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Title: The UCL Lancet Commission on Migration and Health: The health of a world on the move

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Abstract: Executive summary

With one billion people on the move or having moved in 2018, migration is a global reality –and has also become a political lightning rod. Although estimates indicate that the majority of global migration occurs within low- and middle-income countries (LMICs), the most prominent dialogue focuses almost exclusively on migration from LMICs to high-income countries. Today, populist discourse demonises the very same individuals who uphold economies, bolster social services and contribute to health services in both origin and destination locations. Those in positions of political and economic power continue to restrict or publicly condemn migration to promote their own interests. Meanwhile nationalist movements assert "cultural sovereignty" by delineating an 'us' and 'them' rhetoric which has created a moral emergency.

In response to these issues, the UCL-Lancet Commission on Migration and Health was convened to articulate evidence-based approaches to inform public discourse and policy, undertaking a wide consultation of diverse international expertise spanning sociology, politics, public health, law, humanitarianism, and anthropology. The result of this work is a report that aims to be a call to action for civil society, health leaders, academics, and policy-makers to maximise the benefits and reduce the costs of migration on health locally and globally. The outputs of our work relate to five overarching goals that we thread throughout the report.

First, we provide the latest evidence on migration and health outcomes to challenge common myths and highlight the diversity, dynamics, and benefits of modern migration as they relate to population and individual health. Migrants generally contribute more to the wealth of host societies than they cost. Our report shows that international migrants have, on average, lower mortality rates than the host country population. However, increased morbidity was found amongst several subgroups of migrants, for example increased rates of mental ill health in victims of trafficking and people fleeing conflict. Currently, the full range of migrants' health needs are difficult to assess due to poor quality data.

We know very little, for example, about the health of undocumented migrants, disabled people or LGBTI who migrate or who are unable to move. Second, we examine multi-sector determinants of health and consider the implication of current sector-siloed approaches. The health of people who migrate depends greatly on structural and political factors that determine the impetus for migration, the conditions of their journey and their destination. Discrimination, gender inequalities and exclusion from health and social services repeatedly emerge as negative health influences that require cross-sector responses.

Third, we critically review key challenges to healthy migration. Population mobility provides economic, social and cultural dividends for those who migrate and their host communities. Furthermore, the right to the highest attainable standard of health, regardless of location or migration status, is enshrined in numerous human rights instruments. However, national sovereignty concerns overshadow these benefits and legal norms. Attention to migration focuses largely on security concerns and where there is conjoining of the words 'health' and 'migration' it is either limited to small subsets of society and policy, or negatively construed. International agreements, such as the UN Global Compacts on Migration and on Refugees, represent an opportunity to ensure that international solidarity, unity of intent and our shared humanity triumphs over nationalist and exclusionary policies, leading to concrete actions to protect the health of migrants.

Fourth, we examine equity in access to health and health services and offer evidence-based solutions to improve the health of migrants. Migrants must be explicitly included in universal health coverage commitments. Ultimately, the cost of failing to be health-inclusive may be more expensive to national economies, health security and global health than the modest investments required.

Finally, we look ahead to outline how our evidence can contribute to synergistic, equitable health, social and economic policies and feasible strategies to inform and inspire action by migrants, policy makers and civil society. We conclude that migration must be treated as a central feature of 21st century health and development. Commitments to health of migrating populations should be considered across all Sustainable Development Goals (SDGs) and in the implementation of the Global Migration and Refugee Compacts. The Commission offers recommendations that view population mobility as an asset to global health by demonstrating the meaning and reality of 'good health for all'. We present four key messages that provide a focus for future action.

#### Key messages

- We call on nation states, multilateral agencies, non-governmental organisations and civil society to positively and effectively address the health of migrants by improving leadership and accountability. First, we urge the United Nations to appoint a Special Envoy on Migration and Health and national governments to have a country-level focal point for migration and health to ensure much needed coordination and that migrants are included in all decisions about their health. Second, we propose that a Global Migration and Health Observatory is established to develop evidence-based migration and health indicators to ensure better reporting, monitoring, transparency and accountability on the implementation of the migration and refugee Global Compacts.
- International and regional bodies and states should re-balance policy-making in migration to give greater prominence to health by inviting health representatives to high-level migration policy-making fora. Health leaders and practitioners must fully engage in dialogues on the macro-

economic forces that affect population mobility and participate in multi-sector budgeting and programme planning for migrants.

- Racism and prejudice must be confronted with a zero tolerance approach. Public leaders and elected officials have a political, social and legal responsibility to oppose xenophobia and racism that fuels prejudice and exclusion of migrant populations. Health professionals' and organisations awareness of racism and prejudice should be strengthened by regulatory and training bodies including through accreditation, educational courses and continuous professional development. Civil society organisations should hold leaders to account to ensure the implementation of these obligations.

- Universal and equitable access to health services and to all determinants of the highest attainable standard of health needs to be provided to migrant populations, regardless of age, gender or legal status by governments. Solutions must include input from migrants and be specific to the diverse migrant populations. For those exposed to disaster and/or conflict, mobility models and disaster risk reduction systems should be integrated. Targeted interventions to improve the rights of migrant workers' and their knowledge of workplace health and safety and entitlement to healthcare are needed.

# 1 The UCL Lancet Commission on Migration 2 and Health: The health of a world on the 3 move

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## 55 **Executive summary**

56  
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58 also become a political lightning rod. Although estimates indicate that the majority of global  
59 migration occurs within low- and middle-income countries (LMICs), the most prominent dialogue  
60 focuses almost exclusively on migration from LMICs to high-income countries. Today, populist  
61 discourse demonises the very same individuals who uphold economies, bolster social services and  
62 contribute to health services in both origin and destination locations. Those in positions of political  
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64 interests. Meanwhile nationalist movements assert “cultural sovereignty” by delineating an ‘us’ and  
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85 destination. Discrimination, gender inequalities and exclusion from health and social services  
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89 Furthermore, the right to the highest attainable standard of health, regardless of location or  
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108 population mobility as an asset to global health by demonstrating the meaning and reality of ‘good  
109 health for all’. We present four key messages that provide a focus for future action.

110

#### 111 **Key messages**

- 112 ● **We call on nation states, multilateral agencies, non-governmental organisations and civil**  
113 **society to positively and effectively address the health of migrants by improving**  
114 **leadership and accountability.** First, we urge the United Nations to appoint a Special Envoy  
115 on Migration and Health and national governments to have a country-level focal point for  
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117 all decisions about their health. Second, we propose that a Global Migration and Health  
118 Observatory is established to develop evidence-based migration and health indicators to  
119 ensure better reporting, monitoring, transparency and accountability on the implementation  
120 of the migration and refugee Global Compacts.
- 121 ● **International and regional bodies and states should re-balance policy-making in migration**  
122 **to give greater prominence to health by inviting health representatives to high-level**  
123 **migration policy-making fora.** Health leaders and practitioners must fully engage in  
124 dialogues on the macro-economic forces that affect population mobility and participate in  
125 multi-sector budgeting and programme planning for migrants.
- 126 ● **Racism and prejudice must be confronted with a zero tolerance approach.** Public leaders  
127 and elected officials have a political, social and legal responsibility to oppose xenophobia  
128 and racism that fuels prejudice and exclusion of migrant populations. Health professionals’  
129 and organisations awareness of racism and prejudice should be strengthened by regulatory  
130 and training bodies including through accreditation, educational courses and continuous  
131 professional development. Civil society organisations should hold leaders to account to  
132 ensure the implementation of these obligations.
- 133 ● **Universal and equitable access to health services and to all determinants of the highest**  
134 **attainable standard of health needs to be provided to migrant populations, regardless of**  
135 **age, gender or legal status by governments.** Solutions must include input from migrants and  
136 be specific to the diverse migrant populations. For those exposed to disaster and/or conflict,  
137 mobility models and disaster risk reduction systems should be integrated. Targeted  
138 interventions to improve the rights of migrant workers’ and their knowledge of workplace  
139 health and safety and entitlement to healthcare are needed.

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141

## 142 Introduction

143 Nearly one seventh of the world’s population is now living in a location different from the one in  
144 which they were born.<sup>1</sup> A migrant is someone who has moved across an international border or  
145 within her or his own country away from their habitual place of residence. Migration is not a new  
146 phenomenon. People have migrated throughout human history and population mobility continues  
147 to benefit many individuals and communities and contribute to social and economic advancement  
148 globally.

149 Despite the long history of human migration, international dialogue has recently become more  
150 prominent, although relatively limited attention has been paid to migration as a core determinant of  
151 health. When individuals migrate, they enter new environments that have different health risks and  
152 protection mechanisms.<sup>2</sup> Studies indicate that morbidity patterns among migrants are diverse and  
153 dynamic because of numerous interacting influences, such as: an individual’s pre-departure health,  
154 socio-economic and environmental conditions, local disease patterns and risk behaviours, cultural  
155 norms and practices, and access to preventive or curative therapies throughout the migration  
156 process.<sup>3</sup>

157 Health outcomes in migrants are heterogeneous, but evidence consistently shows the  
158 disproportionate health, social and economic burdens of forced migration.<sup>4</sup> Yet, despite widespread  
159 recognition of the numerous migration-related health risks, mobile populations—even forced  
160 migrants who are fleeing for their lives—are often met with punitive border policies, arbitrary  
161 detention, abuse and extortion and commonly denied access to care. Governments that institute  
162 immigration policies that legalise exclusion and rights abuse frequently cite ‘national security’  
163 concerns to justify migration controls that extend beyond their own borders. These policies can go  
164 as far as criminalising migrant status, and deterring asylum seekers by detaining them; even  
165 separating children from their parents, as recently seen in US government immigration policies.<sup>5</sup> All  
166 too often, government policies prioritise the politics of xenophobia and racism over their  
167 responsibilities to act forcefully to counter them.

168 Our current political economy is driven by Western industrial powers that draw on natural and  
169 human resources in low- and middle-income countries (LMICs). Moreover, laws and regulations that  
170 encourage relatively unrestricted trade in goods, services and capital are simultaneously being used  
171 to control labour mobility to further the political and economic interests of the wealthy while often  
172 leaving poor communities behind. For example, global trade and pro-business policies in lower-  
173 income countries have drained natural resources, contributed to environmental degradation and  
174 pushed people into hazardous, exploitative work to meet consumer demands for cheap goods such  
175 as ‘fast fashion’.<sup>6</sup>

176 International conventions are in place to guide policy to support safer and more inclusive migration  
177 and can be used to counter some of these negative forces. Migrants, as all human beings, are  
178 equally entitled to universal human rights without discrimination. All migrants thus have the right to  
179 the “highest attainable standard of health”, according to international law.<sup>7</sup> All migrants are entitled  
180 to equal access to preventive, curative and palliative health care.<sup>8</sup> They also have rights to the  
181 underlying social, political, economic, cultural determinants of physical and mental health, such as  
182 clean water and air and non-discriminatory treatment.<sup>8</sup> Human rights treaties also entitle migrants  
183 to due process of law in border practices and freedom from arbitrary detention and restrictions on  
184 movement. These rights do not simply impose legal obligations on governments but are essential  
185 preconditions for social and economic integration, prosperity, and social cohesion in any society and  
186 “human well-being in the modern world.”<sup>9</sup> The substantial gap between the international legal  
187 requirements guaranteeing the human rights of migrants and the implementation of these laws by  
188 states provides important context for this Commission report.

189 In 2016, at the UN General Assembly, the Global Compact for ‘safe, orderly and regular migration’  
190 and a further Compact to respond to acute and chronic refugee situations were initiated in line with  
191 the 2030 Agenda for Sustainable Development target 10.7 (to ‘facilitate safe, orderly and  
192 responsible migration’).<sup>10,11</sup> Yet, these critical multi-lateral processes appear to be heading in a  
193 precarious direction, as exemplified by the US Government’s withdrawal from the Compact on safe,  
194 orderly and regular migration in 2017,<sup>12</sup> potential internment camps titled ‘migrant centres’<sup>13</sup> and  
195 the reticence of European Union countries in accepting an equitable redistribution of migrants.

## 196 **Our Commission’s Journey**

197 Worldwide mobility is our future—regardless of laws and walls, and our Commission was developed  
198 in light of the opportunity to achieve the SDG commitments “to leave no one behind” and “to reach  
199 first those who are furthest behind,”<sup>14</sup> and in the context of States’ guarantees to protect the human  
200 rights of migrants. Initially we brought together 20 Commissioners ensuring gender and geographical  
201 representation to generate transdisciplinary evidence, contemporary thought and global expertise  
202 that draws on multiple scientific perspectives. To achieve this aim Commissioners were drawn from  
203 a range of scientific backgrounds including public health, sociological, policy, legal, anthropological  
204 and humanitarian.

205 We initially structured our work around the key themes of Health systems; Labour migration; Forced  
206 migration; Vulnerabilities; Law, human rights and politics; Socio-cultural factors and identity; and  
207 Data and health outcomes. We undertook a series of rapid systematic reviews to identify key  
208 literature in each area and building upon these, as well as two formal systematic reviews and meta-  
209 analyses that informed the Commission and are published in detail alongside the report. Our work  
210 was conducted over a two year period with a week-long in-person review of the first draft of the  
211 Commission at the Rockefeller Foundation, Italy, in November 2017.

212 The principles that underpin our report are those of equity and healthy inclusion. The Commission  
213 settled upon five goals to examine in-depth which provide a focus throughout the four sections of  
214 the final report. First, we review current evidence on migration and health, challenge common  
215 myths and describe the composition and characteristics of population mobility and assess uses and  
216 limitations of migrant categories. Second, we examine multi-sector determinants of health and  
217 consider the implication of current sector-siloed approaches, such as the dichotomous goals of the  
218 health versus the security sectors. Third, we critically review key challenges to healthy migration by  
219 analysing health and migration in relation to: culture and identity, rights, legal issues, and the  
220 environment and climate change. Fourth, we examine equity in access to health and health services  
221 and offer evidence-based solutions to improve the health of migrants. Fifth, we look ahead to  
222 consider how our evidence can contribute to synergistic, ethical policies and feasible strategies to  
223 inform and inspire action by governments, international agencies and health professionals to  
224 promote health amidst global mobility.

225 To tackle this complex subject, we developed a ‘Migration and Health Determinants Framework’ to  
226 consider the interactions between migration and the health of individuals, populations and global  
227 health ([See supplementary appendix, Figure 1](#)). The Framework highlights key factors influencing the  
228 health of mobile populations including: legal, social, health structures and systems; service access  
229 and support; exposures and behaviours particular to migrants; and the epidemiological changes  
230 (positive and negative) related to population mobility. These health influences are generally relevant  
231 for each stage of a migration process. Our report thus offers evidence on how various factors might  
232 benefit or be detrimental to individual and population health throughout a journey—including at  
233 origin, transit, destination and return.

234 Migration and health is a diverse topic with an extensive existing literature. While we consciously  
235 start with a broad and ambitious remit, it is not possible to cover all aspects of migration and health,  
236 nor give an overview of all groups of migrants and the conditions they experience. There are many  
237 other facets of migration and health that were beyond the specific remit or bounds of the five main

238 goals of this Commission but we plan to do more in the post-Commission phase in collaboration with  
239 others across sectors who are working in this space. Recognising the recent Lancet series on Conflict  
240 and Health, and the Syria Lancet Commission, we have not presented substantive amounts of  
241 reference to policy documents or examples of best practice, or deeper analysis in the field of refugee  
242 studies. We feel these areas and wider collaboration on forced migration will be key for the post-  
243 Commission phase in achieving further research, policy and operational impact. Whilst we cite cases  
244 of operational practice, we were unable to systematically explore grey literature or repositories of  
245 migration and health operational and interventional practice.

246

## 247 **Section 1: The Case for Action – What do we** 248 **know about migration and health**

249

### 250 **Migration is a dynamic process**

251 Migration seldom involves a single long journey from one place to settle in another. The diversity  
252 and complexity of migration patterns include people traveling long and short distances, within and  
253 across borders, for temporary or permanent residency and often undertaking the journeys multiple  
254 times. A clear delineation or rigid categorisation of different types of migration is rarely possible. The  
255 categorising process attempts to classify a large, heterogeneous population according to limited  
256 criteria, which are not generally suited to capture the complex social dynamics of human mobility or  
257 necessarily the perspectives or needs of the people who are moving. Terms such as “voluntary” or  
258 “forced” migration and categories such as “refugees”, “asylum seekers”, “international” and  
259 “internal” migrants can partially help to understand migration dynamics. These same terms can also  
260 be used to “other” and discriminate against migrants, as well as being generally administrative  
261 definitions used to classify migrants for protection, assistance or research—rather than a true  
262 representation of individual circumstances. For example, legal categories are instrumental for  
263 migration control and management by states and international agencies providing support but may  
264 not fully explain an individual’s circumstances. However, for the purposes of the evidence presented  
265 in this report, we often use existing definitions ([See supplementary appendix, Table 1](#)), which enable  
266 us to draw on current migration literature and data sources. At the same time, throughout the  
267 report we will highlight the complex drivers of migration, and the difficulties and potential dangers  
268 of assigning singular or narrow definitions. Migrant categories are not necessarily objective or  
269 neutral; distinctions frequently reflect particular assumptions, values, goals and interests of the  
270 parties who assign these labels.

271 It is also difficult to categorise people in relation to their reasons for migrating. There are a myriad of  
272 negative drivers and positive aspirations (‘push’ or ‘pull’ factors) that motivate people to migrate.  
273 Individuals, families and groups often have mixed motives for migrating, and their reasons can  
274 change over the course of a single journey. For instance, people seeking safety from conflict may be  
275 classified as refugees, asylum-seekers, undocumented or internally displaced persons, but before  
276 and during transit—especially in protracted conflicts where aid resources are insufficient—migration  
277 decisions may also relate to livelihoods and employment. ‘Distress migration’ or migration due to  
278 entrenched poverty, food insecurity and household economic shock (e.g., illness, debt), is common  
279 worldwide. Distress migration is linked to local unemployment, household financial crises, poor crop  
280 production and in some instances, forced evictions, for example, linked to rising real estate prices,  
281 large development projects and land confiscation.

282 Regardless of migration motives, economic contributions, or people’s rights, amidst populist

283 rhetoric, the amorphous labelling of people who move as ‘migrants’ has seemed to become a  
284 condemnatory marker for populations who have fewer resources, such as refugees, asylum-seekers,  
285 undocumented migrants and low-wage workers. Moreover, in an era of xenophobic politics, the  
286 catch-all term ‘migrants’ obscures the net social, political and economic benefits of migration for  
287 destination communities, and contributions to places of origin, that support families and  
288 supplement development aid, which, in sum, promise greater global health.

289

## 290 **Health throughout the migration process**

291 Migration trajectories involve various phases, (figure 1) including: pre-departure circumstances at  
292 places of origin; short or long-term transit, which may involve interception by authorities, non-  
293 governmental groups or criminal gangs; destination situations of long- or short-term stay; and return  
294 to places of origin for re-settlement or for temporary visits before re-migration.<sup>3</sup> In each phase of a  
295 person’s journey there are potential health risks and possible protective factors that can have a  
296 short or long-term impact on their well-being. As previously noted, the journeys are often diverse  
297 and rarely singular. For example, it is especially common for labour migrants to undertake circular  
298 migration, transiting back and forth between their place of origin and destination or re-migrating to  
299 a new destination. When people are transiting between locations, their health and safety depend on  
300 the forms of transport (air travel, on foot across deserts, hidden in lorries) and the pathogenic or  
301 environmental exposures (malaria, tuberculosis, heat exhaustion, dehydration) along the transit  
302 routes.<sup>15</sup> Return migration also poses both health risks and benefits. For instance, communities of  
303 origin may benefit from new skills or improved health behaviours gained by returning migrants,<sup>16</sup>  
304 but conversely, individuals who are injured or disabled during their journey may return to locations  
305 with few services or support mechanisms. Importantly, policies to protect migrants’ and public  
306 health will be most effective if they take advantages of opportunities to address people’s health  
307 needs at the multiple phases of the migratory process.<sup>3</sup> Maintaining the mental health and wellbeing  
308 of migrants and the families they may leave behind is particularly important. Even in ideal  
309 conditions, migration is stressful, and most people move in ways that are far from ideal; which  
310 coupled with the causes of migration, can lead to mental ill health.

311

## 312 **Migration, gender and health**

313 Both population mobility and the health implications of migration are highly gendered. That is,  
314 women, men and sexual minorities are likely to encounter different health risks and protection  
315 opportunities at each phase of a migration journey - a journey they may have undertaken to flee  
316 gender-based violence. The risks begin before departure, where women and children may be at risk  
317 of violence and discrimination. Amongst those who are forcibly displaced, there is a particular risk of  
318 sexual violence, coercion and sexual exploitation, such as recent accounts of widespread rape of  
319 Rohingya women and girls,<sup>17</sup> or when moving along irregular and dangerous routing ending in official  
320 and unofficial detention centres such as the case of Libya.<sup>18</sup> Even when reaching zones of apparent  
321 safety, women and children have been exploited by humanitarian workers, a problem that remains  
322 widespread suggesting that some protectors need to be protected against.<sup>19</sup> A systematic review of  
323 women and girls in conflict-affected settings indicated their extraordinary vulnerability to various  
324 forms of human trafficking and sexual exploitation, frequently occurring as early or forced marriage  
325 and forced combatant sexual exploitation.<sup>20</sup> Women and children are especially at risk when they  
326 migrate without the protection of family or social networks. Unaccompanied girls and boys who  
327 move in ways that are not readily detected by potential support mechanisms are particularly  
328 vulnerable to neglect, trafficking, abuse and sexual exploitation, such as survival sex among Afghan  
329 refugee boys who shelter in parks and makeshift camps in Greece.<sup>21</sup> Child marriages appear to  
330 increase among displaced populations,<sup>22</sup> as parents are often forced to make impossible choices

331 about their daughters based on their fear of sexual violence by armed forces or combatants and  
332 economic hardship.<sup>23</sup> Sexual minorities might be among the most neglected and at-risk populations  
333 in circumstances of migration. The stigma associated with being lesbian, bi-sexual, gay, transsexual,  
334 or intersex (LGBTI) can subject individuals to bullying and abuse or force them to remain invisible.  
335 There appears to be little training for health and humanitarian aid professionals currently to meet  
336 the health needs of sexual minorities.

337

## 338 **Challenging myths**

339 In our current political climate, the term ‘migrant’ raises a litany of myths and inaccurate  
340 stereotypes. While often used for cynical political gain, stigmatising falsehoods about migrants  
341 frequently become publicly accepted. We will respond to common myths by offering data-driven  
342 facts.

343

344 **Are high-income nations being overwhelmed by migrants?** Dialogue on migrants often centres  
345 around absolute numbers of migrants crossing international borders into high-income countries  
346 (HIC). This rhetoric rarely acknowledges that there has been little change in the proportion of the  
347 world’s international migrants, which has only risen from 2.0% to 3.3% from 1975 to 2015 globally  
348 (figure 2A). And, while HICs have seen a greater rise, from 4.3% to 13.3% (1960 to 2015), it is  
349 important to note that the proportion of the total population that were individuals who have been  
350 displaced and are currently living in HICs is considerably smaller than in LMICs. Furthermore, the  
351 figures in high income settings include, for instance, students<sup>24</sup> who pay for their education and  
352 often return to their countries of origin and labour migrants who are net positive contributors to the  
353 economy. Previous waves of migration as a proportion of the global population (e.g. Europeans  
354 colonising the Americas & Australasia) have been vastly greater than these recent trends. Similarly,  
355 the proportion of the world’s population that were refugees was relatively stable between 1960 and  
356 2015 but HICs saw a slight decrease and it was low income countries (LICs) that experienced  
357 fluctuations from 0.1% to 1.3% (figure 2B). These data illustrate that despite popular discourse to  
358 the contrary, changes in migration are more complex than the simple narrative of a rise in numbers.  
359 Overall, mobility patterns are highly regional and context specific with less wealthy nations bearing a  
360 disproportionate burden of hosting vulnerable displaced populations.

361 **Are migrants a burden on services?** Macro-economic analysis on the impact of asylum seekers in  
362 Europe concluded that they have a positive impact on host countries’ economies.<sup>25</sup> Today, rather  
363 than burdening systems, migrants in HICs are more likely to bolster services by providing medical  
364 care, teaching children, caring for grandparents and undergirding understaffed services. Migration  
365 provides much-needed high and low-skilled workers into economies. The way healthcare markets  
366 are constructed – from both supply and demand side – is inextricably connected with human  
367 mobility. Hospitals, residential homes, childcare centres, domestic and professional cleaning services  
368 are often staffed by migrants. Migrants comprise a substantial portion of the health workforce in  
369 many HICs and contribute to a significant “brain gain” in net-migrant receiving countries.<sup>26</sup> For  
370 example, 36% of doctors in the UK gained their medical qualification in another country.<sup>27</sup>  
371 Healthcare workforce migration from poorer to wealthier countries has been the subject of  
372 extensive academic literature. Health professionals migrate because of low remuneration, poor  
373 working conditions, work overload, and poor opportunities for professional advancement in their  
374 home countries.<sup>28</sup> Higher income countries reap the benefits. It is LMICs such as Syria and Turkey,  
375 who host a higher proportion of vulnerable migrants, where services are challenging to deliver for  
376 the poorest members of society. While many migrants are able to access the labour markets, there  
377 are also many who may not have this same access with immediate and long-term consequences on  
378 livelihoods, social security, education and health. Our systematic review and meta-analysis of global  
379 patterns of mortality however, provides strong evidence that international migrants - particularly

380 those who are more likely to have actively chosen to migrate such as economic, student, and family  
381 reunion migrants - have a mortality advantage compared to host populations across the majority of  
382 ICD10 disease categories.

383 **Are fertility rates among migrants higher than among host populations?** Despite populist rhetoric  
384 that migrants have many more children than host populations, the growth and decline of migrant  
385 populations in a country are affected by birth and death rates and inward and outward migration  
386 from a country. Using large-scale longitudinal data from six countries (Germany, Sweden, United  
387 Kingdom, France, Spain and Switzerland), researchers found that migrants have lower first-birth  
388 rates than non-migrants with the exception of migrant Turkish women.<sup>29</sup> Moreover, birth rates  
389 among migrants are barely at the level of population replacement (a total fertility rate below 2.1  
390 births per woman) and often falling. Access to contraception also influences differences in fertility  
391 rates. Poor access to contraception among migrants is often related to inconsistent policies,  
392 guidelines and provision of services, such as in the EU, where migrants appear to have inadequate  
393 access to sexual and reproductive health care, including family planning services.<sup>30</sup>

394 Evidence about fertility and its relation with internal migration in LMICs is limited. Using  
395 Demographic and Health Survey (DHS) data on the use of modern contraception by individuals'  
396 migration category in five LMICs (Ethiopia, India, Kenya, Malawi and Tanzania) we showed that, in  
397 each country, internal migrants used modern contraception methods more often than non-migrants  
398 (figure 3). These results may be explained, in significant part, by people's educational and socio-  
399 economic status, supporting evidence that migrants have lower first-birth rates than non-migrants—  
400 and dispelling populist views about fertility among migrants. However, these data may not represent  
401 patterns among more marginalised groups such as undocumented migrants, refugees, asylum  
402 seekers or displaced populations in humanitarian crisis situations—where rape is common and there  
403 is even greater need for readily accessible sexual and reproductive health care.<sup>31</sup>

404 **Are migrants damaging economies?** There is overwhelming consensus on the positive economic  
405 benefits of migration which is insufficiently acknowledged. In settings that offer universal access to  
406 minimum economic benefits, there has been much debate whether migrants receive more in social  
407 assistance than they contribute in taxes. The evidence examining this issue generally suggests that  
408 migrants make greater overall contributions, except in countries with a high proportion of older  
409 migrants. In advanced economies, each one percent increase of migrants in the adult population  
410 increases the GDP per person by up to two percent.<sup>32</sup> Migrants increase income per person and  
411 living standards through greater contribution to taxes than the social benefits they receive.<sup>33</sup>  
412 Furthermore, in Europe free movement has been demonstrated to address imbalances in the labour  
413 market<sup>34</sup> by serving as an equilibrating force through the provision of labour where and when  
414 needed. These benefits are not just accrued by the wealthiest in society, as evidence also supports  
415 the increase in average income per person at the bottom and the top of income scales. Moreover,  
416 the World Bank Group estimated that migrants sent a total sum of US\$613 billion to their families at  
417 origin in 2017. Approximately three quarters of these remittances were sent to LMICs -an amount  
418 that is more than three times larger than official development assistance - and these remittance  
419 flows have been growing steadily since 1990.<sup>35</sup> In countries such as Liberia, Nepal and Tajikistan, up  
420 to one-third of the gross domestic product comes from international remittances. Globally these  
421 sums of money are large and transformatory for the lives of non-migrants. ([See supplementary  
422 appendix, Figure 2](#)).

423 **Are migrants disease-carriers that pose risks to resident populations?** Suspicion against migrants to  
424 be “carriers of disease” is probably the most pervasive and powerful myth related to migration and  
425 health throughout history.<sup>36</sup> Although there are historical examples of the introduction of disease  
426 into new settings through human mobility (e.g., the spread of infection from European colonial  
427 settlers), the risk of transmission from migrating populations to host populations is generally low.  
428 For example, studies on tuberculosis, suggest that the risk of transmission is elevated within migrant  
429 households and migrant communities, but not in host populations.<sup>37,38</sup> Nonetheless, several HICs

430 screen migrants for tuberculosis as part of pre-migration visa application checks.<sup>39</sup> While  
431 tuberculosis screening systems may benefit individuals through early detection, screening is often  
432 stigmatising and can spur xenophobic media messages,<sup>40</sup> despite the negligible risk of transmission  
433 in countries with functioning public and universal health systems.<sup>37</sup> Migrant populations may come  
434 from countries with a high burden of disease<sup>41</sup> and it is not uncommon for disease outbreaks to be  
435 found in situations of conflict, which dismantle already weak public health systems. Illness and  
436 infections may also be acquired or spread via transit routes and transport means. For example, air  
437 travel can facilitate rapid geographic spread of infections. However, even risk of air travel-related  
438 outbreaks is low to modest if the destination setting has strong surveillance and inclusive public  
439 health services,<sup>42</sup> which are also crucial to prevent pandemics, whether associated with population  
440 movement or not.<sup>43</sup> Epidemiological patterns and related risks are readily addressed by assessing  
441 the infectious disease burden among populations and using data to design targeted interventions to  
442 contain outbreaks and prevent new infections through immunisation. Because of the prejudice and  
443 unfounded fear that can be generated by misuse of surveillance data, caution is required when  
444 releasing potentially stigmatising disease prevalence figures for public consumption. We revisit this  
445 issue throughout the report and discuss the misuse of data in panel 5.

446

## 447 **Composition of mobile populations**

448 Understanding the health of people on the move requires clarity about *who* is moving, *why* and  
449 *where*, and the potential positive and negative effects. In this section, we offer an overview of:  
450 international migrants; internal migrants; labour migrants; refugees; asylum-seekers; internally  
451 displaced persons (IDP) and climate refugees - an emerging group that is likely to increase. Data will  
452 be presented using the most widely applied migration categories, despite our previously stated  
453 reservations about their weaknesses, reviewing numbers and their associated limitations,  
454 geographical distribution, age and sex characteristics and key issues for each group.

455

456 **International Migration:** In 2017, there were an estimated 258 million international migrants—  
457 which accounted for 3.4% of the world's population.<sup>44</sup> Notably, most data on international migration  
458 between 1960 and 2015 did not classify migrants by subgroup. Recent estimates by the International  
459 Labour Organization indicate that labour migrants comprised 61% of all international migrants in  
460 2015 —however this figure is based on limited data and this was the first year for which data were  
461 available (figure 4a). Figure 4b outlines the number of international migrants by age, sex and region  
462 in 2015. Europe has the largest number of international migrants (76 million), closely followed by  
463 Asia (75 million) and North America (55 million). Globally, the largest number of international  
464 migrants were in the 30-34 age group and 48% were female. To date, data come primarily from  
465 population censuses, population registers and nationally representative surveys, often using place of  
466 birth to determine international migrant status. For 47 countries, place of birth is not available, so  
467 country of citizenship is used instead potentially leading to overestimation of international migrant  
468 numbers, but conversely, these data can also underestimate by inappropriately excluding people  
469 born abroad with local citizenship. Data collection on international migration would benefit from  
470 better information on subgroups and categories of migrants that are currently not adequately  
471 counted so that vulnerable groups are not omitted from needs assessments and budget allocations  
472 for responses.

473

474 **Internal Migration:** While international migration receives the most political and public attention,  
475 the majority of movement globally is internal migration. In 2009 the number of people who moved  
476 across the major zonal demarcations within their countries was nearly four times larger (763 million)  
477 than those who moved internationally.<sup>45</sup> Approximately 40% of urban growth in Asia, Africa and  
478 Latin America results from internal migration from rural to urban areas.<sup>46</sup> In many LMICs, rural to

479 rural internal migration to work in the agriculture sector still accounts for the largest number of  
480 people on the move.<sup>47</sup> In the past, evidence suggests that internal migration was dominated by  
481 single men, however, recent trends show increases in women moving for work and to seek freedom  
482 from discriminatory social and cultural norms.<sup>48</sup> From 2014 to 2050, the proportion of people living  
483 in urban areas, largely due to migration from rural areas, in Asia and Africa are expected to increase  
484 from 48% to 64%, and 40% to 56% respectively.<sup>46</sup> Producing global estimates on internal migrants is  
485 methodologically challenging and routine data are rare.<sup>49</sup>

486 There are considerably more internally displaced persons due to conflict and natural disasters than  
487 asylum seekers and refugees globally. However, they also receive substantially less attention than  
488 the latter, primarily due to the importance attached to national borders, citizenship and the  
489 availability of better data collection for refugees. In 2016, there were 31.1 million newly internally  
490 displaced people, with a total of 40.3 million people internally displaced globally.<sup>50</sup> Asia was the  
491 region with the highest number of IDPs. Between 2009 and 2016, the number of individuals  
492 displaced due to conflict were fewer than those resulting from disaster (figure 5).

493

494 **Labour Migration:** The International Labour Organization (ILO) estimates suggest that in 2013 there  
495 were 150.3 million international migrant workers in the world. While official figures indicate that the  
496 largest proportion of international labour migrants is in North America and Northern, Southern and  
497 Western Europe, this is perhaps misleading. Regional labour migration among LMICs often goes  
498 uncounted due to regional and bilateral labour and trade agreements and undocumented or  
499 irregular border-crossing.<sup>51,52</sup> LMICs are estimated to host roughly 13.6% (20.4/150.3) of total labour  
500 migrants globally.<sup>51,53</sup> Moreover, it is important to note that these figures will be under-estimates as  
501 they exclude undocumented international migration between neighbouring countries and workers  
502 in the informal economy. Among labour migrants globally, recent figures indicate that there are  
503 more male migrant workers (55.7%) than female (44.3%).<sup>51</sup> Women more commonly work in service  
504 jobs (74%) and less often in manufacturing and construction work (15%).<sup>51,53</sup> Increases in female  
505 migration may be due in part to shifts in gender, social and migration norms, and in other part by  
506 remittances,<sup>54</sup> which create greater opportunity for women to migrate. Adolescent girls also migrate  
507 for work, driven by financial incentives,<sup>55,56</sup> and hopes for greater freedom and empowerment.  
508 However, there is growing recognition of the number of young women who end up in exploitative  
509 work.<sup>57</sup> There is extraordinarily limited comparative national data on the patterns and prevalence of  
510 internal labour migration, especially for harder to monitor forms, such as seasonal and often circular  
511 migration.

512

513 **Forced Migration:** Two billion people currently live in countries affected by civil unrest, violence or  
514 ongoing conflict.<sup>58</sup> Using data on historical refugee numbers which fall under UNHCR's mandate, the  
515 proportion of international migrants who were refugees has remained below 10% following a peak  
516 in 1985 at 9% (figure 4a). Consistent with the trend in proportions, the number of refugees declined  
517 from 17.8 million to a low of 8.7 million from 1992 to 2005, followed by an increase to 19.9 million in  
518 2017 (figure 6). Africa had the highest percentage of refugees under 18 in terms of the countries of  
519 origin and countries of asylum application in 2015 ([See supplementary appendix, Figure 3](#)). Further  
520 details on the regional variation in the number of refugees are provided in the [See supplementary](#)  
521 [appendix, Figure 4 and Figure 5](#). Previously most forcibly displaced people were from LICs and lived  
522 in camp-like settings, however, current refugees are more likely to live out of camps. Most refugees  
523 reside in LICs and recent wars and forced displacement, in the Middle East in particular, have caused  
524 millions of refugees to reside in urban and peri-urban settings, often with undocumented status. For  
525 example, less than a fifth of refugees in Jordan live in camps.<sup>59</sup>

526 There were an estimated 1.9 million claims for asylum in 2017 and total 3.1 million asylum seekers  
527 whose refugee status was yet to be determined.<sup>60</sup> There is enormous variation in the total number

528 of asylum seekers by country of origin ([See supplementary appendix, Figure 6](#)) reflecting proximity  
529 to source countries, and the proportion successfully securing refugee status. The numbers in other  
530 categories of forced migrants who are undocumented, and often the most vulnerable, are not  
531 available as these individuals are often not in contact with authorities.

532 Resettlement is a considerable challenge. Refugees with acute health and medical needs are among  
533 the top priorities for consideration for resettlement referral by UNHCR, and some resettlement  
534 countries expedite consideration of refugees facing acute health risks. In 2018 UNHCR determined  
535 that about 1.2 million refugees around the world needed resettlement.<sup>61</sup>

536

537 **Human trafficking and modern slavery:** Human trafficking, forced labour and forced marriage, now  
538 referred to collectively as ‘Modern Slavery’, is estimated to affect 40.3 million people globally,  
539 according to recent estimates from the ILO.<sup>62</sup> These new figures indicate there were 25 million  
540 people in forced labour and highlight that there are also 15 million in forced marriage. This equates  
541 to 5.4 victims for every 1000 people in the world.<sup>63</sup> Regionally, Asia appears to have the largest  
542 number of trafficking victims, with 62% of all trafficked persons, followed by Africa (23%). Women  
543 and girls are disproportionately affected, accounting for 71% of these victims, as are children, with  
544 one in four victims under the age of 18. Females are commonly trafficked for sex work, domestic  
545 service and as brides. Men and adolescent boys are more likely to be recruited—often deceptively—  
546 for various forms of strenuous manual labour, including commercial fishing and construction.<sup>64</sup>  
547 Sexual minorities who are trafficked are often subjected to forced sex work.

548

549 **Climate Change Refugees:** Global climate change, driven by anthropogenic atmospheric and oceanic  
550 warming, and its global impact on rising sea levels, shrinking cryosphere and ocean acidification, has  
551 the potential to affect and disrupt well-known drivers and mechanisms of migration in the future on  
552 an unknown but potentially dramatic scale. The Lancet Commission on Health and Climate Change:  
553 policy responses to protect public health,<sup>65</sup> discusses the potential effects on migrants including  
554 impact on urban health, extremes of heat, and the social impact of population redistribution due to  
555 people who cannot move. A recent study suggests that by 2070 deadly heatwaves due to the  
556 combined impacts of climate change and the vast expansion of irrigated agriculture could make  
557 large parts of northern China, with a population of 400 million, uninhabitable.<sup>66</sup> Climate change will  
558 also increase the frequency and intensity of hydrometeorological hazards.<sup>67</sup>

559 According to a recent report by the World Bank, climate change has the potential to force more than  
560 143 million people to move within their country by 2050.<sup>68</sup> The messages are that internal climate  
561 migration may be a reality but not necessarily a crisis and that migration can be a sensible climate  
562 change adaptation strategy if managed carefully and supported by good development policies and  
563 targeted investments. There is large uncertainty in the impacts of climate change on migration  
564 because migration is driven by complex multi-causal processes which also include social, economic,  
565 political and demographic dimensions which impact on each other and can be driven by the effects  
566 of climate change. The uncertainty is compounded by the fact that refugees from conflict, war or  
567 persecution are protected by the 1951 Convention relating to the Status of Refugees and its 1967  
568 Protocol, but in contrast no international law recognises climate refugees, who are mostly seen as  
569 searching for better economic conditions. The World Bank report is limited to internal displacement,  
570 which limits its scope. For Bangladesh, a country usually considered to be in the front line for climate  
571 change impacts, the World Bank projects that by 2050 there will be 13.3 million climate migrants  
572 (surpassing the number of other internal migrants).<sup>68</sup> In Panel 1, this projection is tested, using  
573 detailed census data over the period is 2001-11. Migration attributed to hydrometeorological hazard  
574 risks from all causes are projected up to 2050 and exceeds the World Bank figure of 13.3 million  
575 internal climate migrants. So as with northern China, the combination of global climate change and  
576 local anthropogenically-driven environmental degradation may trigger dramatic increases in

577 migration. For Bangladesh, there has been no automatic assumption that climate change will cause  
578 mass migration in our analysis, but rather that mass migration is occurring now and will increase,  
579 projected from current trends based on large-scale census data.

580

## 581 **Political, cultural, environmental and structural** 582 **determinants of migration and health**

### 583 **Political determinants of health**

584 Migration has become highly politicised, especially as certain politicians try to curry electoral favour  
585 by migrant-blaming and undermining the welfare state. Stigmatising rhetoric has meant that the  
586 rights of migrants are under attack by the same structures and processes that are supposed to  
587 protect them, both in their country of origin -potentially leading some to move- and during their  
588 migration journey. The views, words and actions by those in power both instigate discrimination and  
589 restrict access to education, work, justice and health. The term “fake news” has recently been  
590 created to describe inaccurate information deliberately created or used to mislead. In a world of  
591 social media and populist discourse, fake news is used against migrants to undermine trust and  
592 divide communities. A previous Lancet Commission on Global Governance, outlined the major  
593 influences and governance deficits which affect health and the power disparities that govern health  
594 inequity.<sup>69</sup> This previous Commission highlighted how the goals of the health sector, which are  
595 inclusive towards better health for all, commonly come into policy conflict with the interests of  
596 influential global actors who prioritise national security, sovereignty, and economic goals. When  
597 considering the health of migrants in light of the Global Governance report, the convergence  
598 of health and migration is situated at the heart of these opposing governance goals. For example,  
599 the Global Governance commission highlighted current democratic deficits—or  
600 the insufficient participation of civil society, health experts, and marginalised groups - in the  
601 decision-making processes. Migrants often suffer from exclusion, and despite their participation as  
602 workers, parents, consumers and investors in the economy, they are frequently left out of  
603 democratic processes. The previous Commission report also indicated that these democratic deficits  
604 are compounded by weak or absent government or public ‘accountability mechanisms’ to fix the  
605 failings in this exclusionary system. Moreover, the authors point out there is a leadership vacuum on  
606 health and this is particularly true for migrant health. For instance, in the UN system, these global  
607 concerns cross thinly through many UN mandates with no clear leadership or coordination with all  
608 relevant external actors. With these profound governance gaps, voices are few and far between to  
609 combat the current highly-charged political rhetoric that demonises migrants.

610

### 611 **Culture, ethnicity and identity**

612 Understanding issues of culture, ethnicity and identity is crucial for achieving equity in health.<sup>70</sup> Past  
613 and present migration dynamics have contributed significantly to the cultural and ethnic diversity of  
614 many societies, highlighting the importance of the cultural dimensions of health and medical care.  
615 Although culture is difficult to define it may be outlined as: a linked group of customs, practices and  
616 beliefs jointly held by individuals, social networks and groups, that help define who they are, where  
617 they stand in relation to those within and beyond the group, and that give meaning and order to life.  
618 A central feature of culture are “the shared, overt and covert understandings that constitute  
619 conventions and practices, and the ideas, symbols, and concrete artefacts that sustain conventions  
620 and practices, and make them meaningful.”<sup>70</sup> Anthropologists describe culture as “a process through  
621 which ordinary activities and conditions take on an emotional tone and a moral meaning for  
622 participants”<sup>71</sup>; this includes perceptions, beliefs, and practices related to health, suffering and

623 disease. Culture is thus never static but evolves in relation to a range of social, economic and  
624 political factors and experiences of individuals and groups. At the individual level, cultural beliefs,  
625 habits and values can be manifested differently among members of the same culturally defined  
626 group.

627 Both migration and culture are processes that define an individual's identity and are both dynamic in  
628 nature. Migration and "living as a migrant" in a transit or host community entails multiple occasions  
629 and stimuli for cultural adaptation and change, on individual and collective levels. Identity can  
630 initially be based on one's place of origin (e.g. ethnicity, nationality). As a migrant, aspects of oneself  
631 are regularly re-shaped as new identities emerge and new labels are imposed (e.g. "migrant",  
632 "foreigner", "undocumented"). New locations raise challenges and individuals develop strategies to  
633 respond to opportunities or constraints, including how they care for their own health and that of  
634 their family, and how they interact with health systems. For individuals who migrate, their past  
635 combines with migration-related experiences to shape how they perceive their health, wellbeing,  
636 risk and disease, and their health seeking behaviour. On arrival at a destination, assimilation and  
637 acculturation may alter their risk profile to mirror patterns of local residents or their fellow migrants.  
638 Independent of specific ethnicity or country of origin, this may mean higher morbidity due to the  
639 deleterious interaction of multiple adverse structural factors, including marginalisation, poverty, the  
640 impact of immigration laws and legal status, and poor access to care.<sup>72</sup> Analysing the dominant  
641 discourse in host countries around migrants helps us to understand how these populations tend to  
642 be 'othered'. For example, questioning the "deservingness" of certain groups of migrants for  
643 healthcare, that eventually supported actual practices and structures of exclusion.<sup>73</sup> Such measures  
644 are both fuelled by and contribute to the anti-migration environments, which make individuals feel  
645 uncertain about their future, their safety and the security of their family.

646 At all stages of the migration process, individuals and groups may be affected by the toxic  
647 consequences of social exclusion and discrimination on the grounds of ethnicity, race, nationality or  
648 migrant status. For some migrants, ethnic discrimination or persecution is already their reason to  
649 leave. In transit or in receiving countries, migrants are often subject to pejorative discourses fed by  
650 cultural stereotypes and racism. The creation of group identity through distinct cultural artefacts,  
651 language, and an assumed common origin or history is an essential feature of culture. However, this  
652 diversity can be utilised as a tool for discrimination which can be created or increased by those who  
653 seek to divide communities. Its detrimental consequences, including the impact of raising  
654 unfounded fears of increased infectious diseases, violence and demands on health resources within  
655 the host group, are well-known from past and recent history. Migrants' burden of discrimination is  
656 often doubled as they carry group characteristics that may be associated with additional prejudice  
657 and exclusion, for example related to intersectionality with gender or disabilities.

658 Discrimination towards migrants is commonplace and often conflated with racism. Anti-migrant  
659 discrimination and racism overlap, sharing features of prejudice against the 'other', and are forms of  
660 xenophobia, but are distinct entities. Racism is based on the belief that one race or ethnicity is  
661 superior, justifying discriminatory actions. Anti-migrant discrimination is directed against migrants  
662 and tends to be a combination of prejudice against the other with fear over the loss of something to  
663 the migrant (e.g. a job, a service). Crucially, discrimination against migrants is usually racism, that is,  
664 it is directed towards people who appear physically or culturally different and can occur between  
665 migrant and host community but can also occur by one migrant group against another.<sup>74,75</sup> Why is  
666 this distinction important? In political discourse, racism is usually socially prohibited and sometimes  
667 illegal. Discrimination against migrants however is 'acceptable' for many and is commonly used in  
668 populist rhetoric. Anti-migrant language is a tool that provides the opportunity to divide populations  
669 on ethnic grounds to advance the majority view and to mobilise fear and hatred. For example, Victor  
670 Orban, Prime Minister of Hungary when speaking about migrants in 2018 stated, "we do not want  
671 our own colour, traditions and national culture to be mixed with those of others".<sup>76</sup> In the United  
672 States for example, anti-immigrant policies were associated with higher levels of perceived

673 discrimination in migrant and non-migrant Latino groups, providing a basis for the unequal  
674 treatment of both migrant and ethnic minority groups.<sup>77</sup> A further study from the United States  
675 showed the health impact; areas with higher anti-immigrant prejudice were associated with  
676 increased mortality generally amongst minority ethnic groups, but in this study the migrants  
677 themselves had lower mortality.<sup>78</sup> This may also have intergenerational consequences. A prominent  
678 raid against Latino migrants was associated with subsequent poorer perinatal outcomes (increased  
679 risk of low birthweight) amongst members of the Latino community.<sup>79</sup> Another example from the UK  
680 was the ‘hostile environment’ towards migrants created by the Conservative government leading to  
681 migrants and British citizens being denied healthcare. This was recently highlighted in the ‘Windrush  
682 scandal’ in 2018, where British citizens who came to the UK from the Caribbean more than 45 years  
683 ago were deported and denied rights and benefits.

684 The socio-political context that leads to inequalities in health creates an accumulation of  
685 disadvantage throughout the lifecycle—and potentially over generations- and migrant-related  
686 discrimination is a profound determinant of health, especially mental health and social well-being.  
687 Studies have shown the substantial mental health implications of living in a state of persistent  
688 unpredictability and uncontrollability over one’s future.<sup>80</sup> Fear of deportation, discrimination and  
689 targeted condemnation can influence willingness to seek care and maintain follow-up appointments,  
690 including to receive medical test results and follow treatment regimens. Studies indicate that the  
691 wider consequences of discrimination are substantial. For example, it is estimated that, on average,  
692 Australia loses up to 3.02% of GDP (\$37.9 billion) annually as a result of individuals being exposed to  
693 some form of racial discrimination.<sup>81</sup>

694 A number of countries have implemented interventions to address discrimination. For example,  
695 Canadian schools have implemented cross-cultural youth leadership programmes and anti-racism  
696 education curricula to equip students and staff to deal more effectively with racism.<sup>82</sup> In South  
697 Africa, the Roll Back Xenophobia programme used community radio to help combat negative  
698 stereotypes of migrants and promote social inclusivity.<sup>83</sup> However, efforts to raise awareness of and  
699 support the needs of particularly at-risk migrant communities fight an uphill battle against  
700 nationalist forces, exclusionary systems, parsimonious resourcing and service-level biases.  
701

## 702 **Environmental influences and hazards**

703 Extreme environmental events and ensuing disasters can cause displacement of populations. These  
704 may be naturally occurring hazards, such as tsunamis, floods, earthquakes, volcanic eruptions;  
705 pandemics of infectious diseases; or conflict and disaster; all of which form a complex driver of both  
706 internal and international migration. Importantly, the most significant components of risk in a  
707 disaster are the vulnerability and exposure, rather than the environmental hazard itself.<sup>84</sup> In this  
708 context, vulnerability refers to the susceptibility of an individual or population to the adverse impact  
709 of the hazard, the components of which are physical, social, economic or environmental. While  
710 disasters may result in an increase in vulnerability, they are also a consequence of the underlying  
711 vulnerability of communities, infrastructure and processes due to poor preparation and mitigation.

712 For example, the increase in extreme weather events has been linked to anthropogenic climate  
713 change<sup>65,85</sup>, but there has been a reduction in global disaster deaths as a proportion of the  
714 population, which is attributed to progress in Disaster Risk Reduction (DRR) actions<sup>86</sup> reducing the  
715 vulnerability of communities, infrastructure and healthcare systems, and through the establishment  
716 of early warning systems. Reactive policies to a crisis which fail to address vulnerability amplify the  
717 social, economic and environmental drivers that turn natural hazards into large-scale disasters.<sup>87</sup> The  
718 majority of disaster deaths occur in fragile and conflict-affected states where DRR is almost absent.<sup>88</sup>  
719 DRR aims to increase resilience and reduce the risk of disasters.

720 Large disasters typically cost between 0.2 and 10% of annual GDP depressing the economy<sup>89</sup> and  
721 these costs may be considerably higher for the lowest income countries, such as the case of the  
722 2010 Haiti earthquake where economic losses equalled GDP.<sup>90</sup> They may exacerbate economically-  
723 driven migration trends, in the medium to longer term from rural to urban areas<sup>91</sup> and sometimes  
724 internationally.<sup>92</sup> But for localised disasters, where effective aid equals disaster losses, there may be  
725 no net migration.<sup>93</sup> Evidence from a longitudinal study over 15 years in Indonesia showed that  
726 permanent migration mostly did not occur in response to disasters, with the exception of  
727 landslides.<sup>94</sup> However, there is contrasting evidence from both Caribbean islands, which experienced  
728 significant post-disaster international migration, and tsunami-affected Japan where large numbers  
729 of local working-age people and families from the Tohoku coast have permanently relocated to  
730 Tokyo and other large cities.<sup>95</sup> Rising sea levels are likely to cause permanent migration of coastal  
731 populations in developing countries with the lowest likelihood of protection, however the people  
732 living in these settings also have strong abilities and desires to make their own mobility decisions.<sup>96</sup>  
733 There is also evidence of migration into disaster areas in response to government programmes  
734 creating jobs or economic migrants filling jobs of displaced people. These inward migrants have  
735 heightened vulnerability owing to lower social capital and disaster awareness.

736 Slow-onset changes in land use and availability due to sea level rise, coastal erosion, precipitation or  
737 agricultural degradation and sector loss, will influence the pre-existing economic drivers of  
738 permanent migration.<sup>97</sup> These changes may be man-made, for example overuse of land or  
739 deforestation that renders it infertile. Drought is a common cause of migration. For example, the  
740 drought in Orissa, India in 2001 resulted in 60,000 people migrating, mostly to the adjoining state of  
741 Andhra Pradesh in search of employment.<sup>98</sup> Migration involves substantial costs and those with  
742 fewest resources have the least capacity to move away, and so are the most vulnerable to harm.  
743 Furthermore, environmental change has the potential to even further diminish people's resources,  
744 exacerbating the vulnerability of a population, resulting in a sub-section, with the least ability to  
745 move, who may become 'trapped.'<sup>99</sup> This 'non-migration influenced by environmental change' is of  
746 great humanitarian concern.

747 It is essential for areas at a high risk of natural disasters to develop strong DRR actions to mitigate  
748 future potential hazards and minimise life loss. An example of where this is important are the  
749 Rohingya settlements in Bangladesh. The Rohingya are the world's largest stateless population,  
750 stripped of citizenship in 1982 by the government of Myanmar. In late August 2017, renewed  
751 violence by the military of Myanmar spurred a rapid mass exodus of Rohingya (655,000 people in  
752 three months) to the south eastern region of Bangladesh.<sup>100</sup> These locations, such as Cox's Bazar and  
753 Bandarban, are extremely susceptible to cyclones, flash flooding, and rainfall-induced landslides and,  
754 coupled with the temporary, makeshift shelters often created by cutting into mud hillsides, render  
755 the Rohingya extremely vulnerable. There is an urgent need to conduct multi-hazard vulnerability  
756 mapping of the refugee camp and surrounding areas, conduct mapping of human mobility patterns,  
757 improve drainage capacities of refugee settlement areas, develop evacuation and relocation  
758 processes, examine resilience of existing healthcare centres to potential hazards, and generate a  
759 post-disaster plan.<sup>101</sup> Reactive policies to a crisis which fail to address vulnerability amplify the social,  
760 economic and environmental drivers that turn natural hazards into large-scale disasters.<sup>102</sup>

## 761 **Education for migrant children and adolescents**

762 Education is essential for children and adolescents and is a determinant of future health and well-  
763 being. Education includes formal schooling, and acquisition of cognitive, social and other soft skills  
764 that foster intellectual and social growth. Migration disrupts a child's formal education, including  
765 difficulties accessing school— with the potential for lost generations of educated adults, particularly  
766 for irregular child migrants and unaccompanied children. For example, in a study of access to public  
767 schools in 28 developed and developing countries across the world, 40% of the developed and 50%  
768 of the developing countries did not allow immediate access to irregular migrant children.<sup>103</sup> Migrant

769 children may also be excluded from school in some countries because they have not undergone  
770 health screening,<sup>104</sup> or they may miss school days because of their limited access to services to treat  
771 even simple illnesses. Migrant children in school may suffer poor educational attainment or decide  
772 to drop out because of language barriers, unsuitable materials or teachers who are inadequately  
773 trained to support student integration. For those with disabilities, obtaining an education can be  
774 especially challenging because few countries will prioritise adapting education, school structures or  
775 providing the necessary staff to ensure children with disabilities can obtain a good education.<sup>105</sup>  
776 Migrant students are more likely than natives to be placed in groups with lower curricular standards  
777 and lower average performance levels.<sup>106</sup> An analysis of Demographic and Health Surveillance data  
778 from Ethiopia, India, Kenya, Malawi and Tanzania on the association between mean number of years  
779 of education and internal migration status indicates that, on average, migrants have more years of  
780 education than non-migrants, with the exception of rural to rural migrants (figure 7). It is also  
781 notable that there are differences between females and males educational attainment among all  
782 groups, with males more likely to stay in school longer—especially among urban residents.

783 Internal migration in China is subjected to the ‘Hukou’ system, which is a household registration  
784 system that determines service entitlements by internal divisions based on residency.<sup>107</sup> These  
785 regulations may mean that internal Chinese migrants, do not have access to their own public  
786 education system—or other services—because the child is not registered in the region they live.<sup>108</sup>  
787 However, where migration is managed well, children can integrate relatively quickly into a new  
788 system, with younger children assimilating particularly well. All children and adolescents, regardless  
789 of their status, should have access to education. According to the Convention of the Rights of the  
790 Child, states are responsible to make primary and secondary education available and accessible to all  
791 children, regardless of migration status. Primary education must be free and compulsory and states  
792 must take progressive steps to make secondary education free as well. The Convention on the Rights  
793 of Persons with Disabilities also requires that governments ensure equal access to basic services  
794 including education for people with disabilities. A practical example of the inclusion of child migrants  
795 is the Reaching All Children with Education programme in Lebanon, which sought to integrate large  
796 numbers of migrant Syrian children into its public school system, while simultaneously improving  
797 access for Lebanese children. The programme increased the number of school places, waived fees  
798 and provided education grants, with encouraging results emerging.<sup>109</sup>

## 799 **Health and safety of labour migrants**

800 Migrant workers’ earnings can sustain households and influence entire economies. For some labour  
801 migrants, primarily highly-skilled individuals with sufficient education, employment, financial, or  
802 citizenship credentials, migration poses few risks. In these circumstances, migration is generally  
803 advantageous for livelihoods, health and well-being. However, the majority of labour migrants are  
804 less well-situated, often originating from LMICs and seeking work in response to financial or safety  
805 needs.

806 Distress or economic migration puts migrant workers at particular risk of unsafe transit and  
807 pressures—or coercion—to engage in unsafe work conditions. Low wage labour migration is closely  
808 linked to globalization and supply and demand, especially for cheap labour. Migrant workers in these  
809 jobs are often amongst the most invisible of migrant populations. Not only are they likely to work in  
810 informal or even illegal sectors, but they are also less likely to take part in the formal economy,  
811 engage with the local community or use official resources. Their safety is also often hindered by  
812 limited social, economic or legal status to assert their rights.

813 Labour migrants rarely migrate on their own without the assistance of labour intermediaries, both  
814 formal agencies and informal migrant networks. Labour brokers play a fundamental role to link  
815 individuals to jobs, however it is not unusual for recruiters to charge exorbitant fees, causing  
816 migrants to incur substantial debt. Recruitment agents, including a migrant’s own social network,  
817 often facilitate third-party contractual arrangements, day labour, piecework, and similar precarious

818 employment and pay arrangements that lead to long hours, exhaustion and serious health hazards.  
819 For example, Bolivian migrant workers in Argentina explained that their social networks had led  
820 them to jobs in harsh working conditions in textile workshops.<sup>110</sup>

821 Although labour migration has served to advance global markets and offer greater livelihood  
822 opportunities, there is growing recognition of the often exploitative and hazardous nature of many  
823 low-skill work sectors and their adverse effects on health and well-being, particularly in emerging  
824 economies. The health and well-being of migrant workers are directly related to their working and  
825 living conditions and influenced by broader social conditions (table 1). Harmful labour situations are  
826 not uncommon for many migrants, especially those in low-wage sectors, as employment  
827 destinations frequently involve hazardous working arrangements, dangerous tasks and unsafe  
828 and/or unhygienic living conditions. For example, commercial fishing is considered to have some of  
829 the most hazardous work conditions—especially in situations of exploitation or ‘sea slavery’. A study  
830 among trafficking survivors in the Thai fishing industry reported higher injury rates (46.6%) than  
831 injuries amongst non-trafficked fishermen (20.6%). Additionally, 53.8% of trafficked fishermen were  
832 subjected to severe violence, whereas 10.1% of non-trafficked fishermen were beaten.<sup>111</sup>

833 As for all migrants, health protections such as health entitlements or health insurance, occupational  
834 safety and health (OSH) regulations and reliable social support are often not easily accessible,  
835 particularly for low-wage sectors and irregular work. In addition to the common barriers to care  
836 experienced by migrants, migrant workers worry about missing work time to seek medical care.  
837 Especially when workers are paid by piecework or are struggling to pay off debts, missing work is  
838 extremely difficult. Moreover, if the medical recommendation for injuries or illness is rest and time  
839 off, day-wage workers are unlikely to heed this advice. In locations where there are regional accords  
840 for cross-border labour migration, it is still not unusual for workers to avoid seeking medical care for  
841 fear of being dismissed for injury or illness or for missing work. Migrant workers may be covered by  
842 insurance in certain instances. However, even those who are insured may not understand that they  
843 are insured or that they have the right to seek care without paying. For example, in a study of  
844 Bangladeshi domestic workers in Singapore,<sup>112</sup> 72% did not know if they had received information  
845 about company-paid insurance, and of those that had received information, 68% did not receive it in  
846 their native language.

847 A diverse group of labour migrants experience major health risks which are often related to  
848 employment policies inadequate to ensure worker health and safety. Most low-wage sectors are  
849 poorly regulated or inspected for protections against occupational hazards and stressors, including  
850 fair wages, financial insecurity, poor psychosocial work environments, exploitation, and verbal or  
851 physical abuse.<sup>113,114</sup>

852 Recognising the important contribution of migrant workers, migrant health has been included in the  
853 SDGs, and highlighted in key international frameworks, for example the WHO Model for Action to  
854 support healthy workplaces, the WHO Global Plan of Action on Worker’s Health 2008-2017, and the  
855 Global Framework for Healthy Workplaces.<sup>115</sup> However, migrants often don’t qualify for medical  
856 subsidies and are frequently not covered by the healthcare financing schemes that protect  
857 citizens.<sup>116</sup> Where such entitlements do exist, work to date suggests that interventions should be  
858 directed towards improving migrant workers’ knowledge of workplace health and safety and about  
859 their healthcare entitlements in order to improve their uptake. There have also been questions  
860 about whether the welfare state is a driver of migration, but research in the US found little evidence  
861 for welfare generosity linked to internal migration across states.<sup>117</sup>

862 Migrant workers’ human rights to health are often severely restricted. Three UN agencies jointly  
863 found that “Migrant workers are among the most vulnerable workers in the world, often subject to  
864 exploitation, discrimination and abuse, lacking access to mechanisms for remedy and redress and in  
865 constant fear of deportation.”<sup>118</sup> Only a minority of migrant workers globally who suffer  
866 occupational injuries receive medical treatment.<sup>119</sup> A report on the ten most significant human rights  
867 violations affecting global business included: recruitment of migrants and refugees into forced

868 labour; a lack of information on labour practices deep within the supply chain; and inadequate  
869 oversight of suppliers.<sup>120</sup> From a human rights standpoint, the right to health requires states to  
870 ensure occupational health and safe working conditions in accordance with the ILO occupational  
871 health conventions 155 and 161 and regardless of immigration status. SDG 8, on decent work and  
872 economic growth, calls on governments to “protect labour rights and promote safe and secure  
873 working environments for all workers, including migrant workers...”<sup>121</sup> and the UN General Assembly  
874 has called for adequate workplace health and safety and protection against violence and  
875 exploitation of migrant workers.<sup>122</sup> Nonetheless, states with significant numbers of migrant workers  
876 often obstruct migrant worker freedoms and safety. For example, in the Gulf Cooperation Council  
877 (GCC) states, the *kafala* or sponsorship system restricts workers’ ability to change or leave their job  
878 without their employer’s permission, or challenge any unfair treatment by the employer (See access  
879 to health systems section and [see supplementary appendix, Table 2](#)).<sup>123</sup> These restrictions have  
880 allowed private sector employers to pay usurious wages, engage in unprotected hazardous work and  
881 force workers to live in crowded, squalid, and unhygienic living quarters.

## 882 **Section 2: Achieving Safe and Healthy** 883 **Migration**

884 There is a strong case for action on migration and health and current evidence indicates that  
885 safeguarding the health of migrants will have positive effects for global wealth and population  
886 health. Countries have a moral and legal obligation to respect the human rights of migrants,  
887 although these obligations are not always respected by states. Over the last century, multilateral  
888 agencies and nation states have moved the migration and health agenda forward through various  
889 notable instruments and events (figure 8). One of the key challenges in progress on advancing the  
890 migrant health agenda is the cross-cutting nature of the migration health topic that demands  
891 sustained multi-sectoral and inter-sectoral partnerships and policies for meaningful action. Recent  
892 policy developments at global, regional and national levels demonstrate evidence-based practices  
893 on how to overcome such challenges. There have been successes through whole-of-government and  
894 whole-of-society approaches, for example, in national migration health policy development by  
895 countries such as Sri Lanka and Chile; multi-stakeholder coordination platforms including civil society  
896 and academia, for example, the Joint UN Initiative on Migration and Health in Asia and the Joint  
897 Initiative on the Health of Migrants and their families in Mexico and Central America, and  
898 implementation of comprehensive refugee responses, for example, Uganda where provision of  
899 comprehensive health care to refugees is integrated within health facilities also serving host  
900 communities.

901 Most of these instruments include important principles supporting health of migrants and propose  
902 several measures for consideration by member states and stakeholders to achieve “health for all”  
903 migrants. It is time for the health community to strongly advocate for all those who migrate to  
904 ensure safety and access to health for all and to hold governments accountable to the migration  
905 policy instruments and conventions.

906 In the first half of this section we review these policy instruments and conventions and the  
907 mechanisms by which states can be held accountable for a migrants’ right to health. In the second  
908 half we explore how, in addition to these conventions, health services in particular can be developed  
909 to protect and improve the health of migrants.

910

## 911 **Strengthening respect for migrants' rights**

### 912 **Migrants' right to health**

913 The right to the highest attainable health extends to all individuals who migrate, regardless of their  
914 circumstances of migration or their legal status. International human rights treaties, most notably  
915 the International Covenant on Economic, Social and Cultural Rights, guarantee “the right of  
916 everyone to the enjoyment of the highest attainable standard of physical and mental health”.<sup>7,8</sup>

917 States are obligated to: *respect* the right to health by not interfering in its realisation, such as  
918 through policies that exclude certain persons from health programmes; *protect* the right to health by  
919 ensuring that third parties do not interfere with the right, such as by discriminating against migrants;  
920 and *fulfil* the right by ensuring the provision of health services that meet essential elements of  
921 availability (economic, physical and geographical, non-discriminatory accessibility; cultural and other  
922 forms of acceptability) and adequate quality (AAAQ). But these rights do not necessarily translate  
923 into entitlements and often states are implicit in this discrimination.<sup>124</sup>

924 For refugees, the Convention Relating to the Status of Refugees and its Protocol guarantees the right  
925 to “the same treatment with respect to public relief and assistance as is accorded their nationals”  
926 (Article 23 ), which has been interpreted to mean access to health services equivalent to the host  
927 population.<sup>125</sup> However healthcare for refugees is often limited because of inadequate resource  
928 allocation by front-line refugee-hosting countries and because states with large numbers of  
929 refugees, such as Jordan and Lebanon, are not signatories to this treaty. Difficulties can also arise for  
930 refugees resettling in non-signatory states where the law does not guarantee their right to access  
931 healthcare, social services, education or employment.

932 For internally displaced persons and irregular migrants, access to healthcare is often severely  
933 constrained. Many states grant irregular migrants access only to emergency care, a practice that is  
934 both overtly discriminatory and is inconsistent with good public health practice for the host  
935 population and for migrants. In Europe, some states have demonstrated that a humane response to  
936 migrant health is possible<sup>126</sup> and expanded access to health services for migrants, especially for  
937 asylum seekers and children without regular status, but there remain major disparities in  
938 entitlements to access based on legal status. ([See supplementary appendix, Table 3.](#))

### 939 **Ensuring limits to health-related restrictions on entry**

940 According to UNAIDS, as of June 2015, 35 countries imposed some form of travel restriction of  
941 people living with HIV.<sup>127</sup> Of these, five countries completely bar the entry of HIV-positive people,  
942 four countries require proof of HIV negative status even for short-term stays, and 17 countries  
943 deport people who are found to be HIV positive ([See supplementary appendix, Table 4](#)). States  
944 impose other health-related restrictions on entry based on infectious disease, communicable  
945 disease, drug dependence, mental illness, pregnancy of migrant workers,<sup>128</sup> or cost of care, and/or  
946 permit deportation on these grounds ([See supplementary appendix, Table 5](#)).

947 These restrictions on entry or deportation for diseases with low risk of casual transmission, such as  
948 HIV/AIDS, leprosy, and hepatitis C, are impermissible on both public health and human rights  
949 grounds.<sup>129,130</sup> The policies violate migrants' right to health and the ability of migrants with  
950 disabilities to enjoy the right to freedom of movement, choice of residence, and nationality on an  
951 equal basis with others.<sup>131,132</sup> Linking health status to migration enforcement reinforces distrust of  
952 the health system and limits migrants' ability to access healthcare on a non-discriminatory basis.<sup>8,133</sup>

953 In practice, health-related enforcement regimes can pressure health workers to act as immigration  
954 control agents—violating their professional ethical requirements as practitioners - an issue that has  
955 been taken up by civil society organisations like Docs Not Cops. Deportation can interrupt treatment,  
956 and deportation on the grounds of pregnancy also violates women migrant workers' rights to

957 privacy, bodily autonomy and reproductive choice and their right to equal treatment, equal  
958 employment rights, and freedom of movement.<sup>8,7,131,134</sup> Protection of the public is often invoked as  
959 a basis for these policies. But if public health is invoked as a basis for denial of entry or deportation,  
960 the Siracusa Principles relating to limitations on civil and political rights demand that the policy be  
961 necessary to protect public health, be based on evidence, be the least restrictive means available to  
962 accomplish the public health objective, and be applied without discrimination.<sup>8,135</sup> Further,  
963 screening for highly contagious diseases must be conducted voluntarily and with informed consent,  
964 pre- and post-test counselling, and protection of confidentiality.<sup>136</sup> Mass screening at entry for  
965 conditions such as HIV, pregnancy and disability is never permissible.<sup>136</sup> Care must be taken that  
966 where pre-entry screening programmes operate, they do not represent a barrier to individuals  
967 seeking to migrate.

968 Several HICs impose residence restrictions based on claims of high treatment costs, especially for  
969 migrants with certain chronic diseases or disabilities. For example, Australia's Migration Act and  
970 Regulations grant the Minister for Immigration and Border Protection the discretion to reject  
971 permanent residency applications if an applicant has a health condition whose treatment is 'likely to  
972 result in significant health care and community service costs to the Australian community,' although  
973 applicants on certain visas (including certain humanitarian, family and skilled work visas) can apply  
974 for a waiver of the requirement.<sup>137,138</sup> The five most common reasons for failing this criterion are  
975 intellectual impairment, functional impairment, HIV, cancer and renal disease.<sup>139</sup> These restrictions,  
976 however, violate the rights of persons with disabilities to liberty of movement and to freedom to  
977 choose their residence on an equal basis with others.<sup>132</sup> As such, the implementation of the law must  
978 be reasonable and proportionate to achieve a legitimate end. All too often, cost-based restrictions  
979 are applied across the board without individualised determinations and in an arbitrary manner. They  
980 also often do not adequately consider the potential economic, social and cultural contributions that  
981 migrants with disabilities make to their host communities and countries, instead considering them  
982 only in terms of cost to the state.<sup>140</sup>

## 983 **Protection of refugees and asylum seekers**

984 The Refugee Convention and Protocol provides specific protections to refugees. Its centrepiece is  
985 Article 33, prohibiting *non-refoulement*, or the return of a refugee to a country where his or her life  
986 or freedom would be threatened on account of race, religion, nationality, membership in a particular  
987 social group, or political opinion. The Convention and Protocol also prohibit states from penalising  
988 refugees seeking protection for unauthorised entry or presence, whether through criminal  
989 prosecutions, arbitrary detention or the imposition of other penalties, so long as they present  
990 themselves to authorities and show good cause for entry.<sup>141</sup> States may not discriminate against  
991 refugees on account of race, religion or country of origin. Equivalent protections apply to internally  
992 displaced persons, including freedom of movement and the right to leave country and seek asylum  
993 elsewhere. Although 43 states have neither signed nor ratified the Convention and Protocol,  
994 including countries such as Lebanon, Jordan, and Bangladesh that host important refugee  
995 populations, these states are indirectly obligated to respect the principle of *non-refoulement* and  
996 other rights of asylum seekers and refugees through other relevant international instruments like  
997 the International Covenant on Civil and Political Rights.

998 Among other rights guaranteed by the Convention, Article 17 requires receiving states to provide  
999 refugees with the same right to wage-earning employment as nationals of a foreign state in the  
1000 same circumstances, and the non-discrimination provisions of human rights law do not permit  
1001 distinctions in work based on nationality or migrant status. Yet only half of the signatories to the  
1002 Convention and Protocol grant refugees the right to work.<sup>142</sup> As a result, refugees must work  
1003 unlawfully if at all and, as a result, often suffer other rights violations and are at increased risks of  
1004 trafficking.

1005 Gaining adherence to the requirements of the Refugee Convention and Protocol has been  
1006 challenging, as they do not include a mechanism for reviewing state compliance, so accountability is  
1007 lacking. Further, to avoid their duties to refugees and asylum-seekers under the Convention, states  
1008 often erect barriers to asylum seekers crossing into the country. These include providing incentives  
1009 to contiguous states to prevent asylum seekers traveling through those states from reaching the  
1010 border, detaining asylum seekers for long periods of time, and criminalising unauthorised entry.  
1011 Another strategy, adopted by the EU, is the return of refugees fleeing conflict in Syria to Turkey on  
1012 the grounds that it is a safe third country. Yet Turkey does not recognise their rights under the  
1013 Convention. These barriers to entry often increase the health risks facing asylum seekers, leave them  
1014 in difficult and dangerous situations, and push them to turn to irregular travel. The proposed Global  
1015 Compact on Refugees would address some of these concerns by strengthening support for  
1016 immediate and ongoing refugee needs and offer incentives for good practice through assistance to  
1017 national and local institutions and communities receiving refugees, though it does not strengthen  
1018 enforcement or accountability.

1019

## 1020 **Human rights of children in forced migration**

1021 Migration enforcement policies directed at adults, including detention and deportation, inevitably  
1022 impact children.<sup>143</sup> Children of parents who have been deported experience increased emotional and  
1023 psychological symptoms.<sup>144</sup> The UN Convention on the Rights of the Child guarantees civil, political,  
1024 economic, social, and cultural rights to all children, irrespective of migration status or citizenship.  
1025 The Convention requires that states act in the “best interests of the child.” Determining the best  
1026 interests of the child requires a comprehensive review of the child’s circumstances and ability to  
1027 exercise basic rights, such as to education, health, and family unity. Children’s rights to life, survival,  
1028 and development (article 6) provide a framework for migrant and refugee children’s rights in host  
1029 countries. States must ensure equal opportunity, access to services, and the chance for all children  
1030 to thrive and reach their potential.<sup>145</sup> As in other dimensions of international migration, however,  
1031 national laws affecting child migrants often do not adhere to human rights requirements, treating  
1032 children and adolescents as foreigners first and often prioritising immigration enforcement policies  
1033 over children’s rights.<sup>146</sup>

## 1034 **Immigration detention, human rights and health**

1035 States are increasingly treating unauthorised border crossing as a criminal offense and detaining  
1036 immigrants, regardless of circumstances. For example, in 2018 the United States announced a “zero  
1037 tolerance” policy for unauthorised border crossings, announcing that it would prosecute 100% of  
1038 such crossings as crimes, regardless of whether the migrants included family groups with children.  
1039 As a result, migrants have been arrested and jailed, and children, including very young children,  
1040 were separated from their parents.<sup>147</sup>

1041 Evidence repeatedly demonstrates the range of negative health consequences associated with  
1042 detention, especially for children and adolescents. We systematically reviewed 38 peer-reviewed  
1043 studies on the effects of immigration detention on health outcomes, and found that a majority of  
1044 the studies concerned male adults originating from Middle-Eastern countries and detained in  
1045 Australia (38%) or the UK (22%). All studies showed negative health outcomes attributable to  
1046 detention, especially mental health disorders although these studies are often limited by  
1047 methodological constraints.

1048 Detention poses clear violations of one of the most important international agreements: the  
1049 International Convention on Civil and Political Rights, which confirms that “Everyone has the right to  
1050 liberty and security of person. No one shall be subjected to arbitrary arrest or detention”<sup>131</sup>. The  
1051 Refugee Convention and Protocol establish protections prohibiting penalising refugees due to their  
1052 entry without documented permission or presence and restrictions on movement other than those

1053 that are necessary, such as to verify identity or protect national security.<sup>148</sup> Detention is only  
1054 warranted when persuasive evidence exists that the individual poses a danger to the community or  
1055 is likely to flee to avoid further immigration proceedings, and must be of short duration.<sup>149</sup> For  
1056 children, the Convention on the Rights of the Child permits states to use detention “only as a  
1057 measure of last resort and for the shortest appropriate period of time”<sup>145</sup>. The UN Committee on the  
1058 Rights of the Child found that immigration detention of children is never in the best interests of the  
1059 child.<sup>150</sup>

1060 Yet throughout the world, detention of irregular migrants, including asylum-seekers, is often used  
1061 routinely, arbitrarily, and for an indefinite period.<sup>151</sup> Conditions in detention facilities are often  
1062 substandard failing to meet needs for adequate food, clean water, healthcare, light, space, safety,  
1063 health and sanitation with consequences for health.<sup>152,153</sup> Detainees, especially children, are  
1064 commonly subjected to violent victimisation, including abuse and rape.<sup>154</sup> Detention also impairs  
1065 immigrants’ other human rights that can have profound and long-lasting effects on health, such as  
1066 obtaining housing, education, employment and pursuit of claims for asylum. Numerous human  
1067 rights and health experts have called for gradual abolition of immigration detention because of its  
1068 arbitrariness, detrimental impact on health and flimsy justification.<sup>155</sup>

## 1069 **Gender, law and health**

1070 As noted, health and migration are both highly gendered, affecting women, men and sexual  
1071 minorities differently. Discriminatory laws frequently sustain or foster health inequalities by gender  
1072 rather than protecting individuals - especially women and girls and sexual minorities. For example,  
1073 host countries are often governed by plural legal systems that severely limit women’s and girls’  
1074 rights to access contraception and abortion, avoid early marriage, and escape violence. In addition,  
1075 in humanitarian aid settings, implementing agencies often apply host country laws rather than  
1076 international standards to determine the scope of access and rights of migrant women and girls.  
1077 Examples of discriminatory laws in countries with very high numbers of displaced persons are  
1078 described in Panel 2.

1079 Some promising programmes and interventions exist to enhance gender justice for forcibly displaced  
1080 persons. For instance, the UN Development Program, the UN Population Fund and local partners  
1081 recently launched a project to protect female migrants inhabiting in refugee settlements in Iraq from  
1082 exploitation, human trafficking, forced and underage marriages, and sexual and gender based  
1083 violence.<sup>156</sup> This project offers novel opportunities for female Syrian refugees to receive free and  
1084 long-term legal assistance in addition to counselling and psychosocial support.<sup>156</sup> The work of the  
1085 Rights in Exile Programme, formerly known as the Fahamu Refugee Programme, is also notable for  
1086 consolidating resources to support migrant legal aid advisors and advocates<sup>157</sup> and has gathered  
1087 resources for legal advisors providing support to LGBTI migrants.<sup>158</sup> ‘Gender responsiveness’, that  
1088 focuses on respecting human rights, is referred to in 12 of the 23 objectives in the Global Compact  
1089 on Migration.

## 1090 **Access to Justice**

1091 Poor access to justice may lead to adverse health outcomes. People who migrate, for whatever  
1092 reason, have the same rights to access to justice as all other people under the International  
1093 Covenant on Civil and Political Rights.<sup>131,159</sup> Yet, migrants encounter numerous obstacles to justice  
1094 systems, for example, for violations of workplace rights and fair adjudication of asylum claims.  
1095 Access to justice is frequently stymied by poor information, employer intimidation, lack of access to  
1096 legal counsel, language barriers and unfamiliarity with procedures. Individual in refugee camps or  
1097 settlements face particular difficulties accessing justice<sup>160</sup> because these are often located in remote  
1098 areas where courts are absent, legal representation is scarce, and judicial systems may be weakened  
1099 by civil unrest and war. Frequently, people are also unfamiliar with formal legal systems and further

1100 hindered by poor education, language barriers and previous reliance on informal, local justice  
1101 systems.<sup>161</sup>

1102

## 1103 **Health services for mobile populations**

### 1104 **Universal and equitable access to healthcare before, during and after** 1105 **migration**

1106 One of the most promising measures to address health inequalities is access to healthcare through  
1107 Universal Health Coverage (UHC). As stated throughout the report, migrants have the right to health  
1108 and UHC is a key strategy for the realisation of that right. UHC is a structural intervention under  
1109 which ‘all people and communities can use the promotive, preventive, curative, rehabilitative and  
1110 palliative health services they need, of sufficient quality to be effective, while also ensuring that the  
1111 use of these services does not expose the user to financial hardship’.<sup>162</sup> Making UHC truly ‘universal’,  
1112 will promote SDG 3.8: “financial risk protection, access to quality essential health-care services and  
1113 access to safe, effective, quality and affordable essential medicines and vaccines for all”. Creating  
1114 UHC systems that integrate migrant populations will benefit entire communities with better health  
1115 access for all, with positive gains for local populations and should be championed by politicians and  
1116 healthcare leaders. To examine the potential role of UHC to improve health considering global  
1117 migration, we focus first on the health system and access for migrants, building on published work<sup>163</sup>  
1118 on transforming health systems towards SDG 3 targets and our conceptual model ([See](#)  
1119 [supplementary appendix, Figure 7](#)) to ensure healthy lives and promote wellbeing for all at all ages.  
1120 We build on established health system analytic frameworks by addressing governance, health  
1121 financing policy, health information systems and health workforce with a focus on migration.

### 1122 **Equitable access to health systems**

1123 A health system is the collection of people, institutions and resources that aim to improve, protect,  
1124 maintain, and restore health.<sup>164</sup> How health systems are conceptualised and structured is primarily  
1125 linked to nation states and their constituent units. Migration can create challenges for health  
1126 systems due to people crossing between system boundaries. That is, health systems are generally  
1127 delimited by geo-political borders, which has made it difficult to assess how they might be  
1128 strengthened to become migrant-inclusive. This is particularly true in situations of conflict that result  
1129 in the spatial reorganisation of health systems within and across borders. These transformations can  
1130 complicate displaced populations inclusion into health systems.<sup>165</sup> Considerations for a health  
1131 system that aims to be inclusive are: addressing heterogeneity in service delivery; ensuring cross-  
1132 jurisdictional networking and interoperability; and protecting the rights of individuals and  
1133 communities to health services. Indeed, analysing health systems requires people-centred  
1134 frameworks that are sensitive to individual and population care needs rather than determined by  
1135 jurisdiction.

1136 Levels of access varies globally with published data providing some examples of good practice ([See](#)  
1137 [supplementary appendix, Table 3](#)). We performed a secondary analysis of data from the Migrant  
1138 Integration Policy Index ([See supplementary appendix, Panel 1](#)) which complemented our analysis of  
1139 access to healthcare in European countries (Law and human rights Section). In our MIPEX analysis,  
1140 Italy received the highest rating of all countries and has had a notably inclusive system that provides  
1141 for asylum seekers and legal migrants under the same system as nationals. In Italy undocumented  
1142 migrants have access to wide health coverage that is specified in the country's law. Countries that  
1143 scored poorly required migrants to pay for specific insurance when the national population was not  
1144 required to, did not provide any exemptions for migrants, and detained undocumented migrants  
1145 identified by healthcare systems.

1146 Drawing on the patient centred access framework by Levesque et al,<sup>166</sup> we developed a new people-  
1147 centred health systems framework for migrants' access to health and social protection (see figure 9).  
1148 Our framework is underpinned by concepts of equity to emphasise human rights and equal access to  
1149 health care regardless of status. The framework explicitly defines health and social protection by  
1150 highlighting both the "supply side", or accessibility of services and determinants of health, such as  
1151 water, nutrition and sanitation, and the "demand side", or the ability to access services. Both the  
1152 demand and supply side are influenced by geographical, economic, and institutional factors  
1153 (including law). These supply- and demand-side factors exist within the broader context of how  
1154 governance institutions define and protect the rights of people (including migrants and other  
1155 marginalised groups equitably) to access and use health services and determinants.<sup>167</sup> Guided by this  
1156 framework we have reviewed the health system accessibility and population's ability barriers as they  
1157 relate to migration.

## 1158 **Overcoming barriers to health services**

1159 National regulations, private employer's provision of health or legal status coverage all interact with  
1160 accessibility and create barrier to health services. Some countries, such as Kenya, have national  
1161 specific treaties or constitutions that assert the right to healthcare for each person, but despite such  
1162 legal protections, and compared to Kenyan patients, migrants often continue to experience specific  
1163 barriers including harassment, cost differentials, administrative and language.<sup>168</sup> Differences  
1164 between<sup>169</sup> and even within<sup>170</sup> countries in the rights of access to health services are marked.

1165 Unaffordable cost of health services remains a significant barrier for many migrants, for example,  
1166 among Syrian refugees in Jordan where cessation of free access to health care is taking a negative  
1167 toll on the health of refugees.<sup>171</sup>

1168 Fear of deportation is of particular importance to undocumented migrants or failed asylum seekers,  
1169 especially in locations where public health workers have a 'duty to report' undocumented migrants.  
1170 These mandates contradict the fundamental ethics of health workers to do no harm, can hinder  
1171 individual and public health, and result in further criminalisation of migration. Data from Doctors of  
1172 the World's European clinics suggest that the contradictions between health and immigration goals  
1173 are considerable and growing across Europe.<sup>172</sup> As a result, individuals with irregular status or who  
1174 are displaced without a regular residence often avoid making themselves known to formal services.

1175 Logistical challenges to provision of health services compound these hindrances, including  
1176 transportation, job commitments, waiting time or poor knowledge of how to navigate the medical  
1177 system.<sup>173</sup> Migrant workers who are paid by piecework or by the hour can rarely afford to sacrifice  
1178 the time and income to seek medical care until urgent. To overcome these issues, health and social  
1179 services may need to be taken closer to people to achieve good levels of access. As a result, a  
1180 number of services have come to understand that medical care and health promotion campaigns  
1181 need to be mobile to reach vulnerable migrant populations who are at greatest risk of harm. Panel 3  
1182 outlines examples from the US of mobile health services and other examples include mobile clinics  
1183 such as the Caravana de Vida, which reaches artisanal gold-miners in Madre de Dios, Peru.<sup>174</sup>

1184 There is an emerging understanding of the ways health needs in conflict-affected settings can be  
1185 supported by telemedicine using digital health technology, such as cellular technology or cloud-  
1186 based solutions.<sup>175</sup> However, these technologies require rigorous evaluation and monitoring during  
1187 roll out with particular attention paid to possible intervention induced inequalities. Implementation  
1188 should be undertaken using evidence based models, but if successful, such systems may help  
1189 achieve SDG 3 indicators and foster better data collection among populations that are especially  
1190 likely to be left behind.

## 1191 **Governance and leadership of universal healthcare systems**

1192 Governance and leadership in the development of universal healthcare systems that facilitate safe  
1193 and successful migration processes have been absent until now. The current focus on provision of  
1194 universal healthcare is therefore an exciting opportunity for this leadership vacuum to be filled. Such  
1195 leadership commitment as shown by the new WHO Director General, need to be followed by  
1196 concrete action and be inclusive of migrants, in all countries and globally through better coordinated  
1197 leadership across the UN system.

1198 The importance of migrant health was emphasised by the World Health Assembly (resolutions 61.17  
1199 in 2008 and 70.15 in 2017). WHO Europe has then created a “Strategy and action plan for refugee  
1200 and migrant health in the WHO European Region”<sup>176</sup>. This document sets out a number of actions  
1201 that should strengthen health systems for migration and we specifically call for member states to  
1202 take positive actions. These actions include identifying an authoritative focal point that can engage  
1203 multiple sectors, supportive legislation for health provision, underpinned by a needs assessment and  
1204 evidence based guidelines, well resourced, and providing inclusive health and social care ideally co-  
1205 developed with migrants.

1206 These calls to action and strategic frameworks have not been implemented by many countries and  
1207 more work urgently needs to be done to ensure existing policies and guidelines around migration  
1208 and health are fully implemented. One exception to the lack of progress is the example of how  
1209 Switzerland have demonstrated leadership in the provision of open health systems for all migrants,  
1210 and countries such as China (case study; Panel 4) have made substantial progress in improving  
1211 access for internal migrants.

1212

## 1213 **Financing universal health coverage for all stages in a migration journey**

1214 Where a universal system does not exist, migrants are often unable to access even basic levels of  
1215 healthcare provision for several reasons, one of the most important of which is cost. Well-designed  
1216 health financing systems can prevent any individual or family from experiencing catastrophic costs  
1217 as a result of ill health but this is unfortunately not the case in many countries at present. In order to  
1218 address such issues, the World Health Assembly resolution 58.33 from 2005 set out a series of  
1219 statements with regards to sustainable health financing, universal coverage and social health  
1220 insurance and urged member states to: “ensure that health-financing systems include a method for  
1221 prepayment of financial contributions for healthcare, with a view to sharing risk among the  
1222 population and avoiding catastrophic health-care expenditure and impoverishment of individuals as  
1223 a result of seeking care”.<sup>177</sup> If implemented, policies such as those recommended by resolution  
1224 58.33 would ensure that no migrant is subject to financial hardship. However, prepayments are  
1225 particularly challenging for migrants, particularly if they become unexpectedly unwell shortly after,  
1226 or during the migration process - a point at which any prepayment is unlikely to be sufficient to  
1227 cover costs.

1228 Several countries have managed to achieve impressive changes in coverage and financing of their  
1229 health systems, including pro-poor pathways towards universal health coverage and specific  
1230 coverage for labour migrants.<sup>178</sup> These examples demonstrate how countries have managed to  
1231 provide coverage using limited budgets, whilst being inclusive of migrants, but tend to focus on  
1232 labour and other forms of documented migration. A systematic review identified six ways to  
1233 improve coverage including adjusting eligibility criteria; improving awareness; reducing insurance  
1234 costs to make them more affordable; improving enrolment processes; strengthening delivery of  
1235 healthcare; and improving the organisational delivery of insurance schemes.<sup>179</sup>

1236 Health insurance schemes exist in many countries but do not cover migrants. A study of access to  
1237 health services among migrants (including labour migrants) in the Greater Mekong Region

1238 (Cambodia, Lao, Myanmar, Thailand, Vietnam)<sup>180</sup> identified significant diversity in the capacity of  
1239 health systems to address the needs of migrant populations. Thailand, for example, has sought to  
1240 improve migrant health coverage. This has included developing migrant health programmes, migrant  
1241 worker agreements, and the implementation of migrant health insurance schemes. In Vietnam,  
1242 health coverage is provided to migrant workers. However, in the Greater Mekong Region overall  
1243 access to high quality healthcare remains very limited, particularly for migrant workers and  
1244 especially those with insecure legal status.

1245 In addition to health insurance and general taxation mechanisms to fund UHC for documented  
1246 migrants, innovative ways of financing may be particularly helpful for those who are undocumented  
1247 and individuals temporarily transiting through a country. Several examples of such mechanisms  
1248 exist. Foreign exchange transaction taxes have considerable potential for fundraising and also are a  
1249 way of migrants indirectly financing the coverage themselves given their likelihood of using such  
1250 services. A new intergovernmental bond scheme administered either through a newly created global  
1251 organisation similar to the Global Fund for Malaria, HIV and Tuberculosis or a regional entity should  
1252 also be explored. Such mechanisms can also be administered through existing regional bodies where  
1253 they exist such as the European Union or African Union. Such a fund will allow nation states to  
1254 provide care to settled and transient populations and pool risks by drawing on funding from a variety  
1255 of sources including governmental donors, charitable sources and taxation of/contributions from  
1256 beneficiaries where they are able to work or wish to purchase additional cover. These forms of  
1257 regional and global support and solidarity are necessary to enable less wealthy countries to make  
1258 progress that will be to the benefit host and destination populations.

## 1259 **Ensuring the provision of migration-appropriate health information systems**

1260 Health information systems are the cornerstone of efficient and effective healthcare provision and  
1261 are used for assessing needs, delivering care, assessing quality of services and accounting and  
1262 financing. At present, the majority of health information systems do not collect routine information  
1263 about the migratory status of individuals.<sup>181</sup> There are risks of collecting this information (see case  
1264 study in Panel 5) although these are often outweighed by the wider overall benefits once mitigated.  
1265 Health information systems that do not collect data on migration, are unable to provide useful data  
1266 to monitor differences in risk factors, morbidity and mortality between migrant and non-migrant  
1267 populations, an essential step in monitoring and improving equity of service provision to this group.  
1268 When health information systems are misused, civil society, academia and healthcare workers -  
1269 including through the creation of “sanctuary hospitals” and “sanctuary doctoring”<sup>182</sup> - can play an  
1270 important and vital role in standing up against the misuse. Human rights law can reduce the risk as it  
1271 requires respect for confidentiality and other protections against misuse of information. Finally,  
1272 information governance and encryption procedures can be built into health information systems so  
1273 that whilst data can be produced on migrants, it remains impossible to identify them.

1274 Many refugees’ healthcare providers have developed bespoke information systems on the basis of  
1275 such a system’s ability to disaggregate populations by refugee status, enabling the monitoring of  
1276 services, and humanitarian standards. It was therefore proposed that these systems remained  
1277 separate and specific to the situation but would feed into the national infrastructure.<sup>183</sup> Despite the  
1278 advantages of such an approach, there are risks associated with developing a completely separate  
1279 system for refugees and other migrants. Separate systems make comparisons between the host  
1280 population much more challenging as the data collection processes and outcomes typically vary.  
1281 Instead, national health information systems should be adapted, with only minor additions, to  
1282 collect information on migrants that will provide public health and policy makers better data. A truly  
1283 universal health coverage system requires joined up and universal health information systems. For  
1284 these reasons we argue that wherever possible, national health information systems should be  
1285 adapted to include data on migration, rather than separate systems being used.

1286

## 1287 **Cultural competence**

1288 The health sector cannot fully assess and support health needs, including health promotion,  
1289 surveillance and service provision, without understanding the users' backgrounds and perspectives,  
1290 as well as the mechanisms for exclusion. Approaches to tackle such challenges, however, need to be  
1291 rooted in an understanding of the cultural context and its intersection with the environment. Yet too  
1292 often, assumptions about health risks and behaviours faced by individuals from cultural or ethnic  
1293 communities stem from misunderstandings or stereotypes. This can obfuscate relevant individual,  
1294 social, structural, economic or political factors.<sup>71</sup>

1295 Healthcare provision must be culturally appropriate and sensitive to the individual's understanding  
1296 of health.<sup>184</sup> The "acceptability" of health services for migrants depends on the ability and  
1297 preparedness of health professionals to provide "culturally informed care",<sup>71</sup> which includes an  
1298 understanding of "culture" and the sensitivity and reflexivity subsumed under the notion of "cultural  
1299 humility".<sup>185</sup> For balancing the awareness for culture with the need to address other relevant factors,  
1300 and to avoid cultural stereotypes, "structural competence" is also needed.<sup>186</sup> This is reflected in an  
1301 anthropological study of irregular Mexican farm workers in the US which showed that in contrast to  
1302 the physician's assumptions, the migrants' culture was not the primary barrier to health access.<sup>187</sup>  
1303 Instead a range of structural issues, including farm schedules, economic pressure, lack of insurance  
1304 coverage and the mobility of farm workers determined utilization of local health resources.

1305 Cultural competence is thus not just a technical skill that can be acquired in specific courses or  
1306 trainings – although such training is an important starting point; it must be an ongoing commitment  
1307 to "awareness of the cultural factors that influence another's views and attitudes" regarding health  
1308 and disease.<sup>70</sup> It supports the healthcare provider in approaching the patients' understanding of the  
1309 illness, how she or he "understands, feels, perceives, and responds to it".<sup>71</sup> This includes notions and  
1310 practices commonly identified as "traditional medicine", that for multiple reasons may be of great  
1311 importance for the patient and his or her peers. Systematic reflection of the health providers' own  
1312 assumptions, beliefs, conventional understandings and values regarding medicine, health, and their  
1313 own culture or ethnic heritage is also essential. Understanding organisational 'culture' - how medical  
1314 institutions, professional groups function in particular settings (e.g. NGO providing humanitarian  
1315 assistance) - are also important factors to consider in providing effective health care for migrant  
1316 populations.<sup>70</sup>

1317 An additional domain when considering migrant health, is the provision of adequate translation  
1318 services and culturally appropriate health-related support services to migrants to increase their  
1319 understanding of health and how to access services.<sup>188</sup> High quality interpretation and cultural  
1320 mediation are among the most important factors in best practice delivery of health services to  
1321 migrants.<sup>189</sup> The deployment of family members as translators when a professional interpreter is not  
1322 available is, in contrast, highly problematic, for issues of confidentiality, quality of the translation,  
1323 problems related to discussing sensitive topics, and the psychological burden for example for  
1324 children when translating serious health issues for their parents. Moreover, it is important to  
1325 consider that interpreters and individuals providing support services from the same country of origin  
1326 or ethnicity may belong to socially and politically different parts of society, which may lead to  
1327 associated challenges to effective provision of care.

## 1328 **Section 3: Burden of Disease and Migration**

1329 For many years, researchers pursued the theory of a "healthy migrant effect", which has been  
1330 described as: "an empirically observed mortality advantage of migrants from certain countries of  
1331 origin, relative to the majority population in the host countries, usually in the industrialised  
1332 world".<sup>190</sup> However, not surprisingly, this theory has proven to be reductionist because it neglects  
1333 the diversity and complexity of migration-related factors that influence people's health and how

1334 these affect individuals at different stages of the lifecourse<sup>191</sup> and also that the health benefits of  
1335 being a migrant tend to reduce over time. To ensure the Commission is informed by the latest and  
1336 most relevant burden of disease evidence, we present the results of a new systematic review and  
1337 meta-analysis of mortality outcomes in international migrants, examine mortality internal migrants  
1338 and then explore in depth migration and morbidity across the lifecourse.

## 1339 **International migration and mortality**

1340 To complement the Commission's work, a systematic review and meta-analysis on mortality  
1341 outcomes in migrants was undertaken.[\[cross reference review\]](#) A total of 96 studies were included  
1342 and 5498 mortality data points were extracted and meta-analysed using a random effects model.  
1343 Findings provide strong empirical evidence of the mortality advantage of international migrants  
1344 (figure 10). Published evidence on all-cause mortality in international migrants was lower (0.70 (95%  
1345 CI:0.65–0.76) than for non-migrants, although there were high levels of underlying heterogeneity  
1346 between studies. Infectious disease and external causes were the only two ICD-10 categories for  
1347 which there was increased mortality (2.4 [1.8–3.2];  $I^2=98.5\%$  and 1.3 [1.1–1.5];  $I^2=98.3\%$   
1348 respectively).

1349 Our review highlighted the heterogeneity of SMRs by country of origin<sup>192</sup>, which is consistent with  
1350 other studies. Moreover, other evidence indicates the importance of age at migration, type of  
1351 migrant, year of migration, social class and policies towards promoting health in the receiving  
1352 country.<sup>193</sup> We compared all-cause SMRs across migrant groups and geographical region of  
1353 destination to examine underlying heterogeneity ([See supplementary appendix, Figure 8](#)) in the  
1354 supplementary appendix). All-cause SMRs in migrants compared to non-migrants in the host  
1355 countries were lower for Europe, Americas and Asia, but the statistical evidence of reduction for  
1356 international migrants to Asia was weak (0.98 [0.92–1.05];  $I^2=99.3\%$ ). Data on refugees and asylum  
1357 seekers were very limited precluding firm conclusions; based on two studies, there was lower  
1358 mortality in refugees (0.50; 95% CI: 0.46, 0.56) and only four data points and no relative mortality  
1359 difference found in among asylum seekers. No SMR data were available for labour migrants or  
1360 internal migrants.

1361 The limitations to this review, detailed in the full manuscript, were that only SMR and absolute  
1362 measures of mortality were included and we were unable to examine whether the mortality  
1363 advantage changed over time since migration, or whether voluntary versus forced migration, socio-  
1364 economic status, levels of acculturation) were associated with mortality rates. We also did not  
1365 explore multi-generational effect. Our results point to the need for improved data collection and  
1366 reporting in migrant health research.

## 1367 **Internal Migration and Mortality**

1368 To explore internal migration and mortality, we conducted a case study using novel analysis of  
1369 Health and Demographic Surveillance System data from Sub Saharan Africa (Panel 6). Findings  
1370 indicate that in half of the study sites, migrants' mortality was 50% higher than among non-migrants.  
1371 These findings are strengthened by results from a study of internal migration and AIDS/tuberculosis  
1372 and non-communicable disease (NCD) mortality in 4 HDSSs in South Africa and Kenya, which showed  
1373 that in-migrants, and return migrants even more so, had higher mortality risk attributed to both  
1374 non-communicable and infectious disease.<sup>194</sup>

1375

## 1376 **Migration and morbidity across the lifecourse**

1377 In this section, we describe the health effects of migration on selected morbidity outcomes to  
1378 illustrate varying impact through the life course and in different migrant groups and, where  
1379 available, we summarise evidence of effective interventions. Health in different periods of life, vary

1380 in important ways in comparison to non-migrants, and may lead to longer term or intergenerational  
1381 effects. There is paucity of evidence comparing migrant groups with the population in the location of  
1382 origin and, unless otherwise stated, the studies relate to international migrants, with the  
1383 comparison group being the host population. This makes it difficult to ascertain whether migration  
1384 itself improves or worsens health. The reality is that it would improve and worsen different risk  
1385 factors for health at an individual and population level. The health risk profiles of migrants are  
1386 determined by their pre-migration status and is a complex combination of biological and  
1387 socioeconomic factors developed over their lives. Moving to a new location will change someone's  
1388 risk profile, with some determinants of health improving and others worsening. As people usually  
1389 move to better their lives, risk factors for health will generally improve, resulting in better overall  
1390 health than the counterfactual in their previous location. Comparing to the population in the  
1391 destination location may make it appear that the morbidity in migrants is higher.

1392

## 1393 **Perinatal health**

1394 An umbrella review (including 19 systematic reviews) of perinatal outcomes amongst migrants and  
1395 refugee women generally found worse outcomes amongst migrants for maternal mortality, maternal  
1396 mental health, preterm birth and congenital anomalies.<sup>195</sup> A meta-analysis of 18 million pregnancies  
1397 in Europe showed that migrant populations had an increased risk of perinatal mortality (OR 1.50;  
1398 95% CI 1.47, 1.53), preterm birth (OR 1.24; 95% CI 1.22, 1.26), low birthweight (OR 1.43; 95% CI 1.42,  
1399 1.44), and congenital malformations (OR 1.61; 95% CI 1.57, 1.65). Importantly, these risks were  
1400 found to be significantly lower in countries with policies promoting social participation and active  
1401 integration with the host population (Belgium, Denmark, the Netherlands, Norway, Sweden).<sup>196</sup>  
1402 Conversely a further large meta-analysis including >20 million pregnant women moving to western  
1403 industrialised countries, found that children of migrants generally fared better. For subgroups of  
1404 migrants from Asia and Africa, there were increased rates of preterm birth and mortality but Latin  
1405 American migrants were at a lower risk of preterm birth.<sup>197</sup> The reasons for adverse birth outcomes  
1406 included underlying conditions in the mother which could be exacerbated by migration, such as  
1407 heart disease or HIV, poor access to and interaction with the health service, communication  
1408 problems, socioeconomic deprivation and the stress of migration.

1409 Migration is also commonly associated with stressors that can have substantial effects on maternal  
1410 mental health and postpartum depression. In a meta-analysis of perinatal mental disorders among  
1411 women from LMICs in HICs, 31% had symptoms of any depressive disorder and 17% for major  
1412 depressive disorder.<sup>198</sup> Estimates suggest that within the first year after childbirth, the risk of  
1413 postpartum depression is 1.5-2 times higher in immigrant versus non-immigrant women.<sup>199</sup> Risk  
1414 factors included a shorter period of residence, lower levels of social support, difficulties adjusting to  
1415 the new country and perceived insufficient household income.<sup>195</sup>

1416

## 1417 **Children and adolescent health**

1418 Children and adolescents who migrate generally do well, as they adapt and integrate quickly into  
1419 new environments, especially when supported by families and engaged in quality education with  
1420 access to health services. The risk factors for health in the location of origin can be profound, for  
1421 example huge health benefits result from escaping trauma or conflict settings. Healthy development  
1422 in infants, children and adolescents occurs in the context of stable and caring relationships. The  
1423 extent to which migration can alter these social determinants of health is immense and migration  
1424 during sensitive developmental phases, especially when exposed to stressors, can determine later  
1425 health outcomes and the health of the next generation. Migration can break up and alter family  
1426 units and loss of parents and carers can lead to emotional and psychological harm but it may also  
1427 bring families together and new family and social networks form over time. Maintenance of secure

1428 family structures and functions during the migration journey can help protect children and  
1429 adolescents from some of the most adverse influences, while continued access to learning  
1430 environments is critical for all children and adolescents. Migration can also disrupt the provision of  
1431 healthcare, for example immunisation schedules, threaten early childhood development and access  
1432 to schooling.<sup>200</sup>

1433 Overall there is far less evidence on adolescents compared to young children, despite them  
1434 constituting a larger proportion of migrants (figure 4b). As children mature through adolescence (10-  
1435 24 years) they become more directly exposed to social determinants of health beyond the family  
1436 (e.g. education, gender norms, racism). During puberty, brain maturation results in increased  
1437 sensitivity to real and perceived differences related to migration. Beyond simply feeling “different”,  
1438 the experience of stigma and social exclusion by bullying can contribute to emotional distress,  
1439 anxiety and depression, and self-harm, including suicide.<sup>201</sup> Some of these impacts can be  
1440 intergenerational. For example, migration of the mother as an adolescent or young adult was found  
1441 to be associated with lower sociability and problem-solving skills in her children at four years of age  
1442 compared to children born in the country or mothers who migrated when younger.<sup>202</sup>

1443 **Mental Health:** A systematic review of mental health outcomes in economic migrants found  
1444 equivocal results, varying by migrant group and host country.<sup>203</sup> A meta-analysis of internal  
1445 migration in China showed that migrant children have a greater risk of internalising and externalising  
1446 problems in public schools, but not in migrant-specific schools.<sup>204</sup> Amongst forcibly displaced  
1447 children in HICs, higher rates of psychological morbidity have been recorded. Only a small number of  
1448 studies have looked at the migration itself with inconclusive results, but the evidence shows that  
1449 pre-migration factors, such as exposure to violence were predictors of mental illness. Comparison  
1450 studies with children left-behind are lacking. Factors, such as support from families and friends and a  
1451 positive school experience, can be protective. There is also evidence of increased mental illness<sup>205</sup>  
1452 and autism<sup>206</sup> in second generation migrants, potentially mediated via epigenetic mechanisms and  
1453 by their parents’ reactions to trauma.

1454 **Nutrition:** Rapid transitions associated with migration can lead to substantial changes in diet,  
1455 exercise and infectious disease exposure, all of which can affect nutritional status. Improving the  
1456 access to quality food by migrating would improve health but changes in lifestyles, shrinking social  
1457 networks and the adoption of taste changes to high fat, high sugar or processed foods may lead to  
1458 obesity.<sup>207</sup> Poor nutrition, particularly during foetal life and infancy, coupled with rapid weight gain  
1459 in a new environment can lead to an increased long-term risk of NCDs. As well as undernutrition,  
1460 migration can lead to rapid weight gain, with evidence that timing of migration alters obesity  
1461 rates.<sup>208</sup> Children affected by migration may experience both undernutrition and overweight. For  
1462 example, a Swedish study found an association between maternal migration and lower BMI in  
1463 children <5 years old but higher BMI in older children.<sup>209</sup> Apart from promoting breastfeeding, most  
1464 other nutrition interventions vary according to the context and health outcome.<sup>210</sup>

1465 **Unaccompanied minors:** Unaccompanied minors, typically 15-18 year olds who are ‘separated from  
1466 both parents and other relatives and are not being cared for by an adult who, by law or custom, is  
1467 responsible for doing so’.<sup>211</sup> They are particularly vulnerable, both from the circumstances that have  
1468 rendered them unaccompanied (e.g. war, parental death) and the risks that can arise when less  
1469 protected by close family. The group is diverse and includes victims of trafficking or modern slavery,  
1470 those reuniting with family, and those seeking a better life or reuniting with family. Less experienced  
1471 than older adults, and generally impoverished, they are at great risk of exploitation. Unaccompanied  
1472 minors can be subject to dispute over age (see Panel 7). While the younger the age, the greater the  
1473 risks, unaccompanied young adults are also likely to be at greater risk than those protected by their  
1474 immediate family. Health risks results from exposure to substances and unsafe sexual behaviours,  
1475 and greater risk of early school completion and unsafe employment. Unaccompanied girls are  
1476 particularly vulnerable to sexual violence and unwanted pregnancy.<sup>212</sup> The accumulation of risks can

1477 result in complex health needs, especially mental health problems, which can then be compounded  
1478 by issues around residency status.<sup>213</sup>

1479 **Left-behind children:** Children may be 'left behind' when parents migrate usually for work. Though  
1480 there are no global estimates for the number of left-behind children, there are an estimated 61  
1481 million in China alone. The impacts of parental migration on the health of left-behind children are  
1482 mixed. In some settings there is evidence of a beneficial effect, for example through receipt of  
1483 remittances, while in others, children suffer adverse consequences. We undertook a comprehensive  
1484 systematic review of the literature in any language, including in Chinese, across key areas of child  
1485 and adolescent mental and physical health (see accompanying paper). We identified 111  
1486 observational studies with outcomes for mental health, nutrition, infectious diseases, injuries and  
1487 key determinants of health. The majority of studies addressed children of internal migrants in China  
1488 and showed no difference or worse outcomes in children or adolescents left-behind compared to  
1489 those of non-migrant parents. The meta-analyses showed an increased risk of anxiety (RR 1.85; 95%  
1490 CI 1.36, 2.53), depression (RR 1.52; 95% CI 1.27-1.82), substance use (RR 1.24; 95% CI 1.00, 1.52),  
1491 suicidal ideation (RR 1.70; 95% CI 1.28-2.26), stunting (RR 1.12 (95% CI 1.00, 1.26), and wasting (RR  
1492 1.13; 95% CI 1.02, 1.24) among left-behind children and adolescents. No differences were found in  
1493 the risk of being overweight/obese or experiencing abuse. In all the meta-analyses, heterogeneity  
1494 was high, however the results were robust to sensitivity analyses removing low quality studies and  
1495 subgroup analyses of internal and international migration, showed little difference. Parental absence  
1496 and lack of supervision may lead to unhealthy risk behaviours in left-behind adolescents. Given the  
1497 very large population of left-behind children globally, the increased risk of mental disorders,  
1498 substance use and malnutrition represent a major concern.

1499

## 1500 **Women, Men and Sexual Minority health**

1501 The health and morbidity patterns among adult migrants are associated with a combination of pre-  
1502 existing factors, their new environment and lifestyles, and exposures during their journey. This  
1503 results in a great deal of variation in morbidity. There are also commonly differences between  
1504 certain health conditions among recent migrant populations versus long-term residents and in this  
1505 section we review the latest evidence in these areas.

1506

1507 **Mental health:** In general, prevalence rates of mental illness vary widely. Among first generation  
1508 international migrants, individuals tend to have higher prevalence rates of depression, anxiety and  
1509 post-traumatic stress disorder compared to the host population, with an increased risk in asylum  
1510 seekers and refugees.<sup>214</sup> Men appear to have a higher risk of mood disorders (RR 1.29; 95% CI 1.06,  
1511 1.56), but no difference in women.<sup>205</sup> Psychosis and schizophrenia are consistently higher among  
1512 migrants, approximately double the risk compared to the host population and these effects are  
1513 carried over into the next generation.<sup>215,216</sup> The reasons for the differences in mental health  
1514 outcomes and the variation between individuals and groups is multi-faceted. They reflect real  
1515 differences in precipitating risk factors, for example exposure to violence and traumatic events, time  
1516 in new setting, and, importantly, methodological variation. Discrimination is also implicated across a  
1517 range of mental health outcomes including depression, psychological distress, anxiety, and well-  
1518 being.<sup>217</sup> Perceived discrimination has also been linked to specific types of physical health problems,  
1519 like self-reported poor health and breast cancer, as well as potential risk factors for disease, such as  
1520 obesity, hypertension, and substance use.<sup>218</sup>

1521 Mixed results were found in mental health status in Chinese rural to urban internal migrants  
1522 compared to local urban migrants or no difference or worsening mental health status compared to  
1523 rural migrants. Social and economic exclusion were both important determinants of mental  
1524 illness.<sup>219</sup> Research on the mental health of migrants typically focuses on refugees, asylum-seekers

1525 and torture survivors. Systematic reviews and meta-analyses often indicate inter-survey variability. A  
1526 review and meta-analysis of 181 surveys from 40 countries, comprising 81,866 refugees and torture  
1527 and conflict-affected persons found the unadjusted weighted prevalence rate was 30.6% (range: 0-  
1528 99%) for PTSD, and 30.8% (range: 0-86%) for depression.<sup>220</sup> Compared to labour migrants, refugees  
1529 experienced approximately double the prevalence of depression and anxiety.<sup>221</sup> Mental health  
1530 interventions, including CBT<sup>222</sup> and trauma-focused therapy<sup>223</sup> have some efficacy in treating PTSD,  
1531 and community-based mental health services have been consistently shown to improve  
1532 outcomes.<sup>224</sup>

1533

1534 **Communicable diseases:** Control measures for infectious diseases have long been established,  
1535 including processes such as quarantine of visitors and animals at ports of entry. The true risk of  
1536 transmission arising through migration is, however, a function of multiple factors and risk varies  
1537 according to route of transmission of the pathogen, its transmissibility, the degree of mixing  
1538 between the infectious and susceptible population and the available control measures in place to  
1539 mitigate transmission risks. Outbreaks of infectious diseases may be sustained by population  
1540 movement, for example during the West African Ebola outbreak, population movement within and  
1541 between countries contributed to sustaining transmission.<sup>225</sup> An important risk in relation to the  
1542 spread of infections is the emergence and subsequent transmission of antimicrobial resistant strains  
1543 that emerge in one part of the world and spread to other regions.<sup>226</sup> However, the spread of such  
1544 resistant pathogens is not due to migration but driven by international travel and tourism and the  
1545 movement of livestock.<sup>226</sup> The public health burden of infectious disease in migrant populations  
1546 remains high in many settings. Strong preventive services, including immunisation and screening  
1547 programmes, and curative services to ensure early detection and treatment of infections in migrants  
1548 are needed. Where screening programmes are established, they need to be evidence-based and  
1549 culturally acceptable. Ultimately, the enlightened self-interest approach is to strengthen global  
1550 health security by supporting the establishment of sustainable health infrastructure and system in all  
1551 countries.

1552

1553 **Physical disability:** For people of any age with a range of disabilities, such as those with mobility  
1554 impairments, or visual, hearing, intellectual or mental health impairments, the process of leaving  
1555 home and traveling elsewhere can be physically challenging, stressful and confusing especially in  
1556 times of crisis. These difficulties also often lead to later departure in times of economic stress or  
1557 humanitarian disaster, placing them at additional risk. Furthermore, migration can disrupt existing  
1558 social and medical support networks. People with disabilities are frequently and incorrectly assumed  
1559 to be less able or competent leading to inability to find work or find enough work in a new  
1560 community to cover their expenses or contribute to their households. Although the UN Convention  
1561 on the Rights of Persons with Disabilities guarantees equal access across borders to all, people with  
1562 disabilities find themselves victims of discrimination during the immigration process, struggling to  
1563 pass immigration tests, understand oaths of alliance or to meet minimum income requirements.  
1564 People with disabilities in all societies are significantly more likely to be victims of violence.

1565

1566 **Non-communicable diseases:** Increasingly people are moving with established non-communicable  
1567 diseases (NCDs); and often combined with a double burden of NCDs alongside communicable  
1568 disease. The interruption of care during transit - due to barriers to health access, documentation,  
1569 lack of healthcare providers or disrupted health systems - prevents the continuous treatment  
1570 necessary for the effective management of many chronic health conditions.<sup>227</sup> The absence of  
1571 effective prevention, screening and continuity of care in migrant populations result in higher  
1572 burdens of NCD morbidity and mortality. Evidence has shown that migrants undergo rapid changes  
1573 in environmental risk factor profiles. When compared to the native Danish population, migrants

1574 from Africa, Asia and the Middle East had 2.5 times the incidence of diabetes.<sup>228</sup> This difference  
1575 could be due to various factors such as poor health literacy and language barriers leading to  
1576 difficulties accessing services, shift in socioeconomic status, decreased rates of physical activity and  
1577 changes in diet. A systematic review of 37 studies of ‘non-Western’ migrants in Europe found lower  
1578 morbidity due to any malignancy in migrants compared to the host populations. For specific cancers  
1579 some exceptions existed, for example liver cancer, and incidence varied by the region migrants  
1580 moved from.<sup>229</sup> Consequently, more effective integration of NCD care into health systems and  
1581 humanitarian response is therefore essential.

1582

1583 **Tobacco and alcohol use:** While tobacco and alcohol in migrants has been shown to be  
1584 heterogenous and context-dependent, a number of underlying risk factors were identified including  
1585 unemployment, poor working conditions, language proficiency, level of integration, number of  
1586 traumatic experiences and community cohesion. Studies suggest that migrant smoking prevalence  
1587 rates are dependent upon the rates in the country of origin and the rates in the host country. For  
1588 example, Ghanaian migrants in Europe were more likely to smoke than both rural and urban  
1589 dwellers in Ghana but still smoked less than the host population.<sup>230</sup> Several studies in HICs and  
1590 internal migrants in China have shown that migrants are less likely to smoke than non-migrants,<sup>231,232</sup>  
1591 while male migrants from Europe, North Africa and the Middle-East in Australia were found to  
1592 smoke more than Australian-born men.<sup>233</sup> A study in Kazakhstan demonstrated that international  
1593 labour migrants reported higher rates of hazardous alcohol consumption compared to internal  
1594 migrants and the host population.<sup>234</sup> Conversely, in Peru the prevalence and incidence of heavy  
1595 drinking was the same for rural-to-urban internal migrants as their rural and urban counterparts.<sup>235</sup>

1596

1597 **Occupational health outcomes in labour migrants:** Rates of fatal and non-fatal injuries are higher in  
1598 labour migrant populations compared to non-migrant populations. This is in part due to the type of  
1599 employment, such as construction, fishing, and metallurgy, but even within these sectors,  
1600 occupational morbidity and mortality is higher among migrants than native-born workers (Table  
1601 1).<sup>236</sup> Occupational harms differ by sector and include injuries, exposure to weather/pesticides,  
1602 respiratory conditions, depression and anxiety, infectious diseases. As part of a new analysis done  
1603 for this Commission, we did a systematic review and meta-analysis focused on international labour  
1604 migrants (originating from 24 LMICs) which found a reported prevalence of 47% documenting at  
1605 least one morbidity (7260 migrants; 95% CI = 29-64%; I<sup>2</sup>= 99.7%)– including predominantly  
1606 musculoskeletal pain and dermatological conditions – and a prevalence of reported injury and  
1607 accidents of 22% (3890 migrants; 95% CI=7-37%; I<sup>2</sup>=99.4%).<sup>237</sup>

1608 However, there are studies that have shown no difference for migrant and non-migrant health in  
1609 certain sectors. In general, men are more likely to suffer workplace injuries, illness and fatalities.<sup>238</sup>  
1610 In fact, migrant workers, operating in many of the most hazardous work sectors may not be aware of  
1611 or have access to occupational health and safety training or personal protective equipment.<sup>236</sup>

1612 To date, there are few studies exploring the mental health of migrant workers. A review that  
1613 compared labour migrants to refugees found that refugees had approximately double the  
1614 prevalence rates of depression and anxiety. Importantly, the authors suggest that financial stress is a  
1615 significant risk factor and that a higher Gross National Product in the country of immigration was  
1616 related to lower symptom prevalence of depression and/or anxiety in labour migrants but not in  
1617 refugees.<sup>221</sup>

1618

1619 **Sexual and reproductive health (SRH):** Addressing SRH needs can be particularly challenging  
1620 because of the risks of sexual abuse and exploitation,<sup>239</sup> especially among children and adolescents,  
1621 and because of cultural practices that increase health risk, such as early or forced marriage,<sup>20</sup> genital

1622 cutting, and historical and cultural norms, such as unfamiliarity with or restricted use of  
1623 gynaecological and obstetric care.

1624 Sexual violence or threat of abuse exacerbates reproductive health problems and can deter women  
1625 and youth from seeking care. Importantly, it is not uncommon for sexual abuse among boys to be  
1626 overlooked, nor is it unusual for professionals to be ill-equipped to detect and treat men and boys  
1627 who have experienced sexual abuse. Traditional practices and beliefs can also be a point of  
1628 contention, as new migrant populations call upon local health services and social support  
1629 organisations. For example, female genital mutilation/cutting (FGM/C) is a human rights violation,  
1630 with substantial health implications. At least 200 million girls and women have been subjected to  
1631 genital cutting in 30 countries.<sup>240</sup> Health systems in locations where FGM/C is uncommon need to be  
1632 able to manage the resulting morbidity from this in migrant women and girls. Healthcare  
1633 practitioners are well-positioned to detect and address the negative effects of FGM/C among  
1634 pregnant women and to also help prevent FGM/C in girls in high risk families through provider  
1635 training and guidelines on FGM/C, culturally appropriate information and engagement with self-help  
1636 groups for the communities concerned.<sup>241</sup> Similarly, for migrant sexual minorities or LGBTI groups,  
1637 appropriate and sensitive sexual services may be difficult to find. For example, in urban centres in  
1638 China, approximately 70% of HIV/AIDS infections are among rural Chinese residents, of whom 80%  
1639 are 16-29 year old men, a portion of whom are 'money boys' or those who engage in transactional  
1640 same-gender sex.<sup>242</sup>

1641 Forcibly displaced women and adolescent girls may have facilitated access to much-needed SRH  
1642 services if they enter well-equipped humanitarian aid settings. Without targeted SRH services in  
1643 place, migrant women and adolescent girls may be more vulnerable to poor SRH outcomes,  
1644 including unwanted pregnancy, pregnancy complications, sexually transmitted infections, and  
1645 unsafe termination options.<sup>243,244</sup> Humanitarian aid agencies have established an agreed set of  
1646 essential services to respond to reproductive health needs in humanitarian crises. The Minimal Initial  
1647 Service Package (MISP) includes: preventing and managing the consequences of sexual violence;  
1648 reducing HIV; and preventing maternal and newborn mortality and morbidity.<sup>245</sup> Where these  
1649 targeted services are not in place, women are at greater risk of unwanted pregnancy, pregnancy  
1650 complications, sexually transmitted infections and unsafe termination options.<sup>246</sup>

1651

1652 **Violence:** Migration can be a movement away from physical or structural violence. For people  
1653 fleeing from violence, whether by crossing an international border or moving within their own  
1654 country, migration allows people to move away from circumstances in which their life and freedom  
1655 were at risk.<sup>247</sup> However, mobility and relocation can create substantial risk factors for various forms  
1656 of gender-based violence (GBV), including rape, intimate partner violence, sexual exploitation and  
1657 human trafficking. Systematic reviews on health and human trafficking indicate that trafficking  
1658 survivors are exposed to multiple physical and psychological abuses, sexual violence, confinement,  
1659 occupational hazards and poor living conditions.<sup>248</sup> The physical, mental health, social and financial  
1660 consequences of these extreme forms of exploitation are multiple, severe and often enduring,  
1661 especially psychological consequences.<sup>248</sup> Meta-analysis of studies in humanitarian settings  
1662 suggested that 21% of refugees or displaced women in complex humanitarian emergencies  
1663 experienced sexual violence—a likely underestimation.<sup>249</sup> Despite the prevalence of GBV in refugee  
1664 populations, there is limited evidence on the effectiveness of prevention programmes, interventions  
1665 and strategies.<sup>250</sup>

1666 Mobility may increase or decrease these health and safety risks among LGBTI migrants, depending  
1667 on the comparative levels of discrimination and stigma in origin, transit and destination locations.  
1668 Research with LGBTI migrants suggests that these individuals are especially likely to suffer from  
1669 mental health disorders as a result of cultural or even state-sponsored persecution and violence.  
1670 Many LGBTI migrants report emotional, physical and sexual violence committed by their families,  
1671 leaving them without a familial support network and even more vulnerable upon migrating.<sup>251</sup>

1672 Service providers in Nairobi have shown that LGBTI services for refugees need to be accessible and  
1673 highly confidential to prevent further harassment or violence.<sup>252</sup>

1674 Migrants with disabilities are significantly more likely to be victims of violence and are less likely to  
1675 be able to report such violence. This can be due to barriers such as not being believed or an  
1676 inaccessibility of reporting mechanisms. Additionally, lack of employment options because of stigma,  
1677 prejudice, lower access to education and job skills training result in many people with disabilities at  
1678 increased risk of poverty and consequently increased risk of sexual violence and forced participation  
1679 in prostitution and household slavery.<sup>253</sup>

1680

## 1681 **Older persons**

1682 There is relatively little evidence on the health effects of migration on older people, particularly from  
1683 LMICs. Older people may have additional health risks due to multimorbidity, for example from  
1684 interruptions to the continuity of care that contribute to clinical decompensations and declines in  
1685 their health status. Despite lower mortality, morbidity is thought to be higher amongst older  
1686 migrants. Analysis of population data from Belgium, England and Wales, and the Netherlands of  
1687 healthy life expectancy at age 50 (HLE<sub>50</sub>; expected number of remaining years in good health) found  
1688 higher life expectancy in migrants compared to non-migrants, but HLE<sub>50</sub> was lower. This was  
1689 particularly so for 'non-Western' migrants, i.e. not from Europe, USA, Canada, Australia, New  
1690 Zealand or Japan.<sup>254</sup> Multi-country studies from across Europe show higher self-reported morbidity  
1691 in older migrants compared to native borns.<sup>255,256</sup> A study from Sweden found a 50 to 80% increased  
1692 risk in cardiovascular determinants, such as physical activity, smoking and body mass index in  
1693 elderly migrants.<sup>257</sup>

1694 Studies of mental health in migrants across Europe found an increased risk of illness. Increased odds  
1695 ratios of 1.6 (men)<sup>258</sup> for depression were found in older migrants, despite lower rates of other  
1696 chronic diseases. Research in forced migrants also points to an increase in depression but there is a  
1697 dearth of evidence.<sup>259</sup> The diagnosis and management of dementia is a particular concern amongst  
1698 all migrants. With population ageing, dementia is becoming more common globally. Migrant or  
1699 ethnic minority populations receive diagnoses later and have differences in their management, for  
1700 example less medication and nursing home admission.<sup>260</sup>

1701

## 1702 **Section 4: Knowledge to address future** 1703 **migration and health challenges**

1704 Work of the Commission argues for a step-change in research on migration and health, joined with a  
1705 deliberate effort to enhance the instruments and infrastructures supporting this. Synergistic work is  
1706 needed which links academia, policy and frontline health and humanitarian workers. Research in  
1707 migration and health has traditionally proven difficult to conduct, partially explained by migrants'  
1708 high mobility.<sup>261</sup> In this section we outline how we can generate better knowledge to meet needs of  
1709 people on the move through better data collection, research, research funding and ethics.

### 1710 **Meeting the health needs of a mobile world**

1711 Research undertaken in migration and health has to respond to the whole population need, not only  
1712 the migrants themselves, but also the other groups affected by migration, such as families left in  
1713 countries of origin and host communities. To enable this, and to further build capacity, the migrant  
1714 population themselves should be viewed as an asset and a participatory approach encouraged,

1715 where migrants and local communities are included in all stages of the research process. Further,  
1716 mixed methods and qualitative work, including anthropological and sociological work, is needed to  
1717 understand socio-cultural factors of the migration experience, how to reduce barriers to healthcare  
1718 and how the determinants of health might affect migrants differently, alongside systems level work  
1719 to develop processes to mainstream and normalise migration.

1720 We used data from our review on mortality, (see section International Migration and Mortality) to  
1721 systematically examine which disease areas have been the focus of historical research. Our data  
1722 suggest that despite being the only ICD-10 disease categories with evidence of increased mortality,  
1723 infectious and parasitic diseases and external causes of mortality were the fifth and third most  
1724 studied group respectively in international migrants ([See supplementary appendix, Figure 9a](#)). These  
1725 data also suggested that labour migrants have also been understudied relative to size of this  
1726 population globally ([See supplementary appendix, Figure 9b](#)).

1727 These data can be used to inform future funding priorities, but this problem is compounded by the  
1728 fact that migration has not been a priority amongst health funders. Review of the mission  
1729 statements and strategies of the main global health funders (including the Global Fund, Gavi, the  
1730 Vaccine Alliance, World Bank, Bill and Melinda Gates Foundation, European Commission, United  
1731 States Agency for International Development, United Kingdom's Department for International  
1732 Development, Wellcome Trust, Ford Foundation, Rockefeller Foundation, Medical Research Council  
1733 and National Institute for Health) suggest that only two, the Global Fund and the European  
1734 Commission, prioritise migrant health. Some funding streams exist that focus on research in  
1735 humanitarian settings<sup>262</sup>, but generally opportunities in migration and health are limited and  
1736 research funding agencies including national government entities, charitable foundations and  
1737 multilateral funding organisations should prioritise specific calls to address these gaps.

## 1738 **Data collection, technology and innovation**

1739 Traditional cohort studies are important to understand the life-course and intergenerational effects  
1740 of migration but these are expensive and can be inefficient when studying populations with high  
1741 levels of loss to follow up. Existing studies have therefore had sub-national coverage on migrants  
1742 who have already moved.<sup>263</sup> One efficient way to produce health data for migrants is the use of  
1743 electronic health records with national coverage.<sup>264,265</sup> However, in most countries (with one or two  
1744 exceptions such as Sweden), migrants are not identifiable within these datasets. 'Big data', such as  
1745 that collected from wearable devices, mobile phones, the internet and electronic health records, has  
1746 the potential to provide new sources of information on migration and health and improve uptake  
1747 and follow-up rates as migrant populations.<sup>266</sup> Progress in genomics, mapping and mathematical  
1748 models, including mechanistic approaches that are driven by information from satellites, human  
1749 behaviour data and pathogen characteristics will allow better elucidation of outbreaks and global  
1750 mapping of infectious transmission.<sup>267,268</sup>

1751 A particular difficulty in migration research is understanding internal migration flows, where there  
1752 are no border controls. A new method to map internal migrants is to use mobile phone data. Each  
1753 time a mobile phone is used, the location of the individual is logged. Anonymised mobile phone call  
1754 detail record (CDR) data can allow inferences about the movement patterns of individuals to be  
1755 made, enabling the movement of populations to be tracked at scale, even in remote areas. For  
1756 example, in 2016 a monsoon in Nepal caused severe flooding and triggered a series of landslides.  
1757 Using mobile phone CDRs, researchers were able to demonstrate that the monsoon resulted in large  
1758 movements of people, examine the number of people who spent time outside their home area,  
1759 identify where these areas of movement were and those that were most heavily affected.<sup>269</sup>

1760 These new techniques are not without risks and logistical problems: for example, if personal health  
1761 records or mobile data can be used to track where people have been, migrants may be reluctant to  
1762 use them. In the case of the Dublin Regulation in the European Union, this might mean that a  
1763 migrant could be sent back to their first country of entry in Europe. The acceptability of mobile

1764 health records therefore needs to be assessed further and any implementation of these should have  
1765 routine monitoring and impact evaluation conducted, to include qualitative perspectives. Health  
1766 professionals must recognise the need to protect the data and safeguards, including firewalls to  
1767 separate who can access the data. New technologies, such as the use of blockchains, can help to  
1768 keep the data secure but may not be possible in low resource countries.

## 1769 **Intervention research**

1770 While this Commission found ample evidence on differences in physical and mental health morbidity  
1771 between migrants and host populations, information on specific interventions to improve the  
1772 delivery of services or how diagnosis and treatment should be altered to better cater for the needs  
1773 of migrants was limited. To complement our understanding of health consequences, resources have  
1774 to be directed to find the best ways to improve health, from clinical and behavioural to health  
1775 systems studies. Evidence on interventions outside the health system and focused on improving  
1776 social, political and economics determinants of health are also critical. Outside of the humanitarian  
1777 setting and in populations who have previously moved, robust interventions to improve the health  
1778 of migrants are uncommon, particularly for neglected groups, such as elderly people left when their  
1779 families migrate or LGBTI migrants. Where evidence of effectiveness exists, for example talking-  
1780 based therapies for PTSD in refugees, data are needed on how to scale up and evaluate them. There  
1781 may also be scope for adaptation and evaluation of interventions that work in other marginalised  
1782 groups.

1783 Understanding the best treatment regimens and modifications in mobile populations to ensure  
1784 continuity of care is urgently needed. Advances in digital technology allow diagnosis and monitoring  
1785 of treatment for infections to be undertaken remotely. Removing the need for a clinic visit opens up  
1786 the prospect of remote-, and self-, management for mobile populations.

1787 In populations that have been traumatised by violence, either at the individual or community level,  
1788 research on pathways to prevent or improve management of both physical and mental health are  
1789 needed. For example, schools have been suggested as important sites for mental health intervention  
1790 research for both children refugees and their families, although studies conducted have been  
1791 relatively small and difficult to replicate.<sup>270</sup> Moreover, intervention implementation should include  
1792 routine monitoring and evaluation of programmes in order to strengthen migration health  
1793 interventions long-term.

## 1794 **Health policy and systems research**

1795 Our analysis of health systems and migration concludes that current thinking on health systems may  
1796 well have a “migration problem”, since mainstream views of a health system tend to be of a  
1797 jurisdiction defined by geopolitical boundaries within which services are provided, rather than –  
1798 more appropriately and justly – a societal response to people’s needs regardless of their official  
1799 status. Contemporary advances in trans-disciplinary health policy and systems research (HPSR) can  
1800 partly address this problem. HPSR is concerned with answering evaluative, explanatory and  
1801 exploratory questions focused on bringing change in health systems and the policy processes that  
1802 shape and underpin them.<sup>271</sup> Multiple disciplines, such as economics, political science, sociology,  
1803 anthropology and public health, contribute towards this. Of late there has been a turn towards a  
1804 people-centric approach to framing the field, with the recognition that changes in health systems  
1805 are not unifocal but are driven by different people at different levels of the system, including service  
1806 users and communities.<sup>272</sup> As such, HPSR has the potential to include migration in relation to health  
1807 system research questions. Under the umbrella question of how we can make existing real-world  
1808 health systems become more responsive to human mobility, thereby improving individual and  
1809 population health outcomes, there is a range of valuable lines of enquiry. More qualitative research  
1810 focusing on the experience of healthcare from the perspectives of migrant service users and  
1811 providers can broaden and enrich our understanding of their needs in different settings. Finally, and

1812 critically, implementation research on existing migration-friendly initiatives can help to identify  
1813 bottlenecks and enablers, and which approaches work in which contexts and for whom, and  
1814 translate those insights to other contexts.

1815

## 1816 **Research ethics**

1817 Migration should be an essential component of public health ethics, in particular in relation to social  
1818 justice. Migration is a good example of where ethical issues related to health and determinants of  
1819 health exist across state boundaries. Many important ethical issues exist - including the prioritisation  
1820 of services, the detention and deportation of migrants, and the labelling of and discrimination  
1821 against migrant groups- yet there is little literature on migration and public health ethics beyond  
1822 issues of access to healthcare.

1823 Compliance with standards of research ethics is essential and can be particularly challenging in  
1824 vulnerable and mobile populations. The social, cultural, legal and political aspects of migration status  
1825 are often associated with higher levels of vulnerability. Due to this inferior social position and the  
1826 particular risks from suffering deprivation of rights and dignity, researchers have to be highly  
1827 sensitive and responsive to unintended and possibly harmful consequences of their work. The  
1828 particular vulnerability to abuse and discrimination of disadvantaged groups demands the inclusion  
1829 of the social and historical contextualisation of research. Systematic reflection on ethical questions  
1830 thus has to be a part of all steps in the research process. When defining the research question, it is  
1831 crucial to reflect on whether the research is likely to produce valuable data to improve living and  
1832 health conditions. Data collection may cause fear and distrust in populations with experiences of  
1833 exclusion and persecution, and trigger traumatising events in case of victims and witnesses of  
1834 torture, sexual and other types of violence. Communication of research results has to be sensitive to  
1835 the risk of directly or indirectly sustaining or promote stereotypes and stigma. The principle of “first  
1836 do no harm” thus applies to all steps of the research process, while issues of confidentiality and  
1837 informed consent especially apply to data security and the risk of abuse of medical and personal  
1838 data (e.g. migration routes reflected in the medical record) by migration authorities. Little is known  
1839 about whether migrants are willing to share their data and the perspectives they may have on this.  
1840 Research activities have to be sensitive to systematically include ethical reflection and accountability  
1841 in the research process and be “responsive” to findings that encourage a reconsideration of research  
1842 questions and methodological and moral challenges. Institutional Review Board approval is  
1843 mandatory, yet not sufficient, as it lacks the required flexibility and responsiveness. A key process to  
1844 ensure that the research is fit for purpose is to engage with the public on migration and health. This  
1845 is in the design of the research, participatory methods in the conduct of the research and in the  
1846 dissemination and discussion of the results.

1847

## 1848 **Conclusions**

1849 Migration must be urgently treated as the central feature of the 21<sup>st</sup> century which is a core  
1850 determinant of health and well-being, and addressed as a global health priority (further details in  
1851 [supplement](#)). Migration and global health are each defining issues of our time. How the world  
1852 addresses human mobility will determine public health and social cohesion for decades to come. Our  
1853 work for this Commission aimed to provide robust evidence on migration and health and examine  
1854 the structures and systems at the intersection of human mobility and individual and population  
1855 health. By systematically presenting evidence on what is known about health and migration, it has  
1856 been our intention to dispel populist myths about a ‘perceived other’ and to suggest promising  
1857 strategies for a highly mobile world. Amidst current international dialogues about safer, healthier

1858 migration, substantial gains can be achieved towards multiple Sustainable Development Goals by  
1859 resisting the turbulence of nationalist xenophobic discourse.

1860 In summary, our findings highlight that modern migration is a diverse and dynamic phenomenon and  
1861 the health of people who migrate generally reflects the circumstances of migration. Our evidence  
1862 indicates that, with sufficient political will, the international community, states and local providers  
1863 have the knowledge and resources necessary to ensure those who are most vulnerable to harm are  
1864 not health-marginalised. But, at the same time, our findings suggest that attitudes, misperceptions  
1865 and cynical political motivations can hinder rights-based approaches to global health for migrants—  
1866 especially for those seeking safety and economic security for themselves and their family. We must  
1867 ensure that migrant’s equal right to health is respected and implemented.

1868 Our multiple analyses also contradict myths about who is migrating where and the health burden of  
1869 migration on recipient locations. Data on migration tell us that more people from LMICs are  
1870 migrating within their own countries and region than across high-income country borders—even if  
1871 vocal political rhetoric implies otherwise. And, migrants are, on average, healthier, better educated  
1872 and employed at higher levels than those in destination locations. However, many individuals who  
1873 migrate are subjected to laws, restrictions and discrimination that put them at risk of ill-health.  
1874 Certain mobile subgroups are especially likely to be exposed to migration-related harm and excluded  
1875 from care, such as trafficking victims, irregular migrants, low-wage workers and asylum-seekers.  
1876 These highly vulnerable migrant subgroups are also frequently individuals who have been forced to  
1877 move because of global economic and political forces well-beyond their control. This also applies to  
1878 the populations left-behind, when family members migrate for work or groups who are unable to  
1879 flee from conflict areas or environmental dangers. The evidence indicates that through targeted  
1880 rights-based laws, inclusive, migrant-friendly health systems and mobile medical services, it is  
1881 possible to reduce migration-related risks and increase people’s access and use of health services.  
1882 Migration-informed laws, services and public perceptions can increase determinants of good health,  
1883 such as social inclusion, safe versus hazardous, low-wage employment, good nutrition, decent  
1884 housing and hygiene, and universally accessible health systems that does not create catastrophic  
1885 costs for families.

1886 Moreover, there are multiple opportunities to intervene to address health throughout the phases of  
1887 a migrant’s journey. We believe that now, as we have the evidence, tools and potential international  
1888 political will via the Global Compacts on Migration and the Sustainable Development Goals, is the  
1889 time to call on our humanity and to take advantage of worldwide mobility to secure global health—  
1890 especially for migrant groups who are most at risk of exclusion.

1891 In preparing this report, the Commissioners have reviewed a mass of data collected by researchers  
1892 from around the world. These data describe the scale and nature of migration and the many threats  
1893 to the health of those migrating. But it is impossible, on the pages of a scientific journal, to capture  
1894 the entire distressing picture. That would require the many individual accounts of tragedy, of  
1895 children drowning in parents’ arms or dying by the wayside, or of individual heroism among those  
1896 who risk their own lives to rescue them. For those stark realities, we must look to those few  
1897 journalists and humanitarian organisations who have recorded these accounts, such as the now  
1898 iconic picture of the lifeless body of Aylan Kurdi being lifted from a Turkish beach. Anyone viewing  
1899 those images must surely ask: Why has the international community done so little to live up to its  
1900 commitments to advance the health of migrating populations, and especially those who have been  
1901 forced to migrate? How can we explain this inertia?

1902 There are no simple answers to this question, but one indisputable reality is that, in the discourse on  
1903 migration, health is far down the list of priorities. International meetings on migration are instead  
1904 dominated by other considerations, such as domestic politics, especially where populist politicians  
1905 ruthlessly exploit migration for their own purposes, national security, international trade, and  
1906 commerce. These almost always take precedence over the health needs of migrants. Indeed, if  
1907 health is discussed at all, it is often framed, unjustifiably, as the migrant posing a threat to the

1908 population in the destination country, either as a vehicle for infections or a terrorist risk. Health and  
1909 migration have competing, if not conflicting, policy goals: health goals are inclusive (better health for  
1910 all, the Hippocratic oath) and international migration policy goals are exclusionary (secure borders,  
1911 national trade). The other key challenges are: a) the money; and 2) the leadership.

1912 Investing in health of populations and individuals is generally an expensive long-term commitment,  
1913 such as providing medical services over lifetimes, whereas, for state budgets, protecting borders and  
1914 arranging deportation can seem a lesser investment for greater political gain. Health leadership in  
1915 the realm of migration policy-making often seems like the poor sister to other policy interests. Why  
1916 are health leaders absent from the top table, engaging proactively in high level debates on  
1917 migration? Instead, the health sector is often left to pick up the pieces of those migration policies  
1918 that leave the lives of migrants in tatters. And, because the health sector will remain dedicated to  
1919 these humanitarian ideals, policy makers can continue to prioritise security, exclusion and trade,  
1920 while discriminatory rhetoric re-enforces the neglect and abuse of migrants. A second, much  
1921 simpler, question is: why do some migrants have better health and health services than others? The  
1922 answer is quite obviously related to the individual's social and economic status and the power this  
1923 wields. So, perhaps the greatest challenge to achieving health equity for disadvantaged migrating  
1924 populations will be promoting rights and empowerment that enables individuals to assert their  
1925 rights to health. The publication of the Global Compacts with numerous references to health in the  
1926 context of migration and for refugees presents an unprecedented opportunity that should be  
1927 leveraged for specific action. Investments should be shifted towards empowering migrants through,  
1928 for example, migrant worker insurance schemes or regional health and social accords.

## 1929 **Recommendations**

1930 The Commission makes the following recommendations that aim to maximise the health of people  
1931 on the move and societies more broadly. We call for urgent action to raise migration and health on  
1932 the political agenda in an objective manner, increase multi-stakeholder action and create robust  
1933 accountability and monitoring mechanisms.

- 1934 1. Dedicate political capital, financial and human resources to fulfil our global commitments to  
1935 secure healthy migration and improve the security and well-being of mobile groups,  
1936 especially the most vulnerable and marginalised.
  - 1937 a. States need to commit strong leadership to meet their commitments to the 2030  
1938 Sustainable Development Goals, and fulfil the health objectives of the Global  
1939 Compacts on Migration and Refugees as well as other relevant global agreements.  
1940 We advocate for clarity in leadership at the global level and for support to national  
1941 actors, the public health workforce and civil society. We urge the Secretary General  
1942 of the United Nations to appoint a Special Envoy on Migration and Health, regional  
1943 bodies to appoint a regional representative, and national governments to have  
1944 country-level focal points for migration and health.
  - 1945 b. International and regional bodies need to utilize existing agreements, such as the  
1946 Global Compacts and the WHO Action Plan, to prioritise the health, rights and  
1947 security of migrating populations. Decision-makers should allocate sufficient funding  
1948 to create equitable health protection mechanisms for mobile groups, such as joint  
1949 health insurance or social safety net schemes, mutual health accords and other  
1950 mechanisms to integrate these groups into health systems.
  - 1951 c. Multilateral funding organizations should have clear mechanisms to include  
1952 migrants into national and regional proposals. Ultimately the inclusion of migrants  
1953 into existing health systems should improve such systems to benefit nationals and  
1954 migrants.

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- d. States and the international community must urgently develop policy links that recognize the integral connections between environmental conditions and anthropogenic climate change, migration and health. Decision-makers should join forces to predict and respond to the effects of climate change on population mobility. Investments are needed in sustainable health infrastructure models that respond to migrants' health protection needs, including disaster risk reduction mechanisms.
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- e. States must go beyond rhetoric to tackle modern slavery by recognizing the exploitation of migrant workers, especially in informal labour, and trafficking of individuals and families displaced by conflict, natural disasters and environmental degradation.
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2. Re-balance policy-making in migration, trade and environment and foreign affairs to give greater prominence to health. Foster cross-sector, complementary decision-making that integrates health considerations across policies and services that determine the health of migrants.
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- a. International and regional bodies and states must create a prominent place for health representatives at high-level policy-making fora for migration-related sectors e.g. (immigration, trade, labour, environment, security, education). Health leaders must assert their rights to participate in these policy fora. Conversely, high-level representatives from other sectors must be encouraged to participate in similar health policy-making fora.
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- b. Health leaders and practitioners must fully engage in policy dialogues that affect migration, including the macro-economic forces that affect population mobility. They must participate in multi-sector budgeting and programme planning for migrants.
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- c. Migrants and their advocates must have a voice in strategies that affect their health and safety.
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3. Confront urgently, vigorously and persistently divisive myths and discriminatory rhetoric about migrants.
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- a. Political leaders and elected officials must resoundingly and consistently condemn misinformation and disinformation about migrants, especially xenophobia proffered by divisive and populist voices. Fact-checking, promoting truth and vociferous objections should not be left to migrants and their advocates alone.
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- b. Governments, international agencies and civil society must stay ahead of developments in social media and digital technology to shut down anti-migrant abuse and promote fact-based portrayals of global migration, particularly the widespread reliance on migrants for economic development, health services, educational institutions and cultural richness.
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4. Advocate for and improve the rights of migrants to ensure safe and healthy educational and working conditions that includes freedom of movement with no arbitrary arrest.
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- a. States, regional bodies and the international community must utilize policies, laws and resources to improve the rights of migrants, especially for labour migrants. States and businesses must ensure workplace health and safety measures, employment conditions and implement inspections and monitoring tools targeted to protect migrant workers. Migrants must be assured easy-to-access, equitable healthcare and worker compensation entitlements. Transparent reporting using an agreed upon framework should occur.

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- b. Policy-makers must guarantee migrants’ rights and inclusion across sectors that affect the health of migrants, including workers, internally displaced persons, asylum seekers, refugees, and empower migrants to assert their rights to the underlying social, political, economic, cultural, and determinants of physical and mental health.
  - c. Social and health sector leaders and educational institutions should offer training to promote cultural competency, cultural mediation and migrant-sensitive services, including outreach programmes for hard-to-reach individuals and groups.
  - d. States must abolish arbitrary arrest and the detention of all migrants, especially children and adolescents. They must remove health restrictions on entry, stay and residence as well as the deportation of individuals with certain health conditions. These measures should be codified in international agreements and included in national law.
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5. There is an urgent need to ensure adequate monitoring, evaluation and research to support the implementation of the Global Compacts.
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- a. States, coordinating with the global community and relevant local professionals (e.g. health, refugee services, labour, civil society), should put into place robust monitoring frameworks and independent reporting mechanisms to ensure accountability in the delivery of the Migration and Refugee Global Compacts. Strategies should include transparent and comparable monitoring frameworks and mechanisms to report how regions and countries are adhering to the policy principles and implementation components on migration and health. The Commission, therefore, recommends that a Global Migration and Health Observatory is established to develop evidence-based indicators and measurement methods, and to ensure improved reporting, transparency and accountability on the implementation of the Migration and Refugee Global Compacts.
  - b. Specific recommendations for research are outlined in greater detail in Panel 9 and were reached through a consensus approach by Commissioners.

2031 **The post-Commission phase**

2032 The Commission plans to inspire action, building on the health and health determinant aspects of  
2033 the Global Compacts on Migration and on Refugees, through a number of key initiatives. There is  
2034 considerable momentum in the migration and health community to move from recommendations to  
2035 action. We plan to engage at multiple levels of society to raise the profile of migration and health.  
2036 This would be at the community level with the public, including migrants themselves and  
2037 populations at all stages of the migration process. Secondly, we plan to support the establishment of  
2038 an inclusive global mechanism that will bring together civil society with researchers, non-  
2039 governmental bodies and charities, and multilateral organisations including the World Health  
2040 Organization, the global Migration Agency (International Organization for Migration) and the UN  
2041 Refugee Agency to establish a distributed observatory to develop agreed indicators and a monitoring  
2042 framework which has local, regional and global reach. The governance, reporting and advocacy  
2043 efforts will include the use of reports, media, and the arts to challenge elected officials and will  
2044 support research to generate new evidence on implementation best practice. We expect the  
2045 observatory to report annually and liaise with regional stakeholders for adapted versions of the  
2046 report to allow local and inter-regional action.

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2054

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2061 IA, DD and RA undertook paid consultancy work in support of the Doctors of the World 2017  
2062 Observatory report - Falling through the cracks: The Failure of Universal Healthcare Coverage in  
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2066 Network, which conducts research and policy work on public health issues in Syria and the region.

2067

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2071 steering group (RA, RB, DD, MO, CZ). The Commission was coordinated by MO, with research  
2072 assistance from RI for the first year and RB for the last year of the Commission work. The work for  
2073 the Commission was undertaken in six subgroups and all commissioners met on three occasions in:  
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2075 written by RA and DD, the second draft was compiled by IA, DD, MO and CZ. Authors provided  
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2078 environment PSa, human rights MK, disabilities NG. All authors read and critiqued the manuscript  
2079 and approved the final version of the report.

2080

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# Figures

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*Figure 1: The Migration cycle*

*Figure 2 A. Global map of the total number of international migrants (2015); B. Proportion of population that were refugees by World Bank Income group (1960-2015). Analysis conducted using data from UN DESA, UNHCR and World Bank. Online interactive versions of figures [2A](#) and [2B](#)*

*Figure 3. Weighted percentage of men and women using modern methods of contraception by migration status.*

*Figure 4a. Percentage of all international migrants that were refugees, asylum seekers and labour migrants, 1960-2015 Note: Labour migration data for 2013 used in estimates for 2015. No historical estimates for labour migration available.*

*Figure 4b. International migrant numbers at mid-year by age, sex and region (2015)*

[Online interactive version of this figure](#)

*Figure 5. Total annual new displacements due to conflict and disasters*

[Online interactive version of figure](#)

*Figure 6. Estimated refugee numbers by region, 1990-2017.*

[Online interactive version of figure here](#)

*Figure 7. Weighted mean number of years of education by internal migration status (Source: DHS)*

*Figure 8. Historical Evolution of the Migration and Health Agenda: Selected International instruments and events*

*Figure 9. A health systems framework for migrants' access to health and social protection Adapted from Levesque et al. 2013<sup>166</sup> Note: Factors on the supply side can affect demand and vice versa.*

*Figure 10. Summary of random effects meta-analysis of Standardised Mortality Ratios for international migrants by ICD-10 disease category. [Online interactive version of figure:](#)*

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## Panels

### **Panel 1 Projection for internal migrant numbers for Bangladesh by 2050 driven by hydrometeorological hazard risks under certain assumptions of social and political developments**

Three different scenarios based on the combination of two development pathways and two climate trajectories were modelled by the World Bank,<sup>68</sup> along with three environmental variables, water stress, crop failure and sea level rise, using a gravity model based on distance and attractiveness of the destination compared with the source area. The report defines climate migrants as people who have moved from their place of origin for at least 10 years and travelled over 14 kilometres within country because of climate change. The report aims to present a plausible range of outcomes rather than precise forecasts. It is based on a single model but has positive aspects such as the inclusion of socioeconomic factors, the choice of slow onset climate change parameters, the use of whole globe decadal changes and that downscaling can easily be achieved. The modelling was calibrated by the highest resolution population census data available at that time. The World Bank report projects that by 2050 there will be 13.3 million climate migrants in Bangladesh applying pessimistic-realistic reference scenario with high emissions and unequal development.

To test the World Bank projection, the 2011 population and housing census data were collected from the Bangladesh Bureau of Statistics. This database was prepared from household surveying in Bangladesh using a questionnaire that covered the respondents' household characteristics, demography, migration details, economic activities etc. 50 districts out of 64 in Bangladesh were identified as vulnerable to hydrometeorological hazard risks: 1) flooding and river erosion (23 districts); 2) cyclones and storm surges (19 districts); 3) drought and groundwater depletion (8 districts). Some districts are affected by multiple hazards. Then in each district, the total number of life-time (greater than 10 years) and inter-district migrants (travelled more than 14 km away) were identified. The migrants constitute about 9%, 12% and 5% of district-wise total population categorised according to flooding and river erosion, cyclone and storm surge, and drought and groundwater depletion as reasons to migrate. They were then filtered by selecting only people migrating from rural areas, based on an assumption that the adaptive capacity to climate-change is lower in rural communities in Bangladesh due to lack of development and poverty. They constitute about 8%, 11%, and 4% respectively. After applying these filters it is possible to assess the number of internal migrants attributed to hydrometeorological hazard risks in Bangladesh and that this figure is compatible with the local context by analysing primary data collected through actual field surveying under the supervision of BBS.

4.07 million internal migrants were identified for the period of 2001-2011 migrating because of these hydrometeorological hazard risks. They represented about 4% of country's total population and 41%, 42%, and 31% of total migrant population for the flooding, cyclone, and drought hit districts, respectively. Now, by considering Bangladesh's population growth rate (varying between 0.22-1%) and a similar scenario (without new climatic and development interventions) up to 2050, it can be assessed that the total number of internal migrants attributed to hydrometeorological hazard risks of 19.4 million will surpass the World Bank projection of 13.3 million internal climate migrants by 2050. However the projected increase in the frequency and intensity of hydrometeorological events with global warming cannot all be identified as being caused by climate change. However these hydrometeorological hazard risks (e.g. river erosion and groundwater depletion) cannot all be identified as being caused by climate change.<sup>67</sup> So while showing greater number of people potentially affected than the World Bank report projects, our analysis of primary data does not validate their projections for internal climate migrants.

**Panel 2: Gender, law and health: a four country analysis**

Rape, sexual servitude, child marriage, and sex trafficking lead to substantial risks of transmitted infections, poor maternal health outcomes, and enduring mental health problems. But, access to protections, medical treatment and legal recourse, especially for women, are often dictated by laws and customs. An in-depth legal analysis of four countries in which migrants form a substantial portion of the population, Chad (519,968), Jordan (3,112,026), and especially in Lebanon (1,997,776) and Turkey (2,964,916), demonstrates the highly gendered –and sometimes contradictory– nature of the laws and customs governing the rights and safety of women and girls (See supplementary appendix, Table 6 ). Among Syrian refugee communities especially, rates of child marriage are high.<sup>273</sup> While many countries have established a legal minimum age of marriage, the practice of early and forced marriage prevails due to weak enforcement, cumbersome marriage registration laws and cultural norms. In Jordan, for example, the legal age of marriage is 18, yet children can be married with the approval of a Sharia court judge starting at age 15.<sup>274</sup> Although Chad criminalises child marriage under age 18, the child marriage rate was 68% between 2004-2017.

Although countries may sign conventions and draft legislation against gender-based violence, migrant women are often unable to access justice due to cultural norms, language barriers, and limited legal representation. Countries often have plural legal systems that provide complete defences or reduced sentences for honour crimes. In Chad for example, adultery is a criminal offence and murder committed because of adulterous behaviour is excusable. Women inhabiting migrant camps have faced months-long detention on grounds of adultery, while men rarely face punishment for rape and sexual assault.<sup>275</sup> In both Jordan and Lebanon, perpetrators can avoid prosecution by marrying their victims<sup>276</sup> as marital rape is not a crime in many host countries. For unmarried and displaced adolescent girls, failing health systems, limited providers, and domestic legal frameworks are significant barriers to reproductive health service access. Individuals under the age of 18 must obtain parental consent prior to receiving or undergoing any sort of medical treatment,<sup>277</sup> including contraceptives in Jordan, Lebanon, and Turkey and in Jordan, spousal consent is also required.<sup>278</sup> Migrant women also have limited access to abortion in the four countries reviewed. In Chad, Jordan, and Lebanon, abortion is not legal in cases of rape. Globally, intimate partner violence is reported to affect one in three women,<sup>279</sup> and displacement appears to exacerbate conditions of abuse,<sup>279,280</sup> triggered by destabilization of gender norms and roles, men's substance use, women's separation from family, and rapid remarriages and forced marriages. Laws are often limited to protect women from sexual abuse, for example, among the migrant-recipient countries analysed, only Turkey has legislation against marital rape and only Chad had legal termination to save the life of the mother—even in cases of rape. Countries are often reluctant to make commitments to protect women, for example, only Chad had signed and ratified without reservations the Convention on the Elimination of All Forms of Discrimination against Women and Convention on the Elimination of All Forms of Discrimination against Women Optional Protocols (CEDAW). While international instruments such as CEDAW and the UN Convention on the Rights of the Child (CRC) exist to protect women and children, implementation is often poor, especially during humanitarian crises. Dismantled or ineffective justice systems result in weak protections and responses for sexual and gender-based violence.<sup>281</sup> And, even where laws are in place, migrants who have tenuous legal status or are not aware of their rights, especially common among women, are much less likely to benefit from health protections and medical treatment.

### **Panel 3: Healthcare for migrant and seasonal farmworkers in the US - improving access and cultural competence**

A high proportion of migrant and seasonal farmworkers in the US are uninsured or underinsured, due to both lack of eligibility and extremely low incomes. It is estimated that at least 75% of farmworkers, and up to 90% of their children do not have health insurance.<sup>282</sup> Many of these individuals do not qualify for government provided or subsidised insurance (e.g. Medicaid) because they are undocumented.

There are positive examples of programmes that have been established to address the health needs of these populations, however. At a national level, the Health Resources and Services Administration funds 137 migrant health centres and 955 community health centres across the US aimed at improving access to services for marginalised groups such as farm workers, including a voucher programme enabling farmworkers to obtain care from community centres, as well as funding non-profit organisations such as Migrant Health Promotion, and Farmworker Health Services.<sup>282</sup> However, there is a significant gap in the literature in terms of robust evaluations of the effectiveness or acceptability of such programmes. There are also numerous local programmes in the US focused on accessible culturally appropriate health assessments, or the use of mobile outreach clinics to migrants, for uninsured farmworkers who are considered to be working in a hazardous industry and are mostly foreign migrants. For example, there are clinics targeting farmworkers in the USA,<sup>283</sup> and the Migrant Health Outreach program (federally funded) mobile clinic to farmworkers staffed by nurses, which seems to be a successful approach.<sup>284</sup>

Outreach services offer the benefit of going to the locations where migrants are working, living, going to school or to houses of worship,<sup>285</sup> reducing many of the main access barriers. In the US, for example, there are an estimated 1500 mobile clinics, receiving 5 million or more annual visits nationwide, which are becoming an integral component of the healthcare system to serve vulnerable populations. Findings from a study on outreach to migrants and seasonal farmworkers in the US shows that workers and their families make very limited use of clinic-based services because of their mobility (constant residential changes), work hours, poor knowledge of the US health system (almost 40% of the population is new each year) with a majority preferring to seek care in Mexico—even those who have US health insurance, but that clinic outreach programmes are overcoming many of these barriers. Research suggests, however, that mobile clinics for migrants have been more often disease-focussed, to offer testing and treatment, for example, for HIV, especially for sex worker populations.<sup>285,286</sup> Evening cluster clinics targeting migrant workers were considered by migrants themselves to be excellent or good.<sup>287</sup> Six characteristics were believed contributed to the successful delivery of healthcare and education through cluster clinics, including: provision of both direct and referral services for this underserved population; comprehensive delivery of services in a single setting; collaborative delivery of services; access-driven delivery of services; delivery of culturally sensitive and linguistically appropriate services; and evidence-based service delivery. Free or mobile clinics and health and wellness programmes specially targeted for migrant workers are relatively rare.

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### **Panel 4: Leadership in Migrant Population Accessibility and Affordability of Healthcare Services China**

Since the launch of the new round of medical reform in 2009, China has almost achieved full coverage of its medical insurance system for urban and rural residents, with a stable coverage rate of above 95% for the whole population. The medical insurance system mainly consists of three types of schemes, including urban employee basic medical insurance (UEBMI), urban resident basic medical insurance (URBMI) and new rural cooperative medical scheme (NCMS). Among

them, the number of people participating in NCMS reached 670 million, with a coverage rate of 98.8%. However, despite the high coverage rate achieved, there is concrete difference among the coverage scope of those three medical insurance schemes, with a higher insurance level by UEBMI and URBMI than by NCMS. In addition, since the off-site medical expense settlement information system for NCMS has not been fully established, medical expenses of migrant populations cannot be directly deducted when they seek medical care in urban areas. Many of them still have to pay medical expenses first out of pocket and afterwards return to rural areas for reimbursement. Besides, the reimbursement review procedures are quite cumbersome and usually take a long period, resulting in a considerable number of the migrant population actually not being able to enjoy concrete insurance security.

Faced with the demand of nearly 200 million migrants, in 2016, the government promulgated a relevant document on off-site medical expense settlement under basic medical insurance schemes, which clarified the responsibility of all levels of governments in ensuring migrant population's right to medical insurance and defined the unified management requirements for locations providing medical treatment. At the same time, the off-site medical expense settlement information system was established and improved. Using social security cards distributed, migrant population can equally enjoy the convenient services of medical expense settlement across provinces. Through those policies and measures, the accessibility and affordability of healthcare services for migrant population have been greatly enhanced. Meanwhile, in order to promote the health of migrant workers working outside, the Health and Family Planning Commission in migrant-sending areas also established a health education group on WeChat, sending them health education messages and keeping track of their health status for better health management.

### **Switzerland**

“Similar to all other areas of corporate governance, diversity policies need assertiveness by the highest management level”, Peter Saladin says.<sup>288</sup> The economist and former president of the H+ Swiss Hospital Association headed the Swiss “Migrant-Friendly-Hospitals”-project implemented in 2003–2007, as part of the Confederation's strategy on migration and public health.<sup>289</sup> According to the recent Migrant Integration Policy Index (MIPEX) Health Strand, and international comparative study health systems' responsiveness to immigrants needs, the endeavour was successful: Switzerland scored second of 38 nations, and has established a “world-leading ‘Migration and Health’ programme”.<sup>290</sup>

On the political level, Switzerland chose to turn “health” into a priority area of its integration policy. Legal entitlements and access to coverage within the insurance based Swiss healthcare system is nearly identical for nationals, legal migrants, asylum-seekers and undocumented migrants. Health care providers are informed by the Federal Health Office or NGOs (like the Swiss Red Cross) about immigrant's entitlements to health care and migrant patients are provided access to health relevant information in multiple languages.<sup>291</sup> Data collection and funding for migrant relevant health data is well developed, just as training of health professionals in transcultural competencies. The actual adaptation and responsiveness of health services, however, vary between regions (cantons) and institutions. The implementation of federal policies and provisions depend on political and institutional structures, priorities, and leadership on regional and local level. Interpreters and cultural mediators, for example, are available only at certain health centres, mainly large and university hospitals. As costs are charged on hospital budgets, a negative incentive for using interpreting services still exists. Specific services and support for undocumented migrants are also only available in a small number of cantons and political and administrative barriers to the actual realisation of formally granted rights are still prevalent.

### Panel 5: Inappropriate health data sharing for immigration enforcement in the UK

On 1 January 2017 a memorandum of understanding (MOU) between the UK Home Office and National Health Service (NHS) Digital was signed.<sup>292</sup> The MOU formalised existing processes and data sharing that had occurred between NHS Digital and the Home Office.<sup>293</sup> The MOU described how any data shared had to comply with the legal obligations under the Data Protection Act 1998 (DPA), the Human Rights Act 1998 (HRA) and the Health and Social Care Act 2012. Requests were used by the Home Office to track down migrants for the purposes of immigration enforcement. Upon publication, the MOU generated significant media interest, particularly as it became apparent that there had been an increasing use of these requests since 2010. The report led to a request for clarification about the issue from the Health Select committee, which received several responses from NHS Digital, Home Office, The National Data Guardian, Public Health England and the UK General Medical Council.<sup>293</sup> In their responses, NHS Digital and the Department of Health outlined the basis by which the MOU had been written and the impact and equity considerations that had been reviewed. NHS Digital confirmed that no privacy impact statement had been undertaken, but that instead a public interest test was carried out in each individual tracing request.

In their response to the Health Select committee, Public Health England (PHE) stated they were unable to find statistical evidence about the impact of knowledge of data sharing on deterring immigrants from accessing healthcare treatment and agreed to undertake a full review within two years. However, in their testimony, PHE experts working in the field of communicable diseases stated that “sharing of personal information by NHS commissioners or healthcare providers, which has been provided to them by patients on an understanding of absolute confidentiality, with other government departments, law enforcement agencies or immigration enforcement authorities risks undermining public confidence in the public health system and could have unintended and serious consequences affecting the health of individuals and the risk to the public health of the wider community”.

The General Medical Council (GMC), the governing body for UK doctors, only permits clinicians to share patient information ‘if failure to disclose may expose others to a risk of death or serious harm’. Suspected immigration offences do not fall under this category. In the GMC’s response to the committee, they stated that: “The memorandum of understanding sets out clearly the public interest in maintaining effective immigration controls. It does not however reflect the public interest in there being a confidential health system, or consider how those two public goods should be weighed against each other”.

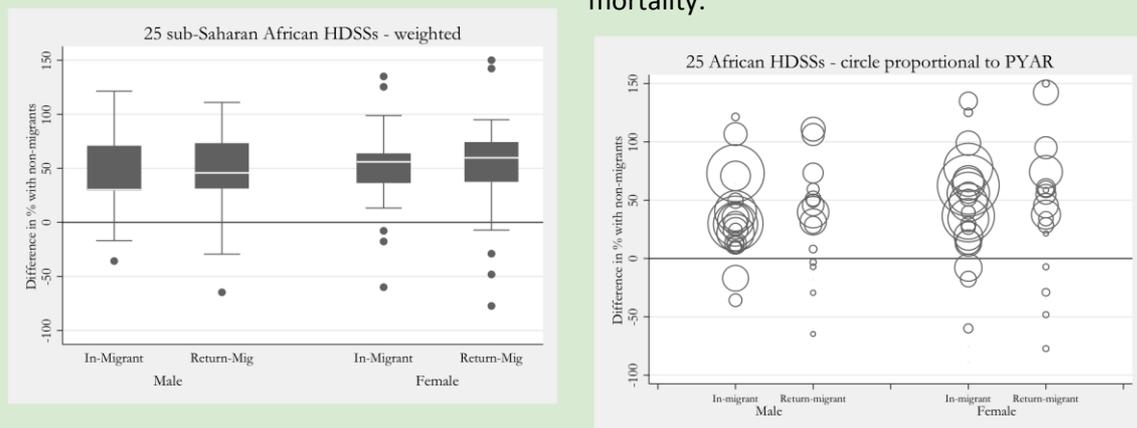
The National Data Guardian, Dame Fiona Caldicott, also expressed her concerns about this issue: “any perception by the public that confidential data collected by the NHS is shared for a purpose that they had not anticipated or without appropriate controls may well lead to a loss of people’s trust” and that “trust would have been better maintained had there been more public debate about where the balance should be struck between the public interest in maintaining an effective immigration service and the public interest in a confidential health service before an agreement was made between NHS Digital, the Home Office and the Department of Health. This would have allowed more scrutiny of the reasoning and factors which led to the policy position which has been taken.”

During a parliamentary debate in May 2018 about new data protection regulations, a member of the UK parliament with the Conservative party and chair of Health Select committee committee, Dr Sarah Wollaston, tabled an amendment to end the data-sharing arrangement between NHS Digital and the Home Office. During the debate the Government announced a reversal of policy and accepted Dr Wollaston’s amendment which significantly narrowed the scope of the MOU in order that it only covered sharing in cases where a person was suspected of serious criminality.

**Panel 6: Internal migration and mortality - an analysis of all-cause mortality in 25 Health and Demographic Surveillance System (HDSS) sites in sub-Saharan Africa**

These data represent a mix of rural and urban settlement types, from the International Network for the Demographic Evaluation of Populations and Their Health (INDEPTH) iShare platform.<sup>294</sup> The datasets include individual-level information on all movements into or out of a surveillance area for durations in excess of 6 months. From these data, we can identify in-migrants (new residents) and return-migrants (former residents returning) to an area. After 5 years of residence, a migrant is considered a permanent resident, since prior analyses of the effect of duration following migration show that the mortality experience of migrants converges with that of permanent residents (non-migrants) after this length of time.<sup>295</sup> For each migration category (non-migrant, in-migrant, return-migrant) premature mortality is estimated using the probability of mortality before age 60 if a person is alive at age 15 (45q15). The percentage difference in 45q15 between migrants and non-migrants was estimated by sex for each of the 25 HDSSs from the year 2000.

The analysis reveals that in sub-Saharan Africa, the distribution of the difference in premature adult mortality between migrants and non-migrants is substantial, i.e. in half of the sites migrants' mortality was 50% higher than non-migrants' mortality.



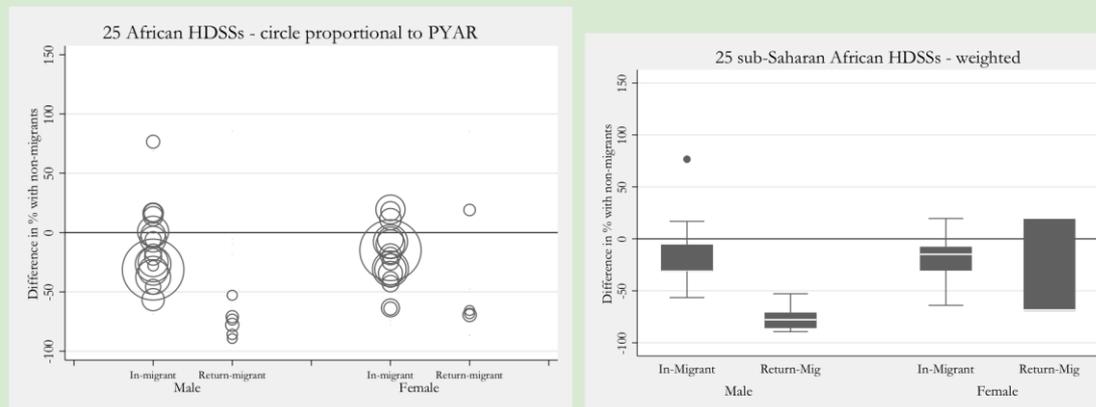
**Figure 1: Difference in adult health probabilities (45q15) by migrant status in 25 African HDSSs**

Box-and-whiskers plots or bubble plots (size of the bubble proportional to the person-years at risk) PYAR = person years at risk

These results suggest that internal migrants in the SSA sub-districts have a health disadvantage relative to the resident, non-migrant population. A study of internal migration and AIDS/tuberculosis and non-communicable disease mortality in 4 HDSSs in South Africa and Kenya affirmed these findings. In the Agincourt study population in rural South Africa, in-migrants and, even more so, return migrants had a health disadvantage in terms of mortality risk attributed to both non-communicable and infectious disease.<sup>296</sup> These findings suggest that relative to non-migrant mortality, the experience of migrants is demonstrably worse in many sub-Saharan settings - with limited access to healthcare a likely determinant along with poor social integration or inadequate living conditions. Further research into the circumstances at migrant destinations is a priority going forward.

The same methodology was used to examine child mortality (the probability of death in under 5-

year olds) by migrant status, where child migration status was considered independently of the migration status of their parents (Figure 2). The results present a striking contrast to those of adults. Both in-migrant and return-migrant children of both sexes have lower all-cause mortality on average than non-migrant children. These results present an important direction for further research and challenge assumptions that determinants operate in the same way and have the same outcomes for adults and children.



**Figure 2: Difference in child health probabilities (45q15) by migrant status in 25 African HDSSs**

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**Panel 7: Age assessment – an unresolved challenge for unaccompanied minors and refugee children**

Though migration to Norway is not a new phenomenon, the number of refugees that came to Norway in 2015 was unprecedented. Over 30,000 sought asylum, of which 5000 were unaccompanied minors. This group is at increased risk of child trafficking, abuse and violence and requires guardianship and protection. However, instead of focusing on their rights and obligations to this group of children and adolescents, regrettably governments often seek to skirt these obligations.

Age determination has been a substantial challenge and source of debate amongst child rights groups and immigration officials. Though there are universally agreed definitions of a ‘child’ there are no agreed methods regarding the assessment to determine the age of a child. Unaccompanied minors often have no reliable information about their age or date of birth. Authorities deploy techniques and investigations that are, at best, approximations.<sup>297</sup> But the consequences of these approximations can be devastating for this group of children. In Norway, if the age assessment shows that someone is less than 18 years of age, they will be cared for by the Norwegian Child Welfare Services. The Child Welfare Services statutory obligation is “to ensure that children and youth who live in conditions that may be detrimental to their health and development receive the necessary assistance and care at the right time”. In addition, non-resident minors are entitled to receive the same help from these services as any other Norwegian child. In contrast, if the assessments conclude that a person is over 18 years old, they will be treated as an ordinary adult asylum seeker, with few such rights.

Thus, it comes as no surprise that the techniques to determine the age of a child are controversial. In Norway, the measurement of age by x-rays of the hand (‘bone age’) and teeth are routinely used, despite long-standing dispute about these techniques. The x-rays assess ossification and presence of molar teeth and can be used to estimate age. However they are not an accurate method and unnecessarily expose the adolescent to radiation. In response to the gravity of

concerns expressed by both the Norwegian Paediatric Society and the Ethical Committee in the Norwegian Medical Association in the context of critical significance of these procedures, the responsibility for conducting these was transferred from the private sector to the Oslo University Hospital from January 2017.

Age assessments, where necessary, should integrate the clinical history and physical assessment, taking into account the person's development (physical, cognitive and emotional). A report on age assessments<sup>298</sup> concluded that "There is evidence that radiography (X-rays) of bones and teeth, which is increasingly relied upon by immigration authorities, is imprecise, unethical and potentially unlawful, and should not be used for age assessment". Despite this, x-rays are perpetuated as the gold standard. As this jeopardises the current and future situation of unaccompanied minors, many have no other alternative but to resort to other even more dangerous choices of living as undocumented minors on the streets of other European cities exposing and endangering them to further perils. Moreover, there is substantial evidence that even adolescents over the legal age for mandatory support services and guardianship, i.e., 16-24, have need of protection and support.<sup>299</sup>

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**Panel 8 Case study – Labour trafficked migrants, mental health and financial security.**

A study among male, female and child trafficking survivors in the Greater Mekong Subregion found that 48% experienced physical or sexual violence, 43% reported symptoms of depression and 40% reported PTSD.<sup>300</sup> Employment is highly correlated to mental health, with job insecurity and financial insecurity closely linked to anxiety and depression. Most data on employment and health come from high-income settings and studies on higher wage jobs, with very little research on migrant workers in LMICs. The *Study on Trafficking, Exploitation and Abuse in the Mekong* documented forms of labour exploitation and health outcomes among men, women and children using post-trafficking services in Thailand, Cambodia and Vietnam. Findings showed high symptom rates of depression and anxiety disorders, post-traumatic stress disorder (PTSD) and suicidal ideation associated with sexual and physical violence and threats during trafficking; poor living and working conditions; excessive overtime and restricted freedom.

Being deprived of wages was also a major stressor for formerly trafficked persons, many of whom experienced guilt and shame from failing to fulfil income expectations. In the STEAM study, most trafficked migrants (62.3%) reported being cheated of their wages. Among the few who were paid for their work, domestic workers (\$0.40), agricultural workers (\$0.70) and fishermen (\$1.10) received the lowest daily wages. Unsurprisingly, domestic workers and fishermen more frequently expressed financial concerns (75.9% and 71.1% respectively). The majority (81.6%) of domestic workers reported depression, anxiety and/or PTSD symptoms, similar to individuals trafficked for construction work (79.0%). Individuals who had been cheated over their wages or had financial concerns had approximately one and a half times the odds of being symptomatic of a mental health disorder.

Studies often overlook the significance of income security to a migrants' psychological well-being because research on migrants' mental health frequently focuses primarily on past events versus current stressors. Especially for those who migrated to improve their family's economic circumstances and failed, mental health support will need to include job training and placement or small business grants. Moreover, for individuals who were exploited, cheated of their wages or injured on the job, legal aid should be provided to help with wage recovery and compensation for abuses, and injuries, including long-term disability support.

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### **Panel 9: Research recommendations and priority research questions**

1. To address the health needs of migrants, high-quality data collection for migration and health must:
  - a. Add migration-related questions to regularly administered surveys such as Demographic and Health Surveys, health and population surveillance systems and censuses.
  - b. Examine the multiple interactions between migrant populations and between migrant and non-migrant groups.
  - c. Include health outcomes of migrants that are more closely aligned with the drivers of migration and the geographical region of origin of migrants, internal migrants and the interaction with aging in order to better understand health needs.
  - d. In addition to comparisons with the host population, conduct research that, for example, compares to the population at origin to ascertain the consequences of moving on health, ideally using longitudinal data collection methods.
2. To provide an evidence base for health-related drivers and outcomes of migration, it is essential to focus on the processes and implementation of migration and health research, through:
  - a. Engagement with the population using participatory approaches to ensure that migration and health research meets their needs and does not result in harm.
  - b. Undertaking research that responds to the population need, including through increased focus on the health effects and needs during the migrant life cycle.
  - c. Analysis of best treatment regimens and modifications to these treatments required by mobile populations.
  - d. Implementing evidence-based health interventions, with a focus on data collection, assessment of cost-effectiveness and analysis of intervention impact and effectiveness.
  - e. Increasing the evidence base describing the consequences of discrimination against migrants and racism, and ways to prevent this.
  - f. Considering the health of migrant groups in all areas of research.
3. To provide and use better data to reduce inequities, changes in the migrant health research process and methods are needed, through:
  - a. Use of globally accepted definitions to guide comparable data collection and disaggregation, with a recognition that the categories used in human mobility and health are not static, but fluid.
  - b. Viewing the migrant population themselves as an asset and encouraging a participatory approach, where migrants and local communities are included in research prioritisation, policy making and decision process.
  - c. Including qualitative, adaptive and context sensitive approaches in order to understand socio-cultural factors of migration, the barriers to healthcare and how the determinants of health might affect migrants differently.
4. To provide evidence for health policy and systems research, the following questions should be considered:
  - a. What financing models are most effective in extending access equitably to migrants?
  - b. How can prevailing jurisdiction-based health governance and citizen participation approaches be made more sensitive to the needs of migrants?
  - c. How can healthcare providers be equipped with necessary multicultural competencies for migrant care?
  - d. How can information systems be made more portable and interoperable while still

preserving patient rights and privacy?

5. To produce ethical research, there should be incorporation of ethics, data protection, monitoring and evaluation into all stages of the research process. The following questions should be considered:
  - a. Does the research meet the particular needs and priorities of the research population, as well as goals like equity, integration, health protection and/or universal health coverage?
  - b. When defining the sample and the distinguishing categories of “migrants”, what are the sources of information that this relies on and how do these categories resonate with the individual’s self-perception?
  - c. Does the research deal with the challenge to understand social boundaries by providing scientific evidence of “differences” between and “homogeneity” within social groups and/or populations?
  - d. To what extent does the research reflect social, structural and political determinants of health and their implications on social gradients, historical power relations, and probably stigma?
6. To provide adequate funding and appropriate research, health funders should:
  - a. Make migration and health a priority research area.
  - b. Ensure that funded research always endeavours to include migrants within it.
  - c. Support capacity development among migration and health researchers and institutions in the global south through specific funding initiatives and support of research networks.

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# Tables

Industry	Examples of occupational hazards and harm	Migrant health studies
Sex work	<ul style="list-style-type: none"> <li>Weak condom negotiation ⇒STIs, unwanted pregnancy</li> <li>Sexual violence, confinement ⇒anxiety disorders, depression</li> </ul>	Migrant female sex workers in Africa (Benin, Kenya, Ethiopia) are at greater risk of HIV than non-migrant sex workers and higher risk of acute STIs in all settings.
Construction	<ul style="list-style-type: none"> <li>Work at heights ⇒fatal falls, disabilities</li> <li>Heavy lifting ⇒musculoskeletal problems</li> <li>Poor personal protective equipment (PPE) ⇒respiratory disease, dermatitis, eye injury.</li> </ul>	In the USA, Latino construction workers were nearly twice (1.84, 95% CI 1.60,2.10) as likely to die from occupational injuries as their non-Latino counterparts.
Manufacturing (e.g., textile)	<ul style="list-style-type: none"> <li>Repeated bending &amp; fixed postures ⇒musculoskeletal damage, pain</li> <li>Sharp instruments, ⇒puncture wounds</li> <li>Dust particles ⇒silicosis</li> </ul>	In Malaysia, 64.4% of migrant workers experienced musculoskeletal pain caused or worsened by work compared to 28% of Malaysian manufacturing workers.
Commercial fishing	<ul style="list-style-type: none"> <li>Environmental exposures (sun, cold, rain) ⇒skin cancer, dehydration, frostbite</li> <li>Long hours, weeks with no break ⇒exhaustion, pneumonia</li> <li>Unstable fishing vessels, inadequate life vests ⇒drowning</li> <li>Fishing net and knife hazards ⇒deep cuts, lost limbs</li> </ul>	Trafficking survivors of the Thai fishing industry reported higher injury rates (46.6%) than non-trafficked fishermen (20.6%). 53.8% of trafficked fishermen experienced severe violence versus 10.1% of non-trafficked fishermen.
Agriculture	<ul style="list-style-type: none"> <li>Pesticide exposure ⇒toxicity</li> <li>Environmental exposures (heat, cold, mosquitoes) ⇒dehydration, kidney failure, headaches, malaria.</li> <li>Heavy lifting, bending ⇒repetitive injury syndromes</li> </ul>	95% of the greenhouse workers in Oman were migrants. Poor practices related to pesticide use resulted numerous health problems, such as skin irritation (70.3%), headaches (39.2%), and vomiting (29.7%).

Domestic work	<ul style="list-style-type: none"> <li>• Physical, sexual, verbal abuse, social isolation ⇒depression, anxiety, suicide</li> <li>• Extensive working hours, food deprivation ⇒exhaustion</li> <li>• Repeated lifting, bending and reaching ⇒musculoskeletal strain</li> <li>• Chemical cleaning agents, cooking, ironing, knives ⇒skin damage, burns</li> </ul>	A two-year study in Kuwait found that hospitalisation for domestic workers (93% from Sri Lanka, India and Philippines) was 1.86 times higher than for Kuwaiti women. Stress-related disorders were more common (49.2 vs. 22.3%) in housemaids than the Kuwaiti female patients.
Mining, quarrying	<p>Mercury extraction, lead exposure, mineral dust ⇒mercury poisoning (gold-mining), neurotoxic disorders, pneumoconiosis</p> <p>Heavy lifting, falls, falling rocks ⇒fatalities, traumatic injuries, disabilities</p> <p>Heavy equipment, extensive hours, repetitive lifting ⇒noise-induced hearing loss, chronic fatigue, musculoskeletal injuries</p> <p>Remote locations malaria ⇒venomous snake bites.</p>	China's Ministry of Health reports that 87% of occupational disease is pneumoconiosis (black lung disease), with a mortality rate higher than 20%. Pneumoconiosis is a chronic lung disease that often affects miners, sandblasters and metal grinders, occupations undertaken primarily by internal migrant workers.
Forestry	<ul style="list-style-type: none"> <li>• Environmental exposures (heat, cold, mosquitos) ⇒dehydration, malaria, parasites</li> <li>• Falls, sharp tools, machinery ⇒fatalities, broken bones, lacerations</li> <li>• Repetitive motions, long hours ⇒body pain, strains, chronic fatigue</li> </ul>	A study of Burmese migrants found 87 of 105 (82.9%) rubber plantation workers had a suspected case of malaria in the past year. Workers had limited access to care due to their working hours and limited transportation.
Leather and tanning	<ul style="list-style-type: none"> <li>• Chemical exposure (i.e., chromium, benzene dyes, formaldehyde) ⇒respiratory illness, ocular damage, cancer, ulcers, toxicity, dermatological diseases (rashes), chronic / allergic bronchitis pulmonary tuberculosis</li> </ul>	Higher morbidity was found in tannery worker (40.1%) than the control group (19.6%) in northern India.
Brick kilns	<ul style="list-style-type: none"> <li>• Unsanitary environment, air pollution ⇒bronchitis, asthma, silicosis, respiratory toxicity</li> <li>• Extremely high heat ⇒burns, fatalities</li> <li>• High rates of child labour ⇒Developmental problems</li> </ul>	Migrant brick kiln workers in South India had higher prevalence of chest symptoms (9.4%) versus general population rates (4.9%) related to occupational hazards and poor healthcare access.
PPE= personal protective equipment; STI= sexually transmitted infection		

2142 Table 1: Low-wage labour sectors and associated occupational hazards among migrant workers ([see appendix for full list of references](#))

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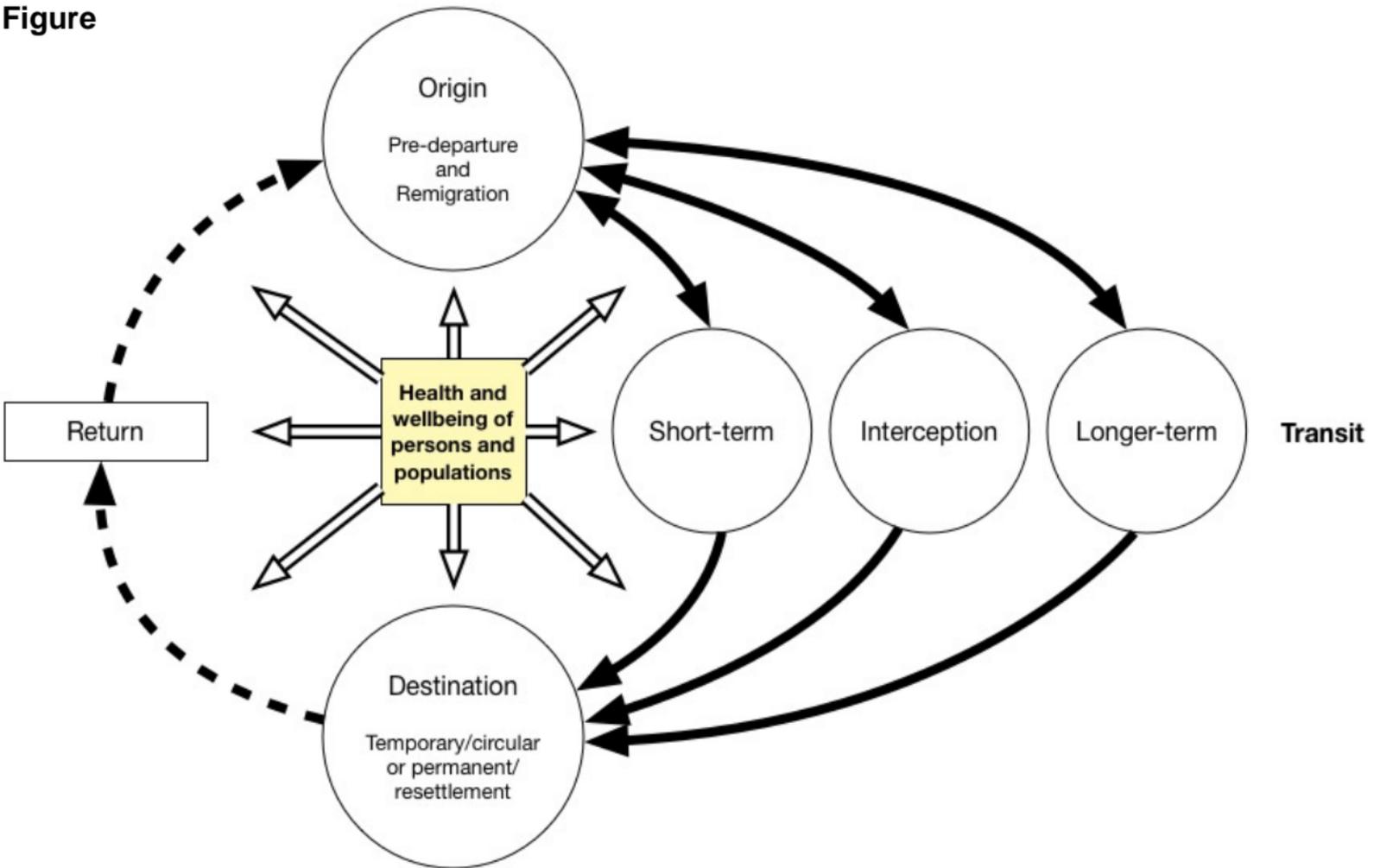
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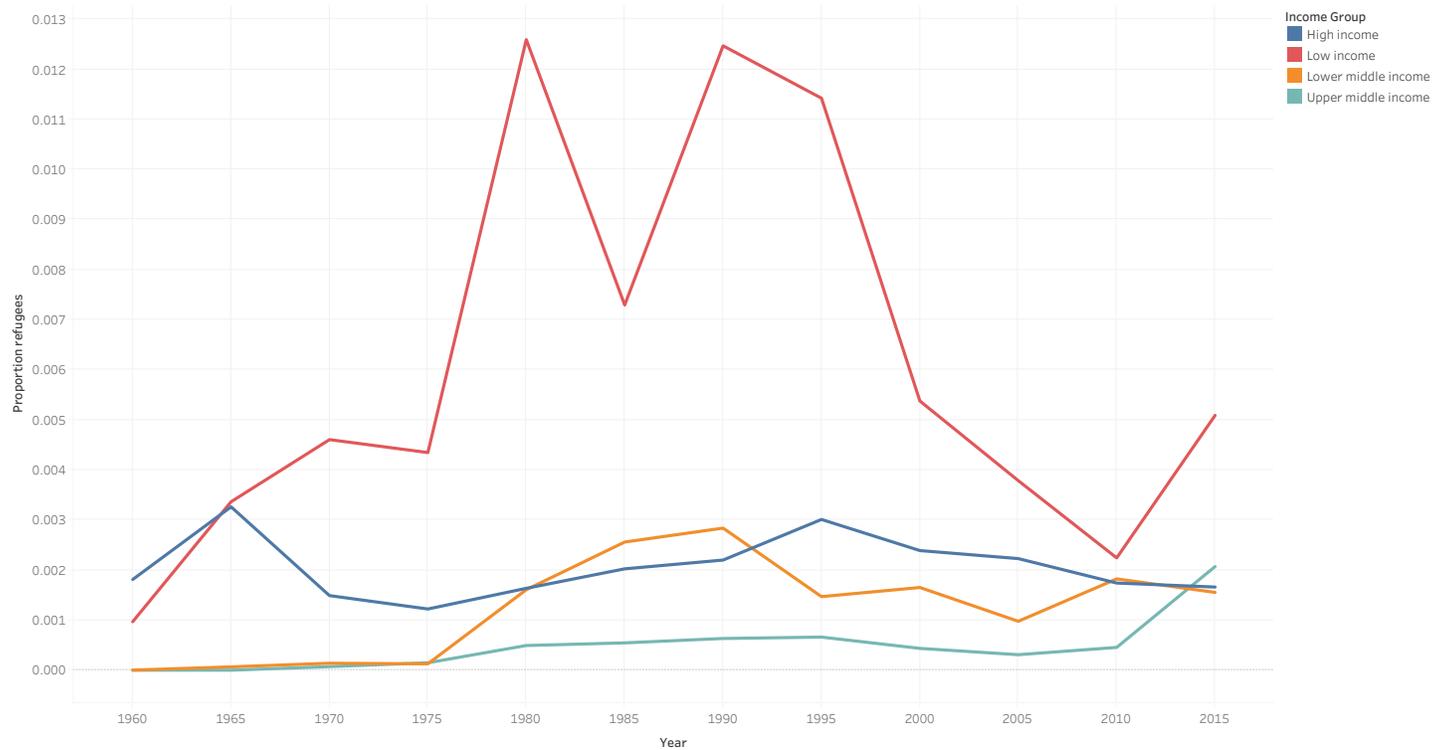
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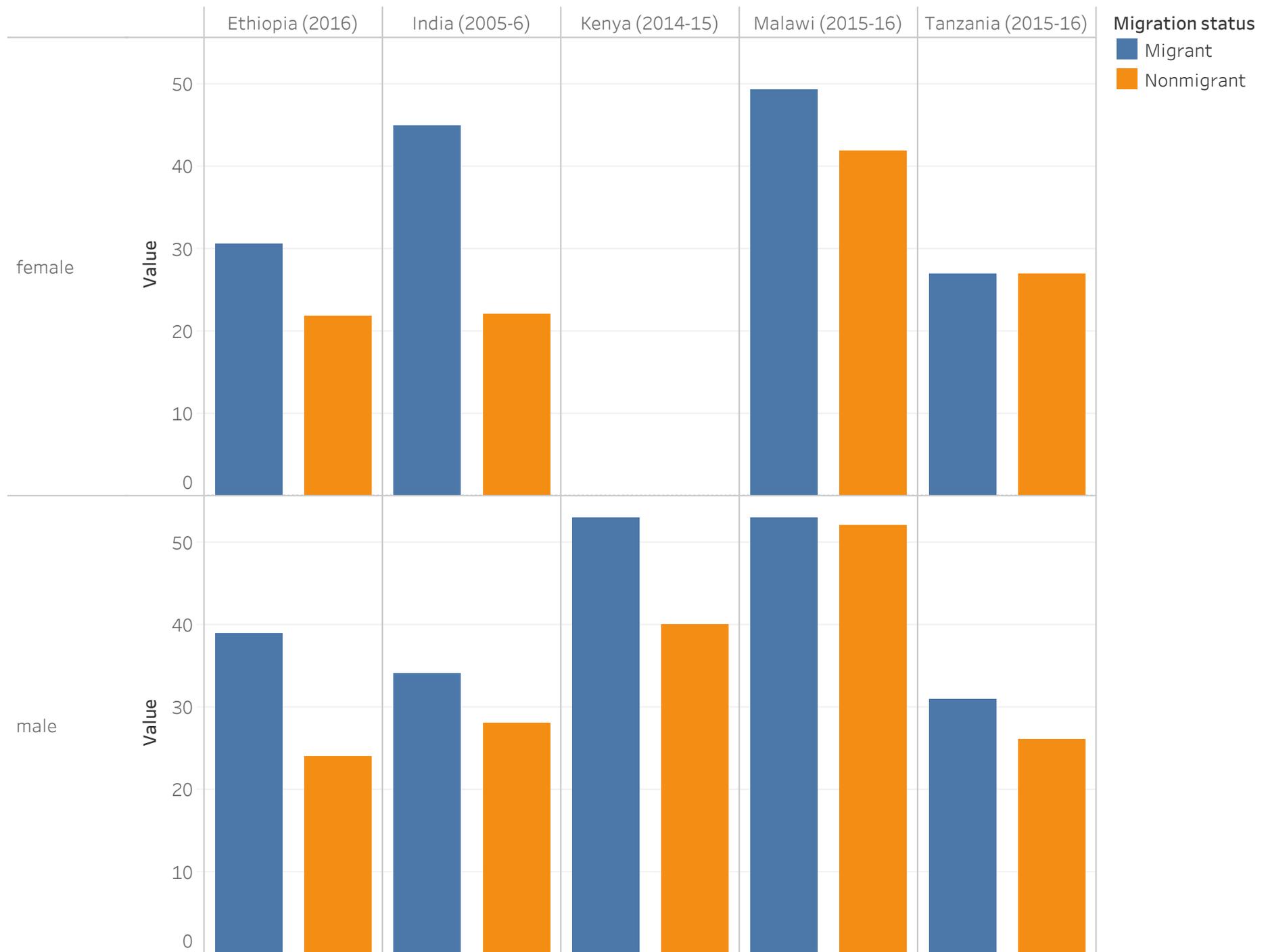


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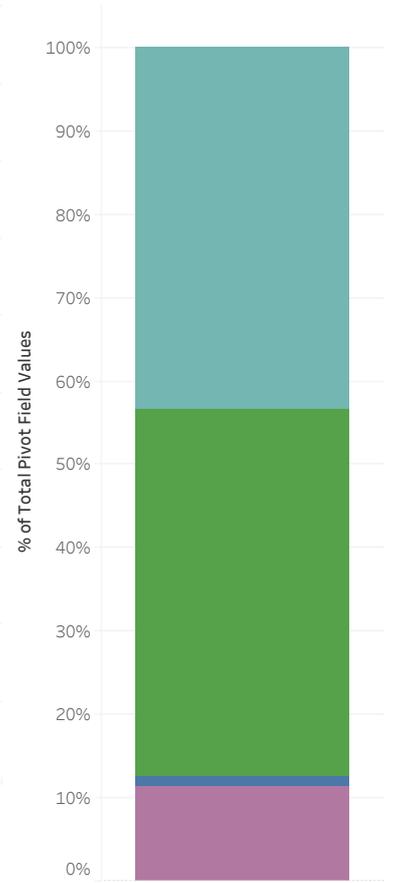
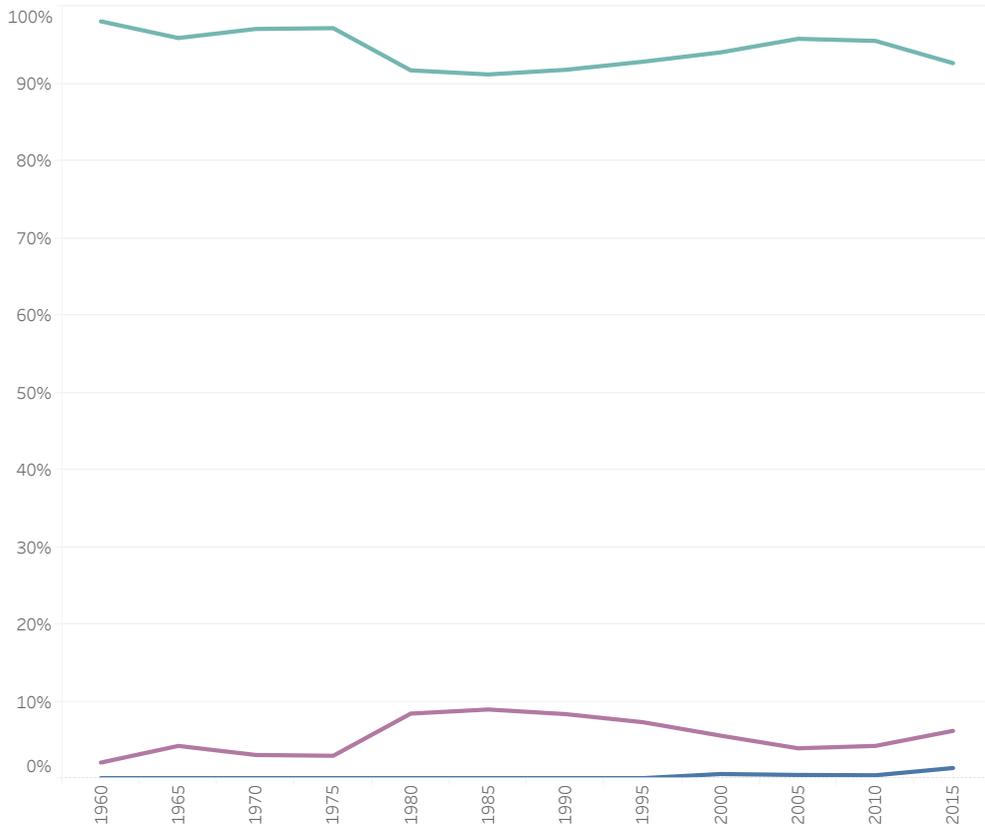
proportion refugees



Figure



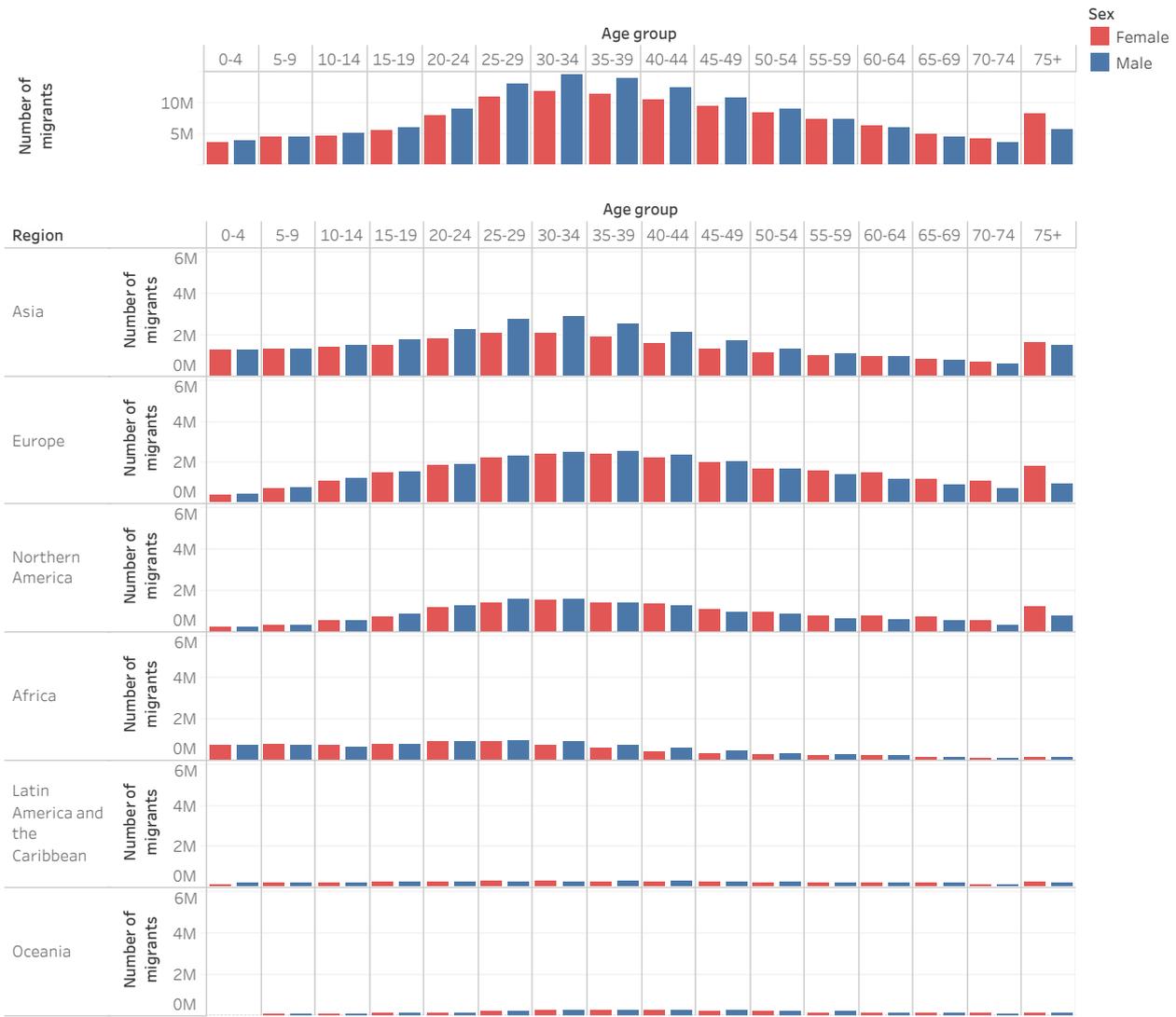
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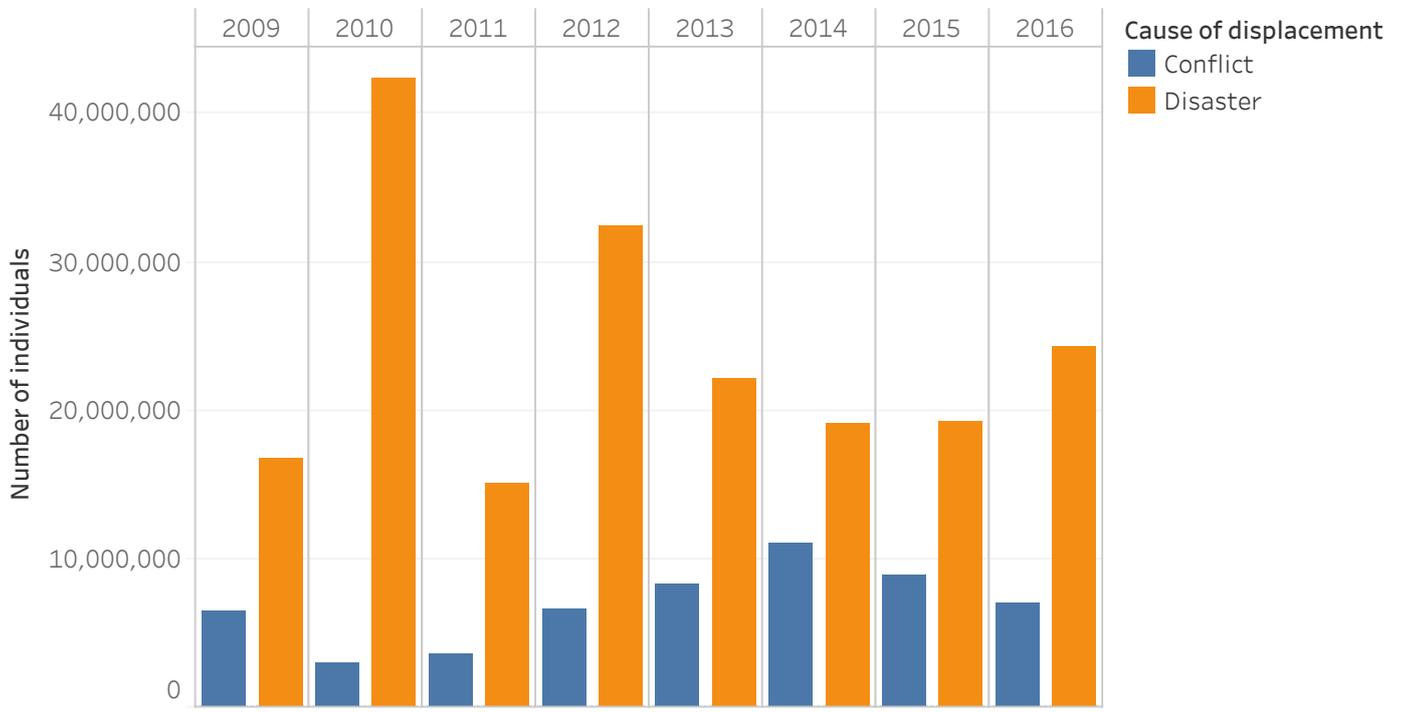
**Migrant subgroup**

- International (no subgroup)
- Labour
- Asylum
- Refugee

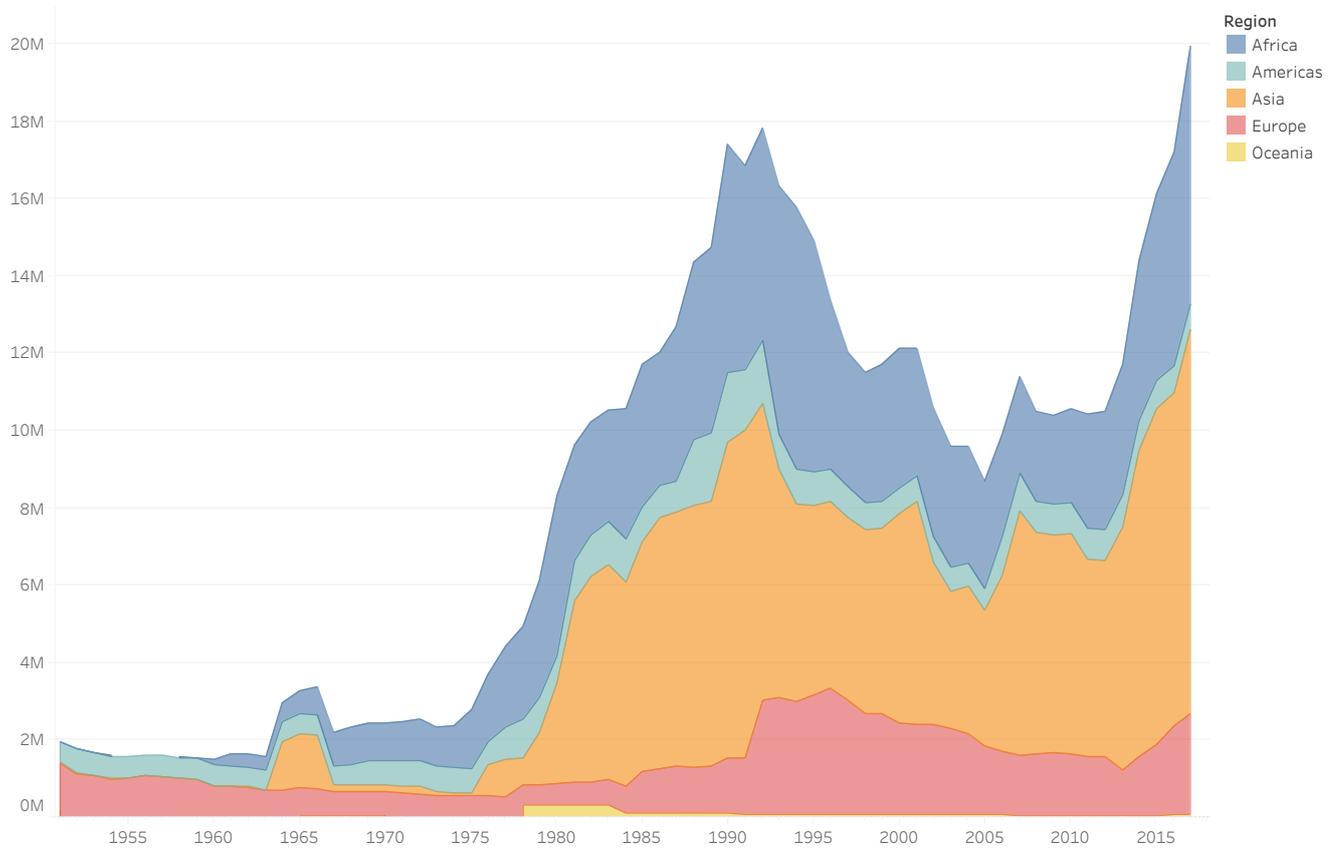
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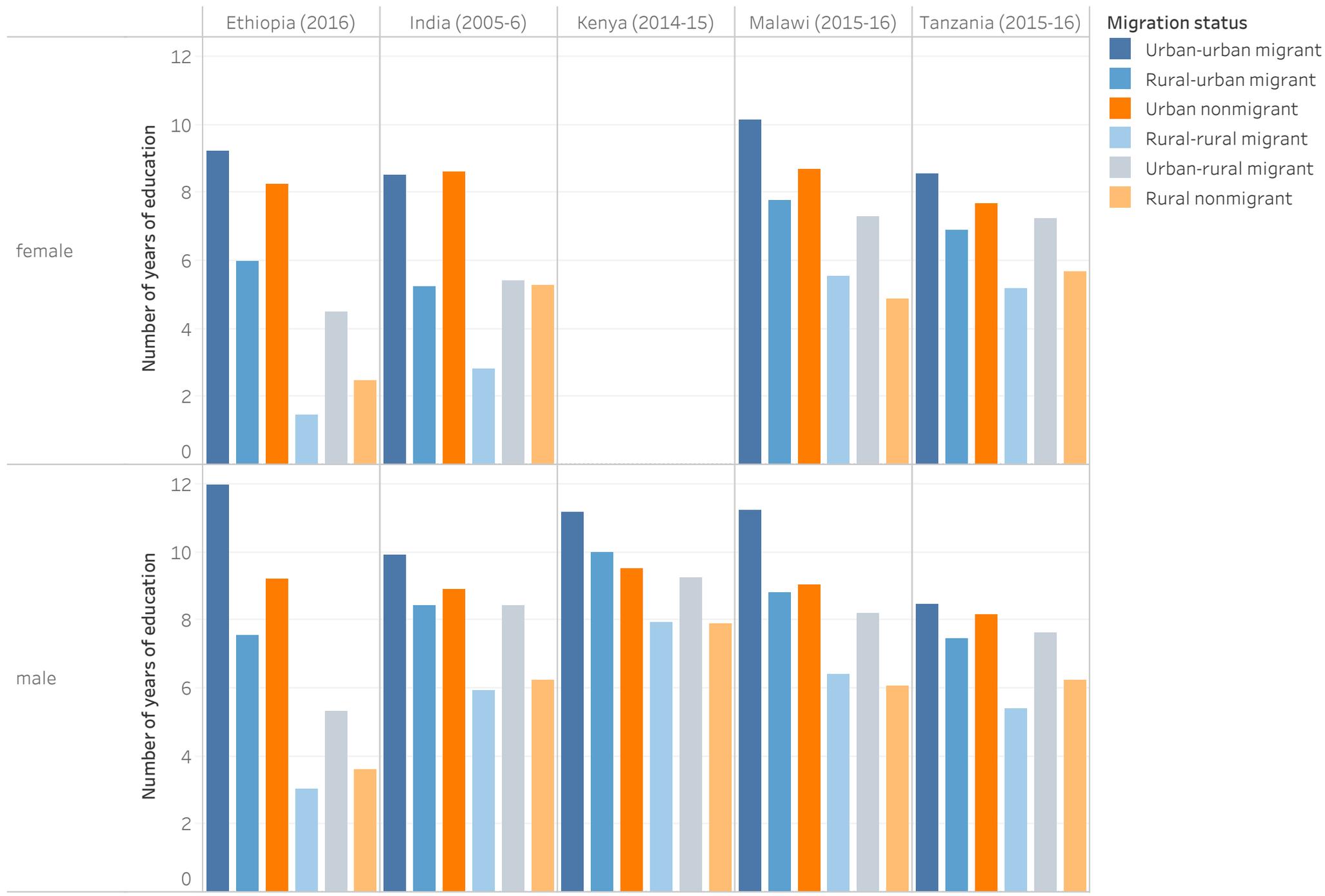
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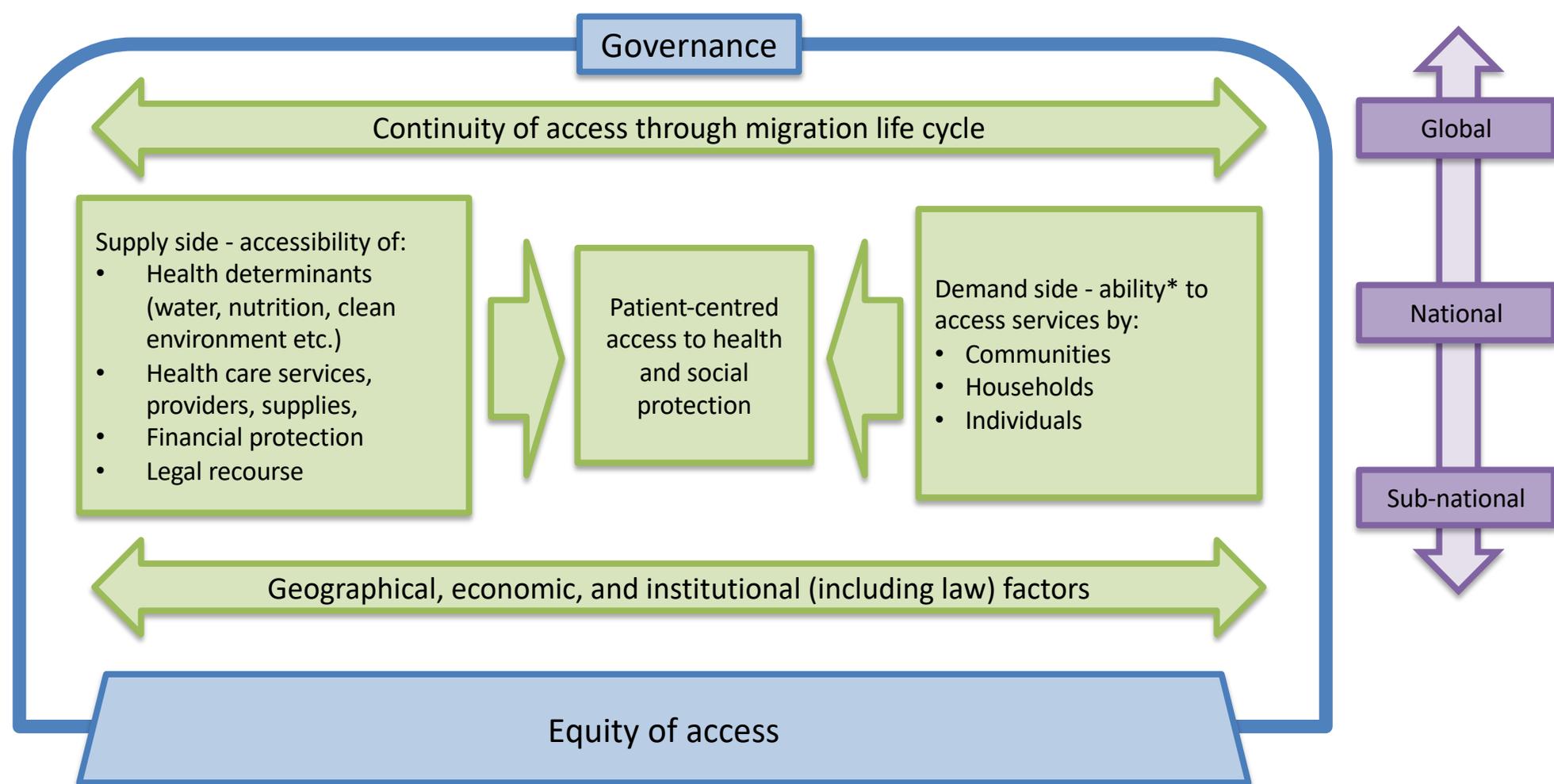
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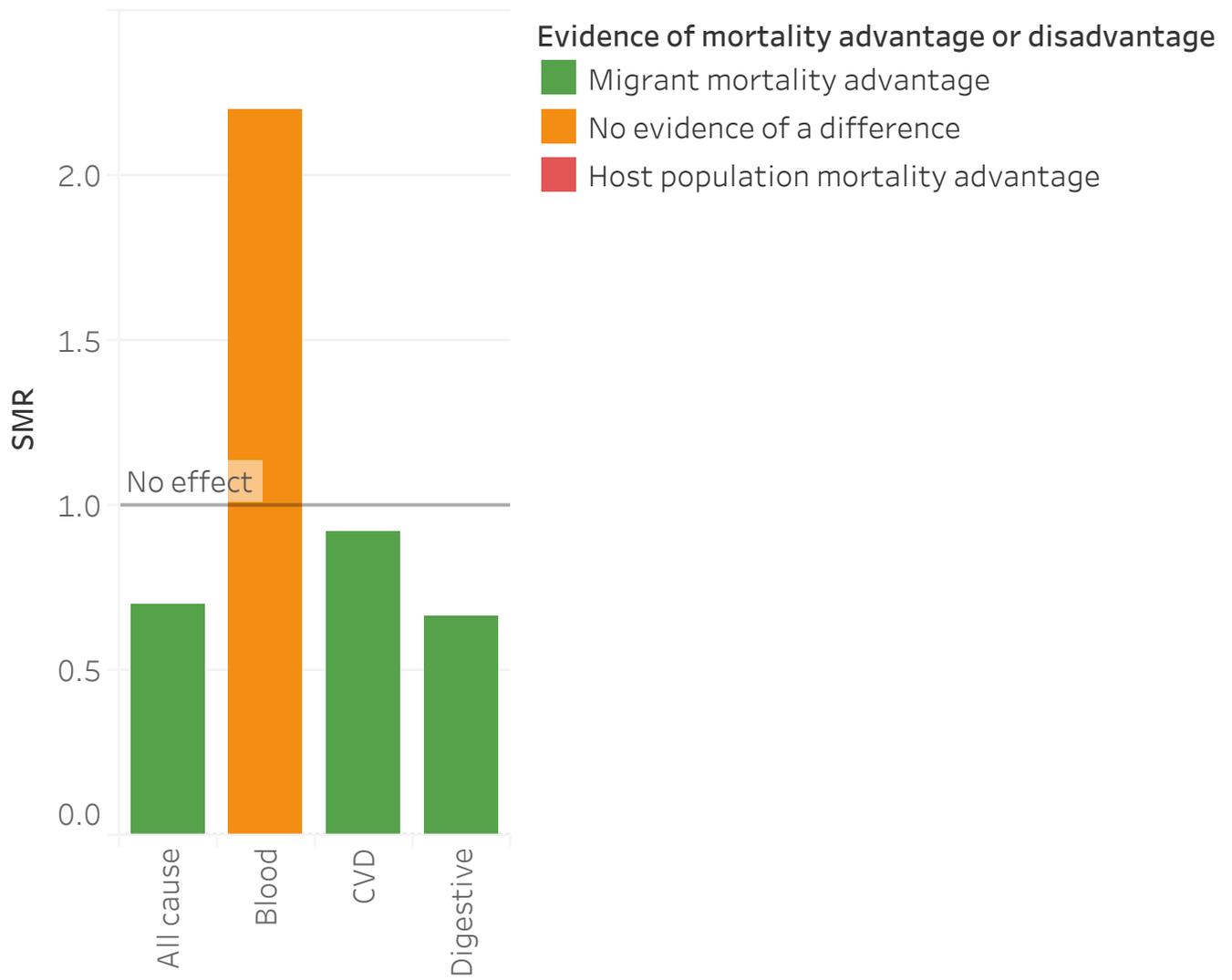


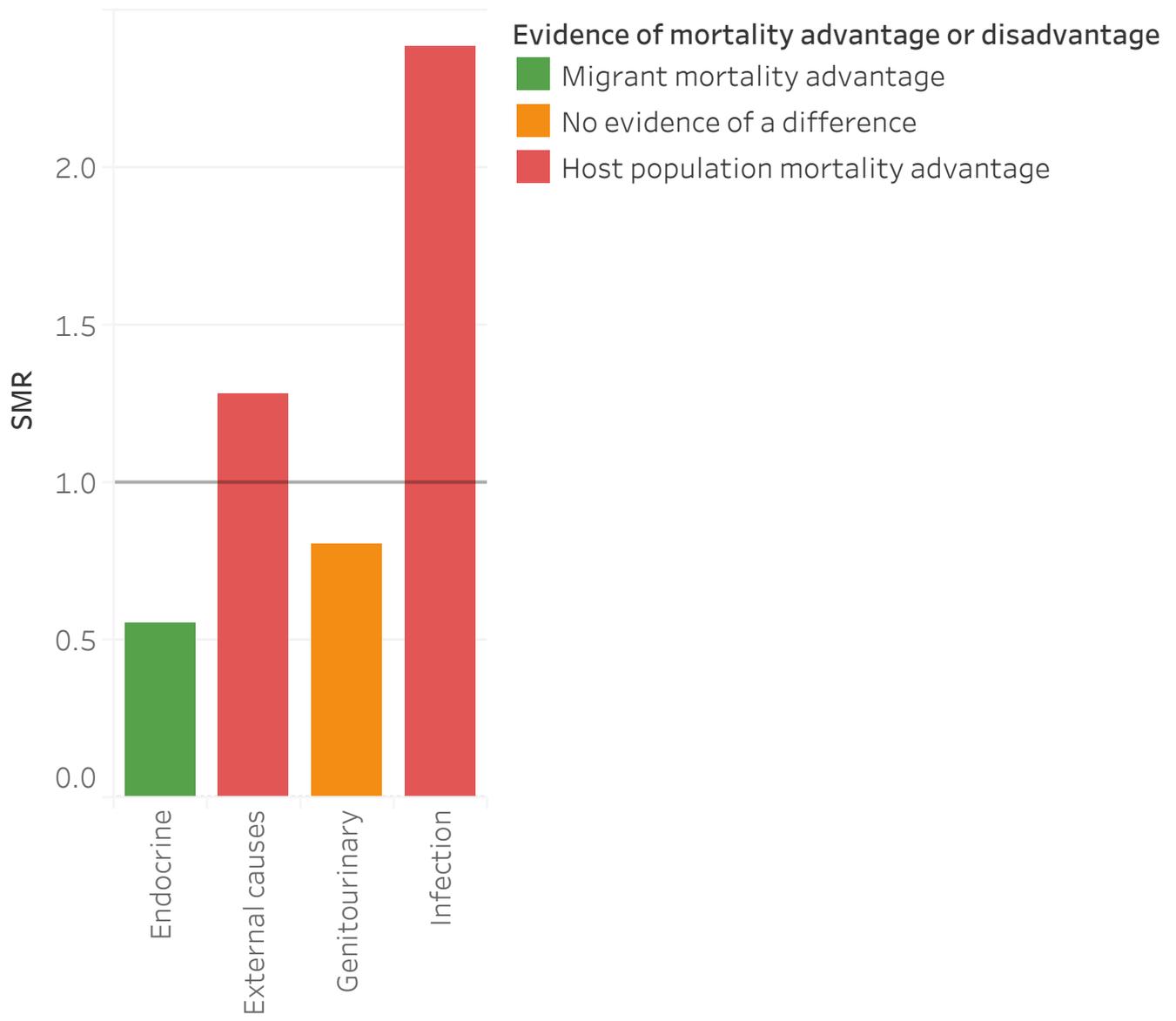
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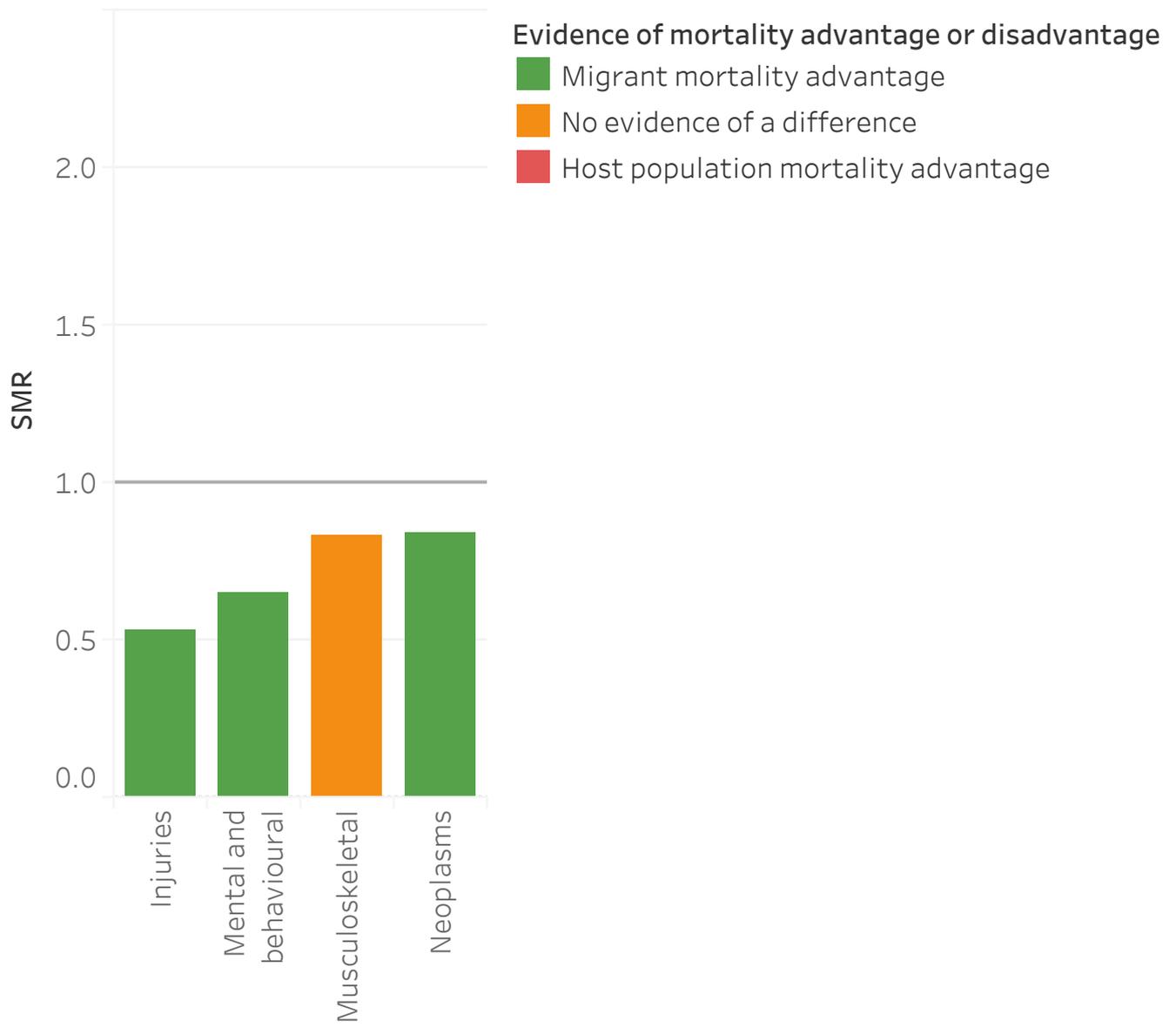


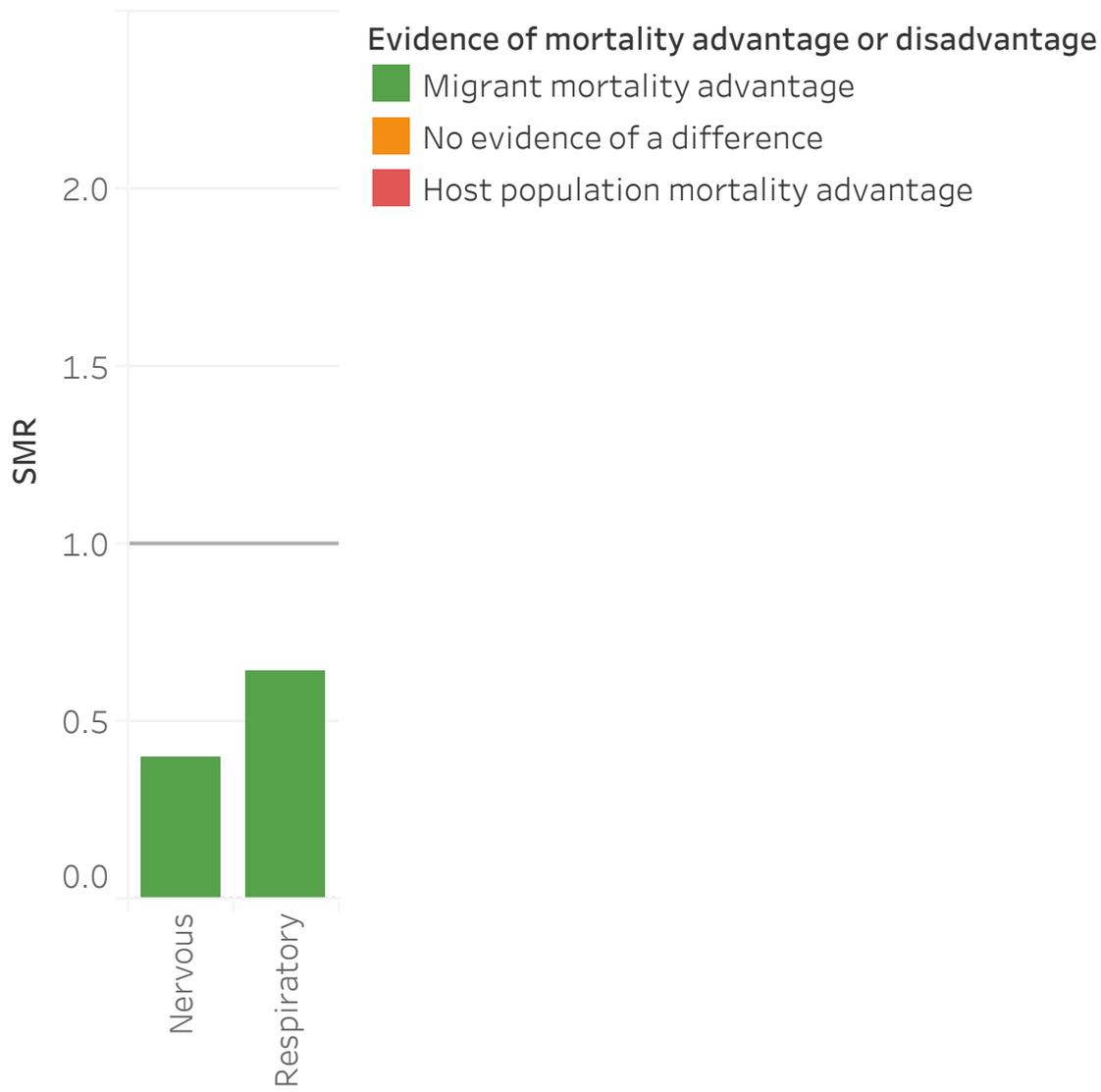
\*social and cultural ability

Figure









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Response to Editorial Comments and Reviews of - The UCL Lancet Commission on Migration and Health: The health of a world on the move [THE LANCET-D-18-04262 ]

## Editorial Comments

Editorial Comments	Response
<p>1. Please refer to the document I sent by email on author guidelines for Commissions (July 2018 version) and follow the guide closely when revising. However, as discussed, we are fine with 300 references. Strictly keep to the 25000 limit (our count is that the current version is 28000).</p>	<p>Thank you, we have closely followed the author guidelines for Commissions upon revision of the report. There are 300 references and the current word count is 24,612.</p>
<p>2. Editors found the Executive Summary to need an overhaul. It currently reads like an extended introduction and instead it should focus on what the Commission is doing and has done (rather than reiterating the problem). One editor said 'the Executive Summary has many statements about wrongly concluded understandings of the migration and the migration &amp; health field. But it doesn't articulate how the Commission will debunk those myths or clearly say what the Commission is bringing to the table (although that is what the Commission does in the meat of its report).'</p>	<p>We have re-written the executive summary and replaced most of it with text focussing on what the Commission has done in addition to including our four key messages.</p>
<p>3. Some editors found the 'dispelling myths' material 'in the Executive Summary' to need a rethink insofar as naming the myths so explicitly reinforced them. So we suggest a lighter touch with the myths part (but do keep it).</p>	<p>We have edited the section about myths in the Executive Summary. We no longer list the myths. We provide specific positive messages including lower mortality and high levels of economic contribution.</p>
<p>4. The report needs an 'afterlife' section to discuss the next steps and plans moving forward. Pam Das suggested our recent Palliative Care Commission to provide a good example of an afterlife section.</p>	<p>We have added a new section "our commissions journey" using the same approach as the Palliative Care Commission describing how we got here and the "afterlife" of the commission (see comment 5 below for further detail on the new section).</p>

<p>5. I'd like there to be more of a Commission 'process'/method section to demonstrate the wide consultation that has been done and the inclusion of multiplicity of opinion include across gender, geography, disciplinary perspective etc. This is a huge USP so I suggest emphasising it.</p>	<p>We have added the section, “Our Commission’s Journey” to outline the composition of the Commission and its working groups, describe the Commission’s goals and Conceptual Framework, and list explicitly what the Commission did not cover.</p>
<p>6. As we discussed a few weeks ago, I feel you also need to have a stronger acknowledgement of what the Commission couldn't do - that there are many many other facets of migration and health that were beyond the specific remit or bounds of this Commission but we plan to do more in collaboration with others, others across sector are working in this space, and the Commission is intended to inspire further questions etc etc etc.</p>	<p>In response to this suggestion we’ve now added a paragraph in “Our Commission’s Journey” that outlines what was explicitly beyond the remit of the Commission.</p>
<p>7. We suggest removing the Rohingya simulation Panel; instead reference any published work.</p>	<p>The Rohingya panel (Panel 2) has been removed as suggested. We have added to the main text to highlight the situation of the Rohingya people, as we feel this is important to include in the Commission report.</p>
<p>8. A key concern for editors were the recommendations. They need to be less (or at least fewer) aspirational and in the clouds, and more actionable and specific. (most reviewers mentioned this too). While the global observatory recommendation was lauded by a reviewer, the editors said everyone makes this recommendation! So pls make that one more specific and how it could be done. The balance/pitch/tone of the recommendations is always the hard part of Commissions so please do give these more consideration in light of the reviewer and editorial comments.</p>	<p>We have revised the recommendations. With each one we have considered carefully “by whom” and “how” the recommended action will be undertaken. We have now focussed the key messages on 4 main issues:</p> <ul style="list-style-type: none"> <li>- Ensuring health leaders are at the migration decision making fora</li> <li>- Tackling racism and prejudice</li> <li>- Access to health</li> <li>- Need for leadership and coordination and the “Observatory” which we clarify will be used by civil society to hold all to account and partly tackle the implementation conundrum.</li> </ul>
<p>8. Overall, the editors agreed with reviewers about the need for polish and bringing the narrative out more strongly. So please take the time to really reflect on making the report as crisp, succinct, and focused as possible, making every word count. Consider removing 'state of the art' which might be hyperbolic.</p>	<p>We have edited the report to make it more crisp, succinct and focused as possible. Additionally, we worked to strengthen the overall narrative. We have removed the wording state of the art from the report.</p>

<p>9. Additional tips on artwork are available at <a href="http://www.thelancet.com/pb/assets/raw/Lancet/authors/artwork-guidelines.pdf">http://www.thelancet.com/pb/assets/raw/Lancet/authors/artwork-guidelines.pdf</a></p>	<p>All non-text items now follow The Lancet guidelines.</p>
<p>10. Please indicate after each of the reviewers' points the text changes which have been made (if any) and the line number on the revised manuscript at which your change can be found. [Line numbers can be added to your word document using the 'page layout' tab. Please select continuous numbers.]</p>	<p>We have indicated in the text using line numbers where any changes may have been revised.</p>
<p>11. Please indicate any authors who are full professors.</p>	<p>We have indicated full professors in the author list.</p>
<p>12. Please list the highest degree for each author (one degree only, please).</p>	<p>We have indicated the highest degree for each author.</p>
<p>13. Please check that all author name spellings and affiliations are correct.</p>	<p>All author name spellings and affiliations are correct.</p>
<p>14. Please state the role of Please also state which author(s) had access to all the data, and which author(s) were responsible for the decision to submit the manuscript.</p>	<p>The writing group (Ibrahim Abubakar, Delan Devakumar, Rob Aldridge, Miriam Orcutt, and Rachel Burns) had access to all of the data and were responsible for the decision to submit the manuscript.</p>
<p>15. Please provide the text, tables, and figures in an editable format. See link above this list for details of acceptable formats for figure files.</p>	<p>All text, tables and figures are in an editable format.</p>
<p>16. Our production system is not compatible with Endnotes. Please convert to normal text.</p>	<p>All references are in normal text.</p>
<p>17. If accepted, only 20 non-text items (figures, tables, or panels) can be accommodated for Commissions; additional material can be provided in a web appendix. Please indicate which items can go in a web appendix.</p>	<p>Only 20 non-text items are included in the Commission report. Any additional non-text items are included in the supplementary appendix.</p>
<p>18. At the end of the manuscript, please summarise the contribution of each author to the work.</p>	<p>An author contribution section is included.</p>

<p>19. At the end of the manuscript please summarise the declaration of interests for each author.</p>	<p>A summary of the declaration of interests for each author is included.</p>
<p>20. If you have not yet done so, please return all signed authorship statements and conflict of interest forms. We also require signed statements from any named person in the acknowledgements saying that they agree to be acknowledged.</p>	<p>All signed authorship statements and conflict of interest forms have been submitted.</p>
<p>21. For any personal communication, please provide a letter showing that the person agrees to their name being used.</p>	<p>There is no personal communication included.</p>
<p>22. As corresponding author, please confirm that all authors have seen and approved of the final text.</p>	<p>All authors have seen and approved the final text.</p>
<p>23. If your author line includes a study group, collaborators' names and affiliations may be listed at the end of the paper or in the appendix. Additionally, if you wish the names of collaborators within a study group to appear on PubMed, please upload with your revision a list of names of all study group members presented as a two-column table in Word. First and middle names or initials should be placed in the first column, and surnames in the second column. Names should be ordered as you wish them to appear on PubMed. The table will not be included in the paper itself - it's simply used to make sure that PubMed adds the names correctly.</p>	<p>A table with the author's has been uploaded.</p>

## Summary of Responses to Reviewers

### Reviewer 1

Reviewer 1	Response
First, I want to note that this is a vast improvement on the earlier version and I'm grateful to the Commissioners for taking my (extensive) comments on board.	Thank you.
It is still very long! As it is a pdf I can't count the words but even if it is in the limit I would encourage a further attempt at brevity.	We have undertaken an extensive edit of this version in order to reduce the word count to 24,612 from about 28,000 in the submission.
I realise that it will be copy-edited but there are lots of typos and complex (sometimes confusing) syntax that could be sorted. It may be easier if I give my copy with scribbled notes to Rob rather than type them all out here. As these make up the bulk of my comments, my remaining ones are quite brief.	Thank you for passing these on to Rob. We have been through and made the suggested edits from your hard copy.
P9: maybe here, under Migration, gender and health, but somewhere a mention of the role of humanitarian workers in sex abuse .... some protectors need to be protected against.	We have added the following sentence to P9 to highlight this issue as suggested:  "Even when reaching zones of apparent safety, women and children have been exploited by humanitarian workers, a problem that remains widespread suggesting that some protectors need to be protected against."
P13 on - Composition of mobile populations. I felt these sections were still a bit disorganised, putting together lots of references but without a clear structure. I wondered if each might be re-organised, perhaps along the	In editing this section we have reorganised the text to broadly follow the the suggested structure of reviewing numbers and associated limitations, geographical distribution, characteristics and key issues for each group. We

<p>lines of: Numbers (and data limitations), geographical distribution, characteristics, key issues?</p>	<p>have also added an introductory sentence at the beginning of the section on line 415 to describe this: “Data will be presented using the most widely applied migration categories—despite our previously stated reservations about their weaknesses - reviewing numbers and their associated limitations, geographical distribution, age and sex characteristics and key issues for each group”</p>
<p>P19 Climate change: I wonder if this needs to be revised in light of the latest data, some published since submission. It really does seem we have now reached a tipping point. A recent report suggested that by 2070 large parts of northern China, with a population of 400 million, could be uninhabitable because a combination of heat and humidity would, at some times, be fatal. I also felt the balance wasn't quite right - sure "these hazard risks cannot all be identified as being caused by climate change" but it is by far the most likely/ leading cause. And do the Commissioners really believe that a world with Trump in the White House will adopt a "sensible climate change adaptation strategy"? recall the evidence linking climate change to the conflict in Syria and subsequent migration. Overall, while seeking to be balanced, this section could give the impression that there is little to worry about when I would argue we should be frantic given what we now see. The final para (p21) on the philosophical basis is somewhat cryptic. See also my comment below on recommendations but I would suggest that this is another area where, given our acceptance of the precautionary principle (although I think we are far beyond that) we should be finding ways to combat a massive campaign of lies and deception. Many of those who deny climate change are the same as those promoting racism and xenophobia.</p>	<p>We have extensively revised the climate section in response to the comments of the reviewer. It is now much shorter and focuses on highlighting the potential impact of this group.</p>
<p>P22: This follows from my last comment. There are some very powerful vested interests actively seeking to create division, for several reasons including undermining trust in certain governments, weakening the international order (e.g. promoting Brexit), and creating a "them and us"</p>	<p>The following text has been added in to the ‘political determinants of health’ section:  “The term “fake news” has recently been created to describe inaccurate information deliberately created or used to mislead. In a world of social</p>

<p>mentality that undermines support for social solidarity. You don't need to be a conspiracy theorist, given recent revelations, to see an unholy alliance of the Russian government and US neo-conservatives. We see this in the documented evidence of Russian support for both Black Lives Matter and the KKK. Consequently, sentences such as that on influential global actors is a bit weak and general. I realise I ask for the report to be shorted but I think this really needs something, given that it will shape how we respond. Essentially, what we call Fake News is a key issue here.</p>	<p>media and populist discourse, fake news is used against migrants to undermine trust and divide communities.”</p>
<p>P22: I think this needs to unpack discrimination. Some represents racist/xenophobic attitudes among ordinary people, but some is government policy I some places. You do pick up Trump's policies on immigrants and May's hostile environment (and I was pleased to see you call out Orban), but maybe make these two elements clearer. There is now a lot of evidence that statements by Trump, May, Orban and others serve to legitimise xenophobia and racism. In this light I would challenge your statement that racism is socially prohibited. Sure, politicians avoid using the "n word" now, except when being interviewed by Sacha Baron-Cohen, but the dog whistle politics is just more subtle.</p> <p>At the end of that para you mention gender and disabilities - maybe refer to the growing body of literature on intersectionality explicitly.</p> <p>Also in this section, or somewhere, you might highlight how policies such as those mentioned above don't only damage migrants. There have now been quite a few cases of American citizens detailed because they could not produce appropriate documents and in the UK the Windrush scandal is an example that could be mentioned. In other words, just because you are not a migrant doesn't mean you will be safe.</p>	<p>We agree that discrimination occurs at multiple levels. To emphasise this point, the text has been edited as follows:      “The discrimination may be at an individual level or structural involving the policies towards migrants. Such measures contribute to the anti-migrant environments and other forms of discrimination that make individuals feel deeply uncertain about their future, their safety and the security of their family.”</p> <p>Racism and social prohibition      This paragraph is meant to describe the subtlety of language and the change in racism. While it is true that some politicians are openly racist (take the example of Jair Bolsonaro), most have moved past the days of Powell or Tebbit. ‘Anti-migrant language’ is used instead by politicians rather than openly racist, but this amounts to a similar thing. For example, discourse is not anti-British Pakistani but anti-migrant, who happens to come from Pakistan. Anti-migrant language is generally not used against people who are similar. As the comment says, this serves to legitimise xenophobia and racism more generally.</p> <p>We added the term intersectionality as suggested. The sentence now reads:      “Migrants’ burden of discrimination is often doubled as they carry group characteristics that may be associated with additional prejudice and</p>

	<p>exclusion, for example related to intersectionality with gender or disabilities.”</p> <p>We have added in the following sentences to give the Windrush example. “Another example from the UK was the ‘hostile environment’ towards migrants created by the Conservative government in the UK that led to the many migrants and British citizens being denied healthcare. This was recently highlighted in the ‘Windrush scandal’ in 2018, where British citizens who came to the UK from the Caribbean more than 45 years ago were deported and denied rights and benefits.”</p>
<p>P25 - the figure of between 0.2 and 10% seems questionable - surely it all depends? Also in that para you say there is conflicting evidence about whether a natural disaster causes migration but the examples you use surely offer the example. If the location is rendered uninhabitable, like Montserrat, then of course it will. If it isn't, it might not. This has particular relevance for climate change - rising sea levels will clearly have this effect (with a delicious irony, one of the places first affected will be Mar a Largo).</p>	<p>The range quotes for disaster costs is from Davis and Alexander (2015), a highly reliable source as they are two of the world leading experts in the field. But the reviewer is correct to say that “it depends”. So paragraph 1 has been re-structured to introduce the concepts of risk, hazard and vulnerability so that the statement about cost range is placed in context. The example of the economic losses from the 2010 Haiti earthquake are now referred to so that the reader can appreciate that losses can be as large as GDP for the lowest income countries.</p> <p>The Reviewer is correct to point out that the situation for disasters and migration is complex. So the in paragraph 2 referring to the Caribbean, to Tohoku and to sea level rise to illustrate these complexities. These are important to include as the received wisdom that disasters do not cause long-term migration is clearly wrong as the Reviewer points out. (Sea level rise, for Mar a Lago too) will be experienced as a series of disasters as defences are breached during storms.)</p>
<p>P30: "violating their oath" - not just doctors</p>	<p>We agree and have edited to: “violating their professional ethical requirements as practitioners”</p>

<p>Also on that page, where you mention Spain (and if you forgive self-citation) a recent publication is very relevant: Legido-Quigley H, Pajin L, Fanjul G, Urdaneta E, McKee M. Spain shows that a humane response to migrant health is possible in Europe. Lancet Publ Health 2018: <a href="http://dx.doi.org/10.1016/S2468-2667(18)30133-6">http://dx.doi.org/10.1016/S2468-2667(18)30133-6</a></p>	<p>Thank you for highlighting which we now reference in the updated sentence on line 645: “ In Europe, some states have demonstrated that a humane response to migrant health is possible and expanded access to health services for migrants, especially for asylum seekers and children without regular status, but there remain major disparities in entitlements to access based on legal status.”</p>
<p>P31 Migrants with disabilities contributing - yes, agree, but some will argue so can you add a ref?</p>	<p>We have added references to support that statement “They also often do not adequately consider the potential economic, social and cultural contributions that migrants with disabilities make to their host communities and countries, instead considering them only in terms of cost to the state.”</p>
<p>Refugee convention - say something about non-signatories?</p>	<p>In response to this comment we have added the following sentence on line 638: “ Difficulties can also arise for refugees resettling in non-signatory states where the law does not guarantee their right to access healthcare, social services, education or employment.”</p> <p>Also added a sentence in the section “Protection of refugees and asylum seekers:”</p>
<p>P 34: "often erroneously rely " - I get what you are saying but could be read as advice to disobey local laws. Complex! May need unpacking?</p>	<p>We have changed this sentence to: “In addition, in humanitarian aid settings, implementing agencies often apply host country laws rather than international standards to determine the scope of access and rights of migrant women and girls.”</p>
<p>P38: "selling sex" ... given that this is often coerced (and I agree that you talk about forcing people) but maybe reflect on language, given response to recent reports in Europe using these words.</p>	<p>In the process of editing the Commission report we have now removed this sentence.</p>
<p>P40: Digital technology - need to temper enthusiasm with need for evaluation, given unjustified hype around many of these</p>	<p>We have edited several sentences in this paragraph to highlight the need for evaluation as well as qualifying further the limitations of this approach including the potential for intervention induced inequalities.</p>

<p>P42: air ticket levy - has this really been a success? Strongly recommend taking out taxes on alcohol and tobacco. The public health goal here should be to reduce consumption, not raise money. For sugar, it is also to encourage reformulation. If these succeed there will be no money. I would encourage a focus on general (non-hypothecated) tax as less subject to evasion/ long term declines because of behavioural change.</p>	<p>We agree with the reviewer’s very well made point about taxes on alcohol and tobacco and have removed this financing mechanism. We have also added the reviewers suggest on general tax in addition to examples of improving pro-poor pathways to achieving Universal Health Coverage.</p>
<p>P43: I think more might be said about the dangers of sharing health data with immigration authorities. What happened in the UK was disgraceful but civil society, academia (including us), and a parliamentary committee were at least able to stand up against the government. This is not a luxury possible in many other countries. It would be good if you could flag up the activities of groups like DocsNotCops and, in the US, those running sanctuary hospitals (see Saadi A, McKee M. Hospitals as places of sanctuary. BMJ 2018; 361: k2178 - again forgive self citation...). Going back to your point on domestic laws and international standards, these are examples of where health professionals have challenged harmful laws in the UK and US. Do you feel able to encourage health professionals to engage in civil disobedience in some circumstances? It would be good if you did but I realise you may not feel comfortable doing so. However, as history tells us, sometimes health workers have to.</p>	<p>Thanks for this very helpful suggestion. We have added the following sentence:</p> <p>“When health information systems are misused civil society, academia and healthcare workers - including through the creation of “sanctuary hospitals” and “sanctuary doctoring” - can play an important and vital role in standing up against the misuse.”</p> <p>“In practice, health-related enforcement regimes can pressure health workers to act as immigration control agents—violating their professional ethical requirements as practitioners - an issue that has been taken up by civil society organisations like Docs Not Cops. Deportation can interrupt treatment, impairing migrants’ health.”</p> <p>Civil disobedience may be the inevitable consequences of the direction of politics globally. We have elected to not call for civil disobedience yet!</p>
<p>P44: Cultural competence. Surely you could say more about culture per se, for example, diet and rituals around life events such as birth and death?</p>	<p>Thank you for this advice. We have expanded the culture section and introduced a definition that also reflects the particular dynamics between culture and migration. For reasons of space, however, we could not expand to giving more examples like you mentioned (birth, death etc.), unfortunately.</p>

<p>P5 (second set of numbers) Intervention research - this would really benefit from being much more specific, with examples if possible?</p>	<p>We have added the following sentence, describing the type of interventional evidence needed: “Evidence on interventions outside the health system and focused on improving social, political and economics determinants of health are also critical.”</p> <p>Additionally, the following sentence has been added as a specific example: “ For example, schools have been suggested as important sites for mental health intervention research for both children refugees and their families, although studies conducted have been relatively small and difficult to replicate.”</p>
<p>Recommendations</p> <p>I think the recommendations are far too long and general. If the Commission is to make a difference it really needs a small number, tightly focused, and clearly directed. Can I suggest that they might be broken down not by issue but by target, e.g. the UN system, governments, civil society, health professionals, researchers?</p> <p>As far as possible they should be based on existing commitments (and as they note, there are many such commitments that are not being adhered to). Also, they should take account of why things are not being done, given that the case for doing so has often existed for years. For example, we do need to challenge myths and misconceptions. But to do so we need to distinguish misinformation (generated and spread inadvertently) from disinformation (deliberately created). See the recent UK Parliament DCMS report on Fake News for a discussion. The question is what we can do to combat the messages being spread by racists and xenophobes. Also, this recommendation makes no mention of how social media is spreading these hate messages. I would suggest this recommendation is very important but at present fails to engage with the real issues we face today.</p> <p>Isn't the recommendation on addressing wider determinants really about</p>	<p>We considerably shortened the recommendations from 1736 words to 948 words in 5 areas and focussed the recommendations on specific largely existing agreed actions/targets. As these recommendations often apply to multiple targets, we have elected not to group them by target to avoid repetition.</p> <p>We have also largely linked our recommendations to existing commitments - including the Compacts and other UN instruments.</p> <p>We have added further discussion in the conclusion on why things are not working and changed recommendations to suggest what can be done to improve implementation (recommendation 3) and uptake of existing policy (e.g. recommendation 2 to get health experts in migration policy discussion).</p> <p>We have removed the recommendation on the wider determinants of health and combined this with upholding national and international law as suggested.</p> <p>We address health workers ethical responsibilities together with workers in</p>

<p>upholding national and international law and conventions on non-discrimination and human rights? It rather gets lost in what is there now. This could then be combined with the later section on Rights and legal structures. But then this could be made simpler and clearer. Also here, given the lack of accountability measures for some international agreements, can't you make much more prominent your call for civil society to publish their own reports?</p> <p>Should there be a recommendation explicitly aimed at health workers, reminding them of their higher duty. You make that point earlier, in the panel on the UK Health Committee victory over the disgraceful conduct of the British government. Shouldn't the World Medical Association and International Council of Nurses speak out, stating clearly the obligations of health professionals, just like they did on ethics in the Declaration of Helsinki? Lots of relevant bits are in your recommendations, but again they tend to get lost. Meanwhile, on ethics, maybe say that it is actually unethical on grounds of equity to do research that consciously excludes migrants when it would be scientifically relevant to include them? I should say that pane 11 is good.</p>	<p>other sectors in recommendation 4c.</p>
<p>I hope these comments help improve what is an excellent report</p>	<p>Thank you</p>

## Reviewer 2

<p>Reviewer 2</p>	<p>Response</p>
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<p>This is a monumental undertaking, and reviews a vast amount of data. Individuals working in migration medicine will find this synthesis very relevant and helpful. It dispels many myths about migration via use of evidence, and will be very useful for those involved in migrant health for this reason. I greatly appreciate the call to action, particularly its multilateral nature; this is the only way we will be able to address migrant health in a comprehensive and effective manner. I appreciate the bold call for a Global Migration and Health Observatory. I have two specific recommendations:</p>	<p>Thank you</p>
<p>1) The term cultural competence has fallen somewhat out of favor. We are using the term "cultural humility" to acknowledge that we cannot know everything about every patient from every culture, and the key is really an approach which is open minded, and asked questions of understanding from each individual patient. I would suggest the authors do some reading on this issue, and revise the manuscript in this area.</p>	<p>Thank you for pointing to this important issue. We have re-written the whole section, introducing a coherent definition of culture and then, related to this, of cultural competence and a rather comprehensive view on "culturally informed care", what also includes "cultural humility". Even though the space for this discussions in the report is very limited, we tried to offer a differentiated view, that looks even beyond "culture" and also addresses important structural aspects.</p>
<p>2) Page 49, peri-natal health: the data you presented seems to suggest that outcomes are worse for migrant women than for their children- this could be stated more strongly at the outset</p>	<p>While the tendency is towards worse outcomes, they do vary a lot, for example from where the person comes from. The first sentence has been removed, so that the Perinatal section now starts with the umbrella review that includes the generally worse outcomes for women and newborns.</p>

### Reviewer 3

Reviewer 3	Response
<p>This is a very thorough and rich report that sets the stage for a much clearer understanding and approach to migration and health. The extent of work done to write this report is significant and commendable. There are clear messages that are woven throughout the report, and the recommendations are pointed and respond to the need for enhanced dignity of migrants.</p> <p>The comments below are made with deference. Some are more detail oriented (sorry) and some more specific or general. I hope they are helpful.</p>	<p>Thank you</p>
<p>Comments on Executive Summary</p>	
<p>Need to add timeframe to some statements; e.g. 'With one billion people on the move: .. in what timeframe), every month, every year, over the last ten years?</p>	<p>We have clarified the timeframe on line 47: "With one billion people on the move or having moved in 2018, migration is a global reality —and has also become a political lightning rod."</p>
<p>Same for next statement: "258 million people have moved internationally and ... " in the last year, ever, ?</p>	<p>In editing the executive summary we have removed this sentence.</p>
<p>First par, last line: "This commission challenges ..." - why only list civil society and health leaders .. everyone must resist the emerging narratives .. including decision and policy makers, academics, researchers, ...</p>	<p>Thank you, we agree with this suggestion and have amended the sentence to be more comprehensive on line 70: "The result of this work is a Commission which aims to be call to action for civil society, health leaders, decision and policy makers, academics, researchers which we structure around five goals."</p>
<p>Beginning of the 4th para, first 3 sentences: "Our Commission ..... otherwise" - suggest to move to the beginning of the 2nd para; or end of 1st para right before "This commission challenges ...". o So that the fourth para is about health specifically.</p>	<p>We have extensively edited the executive summary which hopefully now reflects this point.</p>

<p>Throughout the report, the term cultural competence is used. Recent scholarship suggests that cultural competence be replaced by cultural humility, as achieving cultural 'competence' vis-a-vis all cultures of the world is an impossible feat, whereas achieving an attitude of humility is critical. I would suggest replacing 'cultural competence' with 'cultural humility' throughout the report. For more on this, please see</p> <p>o  <a href="https://muse.jhu.edu/article/268076/pdf?casa_token=_qRZ9D3_aroAAAAA:pE5m7MxZke7NOtoWwCMVEWOfkAm0jt7ScIIXUgqP7nVGz7Cs-mxue2rKX24zccNgXyPjLt0Jiw8">https://muse.jhu.edu/article/268076/pdf?casa_token=_qRZ9D3_aroAAAAA:pE5m7MxZke7NOtoWwCMVEWOfkAm0jt7ScIIXUgqP7nVGz7Cs-mxue2rKX24zccNgXyPjLt0Jiw8</a></p> <p>o  <a href="https://www.tandfonline.com/doi/abs/10.1080/02615479.2014.977244">https://www.tandfonline.com/doi/abs/10.1080/02615479.2014.977244</a></p>	<p>Thank you for pointing to this important issue. We have re-written the whole section introducing a coherent definition of culture and then, related to this, of cultural competence and a rather comprehensive view on “culturally informed care”, what also includes “cultural humility”. Though we did not want to replace one notion for another, but rather offer – even though the space for this discussions in the report is very short and the number of references limited – a differentiated view, that looks even beyond “culture” and also addresses important structural aspects (perspective mainly of critical medical anthropology).</p>
<p>Comments on Key Messages</p>	
<p>First bullet point: suggest the addition of "positively and effectively" in front of address to read: "..the global community to positively and effectively address the health of mobile ..."</p>	<p>We have edited this text on line 103 as suggested.</p>
<p>Second bullet point, I think the sentence starting "Racism and prejudice .." should be a separate point, not part of the second bullet point.</p>	<p>We agree and have changed this.</p>
<p>Although I agree that Racism and prejudice should not be tolerated, there is a need to point to whom will apply the zero tolerance approach. What is the accountability mechanism and who has the power to apply it? This also applies to the next sentence. Agreed: public leaders do have a 'political, social and legal responsibility to oppose xenophobia ...' but to date many of them around the world are not doing much in relation to this responsibility. So, how can we elevate this statement to some actionable level through some recommendation.</p>	<p>We have added further text to the conclusion to highlight the reasons why there is dissonance between agreed international commitments and national action. We believe democratic accountability and civil society action is needed that starts with the publication of accurate information and subsequent action to ensure that politicians are challenged when they misinform populations. The publication of indicators and our forward action plan post commission should help.</p> <p>We agree that public leaders are in many cases are doing the contrary and fostering xenophobia. Our recommendations now include specific</p>

	suggestions on how to improve action - 3 and b describe ways to tackle fake news and for civil society and others to engage with social and other media.
"..such as medical and health science faculties and nursing colleges' .. please add public health. Although it may be assumed to be subsumed under health science, public health as a discipline and in practice is very much involved in migration and health issues, and should be highlighted as such.  The recommendations of a special envoy and an observatory are excellent.	We have added public health to this key message on line 110 and are grateful for the positive comments about the special envoy and observatory.
Comments on introduction	
Suggest to move the definition of a migrant (which is now the first sentence on para 2) to be the second sentence of paragraph 1 (before "Migration is not a new phenomenon.").	We have moved this definition as suggested and is now found on line 132.
Last sentence of para 2, suggest replacing health promotion campaigns (which is a very specific example) with 'public health programs.'	We have edited this as suggested on line 153.
First sentence of 4th para "Discrimination and human rights violations ..." ... not sure that there should be a listing of the types of populations (e.g. individuals who flee from conflict etc) as the sentence applies to many others: women, persons with disability, LGBTQI (and you make this point in other places in the document). So, perhaps here just state that discrimination influences health and safety of most migrant populations without going into the categories.	Thank you for this suggestion - we have removed the limited number of groups and edited the sentence on line 165 so that it now reads: "Discrimination and human rights violations strongly influence the health and safety of many mobile populations."
Generally, the flow of the introduction was a bit difficult to follow. For	We have edited the introduction extensively and made several changes

<p>example, 4th par: "people leave their countries in response to ...." .. perhaps should be moved up?</p>	<p>which hopefully improve the flow of this section.</p>
<p>6th para: "While wealthy nations ..., they are well situated to turn the tide .." - I am not sure I can agree with this statement. How so? It will require a major shift in the priorities of wealthy nations. Many wealthy nations have horrible histories of abuse not only of migrants. If we are going to make this statement, it needs to be substantiated with some statement of how directed at those who are the most abusive to date. International convention are a great first step, but we all know that they are not implemented, and rarely have teeth. So how can we make wealthy nations accountable? And who will do so?</p>	<p>We agree with the comment both in terms of the priorities and history. We have therefore removed this sentence.</p>
<p>Last para on page 6, this was confusing to me as it lays out five goals, and for example goal 2 is related to examining the multi determinants of health ... but this also takes place in section 1. There was some overlap in sections 1 and 2 particularly around determinants. A clearer delineation of how what is covered or intended in section 1 (about determinants) is different than that in section 2 would be helpful.</p>	<p>When editing the introduction we have attempted to clarify that the five goals do not map one to one with each of the subsequent sections, but instead present a focus for our efforts throughout the report. We have updated the text introducing these as follows on line 200:</p> <p>“The principles that underpin our report are those of equity and healthy inclusion and our final report aims to tackle five goals. The five goals provide a focus and golden thread that are tackled throughout the report”</p>
<p>Comment on section 1</p>	
<p>"While terms such as .. they are generally ..used to classify migrants for protection, assistance or research - .." - yes but also used to 'other' and 'discriminate against' .. and although the point is made in this para, perhaps it also needs to be added to this sentence.</p>	<p>We have split this sentence up and adding in the reviewers suggestion about “othering” and discrimination on lines 238-244 as follows:</p> <p>“Terms such as “voluntary” or “forced” migration and categories such as “refugees”, “asylum seekers”, “international” and “internal” migrants can partially help to understand migration dynamics. These same terms can also be used to “other” and discriminate against migrants, as well as being generally administrative definitions used to classify migrants for protection,</p>

	assistance or research—rather than a true representation of individual circumstances. “
Great last sentence re “..values, goals, and interests of the parties who assign these labels.”	Thank you.
Page 8, last sentence before 'Health throughout the migration process' - "Moreover, in an era of ..., the catch-all term 'migrant' obscures the net social, political, and economic benefits of migration ..." - This point is made several times throughout the report and is a critical and important point. However, I did not feel it ever got elevated to be a central point. Perhaps having a subsection labeled: "The net benefit of migration to migrants and receiving communities" so people don't have to search to find this part, it is there calling out to them J.	We are very glad that the reviewer agrees that we make this point several times throughout the report. During the process of writing the Commission this section was considerably reworked several times and as the Commission stands we feel that the central place where we make the reviewers point is within the challenging myths section, and in particular in response to the question: “ <b>Are migrants a burden on services?</b> ” In answering this question we rebut the claim with substantial evidence on the benefits of migration, but because of the nature of the section, we initially frame it negatively rather than in a positive light as suggested by the reviewer. We hope this better explains our rationale.
Health throughout the migration process - mental health is not included in this first para.. and although it does come up later, it is such a central part of the health experience that I think it might be worth including early on and here in this first para about health.	We have added text about mental health to the section as suggested” “Maintaining the mental health and wellbeing of migrants and the families they may leave behind is particularly important. Even in ideal conditions, migration is stressful, and most people move in ways that are far from ideal. As described in the ‘Migration and morbidity section’ this, coupled with the causes of migration, can lead to manifestations of mental ill health.”
Love the last sentence. YES! Absolutely.	Thank you.
Figure 1 - I would suggest adding arrows between 'health and wellbeing' box and all other circles (return, origin, short term, interception, longer term, destination)	Arrows have been added to the other circles as suggested and also to the arrows designating the journeys.
Page 9 - migration, gender, and health. Yes, women, men and sexual minorities "encounter different health risks and protection opportunities at	We would include pre-departure in the phases of migration. The paragraph has been changed to emphasise this:

<p>each phase of a migration journey" - but they also begun the journey at differential risk because of experience, policies, norms, discrimination in their country of origin. This part of the process seems to be missing sometimes in the discussion. The gendered experience during migration is also related to the gendered experience pre migration.</p>	<p>"The risks begin before departure, where women and children may be at risk of violence and discrimination. Amongst those who are forcibly displaced, there is a particular risk of sexual violence, coercion and sexual exploitation, such as recent accounts of widespread rape of Rohingya women and girls,<sup>18</sup> or when moving along irregular and dangerous routing ending in official and unofficial detention centres such as the case of Libya."</p>
<p>Page 10 - challenging myths. The first one is: "Are nations being overwhelmed by migrants" but the text does not answer this question. So perhaps best to ask "Are migrants increasing globally. The text seems to be responding to this question. I prefer this question anyway because the experience of being overwhelmed is relative. I realize that much of the response to this question is directed towards HIC to counter negative narratives, but if you take the case of Lebanon, ¼ of its current population is refugees (Syrian, Palestinian, Iraqi, other). There is a sense of being overwhelmed. And if they read this para, and saw well no not really, they might feel that this report does not speak to them. And I think the report should speak to all, not only the HICs. Bangladesh may be another case in point. I am not intending to highlight the narrative of being overwhelmed as this is a negative narrative, but pointing that it is relative and that HIC cannot be the highlight of the answer (since the report rightly points to movement within areas as more prevalent) .. and so to counter the above confusion, changing the question to "Are migrants increasing globally' might be a better question, and indeed the text answers that question very well.</p>	<p>Thank you for highlighting the very important point that the question as currently framed may alienate an important audience for our Commission. However, whilst we agree wholeheartedly, we actually believe our previous question wasn't focused enough and therefore we have instead changed the question to: "Are high-income nations being overwhelmed by migrants?" This focuses more specifically on high-income countries and we believe this is an important myth to bust. Our response includes points highlighting the burden on countries other than high-income ones, hopefully dealing with the examples of Lebanon and Bangladesh as suggested by the reviewer. Finally, we were less sure that "Are migrants increasing globally" was a common myth.</p>
<p>The second question is equally difficult. In Lebanon, there is a sense of 'burden' as the Syrian refugees are 'displacing' Lebanese at govnt clinics. I state 'displacing' although part of this is a result of discrimination on the part of Lebanese. So it is complex, and again my objective would be that</p>	<p>We have edited this section to include the following in response to this: "Health professionals migrate because of low remuneration, poor working conditions, work overload, and poor opportunities for professional advancement in their home countries.<sup>28</sup> Higher income countries reap the</p>

<p>readers in LIC, MIC, and HIC could read this report and all feel it 'spoke to them.' YES absolutely migrants contribute to economies in many many ways. But they can only do so if they are allowed to do so. So, for example, the million + Syrian refugees include physicians, nurses, educators, social workers, etc. If allowed, they could both serve their communities (and host communities) which would create more services, more support, and less stress... but they are not allowed to do so. Do they still contribute to the economy . YES .. but this needs to be brought out more forcefully here and throughout.</p>	<p>benefits. It is LMICs such as Syria and Turkey, who host a higher proportion of vulnerable migrants, where services are challenging to deliver for the poorest members of society. While many migrants are able to access the labour markets, there are also many who may not have this same access with immediate and long-term consequences on livelihoods, social security, education and health.”</p>
<p>P. 13 - 'Migrant populations may come from countries with a high burden of disease ...' - this sentence is unclear .. perhaps something is missing? (generally the report needs a careful read through as several sentence have words missing or added words, etc .. I assume this will happen in the next draft as the effort to put this one together is clear and noted!)</p>	<p>We have edited this section to clarify several sentences in this section on lines 396-400: “ Migrant populations may come from countries with a high burden of disease and it is not uncommon for disease outbreaks to be found in situations of conflict which dismantle already weak public health systems.”</p>
<p>P. 13 "Epidemiologic patterns and related risks .... needs of migrants.' This is a very long sentence .. perhaps divide into two?</p>	<p>Whilst editing this section we have removed part of this sentence in order to reduce word count and sharpen the focus of this section. On lines 405-408 it now reads: “Epidemiological patterns and related risks are readily addressed by assessing the infectious disease burden among populations and using data to design targeted interventions to contain outbreaks and prevent new infections through immunisation.”</p>
<p>P. 13 , last sentence before 'composition of mobile populations' : "Because of the prejudice and founded fear ... for public consumption.' This is a very important point, and needs to be highlighted separately perhaps, rather than being an ending sentence .. it is related to enhancing dignity of migrants as well.</p>	<p>We agree on the importance of this point and have highlighted the fact that we revisit this issue in several places throughout the report with the addition of this sentence on line 409: “We revisit this issue throughout the report and discuss the misuse of data in the accompanying panel”</p>
<p>P. 20 the discussion of climate migrants is very long .. I suggest shortening. It is also confusing in several places: o 'It aims to present a plausible range of outcomes ..' It=WB report?</p>	<p>The climate change section has been shortened. We thank the reviewer for their comments, and have made the section clear to avoid the impression that there is little to worry about. In the opening sentence we</p>

<ul style="list-style-type: none"> <li>o 'But adaptations could mitigate impacts and it is incorrect to ...assume..' - does the WB report assume? Unclear</li> <li>o 'The WB report is based on a single model... and that downscaling can be easily achieved.' .. this is an unclear sentence</li> <li>o "The Lancet Commission ... access to healthcare." Long unclear sentence</li> <li>o "However, the philosophical basis ... " .. suggest to move this sentence to before: 'However, because health impacts associated with climate change are ..."</li> </ul>	<p>state that patterns of migration may be disrupted on the potentially dramatic scale. We forecast that the migration caused by hydrometeorological hazards risks, for the case study of Bangladesh, could exceed that of the World's Bank's projection of millions of internal climate migrants.</p> <p>We thank the reviewer for introducing the recent study on northern China and it is now included in the report.</p> <ul style="list-style-type: none"> <li>● 'But adaptations could mitigate impacts and it is incorrect to ...assume..' - does the WB report assume? Unclear</li> </ul> <p>We have re-structured the section to make clear that it is the view of the World Bank that migration can be a sensible climate change adaptation strategy and not that of the commissioners. We are providing a critique because it is such an authoritative source.</p> <ul style="list-style-type: none"> <li>● 'The WB report is based on a single model... and that downscaling can be easily achieved.' .. this is an unclear sentence</li> </ul> <p>We have clarified this sentence.</p> <ul style="list-style-type: none"> <li>● "The Lancet Commission ... access to healthcare." Long unclear sentence</li> </ul> <p>This sentence has been removed.</p> <ul style="list-style-type: none"> <li>● "However, the philosophical basis ... " .. suggest to move this sentence to before: 'However, because health impacts associated with climate change are ...</li> </ul> <p>This sentence has been removed.</p>
<p>Panel 1: last sentence, as I read panel 1, the report neither validates nor</p>	<p>This sentence has been edited to the following:</p>

<p>invalidates the WB report.</p>	<p>“So while showing greater number of people potentially affected than the World Bank report projects, our analysis of primary data does not validate their projections for internal climate migrants.”</p>
<p>Political, cultural, .. determinants - I got confused between this part and some of what is covered in section 2... is there a way to make the differentiation clearer?</p>	<p>Section 1 sets out to describe the situation, including dispelling myths, while Section 2 describes responses with a focus on rights and health services. We have edited both sections and hope this is clearer now.</p>
<p>Also I felt this part focused on what happened once migration began, but all these factors are also linked to WHY migration happens to being with. So global politics often create the conditions leading to the need to migrate. Culture, race, nationality and identity often are discriminated against in the country of origin and thus lead to migration. Brining this out if critical because it amplifies all that is happening during migration ... intersectionality.</p>	<p>We did not intend for the political conditions to be confined to only when someone migrates and agree they may create the conditions for migration. We have edited the sentence in the ‘Political determinants of health’ section:  “Stigmatising rhetoric has meant that the rights of migrants are under attack by the same structures and processes that are supposed to protect them, both in their country of origin -potentially leading some to move- and during their migration journey.”</p> <p>We have included the following sentence in the ‘Culture, ethnicity and identity’ section:  “At all stages of the migration process, individuals and groups may be affected by the toxic consequences of social exclusion and discrimination on the grounds of ethnicity, race, nationality or migrant status. For some migrants, ethnic discrimination or persecution is already their reason to leave.”</p>
<p>The discussion of Latinx in the US reminded me of this paper ... on the impact of raids on infant mortality  <a href="https://academic.oup.com/ije/article/46/3/839/2936776">https://academic.oup.com/ije/article/46/3/839/2936776</a></p>	<p>Thank you for the reference. It is an interesting study describing a surprisingly heavy handed raid. The following text has been included:  “ This may also have intergenerational consequences. A study describing a prominent raid against Latino migrants was associated with subsequent poorer perinatal outcomes (increased risk of low birthweight) amongst members of the Latino community.”</p>
<p>P. 24, the flow of the part on envr influences was also hard to follow. I</p>	<p>We have edited the ‘Environmental influences and hazards’ section,</p>

<p>wonder if moving "Importantly, the most significant components .... Panel 2) to the end of this part on environmental determinants (right before education) would make the flow easier to follow?</p>	<p>removing Panel 2 on the Rohingya people, as suggested in the Editor's comments. The section has been reordered to improve the flow with a description of extreme environmental events first, followed by slow onset changes and then disaster risk reduction methods to mitigate their consequences.</p>
<p>P.26, education: second line: suggest 'healthIER behaviours ..' rather than healthy'</p>	<p>We agree. This sentence has been edited, with the inclusion of 'healthier', as follows:  "Education is essential for children and adolescents and is a strong determinant of future health and well-being, including reduced mortality, healthier behaviours, and increased wealth and employment opportunities."</p>
<p>Section 2: 'current evidence indicates ... will have positive effects' - again I think this i stated in several places, and is the crux of what the report wants to state, but it might be stronger to have a specific part dedicated to providing the evidence for this.</p>	<p>We agree with the reviewer that this is an important element of the report. We have elected to provide the evidence of the positive effects in several parts of the report to fit with the structure agreed at the internal review where they are most relevant rather than extracting these into a new section.</p>
<p>Last sentence on this page: '..hold gnvT accountable..' YES, HOW? Making some statement about this would be important.</p>	<p>We agree this is an important point and it was our aim that this section aims to provide detail on exactly this point. We have therefore added the following clarification on line 613: "In this section we review these mechanisms and the mechanisms by which states can be held accountable using them."</p>
<p>Migrants right to health  'States are obligated to: respect ... ' YES, but often states are the ones discriminating .. there is a great paper written about how the SDGs might fail by not acknowledging the limits (and corruption) of state power. Here is the link: <a href="http://philippefargues.com/wp-content/uploads/2016/12/3-The-Lancet_Whos-been-left-behind-January-2016.pdf">http://philippefargues.com/wp-content/uploads/2016/12/3-The-Lancet_Whos-been-left-behind-January-2016.pdf</a></p>	<p>Thank you for highlighting this excellent Viewpoint which we now reference in this updated sentence on line 633: "But these rights do not necessarily translate into entitlements and often states are implicit in this discrimination."</p>
<p>"But these rights do not necessarily translate into entitlements." This seems</p>	<p>We hope that our edits to the sentence highlighted in the response to the</p>

<p>to be a sentence to appease concerns J ... but would be good to expand on this a bit.</p>	<p>previous point by the reviewer also deal with this comment.</p>
<p>Sometimes the subtitles are confusing.. so for strengthening respect for migrant rights .. perhaps the second subtitle ought to state: 'Ensuring limits on health-related restrictions on entry'</p>	<p>We have reviewed all the subtitles during our editing of the Commission and specifically we have changed the subtitle referred to here as suggested on line 648 to: “Ensuring limits to health-related restrictions on entry”</p>
<p>P.31, protection of refugees and asylum seekers. What are the recommendation made for governance of transgressions to the protocol and article?</p>	<p>Thank you for this comment. The proposed Global Compact on Refugees addresses some of these issues by focusing on burden-sharing among states, including assistance to national and local institutions that receive refugees, but does not establish new norms or enforcement mechanisms. It relies on incentives rather than accountability measures. We have added the following sentence on this point.:  “The proposed Global Compact on Refugees would address some of these concerns by strengthening support for immediate and ongoing refugee needs and offer incentives for good practice through assistance to national and local institutions and communities receiving refugees, though it does not strengthen enforcement or accountability.”</p>
<p>Panel 3 is touted as a good practice but it is unclear what the good practice is/was in that case?</p>	<p>We agree, this was incorrectly worded and the sentence referring to this has been deleted. The panel is a discussion of age assessment, which does show some good examples, such as the work of the Norwegian Child Welfare services, but overall it is not a good example of practice. The panel is now mentioned only in the unaccompanied children section.</p>
<p>P. 33, human right of children ... 3rd sentence .. perhaps use Behavioral risks instead of 'outcomes' as I am not sure how outcomes 'diminish'</p>	<p>Behavioural outcomes was meant to include conditions such as conduct disorders. We have changed this sentence to make it clearer and added a citation:  “Children of parents who have been deported experience increased emotional and psychological symptoms.”</p>
<p>Health services for mobile populations.  Recently, Omar Dewachi has coined the term 'therapeutic geographies' to</p>	<p>This is a good point and something the section was missing as it brings up the regional reorganisation of health systems that occurs as a result of</p>

<p>suggest the borderless aspect of health care. Here are some links to relevant articles that might support the point being made in this section:</p> <ul style="list-style-type: none"> <li>o <a href="https://f-origin.hypotheses.org/wp-content/blogs.dir/987/files/2014/04/LAWS4.pdf">https://f-origin.hypotheses.org/wp-content/blogs.dir/987/files/2014/04/LAWS4.pdf</a></li> <li>o <a href="https://www.tandfonline.com/doi/full/10.1080/17441692.2017.1395469?casa_token=yRptr1mcOzAAAAAA:UoXaZafttam4kfyx2MqrVfYhDs_pZ7R3ZvZYiGT6wFQ9u5z8sN1QgMwwaa_gmNeh1FTdoZr-k1wn2w">https://www.tandfonline.com/doi/full/10.1080/17441692.2017.1395469?casa_token=yRptr1mcOzAAAAAA:UoXaZafttam4kfyx2MqrVfYhDs_pZ7R3ZvZYiGT6wFQ9u5z8sN1QgMwwaa_gmNeh1FTdoZr-k1wn2w</a></li> </ul>	<p>war/conflict.</p> <p>The following sentence was added in the “Equitable access to health systems” section: “This is particularly true in situations of conflict that result in the spatial reorganisation of health systems within and across borders. These transformations can complicate displaced populations inclusion into health systems. (<a href="#">Dewachi et al. 2014</a>)”</p>
<p>P.40 . section on mobile health services is a bit repetitive with what precedes it.</p>	<p>In this resubmission we have changed the title of this section to “Overcoming barriers to health services” from “Health barriers”, removed subheading on mobile health services and combined edited the two sections to eliminate any repetition.</p>
<p>Throughout the document, I would strengthen the point about the need to include migrants in all decision making about their health and wellbeing .. so participatory approaches being key aspects of this whole dialogue around migrants and health. It is mentioned in the report, but needs highlighting .. again having a titled section on participation or engagement would make the points clearly, this includes in research - such as CBPR approaches.</p>	<p>Due to the need to reduce the length of the report, we do not feel that we can include a separate section on participation. We currently mention the importance of participation In the ‘political determinants of health section’ and in the ‘Recommendations’ section.</p> <p>We have added the following the Key Messages, so that it gains prominence:</p> <p>“Migrants must be included in decision making processes about their health.”</p> <p>We have added in a new recommendation in Panel 10 “Research recommendations’ on engagement using participatory approaches.:</p> <p>“Engage with the population using participatory approaches to ensure that migration and health research meets their needs and does not result in harm.”</p>
<p>P. 42, in 2010 the WHO set out innovative funding mechanisms. It is now 2018. What needs to happen to make these funding mechanism usable. Perhaps some comment on this?</p>	<p>We have substantially re-written this section and in doing so have now removed reference to this report.</p>

<p>Panel 8, p. 44 .. who is Dr. Wollaston??</p>	<p>We have edited the text as follow:  “... a member of the UK parliament with the Conservative party and chair of Health Select committee committee, Dr Sarah Wollaston,”</p>
<p>P. 44 as noted earlier, changing the term cultural competence to cultural humility is highly recommended. It is a change in approach that is much more progressive and responsive to needs. It is a migrant centered approach rather than a health provider centered one.</p>	<p>Thank you for this comment. Please see the above response to the same issue of cultural competence and humility.</p>
<p>Page 49 - I think a sub title is needed here: perhaps: 'Migration and specific health outcomes along the life course"</p>	<p>We have added a new subtitle  “Migration and morbidity across the lifecourse”</p>
<p>Perinatal health - in this section, throughout, the comparator is often unstated .. is it non migrants, or are refugees being compared to non refugees? increased risk compared to whom?</p>	<p>The comparator for the whole ‘Migration and morbidity across the lifecourse’ section is non-migrants in the host population. Where this is not the case, we specify who the migrant group is and who the comparator group is. To avoid repeating this for each study we included the following in the introduction paragraph to this section:  “Unless otherwise stated, the studies relate to international migrants, with the comparison group being the host population.”</p>
<p>Children and adolescents: I think a point needs to be made that there is much more research on children than adolescents, despite the fact that in LMICs, adolescent are the largest cohort ever and a significant proportion of the population that is migrating. They are often ignored, or if not ignored, labeled as problems. However, they can be an important part of the solution to migrant community health. The report of the Lancet Commission on Adolescent Health and Wellbeing can be used as a reference.</p>	<p>We agree with this point and a lead author (SS) from the Lancet Commission on Adolescent Health and Wellbeing is also a member of our Migration and Health Commission. The following sentence has been included and the Adolescent Commission report cited:  “Overall there is far less evidence on adolescents compared to young children, despite them constituting a larger proportion of migrants (Figure 4b).”</p>
<p>P.54, the section on NCDs needs expansion .. with the increase in conflict zones being MICs, the importance of attention to NCDs and the clear lack of strategy to deal with this has become very apparent.</p>	<p>We have added the following text to this section to respond to the need for expansion: “Increasingly people are moving with established non-communicable diseases (NCDs); and often combined with a double burden of NCDs alongside communicable disease. The interruption of care during</p>

	<p>transit - due to barriers to health access, documentation, lack of healthcare providers or disrupted health systems - prevents the continuous treatment necessary for the effective management of many chronic health conditions.<sup>239</sup> The absence of effective prevention, screening and continuity of care in migrant populations result in higher burdens of NCD morbidity and mortality. Evidence has shown that migrants undergo rapid changes in environmental risk factor profiles. When compared to the native Danish population, migrants from Africa, Asia and the Middle East had 2.5 times the incidence of diabetes.<sup>240</sup> This difference could be due to various factors such as poor health literacy and language barriers leading to difficulties accessing services, shift in socioeconomic status, decreased rates of physical activity and changes in diet. A systematic review of 37 studies of ‘non-Western’ migrants in Europe found lower morbidity due to any malignancy in migrants compared to the host populations. For specific cancers some exceptions existed, for example liver cancer, and incidence varied by the region migrants moved from.<sup>241</sup> Consequently, more effective integration of NCD care into health systems and humanitarian response is therefore essential.”</p>
<p>P. 55 - I also think the section on Occupational health outcomes needs expansion. The health of labor migrants is often very perilous. There may be little research on this but that is also a function of the discrimination they are subject to in the receiving country. The Gulf countries are classic examples. Somewhere when discussing labor migrants, the structural and policy issue of the sending country needs to be highlighted. Sending countries are 'exporting' labor without telling their citizens what the conditions of that labor will be. I've had Bangladeshi men tell me about going to Saudi with high hopes of making \$ to send back to their families (and being told this by their gnvnt -very rosy picture) only to find that conditions were horrible, and the \$ they made were not even enough to get a ticket back or pay off their sponsor to return back .. they wished their gvnnts had set/imposed minimum salaries for example on the Saudi gvnnt ..</p>	<p>We have added the following text to this section, relating to a systematic review members of our Commission have recently completed.</p> <p>“As part of a new analysis done for this Commission, we did a systematic review and meta-analysis focused on international labour migrants (originating from 24 LMICs) which found a reported prevalence of 47% documenting at least one morbidity (7260 migrants; 95% CI = 29-64%; I<sup>2</sup>= 99.7%) – including predominantly musculoskeletal pain and dermatological conditions – and a prevalence of reported injury and accidents of 22% (3890 migrants; 95% CI =7-37%; I<sup>2</sup>=99.4%).”</p> <p>We have also moved some text on mental health to this section, as it relates to labour migrants. Overall, we feel that labour migration is covered</p>

<p>so bringing out this policy aspect on the sending end is important (perhaps in the solution section).</p>	<p>extensively throughout the report, in the “Health and safety of labour migrants’ section and in Table 2 describing occupational hazards. We describe the kafala system in relation to Gulf states and in the supplementary appendix.</p>
<p>Older person.. the term elderly is rarely used anymore .. older adults is used more often. If the use of elderly is preferred, perhaps defining the age group would be helpful.</p>	<p>We are happy to defer to the journal’s lexicon. We understand that both terms, ‘older person’ and ‘older adult’ are used, with a preference from the World Health Organization for older person/people (<a href="http://www.who.int/ageing/en/">http://www.who.int/ageing/en/</a>)</p>
<p>As a note, all of a sudden the page number goes back to 1 here.</p>	<p>Thank you, we have edited the page numbers correctly.</p>
<p>Related to funding, there is a funding stream solely for research in humanitarian settings. R2HC <a href="http://www.elrha.org/r2hc/home/">http://www.elrha.org/r2hc/home/</a> Would be good to highlight this as an example. Also GAGE is doing a lot of work in these humanitarian settings. <a href="https://www.gage.odi.org/">https://www.gage.odi.org/</a></p>	<p>We have added reference to this example on line 1150: “Some funding streams exist focused on research in humanitarian settings, but generally opportunities in migration and health are limited and research funding agencies including national government entities, charitable foundations and multilateral funding organisations should prioritise specific calls to address these gaps.”</p>
<p>Meeting the needs of a mobile world.. first sentence .. also include hot communities in the 'other groups affected by migration'</p>	<p>We have added the phrase ‘host communities’ to the following sentence:  Research undertaken in migration and health has to respond to the whole population need, not only the migrants themselves, but also the other groups affected by migration, such as families left in countries of origin and host communities.</p>
<p>Intervention research - I would recommend a statement in this section about the critical importance of intervention outside the health system .. in line with the clear emphasis in your report on social political economics determinants.</p>	<p>Thank you, we strongly agree with this point and have added the following sentence on line 1194: “Evidence on interventions outside the health system and focused on improving social, political and economics determinants of health are also critical.”</p>
<p>Love the emphasis on research ethics! And would recommend including a section on the critical importance of participatory research as one</p>	<p>Thank you. We agree that participatory research is important, however it is not relevant or possible with all types of research. Instead, we feel that</p>

mechanism to ensure ethics - culturally relevant work.	engagement with the population, migrants and non-migrants, is required. The following text has been added: “A key process to ensure that the research is fit for purpose is to engage with the public on migration and health. This in the design of the research, participatory methods in the conduct of the research and in the dissemination and discussion of the results.”
Recommendation #5: who is holding states to account. I agree it is critical but it has been said many times ... how do we actually do it?	We have now added a section to conclusions describing why agreed actions are not implemented and new recommendations on how this can be achieved.
Panel 11 - please consider adding participatory approaches as a priority research question/recommendation	The following has been added to Recommendation 2: “Engage with the population using participatory approaches to ensure that migration and health research meets their needs and does not result in harm.”

## Reviewer 4

Reviewer 4	Response
Firstly I congratulate the authors for submitting an excellent report which I thoroughly enjoyed reading. Indeed, it is well written and presents a comprehensive overview of the landscape on migration and health evidence, useful to catalyze action for researchers, policy makers, practitioners and other stakeholders.	Thank you

<p>The report is structured around five broad goals: 1) evidence on migration and health; 2) analyzing multi-sector determinants of health; 3) analyzing health and migration in relation to legal issues etc; 4) access to health and health services; and 5) the strategies to 'inform and inspire action by governments, international agencies and health professionals to promote health amidst global mobility'. It is this last component that I choose to focus on - for two reasons, the other sections of the report was rigorous in their presentation/analytics, and because this is also my domain of experience and expertise - assisting governments (especially those in LMICs) on advancing evidence-informed migration health programs and policies.</p>	
<p>The Commission report is the best distillation to date from the academic perspective of the published evidence within migration and health domain. The authors and Lancet team should be congratulated for this outstanding effort! However the report does somewhat miss the mark in describing some of the lessons learnt, challenges and realities faced in the daily actions/efforts to drive migration and health action at country/regional/global governance levels. The jet engine of national sovereignty drive decisions on migration governance, including health action. The toxic political environment which often fuel migration policy directives makes the domain of migration health action one of the most challenging/contested areas of health to work in. Harnessing the insights of those actors/agencies who work within the crucible of migration governance and health diplomacy at global, regional and national levels could further strengthen the report.</p>	<p>Thank you.</p> <p>We have more explicitly acknowledged the difficulty in changing policy in this domain in a new section in the conclusions. the key challenge remains the failure to implement many of the policy and legal documents that nation states have agreed. We have included new recommendations to address how recommendations can be supported to move to action and acknowledged the role of the actors (IOM, WHO, UNHCR and several NGOs as well as national states at the global, regional and local level).</p>
<p>Further, the sources of data for the Commission should include exploring repositories of migration and health operational practice - take for instance the large repositories of migration health technical reports (n=490) on</p>	<p>The reviewer makes an important note. We recognise that the Commission did not include operational or interventional practice as we felt like we could not review it in a systematic way. We have mentioned this in the section on the Commission's Journey.</p>

<p>projects (n=750) across Asia, Africa, North America, South America, Europe and Australia/Oceania. Understanding such efforts, will be crucial to forge recommendations spanning the legislative, monitoring, health system approaches, research agenda and partnerships/multi-country frameworks the commission proposes.</p>	<p>“For example, whilst we cite cases of operational practice, we were unable to systematically explore grey literature or repositories of migration and health operational and interventional practice.”</p>
<p>Most recommendations echo those of previous global meetings and events on migration and health. The Commission report recommends for instance identifying 'an authoritative focal point that can engage multiple sectors, supportive legislation for health provision at country level'. These have been explicitly enshrined in recommendations and action plans of the two Global Consultations in Migration health formulated via engagement from governments (2010 and 2017), subsequent action plans, 4 pillar framework on advancing migration health (2010) and policy guidelines from UN migration agency. The clarion call on other recommendations/strategies presented in this Commission report such as the "Inter-sectoral and multi-disciplinary collaboration moving beyond traditional silos" have also been reaffirmed by member states and international community (2017). The critical question then is WHY...why haven't we seen the sort of traction, commitments and investments in advancing migration and health on par with other movements in global health? What is the cause of the inertia? What can be learnt from other movements in public health?. There is little insight readers get to this. It would be useful to provide commentary on this for readers tethered within the narrative report. The commission aims at "dispel populist myths about a 'perceived other'" - it certainly does!, but in order to succeed with the second aim "to suggest promising strategies for a highly mobile world", it would be useful to canvass insights/experiences of member state focal points, UN agencies driving the 'daily grind' of migration health work (IOM, WHO, UNHCR), NGOs and civil society organizations. The report does of course provide a</p>	<p>We agree with this reviewer that the key question is not what needs to be done but why hasnt it been done. We have now synthesised our views on why these much needed changes have not taken place in the concluding section and included recommendations that should contribute to such changes.</p> <p>We have completely re-written the recommendations along the lines suggested i.e. emphasizing that what is needed is the successful implementation of the many important agreed recommendations (recommendation 1). We further include specific recommendations on measures that should support implementation of existing recommendations (recommendation 2 and 3).</p> <p>We have also added in the following paragraph to the start of Section 2: “One of the key challenges in progress on advancing the migrant health agenda is the cross-cutting nature of the migration health topic that demands sustained multi-sectoral and inter-sectoral partnerships and policies for meaningful action. Recent policy developments at global, regional and national levels demonstrate evidence-based practices on how to overcome such challenges. There have been successes through whole-of-government and whole-of-society approaches, for example, in national migration health policy development by countries such as Sri Lanka and Chile; multi-stakeholder coordination platforms including civil society and academia, for example, the Joint UN Initiative on Migration and Health in Asia and the Joint Initiative on the Health of Migrants and their families in Mexico and Central America, and implementation of comprehensive</p>

<p>case studies of good practice (presented in Panel 7) on the example of Switzerland in the provision of 'open health system' for all migrants. Within the limited real estate of a commission report, it's a challenge to cover all domains and contexts but it would be good to see an example from developing region too e.g. Sri Lanka, Uganda and Philippines. Attached is a short summary of such projects in the Asia-Pacific Region.</p>	<p>refugee responses, for example, Uganda where provision of comprehensive health care to refugees is integrated within health facilities also serving host communities.</p>
<p>From a migration governance perspective, it is perhaps important to anchor recommendations/actions not only at country and global level but at governance at the sub-regional and regional levels. The reality is that these governance blocks - that are often organized via gradients of free-trade, economic zones, labour migration, form key leverage/strategic points for promoting health and health protection for migrants and mobile populations. Ensuring health concerns are enshrined within high level regional dialogues such the Colombo process (labour sending) and Abu Dhabi dialogue (mainly labour receiving) has catalyzed processors to promote health and social protection of low-paid migrant workers. A good example is the fact that migration health has a dedicated agenda and actin item within the Colombo process...multi-country research on health topics such as exclusion based on pre-departure medical examination is being undertaken to better inform member states. Identifying these nodes for strategic intervention are important. Many remain poorly explored/exploited through health diplomacy.</p>	<p>We agree with the reviewer and specific regional and sub-regional action is needed to make progress, in part due to the differences between regions and within region in the drivers of poor health for migrants. We have added specific mention of regional and sub-regional action to our recommendations (2a and 4a).</p> <p>While we agree that using examples from initiatives such as the Colombo process and the Abu Dhabi dialogue would have been useful, space limitation precludes a detailed description of these initiatives which we mention in the report..</p>
<p>Finally, the power of Lancet Commissions is that the recommendations/actions should not be shackled to interests of any academic group, UN system positions, Government or health industry interests...they can be aspirational, catalytic. Thus recommendations can be (need to be) bold and visionary, whilst breathing pragmatism. I think the commission can devote actions on two major omissions of the Global compacts - that of internally displaced persons and the exclusion of climate</p>	<p>Thank you. We now address both groups. Our recommendations includes the need for specific action to mitigate the risk of climate induced population movement and the importance of internal displacement (1c and 2b)</p>

<p>related displaced. The 258 million migrants will be dwarfed if even the most modest climate-related predictions are borne out. Climate change could displace as many as 150 and 300 million people by 2050 - If this group formed a country, it would be the fourth-largest in the world, with a population nearly as large as that of the United States. Yet no international treaty covers climate-induced migration—a gap that must be addressed now- the report can suggest actions within these two spaces. IDPs are also a critical omission. Many returning refugees for instance become IDPs. The Guiding Principles on Internal Displacement do provide a comprehensive set of durable solutions for IDPs however, of the 40 countries that have domestic policies on IDPs health is poorly explored...state capacity and also domestic and international accountability mechanisms also remain unclear.</p>	
<p>Recommendations Section Page 7. "We advocate for clarity in global leadership and for support to national..." What do you mean by lack of clarity? Could not find much reference in the narrative text above on the lacuna of 'global leadership'. Is this from Member states? UN agencies like WHO and IOM? Is it the fact that there is also lack of guidance for member states in driving the migration and health agenda at national level - especially for low to middle income nations? As someone responsible/working in the domain on providing technical cooperation to member states on driving national migration and health policies and programs, a critical gap is capacities and general confusion on 'migration health' as a domain of work at country level. Practical questions confronting us all: Where is the 'natural host' of this work within the machinery of the Ministry of Health for instance? Within Migration governance stakeholders? Is this what you mean by lack of clarity? This is a critical part of the challenge in driving the migration health agenda and a perspective not-often reflected in academic literature - hence the need to</p>	<p>Key to driving change and coordination is having a champion at the global, regional and national level. Globally, health within the context of migration falls within the purview of at least 3 UN agencies (and potentially more). Commissioners who are UN agency former and current staff identified this as a possible reason for the gap between agreed recommendations in multiple documents and relative lack of prioritisation. We therefore propose to keep this recommendation. We agree with the reviewer that this is also a problem at the national level - we have added recommendation 2 to address the need to have health actors in the relevant fora when discussing migration to ensure that health has a “voice” during critical decision making discussions.</p>

<p>distill some of the lessons (un)learnt from those engaged in MH diplomacy.</p>	
<p>Page 8.  "States and the UN system need to develop stronger multi-sectoral partnerships, both crossborder and within countries, which should implement a strong and clear health and migration strategy.."  Both Global Consultations (2010 and 2017) on migration health, the two WHA resolutions (2008 and 2017) and the current draft framework for action on health of migrants and refugees, and the Draft Health Action Plan within Compact calls for the exact same actions...even in language and framing. So what is new here? The Commission is re-iterating the same clarion call - which is fine.</p>	<p>We have removed this recommendation.</p>
<p>"Policy makers should integrate the health effects of migration into all relevant policies through mainstreaming the health ..."  Indeed, but the HOW TO is what is missing/! Developing agency and capacity of member states to do so and the technical capacities to guide them is needed on a practical level. Who will do this work?  Also, what does mainstreaming mean? Overly simplistic/often reductionist arguments ensure when discussing 'main-streaming migration', what 'migrant friendly' or 'migrant sensitive' health systems and services are. Means different things to different health policy makers. 'Mainstreaming' for some mean service models offering tailored community outreach services to ethnic, linguistic and culturally diverse communities. Is it useful to provide clarity in terms of definitions/approaches here? Again, I'm acutely aware of the tight real estate on the paper but this is an important aspect from a policy coherence/clarity perspective.</p>	<p>We have removed this recommendation. As indicated above, we have now provided a "why" section in the conclusion and added new recommendations explaining "how".</p>
<p>"At a state level, policy makers must ensure that policies address the needs of migrants and mobile populations in sectors that determine..."  While the emphasis is firmly on member state actions, where is the role for</p>	<p>We have removed this recommendation. We agree with the reviewer that several sectors are needed at the national and global levels to address health needs of migrants. We have included and emphasized labour migration and the health needs of labour migrants in the revised</p>

<p>the other stakeholders and private sector? Businesses/commerce sectors that thrive on migration? Where is the reference to the UN guiding principles on business and human rights (UNGP) as a means of ensuring protection of migrant workers for instance?</p> <p>Indeed 'Work' is a principal driver of current international migration, a primary social determinant of health, and a fundamental point of articulation between migrants and their host society. The underutilization of the domain of work in addressing the health of migrants is truly a missed opportunity for influencing worker well-being and reducing societal economic burden. Understanding of the relationships among migration, work, and health would facilitate further integration of migrant health concerns into the policy agenda of governments and international agencies that work at the nexus of labor, health and development. The domain of work offers an opportunity to capitalize on the existing health and development infrastructure and leverage technical resources, programs and research to promote migrant health. It also provides the opportunity to advance migrant health through new and innovative approaches and partnerships. See as reference:  <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5664749/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5664749/</a></p>	<p>recommendations (1b, 1d, 4a).</p>
<p>Page 9.  "Creation of UHC that includes migrants will also benefit the local populations and will reduce overall Inequities..."  Emphasis must be made on inclusion of non-citizens/residents in domestic health policies especially when it comes to health security. Unfortunately evidence is clear: Governments exclude non-nationals from national health action plans despite espousing the virtues of UHC and ensuring protection of citizens (e.g. see  <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6039731">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6039731</a> )  Hiding behind veiled commitments of right to health of citizens at the exclusion of non-citizens is an aspect that needs more emphasis. Yes, migration governance rests upon the fulcrum of sovereignty</p>	<p>We agree with the reviewer and have explicitly challenged this in the report. We advocate for solutions including empowering migrants by learning from the experience of migrants who are able to access health care already, by appealing to our humanity and by advocating for more inclusive systems.</p>

<p>Page 10.          "In each region and country a focal point for migration and health to support the development of a whole system multi-sectoral plan for migration and health..."          Same as for the first point on Page 8 comments. This is clearly enshrined within action plans endorsed by member states.</p>	<p>We agree but also think this is an important mechanism to ensure that there is national leadership on migration and health. We have revised and shortened this recommendation.</p>
<p>"To support global monitoring, reporting and the development of robust policy- and intervention-focused data, we propose a Global Migration and Health Observatory is established..."          With regards to the "global observatory" it is unclear as to whether these are member state constructs or purely academic centers or set us as extensions of UN agencies. Would be useful for readers to understand this better. Note that there already are within the UN global data centres on migrants and refugees.</p>	<p>We advocate for a centre that will inevitably require contributions from multiple sectors but also one that can produce independent reports to allow civil society to hold the key actors to account. Ideally this should be a joint effort between civil society partners, UN agencies, academia, NGOs and where possible drive data from multiple sources. We have modified this recommendation to make this clearer and have provided further detail in our "after life section".</p>
<p>"Panel 11: Research recommendations and priority research questions..."          What is missing/limited in the recommendations for research is the need for capacity building of researchers/institutions in the Global South - a major gap in MH research and evidence generation. A recently published study on past 16 years of migration and health research productivity (in peer-review domain) showed the lacuna in evidence from the Global South and on migrant corridors see:  <a href="https://www.ncbi.nlm.nih.gov/pubmed/29925353">https://www.ncbi.nlm.nih.gov/pubmed/29925353</a> . Contribution of authors and institutions from Asian countries, Latin America, Africa, Middle East, and Eastern European countries was low. Literature in 'migration and health' represents the perspectives of high-income migrant destination countries, in Europe, North America and Australia.</p>	<p>We have included capacity strengthening in the global south in the Panel.</p>
<p>Secondly, the development of research networks (across national/regional/global) levels are needed to share research evidence, expertise and experience, develop methodological and ethical guidelines,</p>	<p>We have included this recommendation in the panel.</p>

<p>undertake multi-country studies, provide training and build a global knowledge hub in migration and health. Such a group can also mobilize funders and development partners, collaborate with scientific and professional associations, and engage with journals and publishers to create awareness on the need to better promote migration and health research. Examples do exist on growing global alliance of migration and health researchers and provide a platform to share, collaborate, develop, mentor, advocate and disseminate inter-disciplinary research at the nexus of health and migration. Important for Commission report to refer to the outcome document of the 2nd Global Consultation on advancing a global migration and health research agenda:  <a href="https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-018-5932-5">https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-018-5932-5</a></p>	
<p>Main Report Section 1</p> <p>Page 7</p> <p>Section 1, Page 7, paragraph 1 mentions the report will "outline the potential consequences of global inaction tackle inequalities and multi-sector", however there is limited discussion of such implications in the narrative/conclusions section. What are the consequence of such trajectories of inaction, investment and momentum?</p>	<p>Thank you for the point. As we do not explore the consequences of global inaction in this section, we have deleted the phrase to better capture what we do cover.</p>
<p>"This is a pivotal moment in history for migration and health"  Pivotal from who's perspective? The so called 'migrant crisis' is a political crisis, not a 'migration crisis' - it's a political crisis in response to the 'large influx' of migrants and refugees on European territories/Europe doorstep. Indeed, this is one of the key catalysts to the Compact discussions. If one</p>	<p>In editing this section we have removed this wording as we agree with the reviewers argument. We also believe that we address the reviewers additional points made in this comment throughout the report.</p>

<p>talks to senior officials from governments from Bangladesh, Pakistan, Jordan and Turkey for instance, they will state that the process of the compacts is driven by a European interests/enterprise. Of course it is true to say that the compacts offer an important milestone/key-stone in moving towards a global framework on migration governance. As outlined in the Commission report, migration trends, esp. international migration have remained steady (3-4%). Sense of proportionality needed. "Migration is not a problem to be solved; it's a reality to be managed"...</p>	
<p>"(See supplementary appendix, Figure I). The Framework ..."  Please cite in corresponding text in the table references (within the Google documents file) in relation to the definitions provided in narrative: the Glossary of Migration Terms  <a href="https://publications.iom.int/books/international-migration-law-ndeg25-glossary-migration">https://publications.iom.int/books/international-migration-law-ndeg25-glossary-migration</a>  and the Migration Health Law reference text:  <a href="https://publications.iom.int/system/files/pdf/iml_19.pdf">https://publications.iom.int/system/files/pdf/iml_19.pdf</a></p>	<p>Both citations have been added to the column "Definition" in Table I in the supplementary appendix.</p>

## Reviewer 5

Some general comments:

Reviewer 5	Response
<p>The current version still seems unfocused and I would imagine would benefit massively from a cut in length as it would force the authors to select a clearer focus.</p>	<p>We have shortened the report considerably and focussed many sections. In addition, we have made specific changes in response to several reviewers and hope the new version provides the required level of focus.</p>

<p>Many congratulations on a very big piece of work and incorporating many comments from the review. I am also providing detailed comments on the version provided. Overall this draft clearly brings together many important points and provides an important overview of key issues in health and migration.</p>	<p>Thank you</p>
<p>The recommendations seem still too general and the report itself adopts multiple perspectives and lenses. I think an edit to crisper more specific recommendations, would add more punch.</p>	<p>We have revised the recommendations and made them more focused on specific issues and to specific actors.</p>
<p>The overall report still is a bit unfocused in some sections. I feel section 1 is still least confident. Many of the political economy issues are listed but not really integrated into the overall analysis. This is difficult but at present there is still a feeling of a shopping list. For example social determinants and human rights offer two important framings or perspectives on migration and health but they are really just used descriptively here rather than analytical. Maybe better just to choose one and apply it throughout? I would leave SDH. At present there are many broad statements about power and politics and these seem in some cases unconnected to the more empirical evidence presented. I completely empathise with the statements and can see that these are in response to reviewer comments but 500 words on political determinants is either too much or too little. It is about using this lens to inform findings throughout. In a way you need to take a plunge for which lens to adopt.</p>	<p>We acknowledge the reviewers desire to see a more detailed discussion on the political economy issues, and the perception that some of the issues highlighted appear like a shopping list, we hope that the tightening of the text we have undertaken go some way in addressing this concern. We disagree that our analysis is descriptive and not analytical - while there are sections with limited underlying evidence and hence largely descriptive, many are supported by new case studies and analysis to support our view from various disciplinary perspectives including human rights, epidemiological, sociological and anthropological approaches. Furthermore, see response about political statements below. We have considerably shortened the political determinants section and focussed the message. We have focussed the section primarily on the framework presented by the Lancet Commission on Global Governance. While a detailed discussion on each of the issues is beyond the scope of this report, we believe it provides a comprehensive list of issues that determine why migration and health is not receiving appropriate political prioritisation. We have now tied in this section to our recommendation on better leadership and coordination.</p>
<p>I also worry that some of the political statements or statements about power and politics make the commission appear partisan without adding the umph to recommendations. In many ways the Commission's needs to be</p>	<p>Based on a very clear editorial steer, we have added a considerable amount of political statements - which are evidence based and currently determining policy in several countries. Without specific examples, it is</p>

<p>political but it needs to seem to spring from the evidence rather than preempt it.</p>	<p>unclear to us which, if any, of the political statements or analysis the reviewer perceives to precede the evidence.</p>
<p>The paper would also benefit from a more clearly defined focus. I think in some ways pick a couple of points you want to make and then organise findings around it. For me the section on health systems is a missed opportunity here. I think the readership of the lancet can relate to the health system and here we as a community can have a real impact. Again in this section I would work out some of the key issues and then write around these. To me these are access, different need, the cultural competence you speak of and governance and the way in which health systems and health workers are being used as border police (currently this is in the health information bit). I think these are massive issues and then I think the fact that so many health workers are migrants needs to be addressed in this section also because they really should not be seen in isolation. In fact stating that these issues belong together is an important point to make. On the one hand you try to drive migrants out of the health system, on the other health and social care rely on them as staff. All of this together I think provides some strong messages that UHC is an opportunity for migrant health and needs to be used as that. To me that is the type of specific message or recommendation that make these punchier. Here I would also recommend making the figure based on UHC rather than the people-centred health systems framework just as this is likely abstract even for a specialist audience in the Lancet. Finally, on health systems one of the strongest findings from our South Africa research was that the categories legal and social of migration determine access - this has massive policy implications as basically our current policies that create inequities and drive ill health. A review of policies to understand how and to what extent they do this is necessary. Again a strong recommendation on UHC would seem helpful.</p>	<p>We have now further defined the focus of the commission report in a few key ways:</p> <p>A. <i>We have organised our findings by structuring the whole report around the five goals:</i> 1. current evidence on migration and health, challenge common myths and describe the composition and characteristics of population mobility and assess uses and limitations of migrant categories. 2. examine multi-sector determinants of health and consider the implication of current sector-siloed approaches, such as the dichotomous goals of the health versus the security sectors. 3. critically review key challenges to healthy migration by analysing health and migration in relation to: culture and identity, rights, legal issues, and the environmental and climate change. 4. examine equity in access to health and health services and offer evidence- based solutions to improve the health of migrants. 5. look ahead to consider how our evidence can contribute to synergistic, ethical policies and feasible strategies to inform and inspire action by governments, international agencies and health professionals to promote health amidst global mobility.</p> <p>B. <i>Health systems focus:</i> health systems are highlighted with regards to the themed mentioned by the reviewer in a number of key sections and it is precisely because of wanting to focus on key issues and to highlight the links between these (as mentioned by the reviewers comments ‘migrants needs to be addressed in this section also because they really should not be seen in isolation’ that we have chose to focus on the following health system key issues in these sections:</p> <p>i. Firstly from a rights based perspective in Section 2: Achieving Safe and Healthy Migration (p.20) under the heading of “Universal Health services for mobile populations” and specifically “equitable access to health systems”. Particularly we have added further text in this section to highlight our focus on an aim for cross border and inter-regional care:</p>

	<p>“health systems are generally delimited by geo-political borders, which has made it difficult to assess how they might be strengthened to become migrant-inclusive. This is particularly true in situations of conflict that result in the spatial reorganisation of health systems within and across borders. These transformations can complicate displaced populations inclusion into health systems”</p> <p>ii. Secondly we have argued for significant improvements in “Governance and leadership of universal healthcare systems” on both a full section on p.26 as well as in the completely revised recommendations section at the end of the document.</p> <p>iii. Thirdly, we have recommended new ways of “Financing universal health coverage for all stages in a migration journey” in the section on p.27.</p> <p>iv. Fourthly in “Section 4: Knowledge to address future migration and health challenge” we have highlighted “Health policy and systems research” and the importance of “contemporary advances in trans-disciplinary health policy and systems research (HPSR)”</p> <p>C. We also have a few substantial sections of text which focus just on the point mentioned regarding “ On the one hand you try to drive migrants out of the health system, on the other health and social care rely on them as staff.”, including the text in the section on “Are migrants a burden on services?” which states “The way healthcare markets are constructed – from both supply and demand side – is inextricably connected with human mobility. Hospitals, residential homes, childcare centres, domestic and professional cleaning services are often staffed by migrants. Migrants comprise a substantial portion of the health workforce in many HICs and contribute to a significant “brain gain” in net-migrant receiving countries.<sup>26</sup> For example, 36% of doctors in the UK gained their medical qualification in another country”</p> <p>D. Thank you for highlighting that a strong recommendation on UHC is important, we also agree and have this recommendation strongly in both the “Universal Health services for mobile populations” as well as within our recommendations. The explicit inclusion, based on local laws and priorities,</p>
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	<p>of different typologies of migrants within the country UHC framework is paramount, including a full consideration of population coverage, services provided, and funding whether in the immediate pre-migration, transit, destination or return phase.”</p>
<p>Its great to see gender upfront and the research on SRH and trafficking, but that is not picked up or reflected in either the recommendations or the recommendations for further research. I have made some suggestions there. Clearer recommendation on leadership is needed.</p>	<p>To address this in the recommendations section we now have the following: “States must go beyond rhetoric to tackle modern slavery by recognizing the exploitation of migrant workers, especially in informal labour, and <i>trafficking</i> of individuals and families displaced by conflict, natural disasters and environmental degradation.”</p> <p>We have also made very substantial edits to the full recommendations section to highlight the need for clearer leadership and a new recommendation on slavery and trafficking (1d).</p>
<p>You mention mental health but mainly at the end of the report. I would give this greater prominence also in recommendations.</p>	<p>We have a section on Mental Health in each of the following: the “Children and Adolescent Health” section; the “Women, Men and Sexual Minority health” section. There is also now inclusion of mental health in the recommendations section.</p>
<p>One thing overall I notice the report is light on criticism. For example, I think WHO has been weak - do you want to say this? The Global Compact is silent on gender, and we know v little about about migration.</p>	<p>While we agree that the Global Compacts on Migration could be improved, they do include gender. The following are examples:</p> <p>“Gender-responsive: The Global Compact ensures that the human rights of women, men, girls and boys are respected at all stages of migration, their specific needs are properly understood and addressed and they are empowered as agents of change. It mainstreams a gender perspective, promotes gender equality and the empowerment of all women and girls, recognizing their independence, agency and leadership in order to move away from addressing migrant women primarily through a lens of victimhood.” This is addressed specifically in objectives 3, 4, 5, 7, 9, 11, 12, 14, 16, 18, 20, and 21. ‘Gender equality and empowerment of women and girls’ is addressed in Objective 2, gender-based violence is addressed in Objectives 6 and 7. Gender based discrimination is addressed in Objective 16.</p>

	<p>The following has been added to the 'Gender, law and health section:          “‘Gender responsiveness’, that focuses on respecting human rights, is referred to in 12 of the 23 objectives in the Global Compact on Migration.”</p>
<p>In sum, I think a great piece of work, that could be focused further. To achieve this greater focus I would try and target recommendation and audience more clearly at the health community.</p>	<p>Thank you. We are confident we have now made the report more focused in complete revision of both the recommendations section and executive summary. We have also ensured clearer targeting of the health community within these sections.</p>

**Web Appendix**

[Click here to download Web Appendix: UCL\\_Lancet Commission on Migration and Health Appendix .docx](#)

# The UCL Lancet Commission on Migration and Health: The health of a world on the move

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Word Count: Executive Summary (1043)

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Number of figures, panels and tables: 20

# Executive summary

With ~~a~~ one billion people ~~or more~~ on the move ~~or having moved in 2018~~, migration is a global reality —and has also become a political lightning rod. ~~258 million people have moved internationally and 763 million within their own country. Of these one billion migrants, 25.4 million are refugees and 40.3 million are internally displaced people, while approximately half of international migrants move for work.~~ Although estimates indicate that the majority of global migration occurs ~~within~~ low- and middle-income countries (LMICs), the most prominent dialogue focuses almost exclusively on migration from ~~LMICs low and middle income~~ to high-income countries. Today, populist discourse demonises ~~groups that are often~~ the very same individuals who uphold economies, bolster social services and contribute to health ~~services and education~~ in both origin and destination locations. Those in positions of political and economic power continue to restrict or publicly condemn migration to promote their own interests. Meanwhile nationalist movements assert “cultural sovereignty” by delineating an ‘us’ and ‘them’ rhetoric which has created a moral emergency. ~~This Commission challenges civil society and health leaders to resist the emerging cynical populist narratives that foment stereotypes, prejudice and unjustified exclusion.~~

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In response to these issues, the UCL-Lancet Commission on Migration and Health was convened to articulate evidence-based approaches to inform public discourse and policy, undertaking a wide consultation of diverse international expertise spanning sociology, politics, public health, law, humanitarianism, and anthropology. The result of this work is a report that aims to be a call to action for civil society, health leaders, academics, and policy-makers to maximise the benefits and reduce the costs of migration on health locally and globally. The outputs of our work relate to five overarching goals that we thread throughout the report.

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First, we provide the latest evidence on migration and health outcomes to challenge common myths and highlight the diversity, dynamics, and benefits of modern migration as they relate to population and individual health. Migrants generally contribute more to the wealth of host societies than they cost. Our report shows that international migrants have, on average, lower mortality rates than the host country population. However, increased morbidity was found amongst several subgroups of migrants, for example increased rates of mental ill health in victims of trafficking and people fleeing conflict. Currently, the full range of migrants’ health needs are difficult to assess due to poor quality data. We know very little, for example, about the health of undocumented migrants, disabled people or LGBTI who migrate or who are unable to move.

Second, we examine multi-sector determinants of health and consider the implication of current sector-siloed approaches. The health of people who migrate depends greatly on structural and political factors that determine the impetus for migration, the conditions of their journey and their destination. Discrimination, gender inequalities and exclusion from health and social services repeatedly emerge as negative health influences that require cross-sector responses.

Third, we critically review key challenges to healthy migration.

Population mobility ~~provides~~ ~~has benefitted and will continue to provide~~ economic, social and cultural dividends ~~for~~ those who migrate and ~~their host~~ communities. Furthermore, the right to the highest attainable standard of health, regardless of location or migration status, is enshrined in numerous human rights instruments. However, where they migrate. But, to date, international and national sovereignty concerns overshadow these benefits and legal norms. Attention to attention on migration focuses largely on security concerns and where there is conjoining of the words ‘health’ and ‘migration’ it is either limited to small subsets of society ~~and policy~~, or negatively construed. International Research on nearly every aspect of health—mental health, sexual and reproductive health, maternal health, non-communicable diseases, infectious diseases, child and adolescent health and development—repeatedly indicates that migration is a core determinant of health. While

there is a long history of international agreements protecting the rights of refugees, and agreed human rights principles that should guarantee the health of mobile populations, failure to implement these is the norm in many settings.

The global community has committed to greater prosperity and wellbeing for all mankind through the 2030 Sustainable Development Goals. Furthermore, international agreements, such as the UN Global Compacts on Migration and on Refugees, represent an unprecedented opportunity to ensure that international solidarity, unity of intent and our shared humanity triumphs over nationalist and exclusionary policies, leading to concrete actions to protect the health of migrants. More than ever, how we respond to mobile populations in the next decade will determine global health and social cohesion for generations to come. To foster a future of healthy migration and to make substantial progress towards the promises of the Sustainable Development Goals, our report synthesises what we know about migration and health and critically appraises the structures and systems that influence the intersection between population movement and individual and population health. Our report is intended to provide a body of evidence to ensure future actions are based on fact not fiction and designed to safeguard the health and well-being of all.

#### Fourth

Our Commission report highlights the diversity, dynamics and benefits of modern migration. Myths describing migrants overwhelming countries or becoming a burden on systems are refuted by data showing that migrants generally contribute more than they cost. More people from low and middle income countries are migrating within their own countries and region than across high-income country borders—even if vocal political rhetoric tries to imply otherwise. Our report shows that international migrants have lower mortality rates than the host population. We also demonstrate that the health of people who migrate depends greatly on structural factors that create the conditions of their migration and establish the responses by which their health can be protected throughout their journey. Increased morbidity was found amongst subgroups of migrants, for example increased rates of mental ill health in victims of trafficking, people fleeing conflict or left-behind populations. Discrimination, gender inequalities and exclusion repeatedly emerge as negative health influences. Currently, however, the range of health needs of migrants are difficult to assess because of the lack of or imprecise data collection. We know very little, for example, about the health of disabled people or LGBTI who migrate or who are unable to move.

Amongst the greatest challenges to coordinating policy responses to migration and health are the oppositional interests of the influential decision-makers who prioritise exclusionary policies for national security and trade versus the weaker policy-making sectors of health and social services, which favour inclusion, e.g., good health for all. Moreover, because of their conflicting goals, these decision-makers generally operate in sector silos, resulting in truly competing objectives and methods.

Importantly, our report also indicates that amidst contemporary mobility, we examine equity in have the means to address health and migration, even in the face of numerous challenges. The right to health, regardless of location or migration status, is enshrined in numerous human rights instruments. However, at the same time, many gender discriminatory laws and customs prevent women and girls and sexual minorities from realising these rights. Similarly, while health systems have growing knowledge on how to integrate migrant-friendly services, health access to health and health services and offer evidence-based solutions to improve the health of migrants, has become part of the politicisation of migration. Where healthcare is made available to migrants, limited cultural competency limits access and quality of care. Migrants must be explicitly included in health system provision of universal health coverage commitments. Ultimately, our evidence tells us that the cost of failing to be health-inclusive may be more expensive to national economies, health

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security and global health than ~~the what will seem like~~ modest investments ~~required in prevention~~. The Commission therefore offers recommendations that view mobility as an asset to global health by demonstrating the meaning and reality of 'good health for all'.

### Key messages

- ~~Finally, we look ahead to outline how our evidence can contribute to synergistic, equitable health, social and economic policies and feasible strategies to inform and inspire action by migrants, policy makers and civil society. We conclude that migration~~Migration must be treated as a central feature of 21<sup>st</sup> century health and development. ~~We therefore call on nation states and the global community to address the health of mobile populations as a global health priority.~~
- ~~Clarity of leadership and solutions to address the health dimensions of migration are critical at all levels and a United Nations Special Envoy on Migration and Health should be appointed with a country-level focal point for migration and health. International leadership must be combined with support for national actors, the public health workforce and civil society to ensure they have the skill set required to carry out national and local strategies. Racism and prejudice must be confronted with a zero tolerance approach. Public leaders have a political, social and legal responsibility to oppose xenophobia and racism that fuels prejudice and exclusion of migrant populations. Both migration and discrimination must be considered as determinants of health and public and health professional awareness of this should be strengthened including through training institutions such as medical and health science faculties and nursing colleges.~~
- ~~Universal and equitable access to health service and to all determinants of the highest attainable standard of health need to be provided to migrant populations. We propose innovative funding models that aim to provide universal access to health across a migrant's journey, regardless of status. Solutions must include input from migrants and be specific to the diverse migrant populations and address the health needs of specific subgroups. For those exposed to disaster and/or conflict, mobility models and disaster risk reduction systems should be integrated. For migrant workers, targeted interventions to improve the rights of migrant workers' and their knowledge of workplace health and safety and entitlement to healthcare are needed.~~

● ~~The health implications of migration should be coordinated to avoid sector-siloed policies.~~ Commitments to health of migrating populations should be considered across all Sustainable Development Goals (SDGs) and in the implementation of the Global Migration and Refugee Compacts. The Commission offers recommendations that view population mobility as an asset to global health by demonstrating the meaning and reality of 'good health for all'. We present four key messages that provide a focus for future action. ~~The relationship between health and migration should be integrated into all policies and services. Mainstreaming services should be the goal for migrants within relevant national, regional and international platforms of negotiations and agreements but this should be complemented by the provision of specialist services such as in acute emergencies and for outreach purposes.~~

### Key messages

- **We call on nation states, multilateral agencies, non-governmental organisations and civil society to positively and effectively address the health of migrants by improving leadership and accountability.** First, we urge the United Nations to appoint a Special Envoy on Migration and Health and national governments to have a country-level focal point for migration and health to ensure much needed coordination and that migrants are included in all decisions about their health. Second, ~~we~~We propose that a Global Migration and Health Observatory is established to develop evidence-based migration and health indicators to ~~monitor migration and health and~~ ensure better reporting, monitoring, transparency and accountability on the implementation of the migration and refugee Global Compacts.

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- **International and regional bodies and states should re-balance policy-making in migration to give greater prominence to health by inviting health representatives to high-level migration policy-making fora.** Health leaders and practitioners must fully engage in dialogues on the macro-economic forces that affect for safe, orderly and regular migration and for refugees. There is an urgent need for routine, reliable data to understand the health implications of population mobility and participate in multi-sector budgeting and programme planning for migrants.
- **Racism and prejudice** ~~movement.~~ The current paucity of data on the demographics and health outcomes of internal migrants, and migrants in transit, **must be confronted with a zero tolerance approach.** Public leaders and elected officials have a political, social and legal responsibility to oppose xenophobia and racism that fuels prejudice and exclusion of migrant populations. Health professionals' and organisations awareness of racism and prejudice should be strengthened by regulatory and training bodies including through accreditation, educational courses and continuous professional development. Civil society organisations should hold leaders to account to ensure the implementation addressed. ~~Further improvement in evidence-based outcomes requires a sustained focus on research, data collection and monitoring, and sustainable long-term funding within migration and health, all of these obligations. which are currently lacking.~~
- **Universal and equitable access to health services and to all determinants of the highest attainable standard of health needs to be provided to migrant populations, regardless of age, gender or legal status by governments.** Solutions must include input from migrants and be specific to the diverse migrant populations. For those exposed to disaster and/or conflict, mobility models and disaster risk reduction systems should be integrated. Targeted interventions to improve the rights of migrant workers' and their knowledge of workplace health and safety and entitlement to healthcare are needed.

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# Introduction

Nearly one seventh of the world's population is now living in a location different from the one in which they were born.<sup>1</sup> A migrant is someone who has moved across an international border or within her or his own country away from their habitual place of residence.<sup>2</sup> Migration is not a new phenomenon. People have migrated throughout human history and population mobility continues to benefit many individuals and communities and contribute to social and economic advancement globally. ~~Although an international dialogue on migration and migrants has become prominent, there has been relatively limited attention to the health implications of migration or to migration as a core determinant of health. Given the large and growing numbers of people moving back and forth around the globe, achieving the Sustainable Development Goals (SDGs), and other regional and global health targets, will depend on addressing health disparities related to population mobility. Yet, while lofty goals towards safer, healthier migration have been voiced by the global community, rising anti-migrant discourse perpetuates myths that spawn discriminatory policies that diminish the rights and security of migrating populations and create unjustified hindrances to global health.~~

Despite the long history of human migration, A migrant is someone who has moved across an international dialogue has recently become more prominent, although relatively limited attention has been paid to migration as a core determinant of health. ~~border or within her or his own country away from their habitual place of residence.~~ When individuals migrate, they enter new environments that ~~have pose~~ have pose different health risks and protection mechanisms.<sup>2a</sup> Studies indicate that morbidity patterns among migrants are diverse and dynamic because of numerous interacting influences, such as: an individual's pre-departure health, and socio-economic and environmental conditions status, local disease patterns and risk behaviours, cultural norms and practices, and access to preventive or curative therapies throughout the migration process.<sup>3,3</sup> ~~Migration can involve both increases and reductions in health risks. For example, many people move to new contexts with a lower risk of infectious diseases compared to their country of origin, stronger health systems and greater service availability, and may therefore be less exposed to transmissible infections or receive earlier or better treatment. However, the converse is also true; risks may increase, especially for poor or marginalised groups who are forced to live or work in hazardous conditions and are excluded from health promotion campaigns and medical care.~~

Health outcomes in migrants are heterogeneous, but evidence ~~Evidence~~ consistently shows the disproportionate health, social and economic burdens of forced migration.<sup>4</sup> and migration-related exclusion, discrimination, prejudice, stigma and abuse.<sup>4,5,6</sup> Yet, despite widespread recognition of the numerous migration-related health risks, mobile populations—even forced migrants who are those fleeing for their lives—are often met with punitive- border policies, arbitrary detention, abuse and extortion and commonly denied access to care. Governments that institute immigration policies that legalise exclusion and rights abuse abuses frequently cite 'national security' concerns to justify migration controls that extend beyond their own borders. These policies can go as far as criminalising, criminalisation of migrant status, and detering to deter asylum seekers by detaining them; even separating children from their parents, as recently seen in US government immigration policies.<sup>5,7</sup> All too often, government policies prioritise reflect the politics of xenophobia and racism over versus their responsibilities to act forcefully to counter them.

~~Discrimination and human rights violations strongly influence the health and safety of certain mobile populations, such as individuals who flee conflict as refugees or internally displaced persons (IDPs) and those who migrate for low-wage work. People frequently leave their countries in response to political repression, state-sanctioned or state-tolerated violence, which leave individuals without homes, land and livelihoods. Households also make migration decisions in response to poor local job opportunities and policies that deprive people of decent livelihood opportunities. These types of distress migration are commonly driven by weak regulation of key industries such as oil and gas, mining and logging, in the context of anthropogenic climate and environmental change.<sup>8</sup> And,~~

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~~amidst this modern mobility, many rural communities are left without the most active adults, often resulting in substantial hardship for the children and elderly who are left behind.~~

~~For many people who migrate, leaving home would not be their preferred option, but global and local drivers of migration have fuelled fundamental inequalities that have diminished their access to resources. Our current political economy is driven by Western industrial powers that draw on natural and human resources in low- and middle-income countries (LMICs). Moreover, laws and regulations that encourage relatively unrestricted trade in goods, services and capital are simultaneously being used to control labour mobility to further the political and economic interests of the wealthy while often leaving poor communities behind poorer. For example, global trade and pro-business policies in lower-income countries have drained natural resources, contributed to environmental degradation and pushed people into hazardous, exploitative work to meet consumer demands for cheap goods such as ‘fast fashion’.<sup>69</sup> Extractive practices by multi-national corporations have caused deepening social and economic inequalities. Circumstances of armed conflict, political instability, unrest and displacement that leave people without homes, land and livelihoods are also frequently fostered by outside interests or profits, such as arms sales to corrupt regimes.~~

~~While wealthy nations and powerful corporations fuel growing social and economic inequalities, they are also well-situated to turn the tide towards tackling the disparities that may be producing the intractable health challenges of contemporary mobility.~~ International conventions are in place to guide policy to support safer and more inclusive migration and can be used to counter some of these negative forces. Migrants, as all human beings, are equally entitled to universal human rights without discrimination. All migrants thus have the right to the “highest attainable standard of health”, according to international law.<sup>749</sup> All migrants are entitled to equal access to preventive, curative and palliative health care including sexual and reproductive care, and the same protections against workplace exploitation and exposures as native-born people. They also have rights to the underlying social, political, economic, cultural, ~~and~~ determinants of physical and mental health, such as clean water and air and non-discriminatory treatment.<sup>844–43</sup> Human rights treaties also entitle migrants to due process of law in border practices and freedom from arbitrary detention and restrictions on movement. These rights do not simply impose legal obligations on governments but are essential preconditions for social and economic integration, prosperity, and social cohesion in any society and “human well-being in the modern world.”<sup>944</sup> The substantial gap between the international legal requirements guaranteeing the human rights of migrants and the implementation of these laws by states provides important context for this Commission report.

In 2016, at the UN General Assembly, the Global Compact for ‘safe, orderly and regular migration’ and a further Compact to respond to acute and chronic refugee situations were initiated in line with the 2030 Agenda for Sustainable Development target 10.7 (to “facilitate safe, orderly and responsible migration”).<sup>10,1145,46</sup> Yet, these critical multi-lateral processes appear to be heading in a precarious direction, as exemplified by the US Government’s withdrawal from the Compact on safe, orderly and regular migration in 2017,<sup>12,47</sup> potential internment camps titled ‘migrant centres’<sup>1348</sup> and the reticence of European Union countries in accepting an equitable redistribution of migrants.

## Our Commission’s Journey

Worldwide mobility is our future—regardless of laws and walls, ~~The health of migrants and our global health will depend on the political decisions of today.~~ Our Commission was report has been developed in light of ~~the~~ this propitious opportunity to achieve the SDG commitments “to leave no one behind” and “to reach first those who are furthest behind,”<sup>1449</sup> and in the context of States’ states’ guarantees to protect the human rights of migrants. Initially

To foster a future of healthy migration, our report aims to review what we brought together 20 Commissioners ensuring gender know about migration and geographical representation health and examine the structures and systems that influence the intersection between population movement and individual and population health. The Commission sought to generate transdisciplinary

evidence, contemporary thought and global expertise that draws on multiple scientific perspectives. To achieve this aim Commissioners were drawn from a range of scientific backgrounds, including public health, epidemiological, sociological, policy, political, legal, anthropological and humanitarian.<sup>20</sup> The principles that underpin our report are those of equity and healthy inclusion.

We initially structured our work around the key themes of Health systems; Labour migration; Forced migration; Vulnerabilities; Law, human rights and politics; Socio-cultural factors and identity; and Data and health outcomes. We undertook a series of rapid systematic reviews to identify key literature in each area and building upon these, as well as two formal systematic reviews and meta-analyses that informed the Commission and are published in detail alongside the report. Our work was conducted over a two year period with a week-long in-person review of the first draft of the Commission at the Rockefeller Foundation, Italy, in November 2017.

The principles that underpin our report are those of equity and healthy inclusion. The Commission settled upon five goals to examine in-depth which provide a focus throughout the four sections of the final report. First, we review current state-of-the-art evidence on migration and health, challenge common myths and describe the composition and characteristics of population mobility and assess uses and limitations of migrant categories. Second, we examine multi-sector determinants of health and consider the implication of current sector-siloed approaches, such as the dichotomous goals of the health versus the security sectors. Third, we critically review key challenges to healthy migration by analysing health and migration in relation to: culture and identity, rights, legal issues, and the environment, environmental and climate change. Fourth, we examine equity in access to health and health services and offer evidence-based solutions to improve the health of migrants. Fifth, we look ahead to consider how our evidence can contribute to synergistic, ethical policies and feasible strategies to inform and inspire action by governments, international agencies and health professionals to promote health amidst global mobility—and project the potential consequences of global inaction tackle inequalities and multi-sector. We do not intend to cover all aspects of migration and health, nor give an overview of all groups of migrants and the conditions they experience.

## ~~Section 1: The Case for Action — What do we know about migration and health~~

This is a pivotal moment in history for migration and health. Projections suggest that global mobility will not abate, instead indicating that migration is our future.<sup>21</sup> To tackle this complex subject of migration and health, we developed a 'Migration and Health Determinants Framework' to consider the interactions between migration and the health of individuals, populations and global health (See supplementary appendix, Figure 1). The Framework highlights key factors influencing the health of mobile populations including: legal, social, health structures and systems; service access and support; exposures and behaviours particular to migrants; and points to the epidemiological changes (positive and negative) related to population mobility. These health influences are generally relevant for each stage of a migration process. (Figure 1). Our report thus offers evidence on how various factors might benefit or be detrimental to beneficially and detrimentally influence individual and population health throughout a journey—including groups at places of origin, transit, destination and return.

Migration and health is a diverse topic with an extensive existing literature. While we consciously start with a broad and ambitious remit, it is not possible to cover all aspects of migration and health, nor give an overview of all groups of migrants and the conditions they experience. There are many other facets of migration and health that were beyond the specific remit or bounds of the five main

goals of this Commission but we plan to do more in the post-Commission phase in collaboration with others across sectors who are working in this space. Recognising the recent Lancet series on Conflict and Health, and the Syria Lancet Commission, we have not presented substantive amounts of reference to policy documents or examples of best practice, or deeper analysis in the field of refugee studies. We feel these areas and wider collaboration on forced migration will be key for the post-Commission phase in achieving further research, policy and operational impact. Whilst we cite cases of operational practice, we were unable to systematically explore grey literature or repositories of migration and health operational and interventional practice.

## Section 1: The Case for Action – What do we know about migration and health

### Migration is a dynamic process

Migration seldom involves a single long journey from one place to settle in another. The diversity and complexity of migration patterns include people traveling long and short distances, within and across borders, for temporary or permanent residency and often undertaking the ~~same and different~~ journeys multiple times. A clear delineation or rigid categorisation of different types of migration is rarely possible ~~anymore~~. The categorising process attempts to classify a large, heterogeneous population according to limited criteria, which are not generally suited to capture the complex social dynamics of human mobility or necessarily the perspectives or needs of the people who are moving. ~~Terms~~ ~~While terms~~ such as “voluntary” or “forced” migration and categories such as “refugees”, “asylum seekers”, “international” and “internal” migrants can partially help to understand migration dynamics. ~~These same terms can also be used to “other” and discriminate against migrants, as well as being, they are~~ generally administrative definitions used to classify migrants for protection, assistance or research—rather than a true representation of individual circumstances. For example, legal categories are instrumental for migration control and management by states and international agencies providing support but may not fully explain an individual’s circumstances. However, for the purposes of the evidence presented in this report, we often use existing definitions ([See supplementary appendix, Table 14](#)), which enable us to draw on current migration literature and data sources. At the same time, throughout the report we will highlight the complex drivers of migration, and the difficulties and potential dangers of assigning singular or narrow definitions. Migrant categories are not necessarily objective or neutral; distinctions frequently reflect particular assumptions, values, goals and interests of the parties who assign these labels.

It is also difficult to categorise people in relation to their reasons for migrating. There are a myriad of negative drivers and positive aspirations (‘push’ or ‘pull’ factors) that motivate people to migrate. Individuals, families and groups often have mixed motives for migrating, and their reasons can change over the course of a single journey. For instance, people seeking safety from conflict may be classified as refugees, asylum-seekers, undocumented or internally displaced persons, but before and during transit—especially in protracted conflicts where aid resources are insufficient—migration decisions may also relate to livelihoods and employment. ~~similar to labour migrants. The Government of Jordan issued more than 50,000 work permits to Syrian refugees out of the 666,000 who fled there, but there are still limited suitable and safe jobs for refugee-migrant workers, leaving 85% below the poverty line.<sup>22</sup> In most countries refugees are not allowed to work and humanitarian aid remains insufficient to assist them.~~

‘Distress migration’ or migration due to entrenched poverty, food insecurity and household

economic shock (e.g., illness, debt), is common worldwide. Distress migration is linked to local unemployment, household financial crises, poor crop production (~~for example, from anthropogenic climate change or soil exhaustion~~) and in some instances, forced evictions, for example, linked to rising real estate prices, large development projects and land confiscation.

Regardless of migration motives, economic contributions, or people's rights, amidst populist rhetoric, the amorphous labelling of people who move as 'migrants' has seemed to become a condemnatory marker for populations who have fewer resources, such as refugees, asylum-seekers, undocumented migrants and low-wage workers. Moreover, in an era of xenophobic politics, the catch-all term 'migrants' obscures the net social, political and economic benefits of migration for destination communities, and contributions to places of origin, that support families and supplement development aid, which, in sum, promise greater global health.

## Health throughout the migration process

Migration trajectories involve various phases, (~~figure~~Figure 1) including: pre-departure circumstances at places of origin; short or long-term transit, which may involve interception by authorities, non-governmental groups or criminal gangs; destination situations of long- or short-term stay; and return to places of origin for re-settlement or for temporary visits before re-migration.<sup>33</sup> In each phase of a person's journey there are potential health risks and possible protective factors that can have ~~along or~~ short ~~or long~~-term impact on their well-being. As previously noted, the journeys are often diverse and rarely singular. For example, it is especially common for labour migrants to undertake circular migration, transiting back and forth between their place of origin and destination or re-migrating to a new destination. When people are transiting between locations, their health and safety depend on the forms of transport (air travel, on foot across deserts, hidden in lorries) and the pathogenic or environmental exposures (malaria, tuberculosis, heat exhaustion, dehydration) along the transit routes.<sup>1523</sup> ~~While traveling between destinations, it is also not unusual for individuals to be intercepted during their journey, especially if they are crossing an international border. Interception may occur for charitable reasons to assist or protect, such as in the case of refugee services, or for detention and deportation purposes.~~<sup>24</sup> Return migration also poses both health risks and benefits. For instance, communities of origin may benefit from new skills or improved health behaviours gained by returning migrants,<sup>1625</sup> but conversely, individuals who are injured or disabled during their journey may return to locations with few services or support mechanisms. Importantly, policies to protect migrants' and public health will be most effective if they take advantages of opportunities to address people's health needs at the multiple phases of the migratory process.<sup>3</sup> Maintaining the mental health and wellbeing of migrants and the families they may leave behind is particularly important. Even in ideal conditions, migration is stressful, and most people move in ways that are far from ideal; which coupled with the causes of migration, can lead to mental ill health.<sup>3</sup>

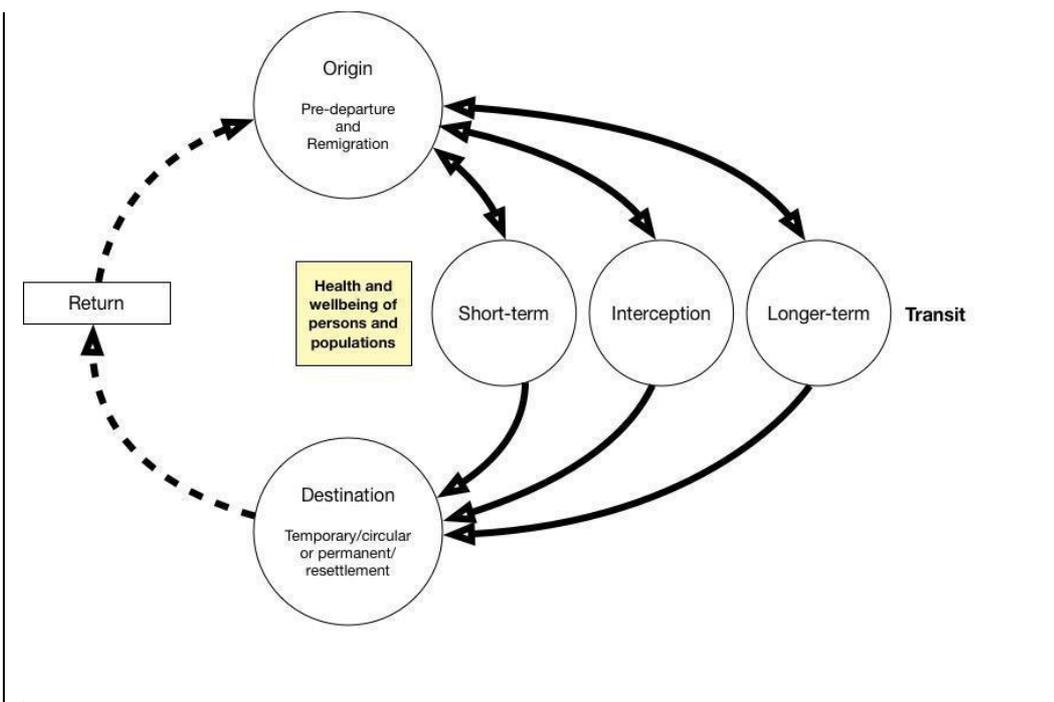


Figure 1. The Migration cycle

## Migration, gender and health

Both population mobility and the health implications of migration are highly gendered. That is, women, men and sexual minorities are likely to encounter different health risks and protection opportunities at each phase of a migration journey – a journey they may have undertaken to flee gender-based violence. The risks begin before departure, where women and children may be at risk of violence and discrimination. Amongst those who are forcibly displaced, there is a particular greater risk of sexual violence, coercion and sexual exploitation when forcibly displaced, such as recent accounts of widespread rape of Rohingya women and girls,<sup>1726</sup> or when moving along irregular and dangerous routing ending in official and unofficial detention centres such as the case of Libya.<sup>18</sup> Even when reaching zones of apparent safety, women and children have been exploited by humanitarian workers, a problem that remains widespread suggesting that some protectors need to be protected against.<sup>1927</sup> A systematic review of women and girls in conflict-affected settings indicated their extraordinary vulnerability to various forms of human trafficking and sexual exploitation, frequently occurring as early or forced marriage and forced combatant sexual exploitation.<sup>2028</sup> Appalling accounts of sexual slavery have emerged repeatedly, such as the Nigerian school girls abducted by Boko Haram and Yazidi girls and women enslaved by ISIS in Mosul.<sup>2030</sup> Women and children are especially at risk when they migrate without the protection of family or social networks. Unaccompanied girls and boys who move in ways that are not readily detected by potential support mechanisms are particularly vulnerable to neglect, trafficking, abuse and sexual exploitation, such as survival sex among Afghan refugee boys who shelter in parks and make-shift make-shift camps in Greece.<sup>2134</sup> Child marriages appear to increase among displaced populations,<sup>2232</sup> as parents are often forced to make impossible choices about their daughters based on their fear of sexual violence by armed forces or combatants and economic hardship.<sup>2333</sup> Sexual minorities might be among the most neglected and at-risk populations in circumstances of migration. The stigma associated with being lesbian, bi-sexual, gay, transsexual, or intersex (LGBTI)

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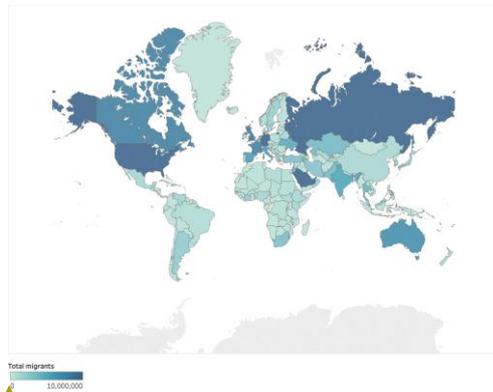
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can subject individuals to bullying and abuse or force them to remain invisible. There appears to be little training for health and humanitarian aid professionals currently to meet the health needs of sexual minorities.

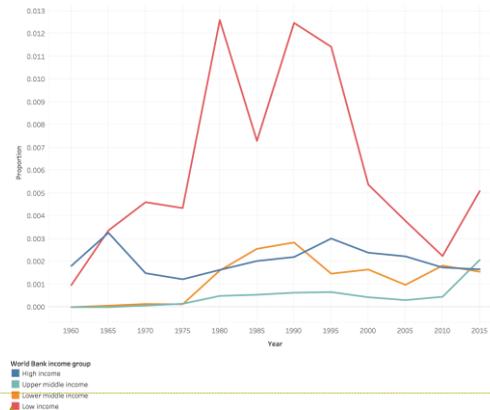
## Challenging myths

In our current political climate, the term ‘migrant’ raises a litany of myths and inaccurate stereotypes. While often used for cynical political gain, stigmatising falsehoods about migrants frequently become publicly accepted. We will respond to common myths by offering data-driven facts.

**Are high-income nations being overwhelmed by migrants?** Dialogue on migrants often centres around absolute numbers of migrants crossing international borders into high-income countries (HIC). This rhetoric rarely acknowledges that there has been little change in the proportion of the world’s international migrants, which has only risen from 2.0% to 3.3% from 1975 to 2015 globally (figureFigure 2A). And, while HICs have seen a greater rise, from 4.3% to 13.3% (1960 to 2015), it is important to note that the proportion of **the total population that were individuals who have been displaced and are currently living** displaced individuals arriving in HICs is considerably smaller than in LMICs. Furthermore, the figures in high income settings include, for instance, students<sup>2434</sup> who pay for their education and often return to their countries of origin and labour migrants who are net positive contributors to the economy. **Students and labour migrants are the two largest categories of migrants in the UK.** Previous waves of migration as a proportion of the global population (e.g. Europeans colonising the Americas & Australasia) have been vastly greater than these recent trends. Similarly, the proportion of the world’s population that were refugees was relatively stable between 1960 and 2015 but HICs saw a slight decrease and it was low income countries (LICs) that experienced fluctuations from 0.1% to 1.3% (figureFigure 2B). These data illustrate that despite popular discourse to the contrary, changes in migration are more complex than the simple narrative of a rise in numbers. Overall, mobility patterns are highly regional and context specific with less wealthy nations bearing a disproportionate burden of hosting vulnerable displaced populations.



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~~Figure 2 A Global map of the total number of international migrants (2015); B Proportion of population that were refugees by World Bank Income group (1960-2015). Analysis conducted using data from UN DESA, UNHR and World Bank.~~

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**Are migrants a burden on services?** Macro-economic analysis on the impact of asylum seekers in Europe concluded that they have a positive impact on host countries' economies.<sup>2545</sup> Today, rather than burdening systems, migrants in HICs are more likely to bolster ~~our~~ services by providing ~~our~~ medical care, teaching ~~our~~ children, caring for ~~our~~ grandparents and undergirding understaffed services. Migration provides much-needed high and low-skilled workers into economies. The way healthcare markets are constructed – from both supply and demand side – is inextricably connected with human mobility. Hospitals, residential homes, childcare centres, domestic and professional cleaning services are often staffed by migrants. Migrants comprise a substantial portion of the health workforce in many HICs and contribute to a significant “brain gain” in net-migrant receiving countries.<sup>2636</sup> For example, 36% of doctors in the UK gained their medical qualification in another country.<sup>2737</sup> Healthcare workforce migration from poorer to wealthier countries has been the subject of extensive academic literature. Health professionals migrate because of low remuneration, poor working conditions, work overload, and poor opportunities for professional advancement in their home countries.<sup>2838</sup> Higher income countries reap the benefits. It is LMICs such as Syria~~In 2008, the WHO published a report on recruitment and Turkey, who host a higher proportion~~retention of vulnerable migrants~~health workers from resource poor settings, where services are challenging states invest in training health professionals yet subsequently lose many to deliver for the poorest members~~HICs. Recommendations of society. While many migrants are able to access the labour markets, there are also many who may not have this same access with immediate~~report included: identifying financial and long-term consequences on livelihoods, social security, education~~other mechanisms to encourage health professionals to return; reversing trends in which foreign-born healthcare staff take on menial jobs; creating an international fund to compensate source countries for training and health loss of their medical professionals; and implementing the WHO code of conduct for managing health workforce migration.<sup>39</sup> Our systematic review and meta-analysis of global patterns~~pattern~~ of mortality however, provides strong evidence that international migrants - particularly those who are more likely to have actively chosen to migrate such as economic, student, and family reunion migrants - have a mortality advantage compared to host populations across the majority of ICD10 disease categories.

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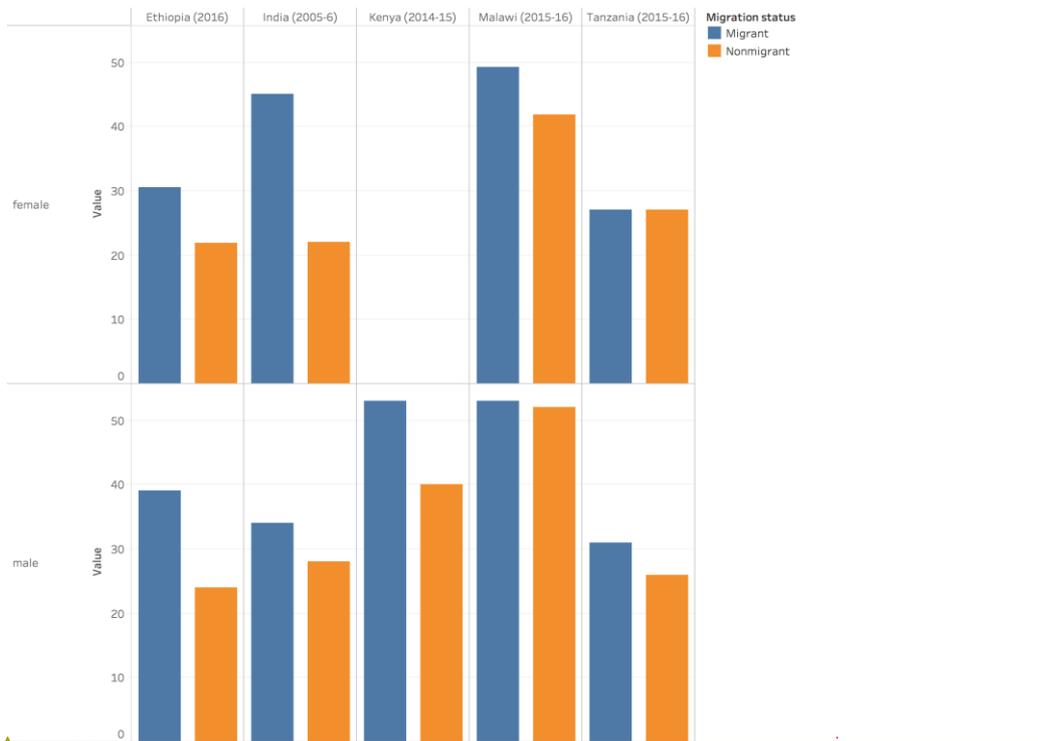
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**Are fertility rates among migrants higher than among host populations?** Despite populist rhetoric that migrants have many more children than host populations, the growth and decline of migrant populations in a country are affected by birth and death rates and inward and outward migration from a country~~movement~~. Using large-scale longitudinal data from six countries (Germany, Sweden, United Kingdom, France, Spain and Switzerland), researchers found that migrants have lower first-birth rates than non-migrants with the exception of migrant Turkish women.<sup>2940</sup> Moreover, birth rates among migrants are barely at the level of population replacement (a total fertility rate below 2.1 births per woman) and often falling. For example, fertility rates in the UK declined similarly among native born mothers (from 1.77 in 2013 to 1.76 in 2014) and non UK born women (from 2.13 to 2.09) over the same period. Perhaps not surprisingly, migrants moving as families have children sooner after migration and more children in total compared to migrants moving alone.<sup>41</sup> Access to contraception also influences differences in fertility rates. Poor access to contraception among migrants is often related to inconsistent policies, guidelines and provision of services, such as in the EU, where migrants appear to have inadequate access to sexual and reproductive health care, including family planning services.<sup>3042</sup>

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Evidence~~Information~~ about fertility and its relation with~~amidst~~ internal migration in LMICs is limited. Using available Demographic and Health Survey (DHS) data on the use of modern contraception by individuals' migration category in five LMICs (Ethiopia, India, Kenya, Malawi and Tanzania) we

showed were able to assess that, in each country, internal migrants used modern contraception methods more often than non-migrants (figureFigure 3). These results may be explained, in significant part, by people’s educational and socio-economic status, supporting evidence that migrants have lower first-birth rates than non-migrants—and dispelling populist views about burdensome fertility among migrants. However, these data may not represent patterns among more marginalised groups such as undocumented migrants, refugees, asylum seekers or displaced populations in humanitarian crisis situations—where rape is common and there is even greater need for readily accessible sexual and reproductive health care.<sup>43</sup>



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Figure 3. Weighted percentage of men and women using modern methods of contraception by migration status.<sup>31</sup>

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**Are migrants damaging economies?** There is overwhelming consensus on the positive economic benefits of migration which is insufficiently acknowledged. In However in settings that offer universal access to minimum economic benefits, there has been much debate whether migrants receive more in social assistance than they contribute in taxes. The—however, the evidence examining this issue generally suggests that migrants make greater overall contributions, except in countries with a high proportion of older migrants. In advanced economies For countries receiving migrants, each one percent increase of migrants in the adult population increases the GDP per person by up to two percent. <sup>32</sup> in advanced economies. <sup>44</sup> Migrants increase income per person and living standards through greater contribution to taxes than the social benefits they receive. <sup>33-45</sup> Furthermore, in Europe free movement has been demonstrated to address imbalances in the labour market <sup>34,46</sup> by serving as an equilibrating force through the provision of labour where and when needed. These benefits are not just accrued by the wealthiest in society, as evidence also supports the increase in average income per person at the bottom and the top of income scales. Moreover, the World Bank Group estimated that migrants sent a total sum of US\$613 billion to their families at origin in 2017—

e. Approximately three quarters of these remittances were sent to LMICs -an amount that is more than three times larger than official development assistance - and these remittance flows have been growing steadily since 1990.<sup>35,47</sup> In countries such as Liberia, Nepal and Tajikistan, up to one-third of the gross domestic product comes from international remittances. Globally these sums of money are large and transformatory for the lives of non-migrants. (See supplementary appendix, Figure 2H).

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**Are migrants disease-carriers that pose risks to resident populations?** Suspicion against migrants to be “carriers of disease” is probably the most pervasive and powerful myth related to migration and health throughout history.<sup>36,48</sup> Although there are historical examples of the introduction of disease into new settings through human mobility (e.g., the spread of infection from European colonial settlers), the risk of transmission from migrating populations to host populations is generally low. For example, studies on tuberculosis, suggest that the risk of transmission is elevated within migrant households and migrant communities, but not in host populations.<sup>37,38,49,50</sup> Nonetheless, several HICs screen migrants for tuberculosis as part of pre-migration visa application checks.<sup>39,51</sup> While tuberculosis screening systems may benefit individuals through early detection, screening is often stigmatising and can spur xenophobic media messages,<sup>40,52</sup>—despite the negligible risk of transmission in countries with functioning public and universal health systems.<sup>37,49,53</sup> Migrant populations may come from countries with a high burden of disease<sup>41</sup> or as a result of socioeconomic disadvantage, co-morbidity and ~~it~~malnutrition, poor health access and low immunisation coverage.<sup>54,55</sup> It is not uncommon for disease outbreaks to be found correspond to the drivers or circumstances of migration, especially in situations of conflict, which dismantle already weak public health systems. Economically disadvantaged migrants often live in overcrowded conditions, with poor nutrition and access to clean water and sanitation that can lower their immunity.<sup>56</sup> Illness and infections may also be acquired or spread via transit routes and transport means. For example, air travel can facilitate rapid geographic spread of infections. However, even risk of air travel-related outbreaks is low to modest if the destination setting has strong surveillance and inclusive public health services,<sup>42,57</sup> which are also crucial to prevent pandemics,<sup>43</sup>—whether associated with population movement or not.<sup>43,58</sup> Epidemiological patterns and related risks are readily addressed by assessing the infectious disease burden among populations and using data to design targeted interventions to contain outbreaks and, prevent new infections through immunisation and promote early presentation and treatment through well-conducted awareness activities and well-functioning screening programmes that have a specific focus on the unique needs of migrants. Because of the prejudice and unfounded fear that can be generated by misuse of surveillance data, caution is required when releasing potentially stigmatising disease prevalence figures for public consumption. We revisit this issue throughout the report and discuss the misuse of data in panel 5.

## Composition of mobile populations

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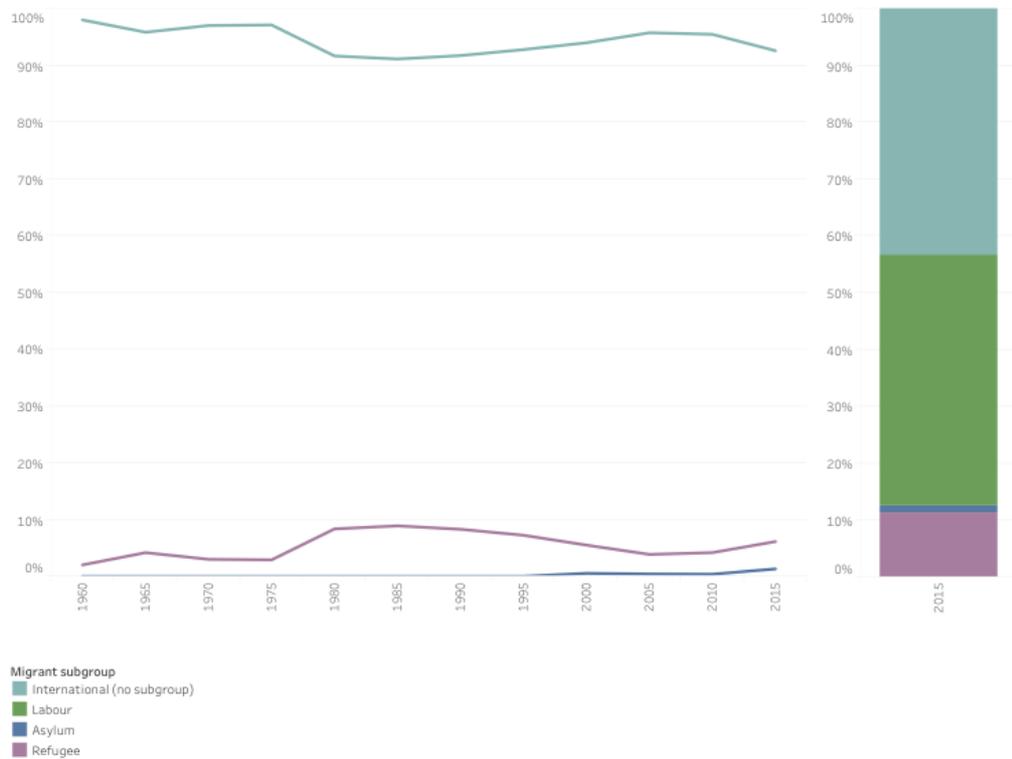
~~Migration has occurred throughout human history. One million years ago Homo sapiens moved across and out of Africa to Eurasia and subsequently throughout the world.<sup>59,60</sup> There is little documented about these early forms of migration, which, much like today, occurred across very long distances, albeit at a much slower pace. Fossil and climate records suggest that these population movements were likely to have been driven by food and environmental factors, which remain important drivers of contemporary migration.<sup>59–62</sup> Throughout history, individuals and families have migrated for a variety of complex reasons, which are often based on the hope of a better, safer, more financially secure life.~~

Understanding the health of people on the move requires clarity about *who* is moving, *why* and *where*, and the potential positive and negative effects. In this section, we offer ~~ana state-of-the-science~~ overview of: international migrants; internal migrants; labour migrants; refugees; asylum-

seekers; internally displaced persons (IDP) and climate refugees - an emerging group ~~that~~ which is likely to increase. ~~climate refugees~~. Data will be presented using the most widely applied migration categories ~~—~~ despite our previously stated reservations about their weaknesses, reviewing numbers and their associated limitations, geographical distribution, age and sex characteristics and key issues for each group.

**International Migration:** In 2017, there were an estimated 258 million international migrants— which accounted for 3.4% of the world’s population.<sup>4462</sup> Notably, most data on international migration between 1960 and 2015 did not classify migrants by subgroup. Recent estimates by the International Labour Organization indicate that labour migrants comprised 61% of all international migrants in 2015 — however this figure is based on limited data and ~~did not exist before this~~ was the first year for which data were available (figure 4a). ~~(Figure 4a).~~ ~~Of international migrants more generally, 48% were female.~~ Figure 4b outlines the number of international migrants by age, sex and region in 2015. Europe has the largest number of international migrants (76 million), closely followed by Asia (75 million) and North America (55 million). Globally, ~~the~~ The largest number of international migrants were in the 30-34 age group and 48% were female. To date, data come primarily from population censuses, population registers and nationally representative surveys, ~~often using and uses information about~~ place of birth to determine international migrant status. For 47 countries, place of birth is not available, so country of citizenship is used instead potentially leading to overestimation of international migrant numbers, ~~but and~~ conversely, these data can also underestimate by inappropriately excluding people born abroad ~~but~~ with local citizenship. Data collection on international migration would benefit from ~~better~~ greater precision in particular to capture information on subgroups and categories of migrants that are currently not adequately counted so that vulnerable groups ~~and internal migrants~~ are not omitted from needs assessments and budget allocations for responses.

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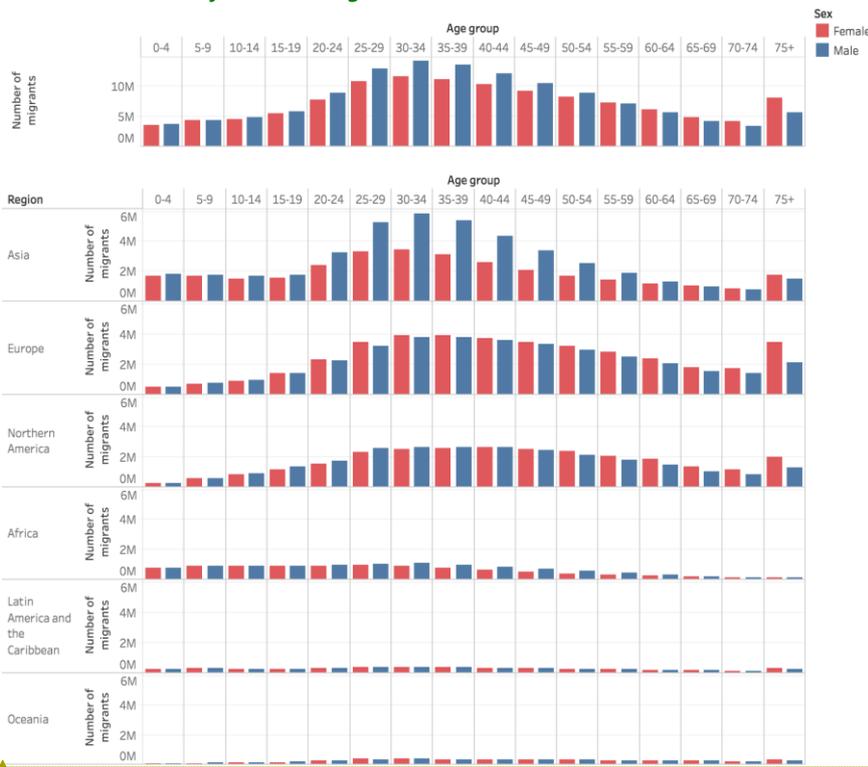
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Figure 4a. Percentage of all international migrants that were refugees, asylum seekers and labour migrants, 1960-2015. Note: Labour migration data for 2013 used in estimates for 2015. No

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**historical estimates for labour migration available**



**Figure 4b International migrant numbers at mid-year by age, sex and region (2015)**

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**Internal Migration:** While international migration receives the most political and public attention, the majority of movement globally is internal migration. In 2009 the number of people who moved across the major zonal demarcations within their countries was nearly four times larger (763 million) than those who moved internationally.<sup>45 63 64,65</sup> Approximately 40% of urban growth in Asia, Africa and Latin America results from internal migration from rural to urban areas.<sup>46,66,67</sup> In many LMICs, rural to rural internal migration to work in the agriculture sector still accounts for the largest number of people on the move.<sup>47,68</sup> In the past, evidence suggests that internal migration was dominated by single men, however, recent trends show increases in women moving for work and to seek freedom from discriminatory social and cultural norms.<sup>48,69-71</sup> Regionally, Asia had the largest number of people living outside of their region of birth (282.1 million), followed by Europe (166.0), Africa (113.5), Latin America and the Caribbean (100.2), North America (91.5) and lastly Oceania (9.3). From 2014 to 2050, the proportion of people living in urban areas, largely due to migration from rural areas, in Asia and Africa are expected to increase from 48% to 64%, and 40% to 56% respectively.<sup>46,66</sup> Producing global estimates on internal migrants is methodologically challenging and routine data are rare.<sup>49 72</sup>

There are considerably more internally displaced persons due to conflict and natural disasters than asylum seekers and refugees globally. However, they also receive substantially less attention than the latter, primarily due to the importance attached to national borders, citizenship and the availability of better data collection for refugees. In 2016, there were 31.1 million newly internally displaced people, with a total of 40.3 million people internally displaced globally.<sup>50,73</sup> Asia was the

region with the highest number of IDPs. Between 2009 and 2016, the number of individuals displaced due to conflict were fewer than those resulting from disaster (figureFigure 5).

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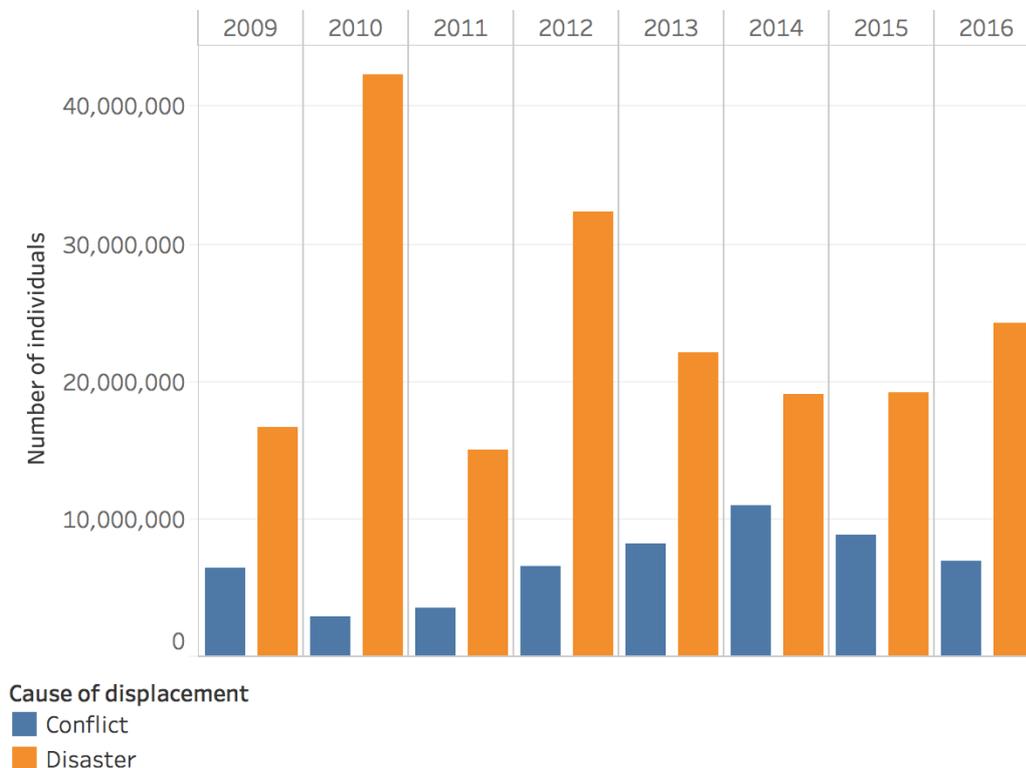


Figure 5. Total annual new displacements due to conflict and disasters

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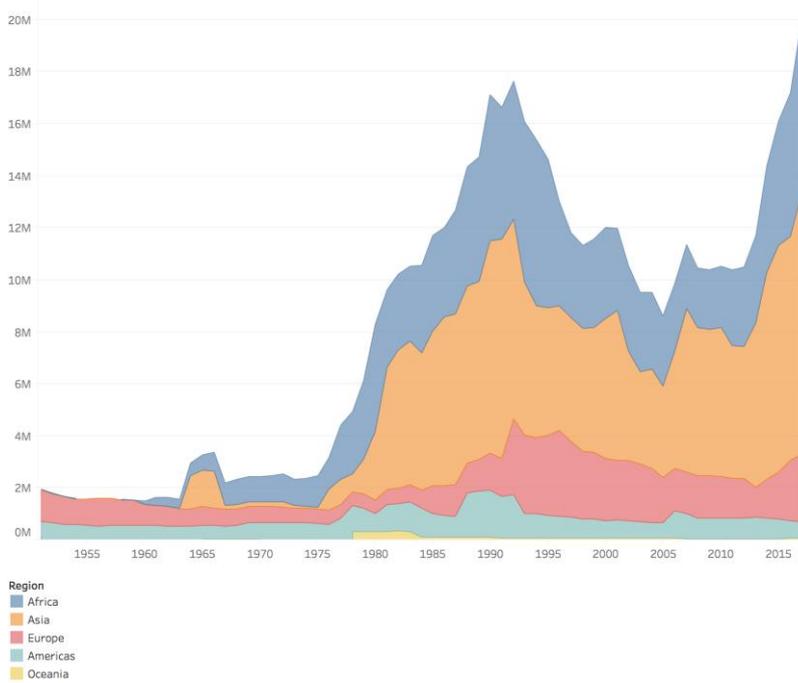
**Labour Migration:** The International Labour Organization (ILO) estimates suggest that in 2013 there were 150.3 million international migrant workers in the world. While official figures indicate that the largest proportion of international labour migrants is in North America and Northern, Southern and Western Europe, this is perhaps misleading. ~~Regional~~Because regional labour migration among LMICs often goes uncounted due to regional and bilateral labour and trade agreements and undocumented or irregular border-crossing.<sup>51,52,74,75</sup> LMICs are estimated to host roughly 13.6% (20.4/150.3) of total labour migrants globally.<sup>51,53,74,76</sup> Moreover, it is important to note that these figures will be under-estimates as they exclude undocumented international migration between neighbouring countries and workers in the informal economy. ~~Migrant workers are commonly engaged in low-wage work. For instance, the majority of workers provided services (71.1%), including 7.7% in domestic work. Industry, including manufacturing and construction, accounted for 17.8%, and agriculture 11.1%. There is extraordinarily limited comparative national data on the patterns and prevalence of internal labour migration, especially for harder to monitor forms, such as seasonal and often circular migration.~~ Among labour migrants globally, recent figures indicate that there are more male migrant workers (55.7%) than female (44.3%).<sup>51,74,76</sup> Women more commonly work in service jobs (74%) and less often in manufacturing and construction work (15%).<sup>51,53,74,76</sup> Increases in female migration may be due in part to shifts in gender, social and migration norms, and in other part by remittances,<sup>54,77</sup> which create greater opportunity for women to migrate. Adolescent

girls also migrate for work, driven by financial incentives,<sup>55,56,78,79</sup> and hopes for greater freedom and empowerment. However, there is growing recognition of the number of young women who end up in exploitative work.<sup>57</sup> There is extraordinarily limited comparative national data on the patterns and prevalence of internal labour migration, especially for harder to monitor forms, such as seasonal and often circular migration.<sup>60</sup> According to a recent systematic review on migration, related stressors and coping among LMIC migrants, job-related stressors often include contract discrepancies, wages, workload, living and working conditions, job insecurity, cultural differences, discrimination, and interpersonal conflicts (Mak, 2018 Unpublished).

**Forced Migration:** Two billion people currently live in countries affected by civil unrest, violence or ongoing conflict.<sup>58,61</sup> While previously most forcibly displaced people were from low income countries (LICs) and lived in camp-like settings, current refugees are more likely to live out of camps. Furthermore, while most refugees still reside in LICs, recent wars and forced displacement in the Middle East in particular, have now caused millions of refugees to reside in urban and peri-urban settings in middle-income countries, often with undocumented status. For example, less than a fifth of refugees in Jordan live in camps.<sup>22</sup> Using data on historical refugee numbers which fall under UNHCR's mandate, the proportion of international migrants who were refugees has remained below 10% following a peak in 1985 at 9% (figureFigure 4a). Consistent with the trend in proportions, the number of refugees declined from 17.8 million to a low of 8.7 million from 1992 to 2005, followed by an increase to 19.9 million in 2017 (figureFigure 6). Africa had the highest percentage of refugees under 18 in terms of the countries of origin and countries of asylum application in 2015 (See supplementary appendix, Figure 3).(Figure 7). Further details on the regional variation in the number of refugees are provided in the See supplementary appendix, Figure 4## and Figure 5##. Previously most forcibly displaced people were from LICs and lived in camp-like settings, however, current refugees are more likely to live out of camps. Most refugees reside in LICs and recent wars and forced displacement, in the Middle East in particular, have caused millions of refugees to reside in urban and peri-urban settings, often with undocumented status. For example, less than a fifth of refugees in Jordan live in camps.<sup>59</sup>

There were an estimated 1.9 million claims for asylum in 2017 and total 3.1 million asylum seekers whose refugee status washes yet to be determined.<sup>60,62</sup> There is enormous variation in the total number of asylum seekers by country of origin (See supplementary appendix, Figure 6)(Figure 8) reflecting proximity to source countries, and the proportion successfully securing refugee status. The numbers in other categories of forced migrants who are undocumented, and often the most vulnerable, are not available as these individuals are often not in contact with authorities, which puts these populations at increased risk of adverse health outcomes.

Resettlement is a considerable challenge. Refugees with acute health and medical needs are among the top priorities for consideration for resettlement referral by UNHCR, and some resettlement countries expedite consideration of refugees facing acute health risks. In 2018 UNHCR determined that about 1.2 million refugees around the world needed resettlement.<sup>61,63</sup> UNHCR indicated that refugees' vulnerability has increased due to both restrictive policies in host countries and the proliferation of emergencies.<sup>62</sup>



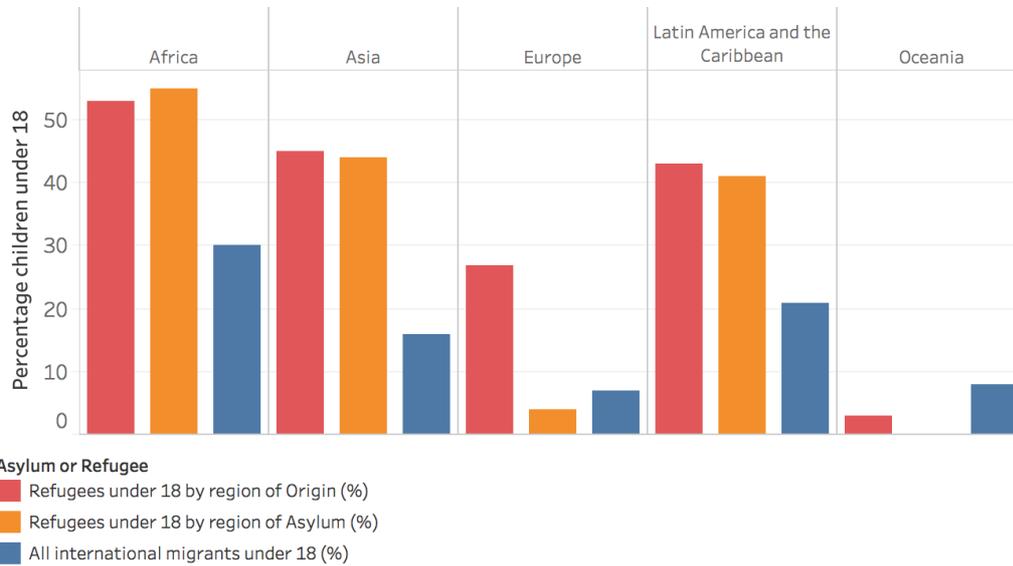
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~~Figure 6. Estimated refugee numbers by region, 1990-2017.~~

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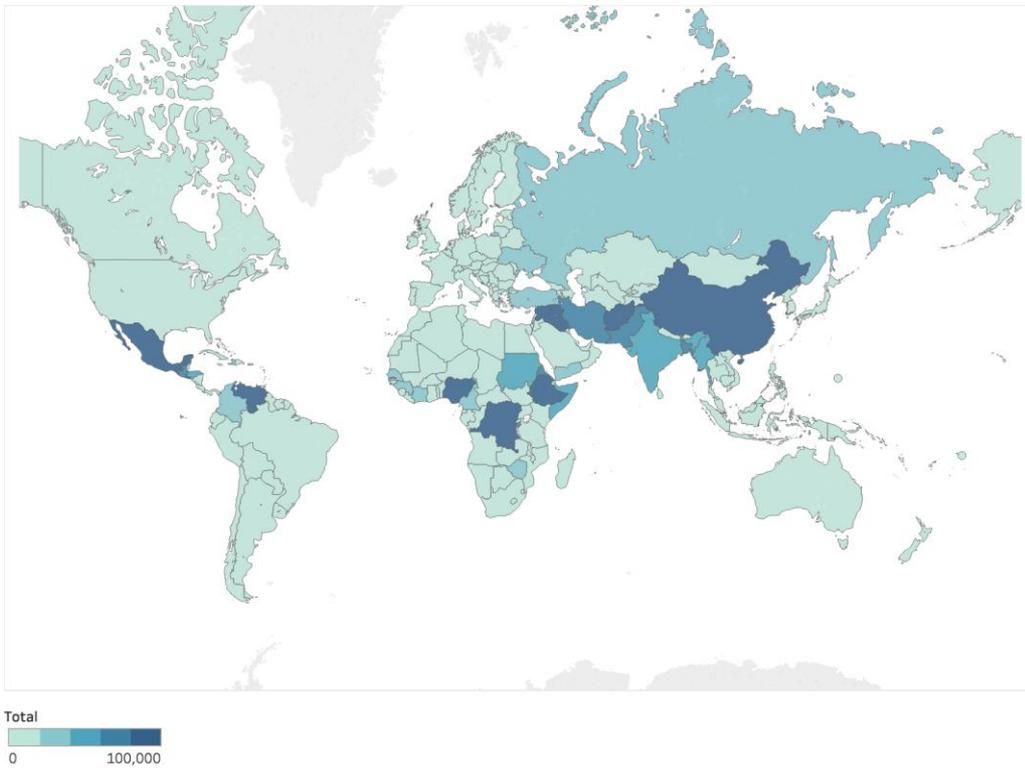
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~~Figure 7. Percentage of migrants who are under the age of 18, by type and region, 2015.~~

~~[Online interactive version of figure](#)~~



**Figure 8. Asylum-seekers by country of origin, 2017.**

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**Human trafficking and modern slavery:** Human trafficking, forced labour and forced marriage, now referred to collectively as ‘Modern Slavery’, is estimated to affect 40.3 million people globally, according to recent estimates from the [ILO](#).<sup>62</sup> [International Labour Organization](#).<sup>64</sup> - These new figures indicate there were 25 million people in forced labour and highlight that there are also 15 million in forced marriage. This equates to 5.4 victims for every 1000 people in the world.<sup>63</sup> Regionally, Asia appears to have the largest number of trafficking victims, with 62% of all trafficked persons, followed by Africa (23%).<sup>65</sup> Common sectors for trafficking are low wage and often hazardous work, including domestic servitude, agricultural and plantation work, commercial fishing, textiles, factory labour, construction, mining, brick kiln, leather tanning, and forced sex work as well as bride trafficking and petty crime.<sup>66-68</sup> Women and girls are disproportionately affected, accounting for 71% of these victims, as are children, with one in four victims under the age of 18. Females are commonly trafficked for sex work, domestic service and as brides. Men and adolescent boys are more likely to be recruited—often deceptively—for various forms of strenuous manual labour, including commercial fishing and construction.<sup>64,69</sup> Sexual minorities who are trafficked are often subjected to forced sex work. Regionally, Asia appears to have the largest number of trafficking victims, with 62% of all trafficked persons, followed by Africa (23%).

**Climate Change Refugees:**

Global climate change, driven by anthropogenic atmospheric and oceanic warming, and its global impact on rising sea levels, shrinking cryosphere and ocean acidification, has the potential to affect and disrupt well-known drivers and mechanisms of migration in the future on an unknown but

potentially dramatic scale. The Lancet Commission on Health and Climate Change: policy responses to protect public health,<sup>65</sup> discusses the potential effects on migrants including impact on urban health, extremes of heat, and the social impact of population redistribution due to people who cannot move. A recent study suggests that by 2070 deadly heatwaves due to the combined impacts of climate change and the vast expansion of irrigated agriculture could make large parts of northern China, with a population of 400 million, uninhabitable.<sup>66</sup> Climate change will also increase the frequency and intensity of hydrometeorological hazards.<sup>67</sup> Climate change will also affect the frequency and intensity of hydro-meteorological hazards.<sup>90</sup> However there is large uncertainty in the impacts of climate change on migration because migration is driven by complex multi-causal processes which also include social, economic, political and demographic dimensions which impact on each other and can be driven by the effects of climate change. The uncertainty is compounded by the fact that refugees from conflict, war or persecution are protected by the 1951 Convention relating to the Status of Refugees and its 1967 Protocol,<sup>92</sup> but in contrast no international law recognises climate refugees, who are mostly seen as searching for better economic conditions. Indeed, it is argued that even the concept of 'climate refugees' is politically constructed.<sup>90,92,93</sup> Against this background, it is argued here that it is possible to analyse climate change and migration in order to arrive at recommendations for action on migration and health, at least for internal displacements.<sup>94,94</sup>

Four geographical zones will see the largest impacts due to rising global temperatures: low elevation coastal zones, dry lands, mountainous and polar regions.<sup>90</sup> According to a recent report by the World Bank, climate change has the potential to force more than 143 million people to move within their country by 2050.<sup>68</sup> The messages are that internal climate migration may be a reality but not necessarily<sup>95</sup> The report defines climate migrants as people who have moved from their place of origin for at least 10 years and travelled over 14 kilometres within country because of climate change. It aims to present a plausible range of outcomes rather than precise forecasts. But adaptation could mitigate impacts and it is incorrect to automatically assume a global-scale population displacement. The World Bank report is based on a single model but has positive aspects such as the inclusion of socioeconomic factors, the choice of slow onset climate change parameters, the use of whole globe decadal changes and that downscaling can easily be achieved. For Bangladesh, a country usually considered to be in the front line for climate change impacts, the World Bank projects that by 2050 there will be 13.3 million climate migrants (surpassing the number of other internal migrants).<sup>95</sup> In Panel 1, to test this projection, a methodology for assessing migration based on detailed census data over the period 2001-11 is presented. Migration attributed to hydrometeorological hazard risks are then projected up to 2050. Migration from these causes exceeds the World Bank figure of 13.3 million internal climate migrants. However although it is projected that the frequency and intensity of hydrometeorological events will increase with global warming,<sup>90</sup> these hazard risks cannot all be identified as being caused by climate change. The Lancet Commission on Health and Climate Change: policy responses to protect public health,<sup>95</sup> concluded that effects on migrants will impact urban health, extremes of heat, and the social impact of population re-distribution due to people who cannot move, particularly in relation to food and water insecurity, vector borne diseases and access to healthcare. The messages from the World Bank report are that internal climate migration may be a reality but it doesn't have to be a crisis and that migration can be a sensible climate change adaptation strategy if managed carefully and supported by good development policies and targeted investments. There is large uncertainty in the impacts of climate change on migration because migration is driven by complex multi-causal processes which also include social, economic, political and demographic dimensions which impact on each other and can be driven by the effects of climate change. The uncertainty is compounded by the fact that refugees from conflict, war or persecution are protected by the 1951 Convention relating to the Status of Refugees and its 1967 Protocol, but in contrast no international law recognises climate refugees, who are mostly seen as searching for better economic conditions. The World Bank report is limited to internal displacement, which limits its scope. For Bangladesh, a country usually

considered to be in the front line for climate change impacts, the World Bank projects that by 2050 there will be 13.3 million climate migrants (surpassing the number of other internal migrants).<sup>68</sup> In Panel 1, this projection is tested, using detailed census data over the period is 2001-11. Migration attributed to hydrometeorological hazard risks from all causes are projected up to 2050 and exceeds the World Bank figure of 13.3 million internal climate migrants. So as with northern China, the combination of global climate change and local anthropogenically-driven environmental degradation may trigger dramatic increases in migration. For Bangladesh, there has been no automatic assumption that climate change will cause mass migration in our analysis, but rather that mass migration is occurring now and will increase, projected from current trends based on large-scale census data. However, because health impacts associated with climate change are diverse in terms of their cause, this makes it difficult to incorporate them into a migration model. For example, for the analysis of zoonoses, it is important to determine the socio-economic and climatic niche for each vector based on current conditions. Further steps would then need to be incorporated to understand global health impacts associated with climate change and migration of each pathogen. The impact of climate change and migration on health in the broader geopolitical sphere is even more difficult to predict. While some research suggest that warmer temperatures or increased rainfall can be causally associated with violent conflict,<sup>97</sup> it is not consistent across the literature.<sup>98</sup> While climate change does influence risk factors of conflict such as poverty and impoverishment, and can lead to economic shocks, translation of increased risk factors into realised conflict is without strong evidence.<sup>99</sup> The Foresight report on 'Migration and Global Environmental Change'<sup>100</sup> draws two relationships in the climate change-conflict-migration nexus. The first is that migration can magnify geopolitical difficulties, in particular in cases of long-term, international migration. The second is that climate change can exacerbate factors such as poverty that increase the vulnerability of populations to conflict; it can also diminish the capital of the population which in turn limits its ability to move in a safe way, or even not move, potentially leading to a humanitarian crisis. However, the philosophical basis, and especially the precepts of the concept 'migration as adaptation', has been critiqued for its neoliberal foundation and replacing politics with the notion of 'governance'.<sup>101</sup>

**Panel 1 Projection for internal migrant numbers for Bangladesh by 2050 driven by hydrometeorological hazard risks under certain assumptions of social and political developments**

Three different scenarios based on the combination of two development pathways and two climate trajectories were modelled by the World Bank,<sup>95</sup> along with three environmental variables, water stress, crop failure and sea level rise, using a gravity model based on distance and attractiveness of the destination compared with the source area. The modelling was calibrated by the highest resolution population census data available at that time. The World Bank report projects that by 2050 there will be 13.3 million climate migrants in Bangladesh applying pessimistic-realistic reference scenario with high emissions and unequal development.

To test the World Bank projection, the 2011 population and housing census data were collected from the Bangladesh Bureau of Statistics. This database was prepared from household surveying in Bangladesh using a questionnaire that covered the respondents' household characteristics, demography, migration details, economic activities etc. 50 districts out of 64 in Bangladesh were identified as vulnerable to hydrometeorological hazard risks: 1) flooding and river erosion (23 districts); 2) cyclones and storm surges (19 districts); 3) drought and groundwater depletion (8 districts). Some districts are affected by multiple hazards. Then in each district, the total number of life time (greater than 10 years) and inter-district migrants (travelled more than 14 km away) were identified. The migrants constitute about 9%, 12% and 5% of district-wise total population categorised according to flooding and river erosion, cyclone and storm surge, and drought and

groundwater depletion as reasons to migrate. They were then filtered by selecting only people migrating from rural areas, based on an assumption that the adaptive capacity to climate change is lower in rural communities in Bangladesh due to lack of development and poverty. They constitute about 8%, 11%, and 4% respectively. After applying these filters it is possible to assess the number of internal migrants attributed to hydrometeorological hazard risks in Bangladesh and that this figure is compatible with the local context by analysing primary data collected through actual field surveying under the supervision of BBS.

4.07 million internal migrants were identified for the period of 2001–2011 migrating because of these hydrometeorological hazard risks. They represented about 4% of country's total population and 41%, 42%, and 31% of total migrant population for the flooding, cyclone, and drought hit districts, respectively. Now, by considering Bangladesh's population growth rate (varying between 0.22–1%) and a similar scenario (without new climatic and development interventions) up to 2050, it can be assessed that the total number of internal migrants attributed to hydrometeorological hazard risks of 19.4 million will surpass the World Bank projection of 13.3 million internal climate migrants by 2050. However the projected increase in the frequency and intensity of hydrometeorological events with global warming cannot all be identified as being caused by climate change.<sup>90</sup> While showing greater number of people potentially affected, our analysis of primary data does not validate the projections of the World Bank report for internal climate migrants.

## Political, cultural, environmental and structural determinants of migration and health

### Political determinants of health

Migration has become highly politicised, especially as certain politicians try to curry electoral favour by migrant-blaming and undermining the welfare state. Stigmatising rhetoric has meant that the rights of migrants are under attack by the same structures and processes that are supposed to protect them, both in their country of origin -potentially leading some to move- and during their migration journey. The—That is, views, words and actions by those in power both instigate discrimination and restrict access to education, work, justice and health. The term “fake news” has recently been created to describe inaccurate information deliberately created or used to mislead. In a world of social media and populist discourse, fake news is used against migrants to undermine trust and divide communities. A previous Lancet Commission on Global Governance, which addressed the political origins of health inequity, the authors outlined the major influences and governance deficits which affect health and the power disparities that govern health inequity.<sup>69</sup> This previous Commission highlighted<sup>402</sup> The previous report highlights how the goals of the health sector, which are inclusive towards better health for all, commonly come into policy conflict with the interests of influential global actors who prioritise national security, safeguarding of sovereignty, and economic goals. When considering the health of migrants in light of the Global Governance report, the convergence of health and migration is situated at the heart of these opposing governance goals. For example, the Global Governance commission highlighted current ‘democratic deficits—or the insufficient participation of civil society, health experts, and marginalised groups - in the decision-making processes. Migrants often suffer from exclusion, and despite their participation as workers, parents, consumers and investors in the economy, they are frequently left out of democratic processes. The previous Commission~~commission~~ report also

indicated that these ~~democratic~~democracy deficits are compounded by weak or absent government or public 'accountability mechanisms' to fix the failings in this exclusionary system. Moreover, the authors point out there is a leadership vacuum on health and this is particularly true for migrant health, ~~which is rarely delegated to a specific agency~~. For instance, in the UN system, these global concerns cross thinly through many UN mandates ~~with no clear leadership or coordination with all relevant external actors rather than held by one~~. With these profound governance gaps, voices are few and far between to combat the current highly-charged political rhetoric that ~~demonises migrants~~demonizes migrants and which will lead to ever-deepening health disparities.

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## Culture, ~~ethnicity~~race, ~~nationality~~ and identity

~~Understanding issues of culture, ethnicity and identity is crucial for achieving equity in health.~~<sup>70</sup> Past and present migration dynamics have contributed significantly to the cultural and ethnic diversity of many societies, highlighting the importance of the cultural dimensions of health and medical care. Although culture is difficult to define it may be outlined as: a linked group of customs, practices and beliefs jointly held by individuals, social networks and groups, that help define who they are, where they stand in relation to those within and beyond the group, and that give meaning and order to life. A central feature of culture are "the shared, overt and covert understandings that constitute conventions and practices, and the ideas, symbols, and concrete artefacts that sustain conventions and practices, and make them meaningful."<sup>70</sup> Anthropologists describe culture as "a process through which ordinary activities and conditions take on an emotional tone and a moral meaning for participants"<sup>71</sup>; this includes perceptions, beliefs, and practices related to health, suffering and disease. Culture is thus never static but evolves in relation to a range of social, economic and political factors and experiences of individuals and groups. At the individual level, cultural beliefs, habits and values can be manifested differently among members of the same culturally defined group.

Both migration and culture are processes that define an individual's identity and are both dynamic in nature. Migration and "living as a migrant" in a transit or host community entails multiple occasions and stimuli for cultural adaptation and change, on individual and collective levels. Identity can initially be Migration often entails cultural change or adaptation as an individual and in relation to one's community. Ethnicity and other aspects of one's identity are initially based on one's place of origin (e.g. ~~ethnicity,~~ nationality). As) but, as a migrant, aspects of oneself are regularly re-shaped as new identities emerge and newer labels are imposed (e.g. ~~as a~~ "migrant", "foreigner", "undocumented"). New locations raise new challenges and individuals develop strategies to respond to opportunities or cope with constraints, including how they care for their own health and ~~that the~~ health of their family, and how they interact with health systems. For individuals who migrate, their past combines with migration-related ~~experiences~~changes to shape ~~how the way~~ they perceive their health, wellbeing, risk and disease, and ~~their health seeking behaviour. On arrival~~how they find relief and accept treatment. Once individuals arrive at a destination, assimilation and acculturation may alter their risk profile to mirror local resident patterns of local residents or or to correspond to the characteristics of their fellow migrants. Independent of specific ethnicity or country of origin, this may, which, for marginalised groups can mean higher morbidity due to the deleterious interaction of multiple adverse structural factors, including marginalisation, poverty, the impact of immigration laws and legal status, linked to social disadvantage and poor access to care.<sup>72</sup> For the health sector, understanding people's background and perspectives, and the causes and nature of their potential exclusion is crucial to assessing and supporting their health needs, including for health promotion, surveillance and service provision. Approaches to tackle such challenges, however, need to be rooted in an understanding of the cultural context and its intersection with the new environment.

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Analysing the dominant discourse in host countries around migrants and refugees helps us to understand how these populations tend to be 'othered'. For example, questioning the



~~The socio-political context that leads to inequalities in health creates an accumulation of disadvantage throughout the lifecycle—and potentially over generations- andAs noted previously,~~ migrant-related discrimination is a profound determinant of health, especially mental health and social well-being. ~~Studies have shown the substantial mental health implications of living in a state of persistent unpredictability and uncontrollability over one’s future.~~<sup>80</sup> ~~Fear of deportation, discrimination and targeted condemnation can influence willingness to seek care and maintain follow-up appointments, including to receive medical test results and follow treatment regimens.~~ ~~Racial discrimination can be internalised as individuals incorporate racist attitudes, beliefs or ideologies into their own worldview. Especially important for the health sector, systemic racism can affect access to income and material within society.~~<sup>109,110</sup> ~~Studies indicate that the wider consequences of discrimination are substantial. For example, it is estimated that, on average, Australia loses up to 3.02% of GDP (\$37.9 billion) annually as a result of individuals being exposed to some form of racial discrimination.~~<sup>81</sup> ~~discrimination.~~<sup>111</sup> ~~For individuals, the socio-political context that leads to inequalities in health creates an accumulation of advantage and disadvantage throughout the lifecycle—and potentially over generations.~~<sup>112</sup> ~~Migrants’ burden of discrimination is often doubled as they carry group characteristics that may be associated with additional prejudice and exclusion related gender or disabilities.~~

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A number of countries have implemented interventions to address discrimination. For example, Canadian schools have implemented cross-cultural youth leadership programmes and anti-racism education curricula to equip students and staff to deal more effectively with racism.<sup>82,113</sup> In South Africa, the Roll Back Xenophobia programme used community radio to help combat negative stereotypes of migrants and promote social inclusivity.<sup>83,114,115</sup> ~~Engagement through sports has also been shown to be an effective strategy to reduce xenophobia against migrant workers in Singapore.~~<sup>116</sup> However, efforts to ~~raise awareness of and~~ support the needs of particularly at-risk migrant communities ~~fightare fighting~~ an uphill battle against nationalist forces, exclusionary systems, parsimonious resourcing and service-level biases. ~~For the health sector specifically, research shows that unintentional or unconscious bias among physicians can influence the way they treat patients from certain racial and ethnic groups, which can contribute to inequalities in healthcare delivery, although data are still limited about how practitioners reach and treat migrants, specifically.~~<sup>117, 118</sup>

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## Environmental influences and hazards

Extreme environmental events and ensuing disasters can cause displacement of populations. These may be naturally occurring hazards, such as tsunamis, floods, earthquakes, volcanic eruptions; ~~and~~ pandemics of infectious diseases; ~~or -and the intersection of~~ conflict and disaster; ~~all of which also~~ form a complex driver of both internal and international migration. Importantly, the most significant components of risk in a disaster are the vulnerability and exposure, rather than the environmental hazard itself.<sup>84</sup> ~~In this context~~<sup>119</sup> ~~In this sense~~, vulnerability refers to the susceptibility of an individual or population to the adverse impact of the hazard, the components of which are physical, social, economic or environmental. While disasters may result in an increase in vulnerability, they are also a consequence of the underlying vulnerability of communities, infrastructure and processes due to poor preparation and mitigation.

-For example, the increase in extreme weather events has been linked to anthropogenic climate change<sup>65,85, 96,120</sup> but there has been a reduction in global disaster deaths as a proportion of the population, which is attributed to progress in Disaster Risk Reduction (DRR) actions<sup>86</sup> ~~pre-disaster risk reduction (DRR) actions~~<sup>121</sup> reducing the vulnerability of communities, infrastructure and healthcare systems, and through the establishment of early warning systems. Reactive policies to a crisis which

fail to address vulnerability amplify the social, economic and environmental drivers that turn natural hazards into large-scale disasters.<sup>87,122</sup> The majority of disaster deaths occur in fragile and conflict-affected states where DRR is almost absent.<sup>88</sup> ~~DRR<sup>123</sup> DRR aims to increase resilience and reduce the risk of disasters. It is essential for areas at a high risk of natural disasters to develop strong DRR actions to mitigate future potential hazards and minimise life loss, as described in the case study of Rohingya refugee camps in Bangladesh in Panel 2.~~

#### **Panel 2: Disaster risk reduction in practice—a simulation of the Rohingya refugee crisis**

On 30th November 2017, UCL Institutes for Global Health and for Risk and Disaster Reduction held a day-long simulation session to work through a disaster scenario in the context of the Rohingya Crisis in Cox's Bazar, Bangladesh. Disaster risk reduction measures are intended to prevent, mitigate, and prepare for disasters through assessing and addressing the vulnerabilities.

The goal of the scenario was to develop an operational response strategy to the occurrence of rainfall-induced landslides in the Kutupalong refugee camp and the surrounding expansion zone. Participants from came with expertise in the thematic areas of conflict, migration, disasters, health and risk reduction from academia, policy, and humanitarian arenas.

The Rohingya people are the world's largest stateless population, stripped of citizenship in 1982 by the government of Myanmar. In late August 2017, renewed violence by the military of Myanmar spurred a rapid mass exodus of Rohingya (655,000 people in three months) to the south eastern region of Bangladesh.<sup>124</sup> Within Bangladesh, the Rohingya are currently residing in overcrowded, temporary shelters with inadequate water and sanitation facilities. These sub-optimal living conditions, coupled with low vaccination coverage of new arrivals, elevate the risk of waterborne illness and vaccine-preventable diseases. As of December 2017, outbreaks of measles and diphtheria in the Kutupalong refugee camp have occurred. Malnutrition was at emergency thresholds, with Rohingyas having an acute malnutrition rate 50% higher than non-Rohingya residents in the Rakhine state,<sup>125</sup> and then worsened with the journey and dire living conditions in the camps. Moreover, mental and psychosocial support are in urgent need, as many have experienced trauma in their home state and throughout the journey.

From within this context, the following areas were discussed in regards to the disaster scenario: the vulnerability of the topographical and environmental context and of the Rohingya refugees, logistical challenges to a disaster response, health effects of a disaster, and recommendations for disaster risk reduction planning. The two districts in which most refugees reside, Cox's Bazar and Bandarban, are extremely susceptible to cyclones, flash flooding, and rainfall-induced landslides.<sup>126</sup> This, coupled with the temporary, makeshift shelters often created by cutting into mud hillsides, render the Rohingya even more vulnerable. Logistical challenges to a disaster response include: an absence of a landslide or flash flood early warning system, the inaccessibility and lack of basic infrastructure of new refugee settlements, limited shelters for evacuation, and lack of sufficient resources available to enable an adequate response. There are serious health implications of a landslide in this context, such as immediate injury and trauma post-disaster, increased risk of waterborne diseases due to disrupted or destroyed water and sanitation infrastructure, compounding mental health issues following recent experiences with violence and displacement in addition to the disaster, and little to no management of pre-existing chronic diseases.

The simulations found that natural hazard-induced disaster would profoundly hamper the humanitarian response without the appropriate disaster risk reduction (DRR) planning. The scenario highlighted an urgent need to conduct multi-hazard vulnerability mapping of the refugee camp and surrounding areas, conduct mapping of human mobility patterns, improve drainage capacities of refugee settlement areas, develop evacuation and relocation processes, examine

resilience of existing healthcare centres to potential hazards, and generate a post-disaster plan. The two key recommendations of the simulation were to: (1) develop and strengthen the DRR components of the global humanitarian response to the Rohingya refugee crisis to minimise preventable deaths; and (2) integrate DRR planning into the health system to prepare for future environmental hazards in communities at risk from environmental change. These findings should also be applied more broadly to other migrant populations living in precarious conditions.

Large disasters typically cost between 0.2 and 10% of annual GDP depressing the economy<sup>89+27</sup> and these costs may be considerably higher for the lowest income countries, such as the case of the 2010 Haiti earthquake where economic losses equalled GDP.<sup>90, 428</sup> They may exacerbate economically-driven migration trends, in the medium to longer term from rural to urban areas<sup>91+29</sup> and sometimes internationally.<sup>92+30</sup> But for localised disasters, where effective aid equals disaster losses, there may be no net migration.<sup>93+34</sup> Evidence from a longitudinal study over 15 years in Indonesia showed that permanent migration mostly did not occur in response to disasters, with the exception of landslides.<sup>94+32</sup> However, there is contrasting evidence from both Caribbean islands, which experienced significant post-disaster international migration, and tsunami-affected Japan where large numbers of local working-age people and families from the Tohoku coast have permanently relocated to Tokyo and other large cities.<sup>95</sup> Rising sea levels are likely to cause permanent migration of coastal populations in developing countries with the lowest likelihood of protection, however the people living in these settings also have strong abilities and desires to make their own mobility decisions.<sup>96+33</sup> There is also evidence of migration into disaster areas in response to government programmes creating jobs or economic migrants filling jobs of displaced people. These inward migrants have heightened vulnerability owing to lower social capital and disaster awareness.

Slow-onset changes in land use and availability due to sea level rise, coastal erosion, precipitation or agricultural degradation and sector loss, will influence the pre-existing economic drivers of permanent migration.<sup>97+34</sup> These changes may be man-made, for example overuse of land or deforestation that renders it infertile. Drought is a common cause of migration. For example, the drought in Orissa, India in 2001 resulted in 60,000 people migrating, mostly to the adjoining statedistrict of Andhra Pradesh in search of employment.<sup>98+35</sup> Migration involves substantial costs and those with fewest resources have the least capacity to move away, and so are the most vulnerable to harm. Furthermore, environmental change has the potential to even further diminish people's resources, exacerbating the vulnerability of a population, resulting in a sub-section, with the least ability to move, who may become 'trapped.'<sup>99</sup> This 'non-trapped'<sup>100</sup> This 'non- migration influenced by environmental change' is of great humanitarian concern.

It is essential for areas at a high risk of natural disasters to develop strong DRR actions to mitigate future potential hazards and minimise life loss. An example of where this is important are the Rohingya settlements in Bangladesh. The Rohingya are the world's largest stateless population, stripped of citizenship in 1982 by the government of Myanmar. In late August 2017, renewed violence by the military of Myanmar spurred a rapid mass exodus of Rohingya (655,000 people in three months) to the south eastern region of Bangladesh.<sup>100</sup> These locations, such as Cox's Bazar and Bandarban, are extremely susceptible to cyclones, flash flooding, and rainfall-induced landslides and, coupled with the temporary, makeshift shelters often created by cutting into mud hillsides, render the Rohingya extremely vulnerable. There is an urgent need to conduct multi-hazard vulnerability mapping of the refugee camp and surrounding areas, conduct mapping of human mobility patterns, improve drainage capacities of refugee settlement areas, develop evacuation and relocation processes, examine resilience of existing healthcare centres to potential hazards, and generate a post-disaster plan.<sup>101</sup> Reactive policies to a crisis which fail to address vulnerability amplify the social, economic and environmental drivers that turn natural hazards into large-scale disasters.<sup>102</sup>

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## Education for migrant children **and adolescents**

~~Education is essential~~ Learning for children and adolescents ~~is essential for their development~~ and is a ~~strong~~ determinant of future health and well-being, ~~including reduced mortality, healthy behaviours and increased wealth and employment opportunities~~. Education includes formal schooling, and acquisition of cognitive, social and other soft skills that foster intellectual and social growth.<sup>137,137,138</sup> Migration disrupts a child's formal education, including difficulties accessing school— with the potential for lost generations of educated adults, particularly for irregular child migrants and unaccompanied children. For example, in a study of access to public schools in 28 developed and developing countries across the world, 40% of the developed and 50% of the developing countries did not allow immediate access to irregular migrant children.<sup>103,139</sup> Migrant children may also be excluded from school in some countries because they have not undergone health screening,<sup>104,140</sup> or they may miss school days because of their limited access to services to treat even simple illnesses. Migrant children in school may suffer poor educational attainment or decide to drop out because of language barriers, unsuitable materials or teachers who are inadequately trained to support student integration. ~~For those~~ **For migrant children and adolescents** with disabilities, obtaining an education can be especially challenging because few countries will prioritise adapting education, school structures or providing the necessary staff to ensure children with disabilities can obtain a good education.<sup>105, 141</sup> Migrant students are more likely than natives to be placed in groups with lower curricular standards and lower average performance levels.<sup>106,142</sup> An analysis of Demographic and Health Surveillance data from Ethiopia, India, Kenya, Malawi and Tanzania on the association between mean number of years of education and internal migration status indicates that, on average, migrants have more years of education than non-migrants, with the exception of rural to rural migrants (**figure 7** **Figure 9**). It is also notable that there are differences between females and males educational attainment among all groups, with males more likely to stay in school longer—especially among urban residents.

Internal migration in China is subjected to the 'Hukou' system, which is a household registration system that determines service entitlements by internal divisions based on residency.<sup>107,143</sup> These regulations may mean that ~~internal~~ Chinese migrants, ~~even though they are Chinese citizens~~, do not have access to their own public education system—or other services—because the child is not registered in the region ~~in which~~ they live.<sup>108,144</sup>

However, where migration is managed well, children can integrate relatively quickly into a new system, with younger children assimilating particularly well. All children and adolescents, regardless of their status, should have access to education. According to the Convention of the Rights of the Child, states are responsible to make primary and secondary education available and accessible to all children, regardless of migration status. Primary education must be free and compulsory and states must take progressive steps to make secondary education free as well. The Convention on the Rights of Persons with Disabilities also requires that governments ensure equal access to basic services including education for people with disabilities. A practical example of the inclusion of child migrants is the Reaching All Children with Education (**RACE**) programme in Lebanon, which sought to integrate large numbers of migrant Syrian children into its public school system, while simultaneously improving access for Lebanese children. The programme, ~~supported by the Lebanon government and non-governmental organisations~~, increased the number of school places, waived fees and provided education grants, with encouraging results emerging.<sup>145</sup>

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Figure 9. Weighted mean number of years of education by internal migration status (Source: DHS)

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## Health and safety of labour migrants

Migrant workers' earnings can sustain households and influence entire economies. For some labour migrants, primarily highly-skilled individuals with sufficient education, employment, financial, or citizenship credentials, migration poses few risks. In these circumstances, migration is generally advantageous for livelihoods, health and well-being. However, the majority of labour migrants are less well-situated, often originating from LMICs and seeking work in response to financial or safety needs.

Distress or economic migration puts migrant workers at particular risk of unsafe transit and pressures—or coercion—to engage in unsafe work conditions. Low wage labour migration is closely linked to globalization and supply and demand, especially for cheap labour. Migrant workers in these jobs are often amongst the most invisible of migrant populations. Not only are they likely to work in informal or even illegal sectors, but they are also less likely to take part in the formal economy, engage with the local community or use official resources. Their safety is also often hindered by limited social, economic or legal status to assert their rights.

Labour migrants rarely migrate on their own without the assistance of labour intermediaries, both formal agencies and informal migrant networks. Labour brokers play a fundamental role to link individuals to jobs, however it is not unusual for recruiters to charge exorbitant fees, causing migrants to incur substantial debt. Recruitment agents, including a migrant's own social network, often facilitate third-party contractual arrangements, day labour, piecework, and similar precarious employment and pay arrangements that lead to ~~long~~ tremendous hours, exhaustion and serious health hazards. For example, Bolivian migrant workers in Argentina explained that their social networks had led them to jobs in harsh working conditions in textile workshops. <sup>110</sup>~~46~~

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Although labour migration has served to advance global markets and offer greater livelihood opportunities, there is growing recognition of the often exploitative and hazardous nature of many low-skill work sectors and their adverse effects on health and well-being, particularly in emerging economies. The health and well-being of migrant workers are directly related to their working and

living conditions and influenced by broader social conditions (table 1Table-2). Harmful labour situations are not uncommon for many migrants, especially those in low-wage sectors, as employment destinations frequently involve hazardous working arrangements, dangerous tasks and unsafe and/or unhygienic living conditions. For example, commercial fishing is considered to have some of the most hazardous work conditions—especially in situations of exploitation or ‘sea slavery’. A study among trafficking survivors in the Thai fishing industry reported higher injury rates (46.6%) than injuries amongst non-trafficked fishermen (20.6%). Additionally, 53.8% of trafficked fishermen were subjected to severe violence, whereas 10.1% of non-trafficked fishermen were beaten.<sup>111 67,336</sup>

As for all migrants, health protections such as health entitlements or health insurance, occupational safety and health (OSH) regulations and reliable social support are often not easily accessible, particularly for low-wage sectors and irregular work. In addition to the common barriers to care experienced by migrants, migrant workers worry about missing work time to seek medical care. Especially when workers are paid by piecework or are struggling to pay off debts, missing work is extremely difficult. Moreover, if the medical recommendation for injuries or illness is rest and time off, day-wage workers are unlikely to heed this advice. In locations where there are regional accords for cross-border labour migration, it is still not unusual for workers to avoid seeking medical care for fear of being dismissed for injury or illness or for missing work. Migrant workers may be covered by insurance in certain instances. However, even those who are insured may not understand that they are insured or that they have the right to seek care without paying. For example, in a study of Bangladeshi domestic workers in Singapore,<sup>112447</sup> 72% did not know if they had received information about company-paid insurance, and of those that had received information, 68% did not receive it in their native language.

A diverse groupgroups of labour migrants experience major health risks which are often related to inadequate employment policies inadequate to ensure worker health and safety. Most low-wage sectors are poorly regulated or inspected for protections against occupational hazards and stressors, including fair wages, financial insecurity, poor psychosocial work environments, exploitation, and verbal or physical abuse.<sup>113,114448-450</sup>

Recognising the important contribution of migrant workers, migrant health has been included in the SDGs, and highlighted in key international frameworks, for example the WHO Model for Action to support healthy workplaces, the WHO Global Plan of Action on Worker’s Health 2008-2017, and the Global Framework for Healthy Workplaces.<sup>115454</sup> However, migrants often don’t qualify for medical subsidies and are frequently not covered by the healthcare financing schemes that protect citizens.<sup>116452</sup> Where such entitlements do exist, work to date suggests that interventions should be directed towards improving migrant workers’ knowledge of workplace health and safety and about their healthcare entitlements in order to improve their uptake. ~~Importantly, despite their enormous contribution to their sending countries, migrants face extremely high transaction costs with remittances that have remained stagnant at around 7%, significantly higher than the SDG target of 3%.~~ There have also been questions about whether the welfare state is a driver of migration, ~~but research.~~ Research in the US found little evidence for welfare generosity linked to internal migration across states.<sup>117453</sup>

Migrant workers’ human rights to health are often severely restricted. Three UN agencies jointly found that “Migrant workers are among the most vulnerable workers in the world, often subject to exploitation, discrimination and abuse, lacking access to mechanisms for remedy and redress and in constant fear of deportation.”<sup>118454</sup> Only a minority of migrant workers globally who suffer occupational injuries receive medical treatment.<sup>119455</sup> A report on the ten most significant human rights violations affecting global business included: recruitment of migrants and refugees into forced labour; a lack of information on labour practices deep within the supply chain; and inadequate oversight of suppliers.<sup>120456</sup> From a human rights standpoint, the right to health requires states to ensure occupational health and safe working conditions in accordance with the ILOInternational

~~Labour Organization~~ occupational health conventions 155 and 161 and regardless of immigration status. SDG 8, on decent work and economic growth, calls on governments to “protect labour rights and promote safe and secure working environments for all workers, including migrant workers...”<sup>121+57</sup> and the UN General Assembly has called for adequate workplace health and safety and protection against violence and exploitation of migrant workers.<sup>122+58</sup> Nonetheless, states with significant numbers of migrant workers often obstruct migrant worker freedoms and safety. For example, in the Gulf Cooperation Council (GCC) states, the *kafala* or sponsorship system restricts workers’ ability to change or leave their job without their employer’s permission, or challenge any unfair treatment by the employer (See access to health systems section and [see supplementary appendix, Table 24](#)).<sup>123+59</sup> These restrictions have allowed private sector employers to pay usurious wages, engage in unprotected hazardous work and force workers to live in crowded, squalid, and unhygienic living quarters.

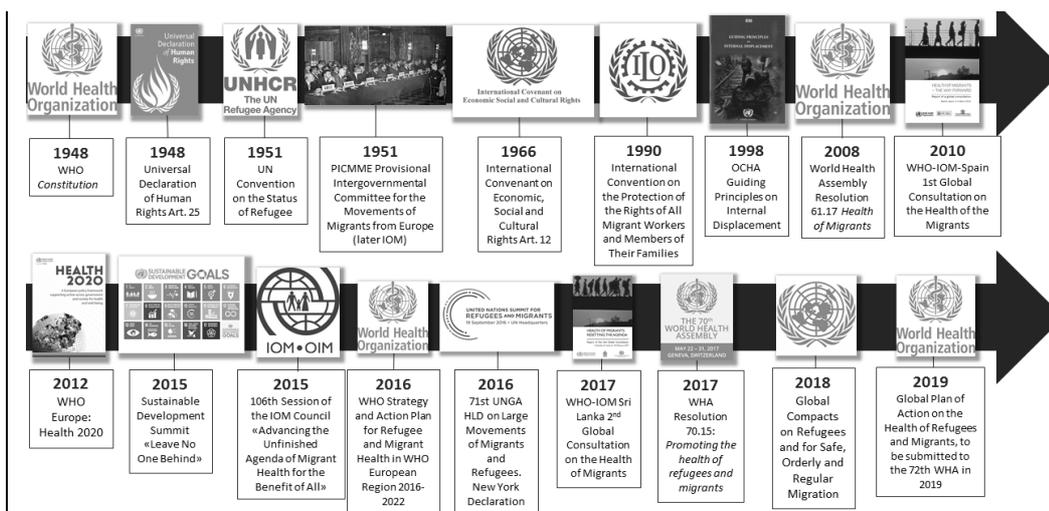
## Section 2: Achieving Safe and Healthy Migration

~~There is a strong case for action on migration and health and current~~Current evidence indicates that safeguarding the health of migrants will have positive effects for global wealth and population health. ~~Countries and wellbeing. Further, countries~~ have a moral and legal obligation to respect the human rights of migrants, ~~although these obligations are not always respected by states which precludes the use of draconian border enforcement policies or discrimination against migrants in access to health care.~~ Over the last century, multilateral agencies and nation states have moved the migration and health agenda forward through various notable instruments and events [\(figure 8\)](#). ~~One of the key challenges in progress on advancing the migrant health agenda is the cross-cutting nature of the migration health topic that demands sustained multi-sectoral and inter-sectoral partnerships and policies for meaningful action. Recent policy developments at global, regional and national levels demonstrate evidence-based practices on how to overcome such challenges. There have been successes through whole-of-government and whole-of-society approaches, for example, in national migration health policy development by countries such as Sri Lanka and Chile; multi-stakeholder coordination platforms including civil society and academia, for example, the Joint UN Initiative on Migration and Health in Asia and the Joint Initiative on the Health of Migrants and their families in Mexico and Central America, and implementation of comprehensive refugee responses, for example, Uganda where provision of comprehensive health care to refugees is integrated within health facilities also serving host communities.~~

~~Most of these (Figure 10). Many~~ instruments include important principles supporting [health of migrants and propose several measures for consideration by member states and stakeholders to achieve healthy migration, but not without gaps to fulfil the stated goal of “health for all” migrants.](#) It is time for the health community to strongly advocate for all those who migrate to ensure safety and access to health for all and to hold governments accountable to the ~~above~~ migration policy instruments and conventions.

~~In the first half of this section we review these policy instruments and conventions and the mechanisms by which states can be held accountable for a migrants’ right to health. In the second half we explore how, in addition to these conventions, health services in particular can be developed to protect and improve the health of migrants.~~

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Figure 10. Historical Evolution of the Migration and Health Agenda: Selected International instruments and events

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## Strengthening respect for migrants' rights

### Migrants' right to health

The right to the highest attainable health extends to all individuals who migrate, regardless of their circumstances of migration or their legal status. People have a right to health whether they migrate for work or to escape war or persecution. International human rights treaties, most notably the International Covenant on Economic, Social and Cultural Rights, guarantee "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health". 7.8+60 +61

States are obligated to: *respect* the right to health by not interfering in its realisation, such as through policies that exclude certain persons from health programmes; *protect* the right to health by ensuring that third parties do not interfere with the right, such as by discriminating against migrants; and *fulfil* the right by ensuring the provision of health services that meet essential elements of availability (economic, physical and geographical, non-discriminatory accessibility; cultural and other forms of acceptability) and adequate quality (AAQ). But these rights do not necessarily translate into entitlements and often states are implicit in this discrimination. <sup>124</sup>

For refugees, the Convention Relating to the Status of Refugees and its Protocol guarantees the right to "the same treatment with respect to public relief and assistance as is accorded their nationals" (Article 23) <sup>125</sup>, which has been interpreted to mean access to health services equivalent to the host population. <sup>125+63,164</sup> However healthcare for refugees is often limited because of inadequate resource allocation by front-line refugee-hosting countries and because states with large numbers of refugees, such as Jordan and Lebanon, are not signatories to this treaty. Difficulties can also arise for refugees resettling in non-signatory states where the law does not guarantee their right to access healthcare, social services, education or employment.

For internally displaced persons and irregular migrants, access to healthcare is often severely constrained. Many states grant irregular migrants access only to emergency care, a practice that is both overtly discriminatory and is inconsistent with good public health practice for the host population and for migrants. In Europe, some states have demonstrated that a humane response to migrant health is possible <sup>126</sup> and expanded access to health services for migrants, especially for

asylum seekers and children without regular status, but there remain major disparities in entitlements to access based on legal status. ([See supplementary appendix, Table 3III.](#))

### **Ensuring limits to health-related restrictions on entry**

According to UNAIDS, as of June 2015, 35 countries imposed some form of travel restriction of people living with HIV.<sup>127,165</sup> Of these, five countries completely bar the entry of HIV-positive people, four countries require proof of HIV negative status even for short-term stays, and 17 countries deport people who are found to be HIV positive ([See supplementary appendix, Table 4IV.](#)) States impose other health-related restrictions on entry based on infectious disease, communicable disease, drug dependence, mental illness, pregnancy of migrant workers,<sup>128,166</sup> or cost of care, and/or permit deportation on these grounds ([See supplementary appendix, Table 5.](#)) -

[Table 1 Health-related restrictions on entry, stay or residence in countries with large migrant populations. See supplementary appendix for full reference list](#)

These restrictions on entry or deportation for diseases with low risk of casual transmission, such as HIV/AIDS, leprosy, and hepatitis C, are impermissible on both public health and human rights grounds.<sup>129,130,167-170</sup> The policies violate migrants' right to health and the ability of migrants with disabilities to enjoy the right to freedom of movement, choice of residence, and nationality on an equal basis with others.<sup>131,132,171,172</sup> Linking health status to migration enforcement reinforces distrust of the health system and limits migrants' ability to access healthcare on a non-discriminatory basis.<sup>8,133,173,174</sup>

In practice, health-related enforcement regimes can pressure health workers to act as immigration control agents—violating their [professional ethical requirements](#) as [practitioners - an issue that has been taken up by civil society organisations like Docs Not Cops, a medical practitioner.](#) Deportation can interrupt treatment, [and deportation impairing migrants' health.](#)<sup>175,176</sup> Deportation on the grounds of pregnancy also violates women migrant workers' rights to privacy, bodily autonomy and reproductive choice and their right to equal treatment, equal employment rights, and freedom of movement.<sup>8,7,131,134,160,171,174,177</sup> Protection of the public is often invoked as a basis for these policies. But if public health is invoked as a basis for denial of entry or deportation, the Siracusa Principles relating to limitations on civil and political rights demand that the policy be necessary to protect public health, be based on evidence, be the least restrictive means available to accomplish the public health objective, and be applied without discrimination.<sup>8,135,174,178</sup> Further, screening for highly contagious diseases must be conducted voluntarily and with informed consent, pre- and post-test counselling, and protection of confidentiality.<sup>136,179</sup> Mass screening at entry for conditions such as HIV, pregnancy and disability is never permissible.<sup>136,179</sup> Care must be taken that where pre-entry screening programmes operate, they do not represent a barrier to individuals seeking to migrate.

Several HICs impose residence restrictions based on claims of high treatment costs, especially for migrants with certain chronic diseases or disabilities. For example, Australia's Migration Act and Regulations grant the Minister for Immigration and Border Protection the discretion to reject permanent residency applications if an applicant has a health condition whose treatment is 'likely to result in significant health care and community service costs to the Australian community,' although applicants on certain visas (including certain humanitarian, family and skilled work visas) can apply for a waiver of the requirement.<sup>137,138,180,181</sup> The five most common reasons for failing this criterion are intellectual impairment, functional impairment, HIV, cancer and renal disease.<sup>139,182</sup> These restrictions, however, violate the rights of persons with disabilities to liberty of movement and to freedom to choose their residence on an equal basis with others.<sup>132,172</sup> As such, the implementation of the law must be reasonable and proportionate to achieve a legitimate end. All too often, cost-based restrictions are applied across the board without individualised determinations and in an arbitrary manner. They also often do not adequately consider the potential economic, social and

cultural contributions that migrants with disabilities make to their host communities and countries, instead considering them only in terms of cost to the state.<sup>140</sup>

## Protection of refugees and asylum seekers

The Refugee Convention and Protocol provides specific protections to refugees. Its centrepiece is Article 33, prohibiting *non-refoulement*, or the return of a refugee to a country where his or her life or freedom would be threatened on account of race, religion, nationality, membership in a particular social group, or political opinion.<sup>143,144</sup> The Convention and Protocol also prohibit states from penalising refugees seeking protection for unauthorised entry or presence, whether through criminal prosecutions, arbitrary detention or the imposition of other penalties, so long as they present themselves to authorities and show good cause for entry.<sup>141,142</sup> States may not discriminate against refugees on account of race, religion or country of origin. Equivalent protections apply to internally displaced persons, including freedom of movement and the right to leave country and seek asylum elsewhere. Although 43 states have neither signed nor ratified the Convention and Protocol, including countries such as Lebanon, Jordan, and Bangladesh that host important refugee populations, these states are indirectly obligated to respect the principle of *non-refoulement* and other rights of asylum seekers and refugees through other relevant international instruments like the International Covenant on Civil and Political Rights.

Among other rights guaranteed by the Convention, Article 17 requires receiving states to provide refugees with the same right to wage-earning employment as nationals of a foreign state government in the same circumstances, and the non-discrimination provisions of human rights law do not permit distinctions in work based on nationality or migrant status. Yet only half of the signatories to the Convention and Protocol grant refugees the right to work.<sup>142,145</sup> As a result, refugees must work unlawfully if at all and, as a result, often suffer other rights violations and are at increased risks of trafficking. ~~Some families feel they have little choice but to have children work to support them, as children are less likely to be detained and deported for working without legal authorisation.~~

Gaining adherence to the requirements of the Refugee Convention and Protocol has been challenging, as they do not include a mechanism for reviewing state compliance, so accountability is lacking. Further, to avoid their duties to refugees and asylum-seekers under the Convention, states often erect barriers to asylum seekers crossing into the country. These include providing incentives to contiguous states to prevent asylum seekers traveling through those states from reaching the border, detaining asylum seekers for long periods of time, and criminalising unauthorised entry. Another strategy, adopted by the EU, is the return of refugees fleeing conflict in Syria to Turkey on the grounds that it is a safe third country. Yet Turkey does not recognise their rights under the Convention. These barriers to entry often increase the health risks facing asylum seekers, leave them in difficult and dangerous situations, and push them to turn to irregular travel. The proposed Global Compact on Refugees would address some of these concerns by strengthening support for immediate and ongoing refugee needs and offer incentives for good practice through assistance to national and local institutions and communities receiving refugees, though it does not strengthen enforcement or accountability. However good practices do exist. Norway provides one such example in relation to unaccompanied minors described in a case study below (Panel 3).

### **Panel 3: Age assessment—an unresolved challenge for unaccompanied minors and refugee children**

Though migration to Norway is not a new phenomenon, the number of refugees that came to Norway in 2015 was unprecedented. Over 30,000 sought asylum, of which 5000 were unaccompanied minors. This group is at increased risk of child trafficking, abuse and violence and

requires guardianship and protection. However, instead of focusing on their rights and obligations to this group of children and adolescents, regrettably governments often seek to skirt these obligations.

Age determination has been a substantial challenge and source of debate amongst child rights groups and immigration officials. Though there are universally agreed definitions of a 'child' there are no agreed methods regarding the assessment to determine the age of a child. Unaccompanied minors often have no reliable information about their age or date of birth. Authorities deploy techniques and investigations that are, at best, approximations.<sup>146</sup> But the consequences of these approximations can be devastating for this group of children. In Norway, if the age assessment shows that someone is less than 18 years of age, they will be treated by the Norwegian Child Welfare Services.<sup>147</sup> The Child Welfare Services statutory obligation is "to ensure that children and youth who live in conditions that may be detrimental to their health and development receive the necessary assistance and care at the right time". In addition, non-resident minors are entitled to receive the same help from these services as any other Norwegian child. In contrast, if the assessments conclude that a person is over 18 years old, they will be treated as an ordinary adult asylum seeker, with few such rights.

Thus, it comes as no surprise that the techniques to determine the age of a child are controversial. In Norway, the measurement of age by x-rays of the hand ('bone age') and teeth are routinely used, despite long-standing dispute about these techniques. The x-rays assess ossification and presence of molar teeth and can be used to estimate age. However they are not an accurate method and unnecessarily expose the adolescent to radiation. In response to the gravity of concerns expressed by both the Norwegian Paediatric Society and the Ethical Committee in the Norwegian Medical Association in the context of critical significance of these procedures, the responsibility for conducting these was transferred from the private sector to the Oslo University Hospital from January 2017.

Age assessments, where necessary, should integrate the clinical history and physical assessment, taking into account the person's development (physical, cognitive and emotional). A report on age assessments<sup>148</sup> concluded that "There is evidence that radiography (X-rays) of bones and teeth, which is increasingly relied upon by immigration authorities, is imprecise, unethical and potentially unlawful, and should not be used for age assessment". Despite this, x-rays are perpetuated as the gold standard. As this jeopardises the current and future situation of unaccompanied minors, many have no other alternative but to resort to other even more dangerous choices of living as undocumented minors on the streets of other European cities exposing and endangering them to further perils. Moreover, there is substantial evidence that even adolescents over the legal age for mandatory support services and guardianship, i.e., 16-24, have need of protection and support.<sup>149</sup>

## Human rights of children in forced migration

During their journeys, including when displaced within their own country, and upon arrival in their destination, children and adolescents are particularly vulnerable to abuse and exploitation, and disproportionately experience poverty and social exclusion. Migration enforcement policies directed at adults, including detention and deportation, inevitably impact children.<sup>143</sup> Children of parents who have been deported experience increased emotional and psychological symptoms.<sup>144,150</sup> Behavioural outcomes, educational achievement, future earnings, and even life expectancy diminish when parents are detained and/or deported. The UN Convention on the Rights of the Child guarantees civil, political, economic, social, and cultural rights to all children, irrespective of migration status or citizenship. The Convention requires that states act in the "best interests of the child."<sup>141</sup> Determining the best interests of the child requires a comprehensive review of the child's

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circumstances and ability to exercise basic rights, such as to education, health, and family unity.<sup>145</sup> Children's rights to life, survival, and development (article 6) provide a framework for migrant and refugee children's rights in host countries. States must ensure equal opportunity, access to services, and the chance for all children to thrive and reach their potential.<sup>145</sup> As in other dimensions of international migration, however, national laws affecting child migrants often do not adhere to human rights requirements, treating children and adolescents as foreigners first and often prioritising immigration enforcement policies over children's rights.<sup>146</sup>

## Immigration detention, human rights and health

States are increasingly treating unauthorised border crossing as a criminal offense and detaining immigrants, regardless of circumstances. For example, in 2018 the United States announced a "zero tolerance" policy for unauthorised border crossings, announcing that it would prosecute 100% of such crossings as crimes, regardless of whether the migrants included family groups with children. As a result, migrants have been arrested and jailed, and children, including very young children, ~~were have been~~ separated from their parents.<sup>147</sup>

Evidence repeatedly demonstrates the range of negative health consequences associated with detention, especially for children and adolescents. ~~We systematically reviewed~~A systematic review of 38 peer-reviewed studies on the effects of immigration detention on health outcomes, and found that a majority of the studies concerned male adults originating from Middle-Eastern countries and detained in Australia (38%) or the UK (22%). ~~All studies showed negative health outcomes attributable to detention, especially mental health disorders although these studies are often limited by methodological constraints.~~<sup>148</sup> ~~All studies showed negative health outcomes attributable to detention. A meta-analysis of three studies in asylum seekers found that detention had an independent adverse effect on mental health of individuals who had previously been traumatised, and that these effects continued after release.~~<sup>149</sup> ~~Studies are often limited by methodological constraints such as selection biases (data collection was in English), cross-cultural validation of questionnaires, misclassification or poor distinctions between asylum seekers and others in detention (e.g. visa overstays), and cross-sectional study designs not controlling for previous health conditions and traumatic exposures. Despite such limitations, studies suggest that detained asylum seekers are exposed to multiple health risks, especially mental health disorders. International agreements have been established to prevent these risks and safeguard the well-being of migrants.~~

Detention poses clear violations of one of the most important international agreements: the International Convention on Civil and Political Rights, which confirms that "Everyone has the right to liberty and security of person. No one shall be subjected to arbitrary arrest or detention"<sup>151</sup>. The Refugee Convention and Protocol establish protections prohibiting penalising refugees due to their entry without documented permission or presence and restrictions on movement other than those that are necessary, such as to verify identity or protect national security.<sup>148</sup> Detention is only warranted when persuasive evidence exists that the individual poses a danger to the community or is likely to flee to avoid further immigration proceedings, and must be of short duration.<sup>149</sup> For children, the Convention on the Rights of the Child permits states to use detention "only as a measure of last resort and for the shortest appropriate period of time"<sup>145</sup>. The UN Committee on the Rights of the Child found that immigration detention of children is never in the best interests of the child.<sup>150</sup> ~~while the 2016 New York Declaration for Refugees and Migrant Compact on Safe, Orderly and Regular Migration, paragraph 59, reaffirmed states' "commitment to protect the human rights of migrant children, given their vulnerability, particularly unaccompanied migrant children"... ensuring that the best interests of the child is a primary consideration in all relevant policies"~~<sup>149</sup>

Yet throughout the world, detention of irregular migrants, including asylum-seekers, is often used routinely, arbitrarily, and for an indefinite period.<sup>151</sup> Conditions in detention facilities are often ~~substandard~~sub-standard failing to meet needs for adequate food, clean water, healthcare, light, space, safety, health and sanitation with consequences for health.<sup>152</sup> Detainees, especially

children, are commonly subjected to violent victimisation, including abuse and rape.<sup>154205</sup> Detention also impairs immigrants' other human rights that can have profound and long-lasting effects on health, such as obtaining housing, education, employment and pursuit of claims for asylum. Numerous human rights and health experts have called for gradual abolition of immigration detention because of its arbitrariness, detrimental impact on health and flimsy justification.<sup>155206</sup>

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## Gender, law and health

As noted, health and migration are both highly gendered, affecting women, men and sexual minorities differently. Discriminatory laws frequently sustain or foster health inequalities by gender rather than protecting individuals—especially women and girls and sexual minorities. For example, host countries are often governed by plural legal systems that severely limit women's and girls' rights to access contraception and abortion, avoid early marriage, and escape violence. In addition, in humanitarian aid settings, implementing agencies often ~~apply erroneously rely on~~ host country laws rather than international standards to determine the scope of access and rights of migrant women and girls. Examples of discriminatory laws in countries with very high numbers of displaced persons are described in below (Panel 2.4).

Some promising programmes and interventions exist to enhance gender justice for forcibly displaced persons. For instance, the UN Development Program, the UN Population Fund and local partners recently launched a project to protect female migrants inhabiting in refugee settlements in Iraq from exploitation, human trafficking, forced and underage marriages, and sexual and gender based violence.<sup>156207</sup> This project offers novel opportunities for female Syrian refugees to receive free and long-term legal assistance in addition to counselling and psychosocial support.<sup>156207</sup> The work of the Rights in Exile Programme, formerly known as the Fahamu Refugee Programme, is also notable for consolidating resources to support migrant legal aid advisors and advocates<sup>157208</sup> and has gathered resources for legal advisors providing support to LGBTI migrants.<sup>158</sup> Gender responsiveness', that focuses on respecting human rights, is referred to in 12 of the 23 objectives in the Global Compact on Migration.<sup>209</sup>

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## Access to Justice

Poor access to justice may lead to adverse health outcomes. People who migrate, for whatever reason, have the same rights to access to justice as all other people under the International Covenant on Civil and Political Rights.<sup>131,159</sup> ~~174,210~~ Yet, migrants encounter numerous obstacles to justice systems, for example, for violations of workplace rights and fair adjudication of asylum claims. Access to justice is frequently stymied by poor information, employer intimidation, lack of access to legal counsel, language barriers and unfamiliarity with procedures. Individual in refugee camps or settlements face particular difficulties accessing justice<sup>160211</sup> because these are often located in remote areas where courts are absent, legal representation is scarce, and judicial systems may be weakened by civil unrest and war. Frequently, people are also unfamiliar with formal legal systems and further hindered by poor education, language barriers and previous reliance on informal, local justice systems.<sup>161212</sup>

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### Panel 4: Gender, law and health: a four country analysis

Rape, sexual servitude, child marriage, and sex trafficking lead to substantial risks of transmitted infections, poor maternal health outcomes, and enduring mental health problems. But, access to protections, medical treatment and legal recourse, especially for women, are often dictated by laws and customs. An in-depth legal analysis of four countries in which migrants form a substantial portion of the population, Chad (519,968), Jordan (3,112,026), and especially in Lebanon (1,997,776) and Turkey (2,964,916), demonstrates the highly gendered—and sometimes contradictory—nature

of the laws and customs governing the rights and safety of women and girls (See supplementary appendix, Table V). For the countries analysed, the median age of migrant women and children was between 15 years old in Chad, between 21–22 in Jordan. Among Syrian refugee communities especially, rates of child marriage are high.<sup>243</sup> While many countries have established a legal minimum age of marriage, the practice of early and forced marriage prevails due to weak enforcement, cumbersome marriage registration laws and cultural norms. In Jordan, for example, the legal age of marriage is 18, yet children can be married with the approval of a Sharia court judge starting at age 15.<sup>244</sup> Although Chad criminalises child marriage under age 18, the child marriage rate was 68% between 2004–2017.

Although countries may sign conventions and draft legislation against gender-based violence, migrant women are often unable to access justice due to cultural norms, language barriers, and limited legal representation. Countries often have plural legal systems that provide complete defences or reduced sentences for honour crimes. In Chad for example, adultery is a criminal offence and murder committed because of adulterous behaviour is excusable. Women inhabiting migrant camps have faced months-long detention on grounds of adultery, while men rarely face punishment for rape and sexual assault.<sup>245</sup> In both Jordan and Lebanon, perpetrators can avoid prosecution by marrying their victims<sup>246</sup> as marital rape is not a crime in many host countries.

For unmarried and displaced adolescent girls, failing health systems, limited providers, and domestic legal frameworks are significant barriers to reproductive health service access. Individuals under the age of 18 must obtain parental consent prior to receiving or undergoing any sort of medical treatment,<sup>247</sup> including contraceptives in Jordan, Lebanon, and Turkey<sup>248</sup> and in Jordan, spousal consent is also required.<sup>249</sup> Migrant women also have limited access to abortion in the four countries reviewed. In Chad, Jordan, and Lebanon, abortion is not legal in cases of rape.

Globally, intimate partner violence is reported to affect one in three women,<sup>220</sup> and displacement appears to exacerbate conditions of abuse,<sup>220,221</sup> triggered by destabilization of gender norms and roles, men's substance use, women's separation from family, and rapid remarriages and forced marriages. Laws are often limited to protect women from sexual abuse, for example, among the migrant recipient countries analysed, only Turkey has legislation against marital rape and only Chad had legal termination to save the life of the mother—even in cases of rape. Countries are often reluctant to make commitments to protect women, for example, only Chad had signed and ratified without reservations the Convention on the Elimination of All Forms of Discrimination against Women and Convention on the Elimination of All Forms of Discrimination against Women-Optional Protocols (CEDAW). While international instruments such as CEDAW and the UN Convention on the Rights of the Child (CRC) exist to protect women and children, implementation is often poor, especially during humanitarian crises. Dismantled or ineffective justice systems result in weak protections and responses for sexual and gender-based violence.<sup>222</sup> And, even where laws are in place, migrants who have tenuous legal status or are not aware of their rights, especially common among women, are much less likely to benefit from health protections and medical treatment.

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## Health services for mobile populations

### Universal and equitable access to healthcare before, during and after migration

One of the most promising measures to address health inequalities is access to healthcare through Universal Health Coverage (UHC). As stated throughout the report, migrants have the right to health and UHC is a key strategy for the realisation of that right. UHC is a structural intervention under which 'all people and communities can use the promotive, preventive, curative, rehabilitative and

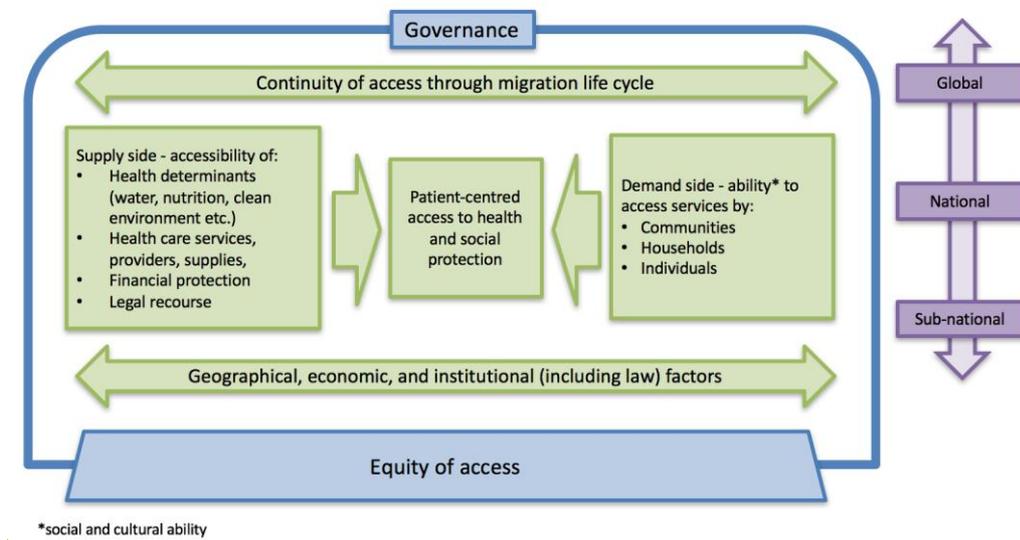
palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship'.<sup>162</sup> Making<sup>223</sup> ~~The inclusion of migrant groups in UHC schemes is particularly relevant in our increasingly mobile world because it promotes: equity in access to health services (everyone who needs them should get them, not only those who can pay for them); services of sufficient quality to improve people's health; and protection against financial harm related to service use.~~<sup>224</sup> ~~When considering the combined global goals of safe migration and good health for all, there is every reason to insist that people who migrate should be included in UHC in equivalent ways to non-mobile populations. Moreover, making UHC truly 'universal', will promote SDG 3.8: "financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all".~~ Creating UHC systems that integrate migrant populations will benefit entire communities ~~withby fostering~~ better health access for all, with positive gains for and social cohesion, which also benefits the local populations ~~and-something that~~ should be championed by politicians and healthcare leaders. ~~The inclusion of migrants in universal healthcare is further complicated by the intricacies of defining citizenship which has been summarised previously.~~ To examine the potential role of UHC to improve health considering global migration, we focus first on the health system and access for migrants, building on published work<sup>163,225</sup> on transforming health systems towards SDG 3 targets and our ~~a~~ conceptual model ([See supplementary appendix, Figure 7A](#)) to ensure healthy lives and promote wellbeing for all at all ages. We build on established health system analytic frameworks by addressing governance, health financing policy, health information systems and health workforce with a focus on migration.

## Equitable access to health systems

A health system is the collection of people, institutions and resources that aim to improve, protect, maintain, and restore health.<sup>164,226</sup> How health systems are conceptualised and structured is primarily linked to nation states and their constituent units. Migration can create challenges for health systems ~~due to because~~ people ~~are often~~ crossing between system boundaries. That is, health systems are generally delimited by geo-political borders, which has made it difficult to assess how they might be strengthened to become migrant-inclusive. This is particularly true in situations of conflict that result in the spatial reorganisation of health systems within and across borders. These transformations can complicate displaced populations inclusion into health systems.<sup>165</sup> Considerations for a health system that aims to be inclusive are: addressing heterogeneity in service delivery; ensuring cross-jurisdictional networking and ~~interoperabilityinter-operability~~; and protecting the rights of individuals and communities to health services. Indeed, analysing health systems requires people-centred frameworks that are sensitive to individual and population care needs rather than determined by jurisdiction.

Levels of access varies globally with published data providing some examples of good practice ([See supplementary appendix, Table 3III](#)). We performed a secondary analysis of data from the Migrant Integration Policy Index ([See supplementary appendix, Panel 1MIPEX and Figure VI](#)) ~~which) to provide good practice migrant-inclusive health systems. Results from the MIPEX data analysis~~ complemented our analysis of access to healthcare in European countries (Law and human rights Section). In our MIPEX analysis, Italy received the highest rating of all countries and has had a notably inclusive system that provides for asylum seekers and legal migrants under the same system as nationals. In Italy undocumented migrants ~~also~~ have access to wide health coverage that is specified in the country's law. Countries that scored poorly required migrants to pay for specific insurance when the national population was not required to, ~~and~~ did not provide any exemptions for migrants, ~~and detainedas well as detaining~~ undocumented migrants ~~in centres if~~ identified by healthcare systems.

Drawing on the patient centred access framework by Levesque et al.<sup>166227</sup> we developed a new people-centred health systems framework for migrants' access to health and social protection (see figure 9). **Figure 11).**



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**Figure 11 A health systems framework for migrants' access to health and social protection**  
Adapted from Levesque et al. 2013<sup>227</sup> -Note: Factors on the supply side can affect demand and vice-versa.

Our framework is underpinned by concepts of equity to emphasise human rights and equal access to health care regardless of status. The framework explicitly defines health and social protection by highlighting both the “supply side”, or accessibility of services and determinants of health, such as water, nutrition and sanitation, and the “demand side”, or the ability to access services. (see Panel 3 for an example). Both the demand and supply side are influenced by geographical, economic, and institutional factors (including law). These supply- and demand-side factors exist within the broader context of how governance institutions define and protect the rights of people (including migrants and other marginalised groups equitably) to access and use health services and determinants.<sup>167228</sup> Migrants may or may not be able to use services on the same terms as citizens. In some settings, citizens have the right to use services at no cost or at a cost that is subsidised through a national insurance scheme, access to which may be denied migrants. The rights may be enacted by law at a global, national, or sub-national levels (de jure) or depend on the way in which individuals access services in practice irrespective of existing laws or provisions (de facto). Guided by this framework we have reviewed the health system accessibility and population’s ability barriers as they relate to migration.

### **Overcoming barriers to health services**Health Barriers

National regulations, private employer’s provision of health or legal status coverage all interact with accessibility and create barrier to health services.- Some countries, such as Kenya, have national specific treaties or constitutions that assert the right to healthcare for each person, but despite such legal protections, and compared to Kenyan patients, migrants often continue to experience specific barriers including harassment, cost differentials, compared to Kenyan patients, administrative and

language barriers.<sup>168,229</sup> Differences between<sup>169,230,234</sup> and even within<sup>170,232,233</sup> countries in the rights of access to health services are marked.<sup>234</sup>

Unaffordable cost of health services remains a significant barrier for many migrants, for example, in the US (see case study in Panel 5) among Syrian refugees in Jordan where cessation of free access to health care is taking a negative toll on the health of refugees.<sup>171, 235</sup> Some countries such as China (case study; Panel 6) have made substantial progress in improving access for internal migrants, but elsewhere the inability to pay for basic health services has the adverse effect of forcing means of gaining cash for example by selling sex.<sup>236</sup> Fear of being referred to the police has often been found to be a substantial barrier to seeking healthcare.<sup>227,238</sup> In some situations there is a contradiction between professional ethics of health workforce and law.<sup>239</sup>

#### **Panel 5: Healthcare for migrant and seasonal farmworkers in the US—improving access and cultural competence**

A high proportion of migrant and seasonal farmworkers in the US are uninsured or underinsured, due to both lack of eligibility and extremely low incomes. It is estimated that at least 75% of farmworkers, and up to 90% of their children do not have health insurance.<sup>240</sup> Many of these individuals do not qualify for government provided or subsidised insurance (e.g. Medicaid) because they are undocumented.

There are positive examples of programmes that have been established to address the health needs of these populations, however. At a national level, the Health Resources and Services Administration funds 137 migrant health centres and 955 community health centres across the US aimed at improving access to services for marginalised groups such as farm workers, including a voucher programme enabling farmworkers to obtain care from community centres, as well as funding non-profit organisations such as Migrant Health Promotion, and Farmworker Health Services.<sup>240</sup> However, there is a significant gap in the literature in terms of robust evaluations of the effectiveness or acceptability of such programmes. There are also numerous local programmes in the US focused on accessible culturally appropriate health assessments, or the use of mobile outreach clinics to migrants, for uninsured farmworkers who are considered to be working in a hazardous industry and are mostly foreign migrants.<sup>241</sup> For example, there are clinics targeting farmworkers in the USA,<sup>242</sup> and the Migrant Health Outreach program (federally funded) mobile clinic to farmworkers staffed by nurses, which seems to be a successful approach.<sup>243</sup>

Outreach services offer the benefit of going to the locations where migrants are working, living, going to school or to houses of worship,<sup>244</sup> reducing many of the main access barriers. In the US, for example, there are an estimated 1500 mobile clinics, receiving 5 million or more annual visits nationwide, which are becoming an integral component of the healthcare system to serve vulnerable populations. Findings from a study on outreach to migrants and seasonal farmworkers in the US shows that workers and their families make very limited use of clinic based services because of their mobility (constant residential changes), work hours, poor knowledge of the US health system (almost 40% of the population is new each year) with a majority preferring to seek care in Mexico—even those who have US health insurance, but that clinic outreach programmes are overcoming many of these barriers. Research suggests, however, that mobile clinics for migrants have been more often disease focussed, to offer testing and treatment, for example, for HIV, especially for sex worker populations, or for malaria.<sup>244,245,246</sup> Evening cluster clinics targeting migrant workers were considered by migrants themselves to be excellent or good.<sup>247</sup> Six characteristics were believed contributed to the successful delivery of healthcare and education through cluster clinics, including: provision of both direct and referral services for this underserved population; comprehensive delivery of services in a single setting; collaborative delivery of services; access-driven delivery of services; delivery of culturally sensitive and linguistically appropriate services; and evidence based service delivery. Free or mobile clinics and health and

wellness programmes specially targeted for migrant workers are relatively rare.

#### Panel 6: Improving Migrant Population's Accessibility and Affordability of

##### Health Care Services in China

Since the launch of the new round of medical reform in 2009, China has almost achieved full coverage of its medical insurance system for urban and rural residents, with a stable coverage rate of above 95% for the whole population. The medical insurance system mainly consists of three types of schemes, including urban employee basic medical insurance (UEBMI), urban resident basic medical insurance (URBMI) and new rural cooperative medical scheme (NCMS). Among them, the number of people participating in NCMS reached 670 million, with a coverage rate of 98.8%. However, despite the high coverage rate achieved, there is concrete difference among the coverage scope of those three medical insurance schemes, with a higher insurance level by UEBMI and URBMI than by NCMS. In addition, since the off-site medical expense settlement information system for NCMS has not been fully established, medical expenses of migrant populations cannot be directly deducted when they seek medical care in urban areas. Many of them still have to pay medical expenses first out of pocket and afterwards return to rural areas for reimbursement. Besides, the reimbursement review procedures are quite cumbersome and usually take a long period, resulting in a considerable number of the migrant population actually not being able to enjoy concrete insurance security.

Faced with the demand of nearly 200 million migrants, in 2016, the government promulgated a relevant document on off-site medical expense settlement under basic medical insurance schemes, which clarified the responsibility of all levels of governments in ensuring migrant population's right to medical insurance and defined the unified management requirements for locations providing medical treatment. At the same time, the off-site medical expense settlement information system was established and improved. Using social security cards distributed, migrant population can equally enjoy the convenient services of medical expense settlement across provinces. Through those policies and measures, the accessibility and affordability of healthcare services for migrant population have been greatly enhanced. Meanwhile, in order to promote the health of migrant workers working outside, the Health and Family Planning Commission in migrant-sending areas also established a health education group on WeChat, sending them health education messages and keeping track of their health status for better health management.

Fear of deportation is of particular importance to undocumented migrants or failed asylum seekers, especially in locations where public health workers have a 'duty to report' undocumented migrants. These mandates contradict the fundamental ethics mandates of health workers, to do no harm, and can hinder individual and public health, and result in further criminalisation of migration. Data from Doctors of the World's European clinics on individuals seeking healthcare suggest that the contradictions between health and immigration goals are considerable and growing across Europe.<sup>172</sup> As a result, individuals with irregular status or who are displaced without a regular residence often avoid making themselves known to formal services.

<sup>248</sup> Providers often feel that immigration reporting goes beyond their job description and these mandates can influence the quality of care they provide. Migrants' fears of being reported to immigration authorities by a healthcare worker, real or perceived negative attitudes from healthcare providers, are notable barriers to good care.<sup>249</sup> Logistical challenges to provision of health services compound these hindrances, including transportation, job commitments, waiting time or poor knowledge of how to navigate the medical system.<sup>173</sup> Migrant<sup>250</sup>

## Mobile health services for hard-to-reach and mobile populations

The provision of health and social services for vulnerable populations may require that services are taken closer to people to achieve good levels of access. These services should ideally be integrated with routine services. There are subgroups of migrants who still have difficulty accessing services even where these are provided free at the point of use in primary care and hospital settings. Such services are essential for both those fleeing conflict, for all stages of their journey including while in transit camps, or vulnerable labour migrants. For instance, as noted, migrant workers who are paid by piecework or by the hour can rarely afford to sacrifice the time and income to seek medical care until urgent. To overcome these issues, health and social individuals with irregular status or who are displaced without a regular residence often avoid making themselves known to formal services may need to be taken closer. And, even individuals who are eligible for entitlements to people care are often unaware of how to achieve good levels of access. As a result, identify services—or can be deterred from using services because of discriminatory care gate-keepers. A number of services have come to understand that medical care and health promotion campaigns need to be mobile to reach vulnerable migrant populations who are at greatest risk of harm. Panel 34 outlines examples from the US of mobile health services and other examples include-

Work in the informal or illegal sectors are often the most hazardous and comprise the individuals who would benefit most from mobile clinics such as the Caravana de Vida, which reaches artisanal gold-miners in Madre de Dios, Peru.<sup>174,254</sup> NGOs in Greece are implementing mobile programmes in an attempt to reach mobile populations and provide appropriate services. Many communities move regularly within the country or even cities, and are not integrated into the national health or education system. The national NGO PRAKSIS is working to ensure that populations' diverse and distinct needs are being met. In Patras, they run a mobile school, specifically aimed at reaching unaccompanied minors who are living outside formal housing. Children, who are often working and not attending school, have access to creative and tailored education during times and in locations which are most appropriate for them. PRAKSIS also provides mobile health services, particularly for those who are unable or choose not to visit the formal health sector. Every evening, a team consisting of medical and psychosocial staff conducts free and anonymous HIV and Hepatitis B and C testing and counselling. The mobile service provides outreach to hidden and mobile populations such as sex workers, unaccompanied minors and intravenous drug users.

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There is an emerging understanding of the ways health needs in conflict-affected settings can be supported by telemedicine using digital health technology, such as cellular technology or cloud-based solutions.<sup>175</sup> However,<sup>252</sup> The use of these technologies require rigorous requires evaluation and monitoring during roll out with particular attention paid to possible intervention induced inequalities. Implementation should be undertaken using the implementation of evidence based models, but if successful, such systems may to help achieve SDG 3 indicators and foster better data collection among populations that are especially likely to be left behind.

## Governance and leadership of universal healthcare systems

Governance and leadership in the development of universal healthcare systems that facilitate safe and successful migration processes have been absent until now. The current focus on provision of universal healthcare is therefore an exciting opportunity for this leadership vacuum to be filled. Such leadership commitment as shown by the new WHO Director General, need to be followed by concrete action and be inclusive of migrants, in all countries and globally through better coordinated leadership across the UN system.

The importance of migrant health was emphasised by the World Health Assembly (resolutions 61.17 in 2008 and 70.15 in 2017). WHO Europe has then created a "Strategy and action plan for refugee and migrant health in the WHO European Region",<sup>176, 253</sup> This document sets out a number of actions

that should strengthen health systems for migration and we specifically call for member states to take positive actions. These actions include identifying an authoritative focal point that can engage multiple sectors, supportive legislation for health provision, underpinned by a needs assessment and evidence based guidelines, well resourced, and providing inclusive health and social care ideally co-developed with migrants.

These calls to action and strategic frameworks have not been implemented by many countries and more work urgently needs to be done to ensure existing policies and guidelines around migration and health are fully implemented. One exception to the lack of progress is the example of how Switzerland have demonstrated leadership in the provision of open health systems for all migrants, [and countries such as China \(case study; Panel 4\) have made substantial progress in improving access for internal migrants.7\)-](#)

#### **Panel 7: Leadership in health systems for migration—Switzerland**

*“Similar to all other areas of corporate governance, diversity policies need assertiveness by the highest management level”, Peter Saladin says.<sup>254</sup> The economist and former president of the H+ Swiss Hospital Association headed the Swiss “Migrant Friendly Hospitals” project implemented in 2003–2007, as part of the Confederation’s strategy on migration and public health.<sup>255</sup> According to the recent Migrant Integration Policy Index (MIPEX) Health Strand, and international comparative study health systems’ responsiveness to immigrants needs, the endeavour was successful: Switzerland scored second of 38 nations, and has established a “world leading ‘Migration and Health’ programme”.<sup>256</sup>*

*On the political level, Switzerland chose to turn “health” into a priority area of its integration policy. Legal entitlements and access to coverage within the insurance-based Swiss healthcare system is nearly identical for nationals, legal migrants, asylum-seekers and undocumented migrants. Health care providers are informed by the Federal Health Office or NGOs (like the Swiss Red Cross) about immigrant’s entitlements to health care and migrant patients are provided access to health relevant information in multiple languages.<sup>257</sup> Data collection and funding for migrant relevant health data is well developed, just as training of health professionals in transcultural competencies. The actual adaptation and responsiveness of health services, however, vary between regions (cantons) and institutions. The implementation of federal policies and provisions depend on political and institutional structures, priorities, and leadership on regional and local level. Interpreters and cultural mediators, for example, are available only at certain health centres, mainly large and university hospitals. As costs are charged on hospital budgets, a negative incentive for using interpreting services still exists. Specific services and support for undocumented migrants are also only available in a small number of cantons and political and administrative barriers to the actual realisation of formally granted rights are still prevalent.*

### **Financing universal health coverage for all stages in a migration journey**

Where a universal system does not exist, migrants are often unable to access even basic levels of healthcare provision for several reasons, one of the most important of which is cost. Well-designed health financing systems can prevent any individual or family from experiencing catastrophic costs as a result of ill health but this is unfortunately not the case in many countries at present. In order to address such issues, the World Health Assembly resolution 58.33 from 2005 set out a series of statements with regards to sustainable health financing, universal coverage and social health insurance and urged member states to: “ensure that health-financing systems include a method for prepayment of financial contributions for healthcare, with a view to sharing risk among the population and avoiding catastrophic health-care expenditure and impoverishment of individuals as

a result of seeking care”.<sup>177259</sup> If implemented, policies such as those recommended by resolution 58.33 would ensure that no migrant is subject to financial hardship. ~~However, however,~~ prepayments are particularly challenging for migrants, particularly if they become unexpectedly unwell shortly after, or during the migration process - a point at which any prepayment is unlikely to be sufficient to cover costs. ~~or if they are unable to work in their destination country. Several examples exist where pre-payments for access to healthcare are made as part of the visa application process;~~<sup>259</sup> ~~however, many of these systems lead to a worsening of health in migrants and host populations.~~<sup>260</sup>

~~Many migrants, such as internal or those who have settled, pay taxes and have access to services. But many, such as new, undocumented, seasonal and migrant populations in transit, however, present a challenge for financing, and new models for provision of universal healthcare coverage that enable ease of access during the whole migratory journey need to be considered alongside existing mechanisms.~~

Several countries have managed to achieve impressive changes in coverage and financing of their health systems, including pro-poor pathways towards universal health coverage and specific coverage for labour migrants.<sup>178264</sup> These examples demonstrate how countries have managed to provide coverage using limited budgets, whilst being inclusive of migrants, but tend to focus on labour and other forms of documented migration.

A ~~recent~~ systematic review identified six ways to improve coverage including adjusting eligibility criteria; improving awareness; reducing insurance costs to make them more affordable; improving enrolment processes; strengthening delivery of healthcare; and improving the organisational delivery of insurance schemes.<sup>179262</sup> ~~New and innovative ways of financing mechanisms are likely to be required if all migrants, including those who are undocumented and individuals that may only be transiting through a country, are to be covered. In its World Health Report in 2010, the WHO set out a series of innovative mechanisms for additional funding.~~

Health insurance schemes exist in many countries but do not cover migrants. A study of access to health services among migrants (including labour migrants) in the Greater Mekong Region (Cambodia, Lao, Myanmar, Thailand, Vietnam)<sup>180</sup> identified significant diversity in the capacity of health systems to address the needs of migrant populations. First, air ticket levies have previously been used to fund progress towards Millennium Development Goals.<sup>263</sup> A levy that is introduced in order to fund healthcare for migrants would be particularly appealing as, not only would it be implemented on a major transportation mechanism used by migrants (thereby wealthier migrants would face some costs), it would also be progressive, i.e. wealthier individuals who use such transport more regularly would pay more. Second, foreign Thailand, for example, has sought to improve migrant health coverage. This has included developing migrant health programmes, migrant worker agreements, and the implementation of migrant health insurance schemes. In Vietnam, health coverage is provided to migrant workers. However, in the Greater Mekong Region overall access to high quality healthcare remains very limited, particularly for migrant workers and especially those with insecure legal status.

In addition to health insurance and general taxation mechanisms to fund UHC for documented migrants, innovative ways of financing may be particularly helpful for those who are undocumented and individuals temporarily transiting through a country. Several examples of such mechanisms exist. Foreign exchange transaction taxes have considerable potential for fundraising and also are a way of migrants indirectly financing the coverage themselves given their likelihood of using such services. A third, products that are harmful to health such as alcohol and tobacco are already taxed in many countries. Increasing the income generated in this way could substantially increase funding for the general and migrant populations, in addition to having the benefit of reducing consumption of these harmful products. Fourth, a new intergovernmental bond scheme administered either through a newly created global organisation similar to the Global Fund for Malaria, HIV and Tuberculosis or a regional entity should also be explored. Such mechanisms can also be administered

through existing regional bodies where they exist such as the European Union or African Union. Such a fund will allow nation states to provide care to settled and transient populations and pool risks by drawing on funding from a variety of sources including governmental donors, charitable sources and taxation of/contributions from beneficiaries where they are able to work or wish to purchase additional cover. These forms of regional and global support and solidarity are necessary to enable less wealthy countries to make progress that will be to the benefit host and destination populations.

~~Lastly, health insurance schemes exist in many countries but do not cover migrants. A study of access to health services among migrants (including labour migrants) in the Greater Mekong Region (Cambodia, Lao, Myanmar, Thailand, Vietnam)<sup>264</sup> identified significant diversity in the capacity of health systems to address the needs of migrant populations. Thailand, for example, has sought to improve migrant health coverage. This has included developing migrant health programmes, migrant worker agreements, and the implementation of migrant health insurance schemes. In Vietnam, health coverage is provided to migrant workers. However, in the Greater Mekong Region overall access to high quality healthcare remains very limited, particularly for migrant workers (especially those with insecure legal status), who may experience an increased risk of poor health outcomes, poor health coverage, and as a result, high out of pocket costs for healthcare.~~

## Ensuring the provision of migration-appropriate health information systems

Health information systems are the cornerstone of efficient and effective healthcare provision and are used for assessing needs, delivering care, assessing quality of services and accounting and financing. At present, the majority of health information systems do not collect routine information about the migratory status of individuals.<sup>181265</sup> There are risks of collecting this information (see case study in Panel 58) although ~~these~~ they are often outweighed by the wider overall benefits once mitigated. ~~One way to reduce the risk is by following human rights law requirements requiring respect for confidentiality and other protections against misuse of information, e.g., no sharing with enforcement authorities. Information on migratory status should not be collected unless safeguards against misuse are in place.~~ Health information systems that do not collect data on migration, are unable to provide useful data to monitor differences in risk factors, morbidity and mortality between migrant and non-migrant populations, an essential step in monitoring and improving equity of service provision to this group. When health information systems are misused, civil society, academia and healthcare workers - including through the creation of “sanctuary hospitals” and “sanctuary doctoring”<sup>182</sup> - can play an important and vital role in standing up against the misuse. Human rights law can reduce the risk as it requires respect for confidentiality and other protections against misuse of information. Finally, information governance and encryption procedures can be built into health information systems so that whilst data can be produced on migrants, it remains impossible to identify them.

Many refugees' healthcare providers have developed bespoke information systems on the basis of such a system's ability to disaggregate populations by refugee status, enabling the monitoring of services, and humanitarian standards. It was therefore proposed that these systems remained separate and specific to the situation but would feed into the national infrastructure.<sup>183266</sup> Despite the advantages of such an approach, there are risks associated with developing a completely separate system for refugees and other migrants. Separate systems make comparisons between the host population much more challenging as the data collection processes and outcomes typically vary. Instead, national health information systems should be adapted, with only minor additions, to collect information on migrants that will provide public health and policy makers better data. ~~Many commercially available health systems are able to run securely using web-based portals both on and offline opening up the possibility of high quality information systems for use in mobile health units, or remote rural locations that weren't previously possible.~~ A truly universal health coverage system requires joined up and universal health information systems. For these reasons we argue that

wherever possible, national health information systems should be adapted to include data on migration, rather than separate systems being used.

**Panel 8: Inappropriate health data sharing for immigration enforcement in the UK**

On 1 January 2017 a memorandum of understanding (MOU) between the UK Home Office and National Health Service (NHS) Digital was signed.<sup>267</sup> The MOU formalised existing processes and data sharing that had occurred between NHS Digital and the Home Office.<sup>268</sup> The MOU described how any data shared had to comply with the legal obligations under the Data Protection Act 1998 (DPA), the Human Rights Act 1998 (HRA) and the Health and Social Care Act 2012. Requests were used by the Home Office to track down migrants for the purposes of immigration enforcement. Upon publication, the MOU generated significant media interest, particularly as it became apparent that there had been an increasing use of these requests since 2010. The report led to a request for clarification about the issue from the Health Select committee, which received several responses from NHS Digital, Home Office, The National Data Guardian, Public Health England and the UK General Medical Council.<sup>269</sup> In their responses, NHS Digital and the Department of Health outlined the basis by which the MOU had been written and the impact and equity considerations that had been reviewed. NHS Digital confirmed that no privacy impact statement had been undertaken, but that instead a public interest test was carried out in each individual tracing request.

In their response to the Health Select committee, Public Health England (PHE) stated they were unable to find statistical evidence about the impact of knowledge of data sharing on deterring immigrants from accessing healthcare treatment and agreed to undertake a full review within two years. However, in their testimony, PHE experts working in the field of communicable diseases stated that “sharing of personal information by NHS commissioners or healthcare providers, which has been provided to them by patients on an understanding of absolute confidentiality, with other government departments, law enforcement agencies or immigration enforcement authorities risks undermining public confidence in the public health system and could have unintended and serious consequences affecting the health of individuals and the risk to the public health of the wider community”.

The General Medical Council (GMC), the governing body for UK doctors, only permits clinicians to share patient information ‘if failure to disclose may expose others to a risk of death or serious harm’. Suspected immigration offences do not fall under this category. In the GMC’s response to the committee, they stated that: “The memorandum of understanding sets out clearly the public interest in maintaining effective immigration controls. It does not however reflect the public interest in there being a confidential health system, or consider how those two public goods should be weighed against each other”.

The National Data Guardian, Dame Fiona Caldicott, also expressed her concerns about this issue: “any perception by the public that confidential data collected by the NHS is shared for a purpose that they had not anticipated or without appropriate controls may well lead to a loss of people’s trust” and that “trust would have been better maintained had there been more public debate about where the balance should be struck between the public interest in maintaining an effective immigration service and the public interest in a confidential health service before an agreement was made between NHS Digital, the Home Office and the Department of Health. This would have allowed more scrutiny of the reasoning and factors which led to the policy position which has been taken.”

During a parliamentary debate in May 2018 about new data protection regulations, the chair of Health Select committee, Dr Sarah Wollaston, tabled an amendment to end the data-sharing arrangement between NHS Digital and the Home Office. During the debate the Government announced a reversal of policy and accepted Dr Wollaston’s amendment which

significantly narrowed the scope of the MOU in order that it only covered sharing in cases where a person was suspected of serious criminality.

## Cultural competence

The health sector cannot fully assess and support health needs, including health promotion, surveillance and service provision, without understanding the users' backgrounds and perspectives, as well as the mechanisms for exclusion. Approaches to tackle such challenges, however, need to be rooted in an understanding of the cultural context and its intersection with the environment. Yet too often, assumptions about health risks and behaviours faced by individuals from cultural or ethnic communities stem from misunderstandings or stereotypes. This can obfuscate relevant individual, social, structural, economic or political factors.<sup>71</sup>

Healthcare provision must be culturally appropriate and sensitive to the individual's understanding of health.<sup>184</sup> The "acceptability" of health services for migrants depends on the ability and preparedness of health professionals to provide "culturally informed care",<sup>71</sup> which includes an understanding of "culture" and the sensitivity and reflexivity subsumed under the notion of "cultural humility".<sup>185</sup> For balancing the awareness for culture with the need to address other relevant factors, and to avoid cultural stereotypes, "structural competence" is also needed.<sup>186</sup> This is reflected in an anthropological study of irregular Mexican farm workers in the US which showed that in contrast to the physician's assumptions, the migrants' culture was not the primary barrier to health access.<sup>187</sup> Instead a range of structural issues, including farm schedules, economic pressure, lack of insurance coverage and the mobility of farm workers determined utilization of local health resources.

Cultural competence is thus not just a technical skill that can be acquired in specific courses or trainings – although such training is an important starting point; it must be an ongoing commitment to "awareness of the cultural factors that influence another's views and attitudes" regarding health and disease.<sup>70</sup> It supports the healthcare provider in approaching the patients' understanding of the illness, how she or he "understands, feels, perceives, and responds to it".<sup>71</sup> This includes notions and practices commonly identified as "traditional medicine", that for multiple reasons may be of great importance for the patient and his or her peers. Systematic reflection of the health providers' own assumptions, beliefs, conventional understandings and values regarding medicine, health, and their own culture or ethnic heritage is also essential. Understanding organisational 'culture' - how medical institutions, professional groups function in particular settings (e.g. NGO providing humanitarian assistance) - are also important factors to consider in providing effective health care for migrant populations.<sup>70</sup>

An additional domain when considering migrant health, is the healthcare provision must be culturally appropriate and sensitive to the individual's understanding of health.<sup>269</sup> The provision of good quality care and enhancement of acceptability requires the health services to have cultural competence. The complex interactions of migrant experiences, with their ideas and expectations of care, will inevitably influence engagement with healthcare providers. In order to facilitate an effective doctor-patient encounter, and to encourage the most approachable and appropriate form of healthcare for migrants, professionals must be aware of the importance of cultural competence within health systems.<sup>270,271</sup> Prejudice and bias from health providers can be implicit and explicit, has multiple social dimensions, and patients with multiple minority identities may be particularly affected. In a synthesis of qualitative research of antenatal and postnatal care with migrants (mostly from LMICs moving to HICs), findings showed that women's expectations of care were based on their country of origin and difficulties were related to trouble adapting to a new setting while keeping traditional values. Other barriers included communication, both in terms of the understanding the local language and requesting services, and discriminatory attitudes by local

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health providers about women's understanding of the pregnancy and childbirth process. These factors influenced the care women received, leading to the abandonment of services in some cases.<sup>272,273</sup> Similar findings have been identified amongst rural to urban migrants in China who had poor knowledge and use of antenatal health services.<sup>274</sup>

Improvements in cultural competence can be achieved through provision of adequate better translation services and culturally appropriate through providing health-related support services improvement activities to migrants to that will increase their health literacy (understanding of health and how to access services.<sup>188</sup>). Language is a common barrier to access to and successful use of healthcare services, even when an individual has migrated to a country with the same language due to cultural nuances in which languages operate.<sup>275</sup> High quality interpretation and cultural mediation are among was seen as one of the most important factors in best practice delivery of health services to migrants.<sup>189</sup> The deployment of family members as translators when a professional interpreter is not available is, in contrast, highly problematic, immigrants.<sup>276,277</sup> But cultural competency, goes beyond health literacy and language. It includes combating the fear of discrimination or stigma,<sup>278</sup> of having one's culture misunderstood and structural competency, the "trained ability to discern how symptoms, attitudes, or diseases also represent the downstream implications of a number of upstream decisions".<sup>279,280</sup>

Cultural competence training for issues of confidentiality, quality of the translation, problems related to discussing sensitive topics, and the psychological burden for example for children when translating serious health issues for their parents. Moreover professionals improves the quality of care for migrants. Often, where cultural competence training is provided, it is important to consider that interpreters and individuals providing support services from the same country of origin or ethnicity may belong to socially and politically different parts of society, which may lead to associated challenges to effective provision of care. focuses on the culture of the migrant patients and rather than the social and structural barriers inherent in the culture of health providers and institutions.<sup>281</sup> For example, in a study among irregular Mexican farm workers in their communities of origin, migrants' dwellings in the United States, during farm work, and while accompanying migrants to health facilities,<sup>282</sup> the migrants' culture was not the main barrier to good health access but multiple structural factors, and the clinicians' perceptions of migrants and their patients' health problems. Structural issues hampering access included farm schedules, economic pressure, lack of insurance coverage and the mobility of farm workers. Consequently, patients frequently waited until advanced stages of disease before presenting to a clinic, and continuity of care was difficult. At the same time, physicians' views of the migrant patients' health problems largely excluded current social and structural aspects and focused on "culture" in terms of traditional beliefs, habits and biological features.<sup>283,284</sup>

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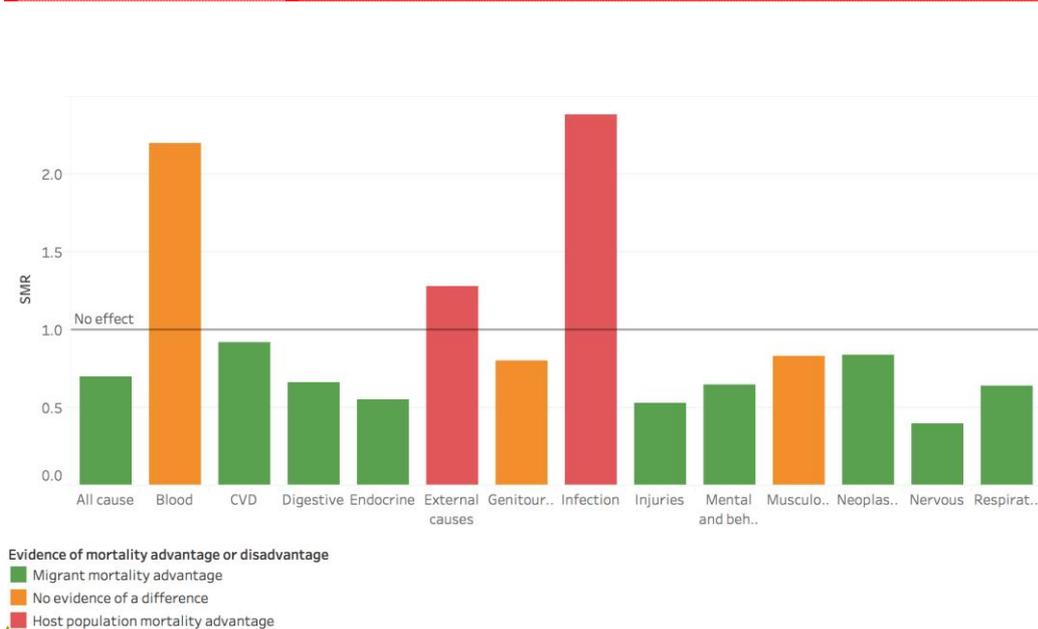
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## Section 3: Burden of Disease and Migration

For many years, researchers pursued the theory of a "healthy migrant effect", which has been described as: "an empirically observed mortality advantage of migrants from certain countries of origin, relative to the majority population in the host countries, usually in the industrialised world".<sup>190,285</sup> However, not surprisingly, this theory has proven to be reductionist because it neglects the diversity and complexity of migration-related factors that influence people's health and how these affect individuals at different stages of the lifecourse<sup>191,286</sup> and also that the health benefits of being a migrant tend to reduce over time. To ensure the Commission is informed by the latest and most relevant burden of disease evidence, we present the results of a new systematic review and meta-analysis of mortality outcomes in international migrants, examine mortality internal migrants and then explore in depth migration and morbidity across the lifecourse.

## International migration and mortality

To complement the Commission’s work, a systematic review and meta-analysis on mortality outcomes in migrants was undertaken. [\[cross reference review\]](#) A total of 96 studies were included and 5498 mortality data points were extracted and meta-analysed using a random effects model. Findings provide strong empirical evidence of the mortality advantage of international migrants ([figure across virtually all ICD-10 disease categories \(Figure 12\)](#)). Published evidence on all-cause mortality in international migrants was lower (0.70 (95% CI: 0.65–0.76) than for non-migrants, although there were high levels of underlying heterogeneity between studies, [and residual confounding due to the younger age of the migrants](#). Infectious disease and external causes were the only two ICD-10 [categoriescategory](#) for which there was increased mortality (2.4 [1.8–3.2];  $I^2=98.5\%$  and 1.3 [1.1–1.5];  $I^2=98.3\%$  respectively).



**Figure 12.** Summary of random effects meta-analysis of Standardised Mortality Ratios for international migrants by ICD-10 disease category. [Online interactive version of figure.](#)

Our review highlighted the heterogeneity of SMRs by country of origin <sup>192287</sup>, which is consistent with other studies. Moreover, other evidence indicates the importance of age at migration, type of migrant, year of migration, social class and policies towards promoting health in the receiving country. <sup>193288</sup> We compared all-cause SMRs across migrant groups and geographical region of destination to examine underlying heterogeneity (See supplementary appendix, Figure 8) in the supplementary appendix. (Figure 13). All-cause SMRs in migrants compared to non-migrants in the host countries were lower for Europe, Americas and Asia, <sup>7</sup> but the statistical evidence of reduction for international migrants to Asia was weak (0.98 [0.92–1.05];  $I^2=99.3\%$ ). Data on refugees and asylum seekers were very limited precluding firm conclusions; based on two studies, there was lower mortality in refugees (0.50; 95% CI: 0.46, 0.56) and only four data points and no relative mortality difference found in among asylum seekers. No SMR data were available for labour migrants or internal migrants.

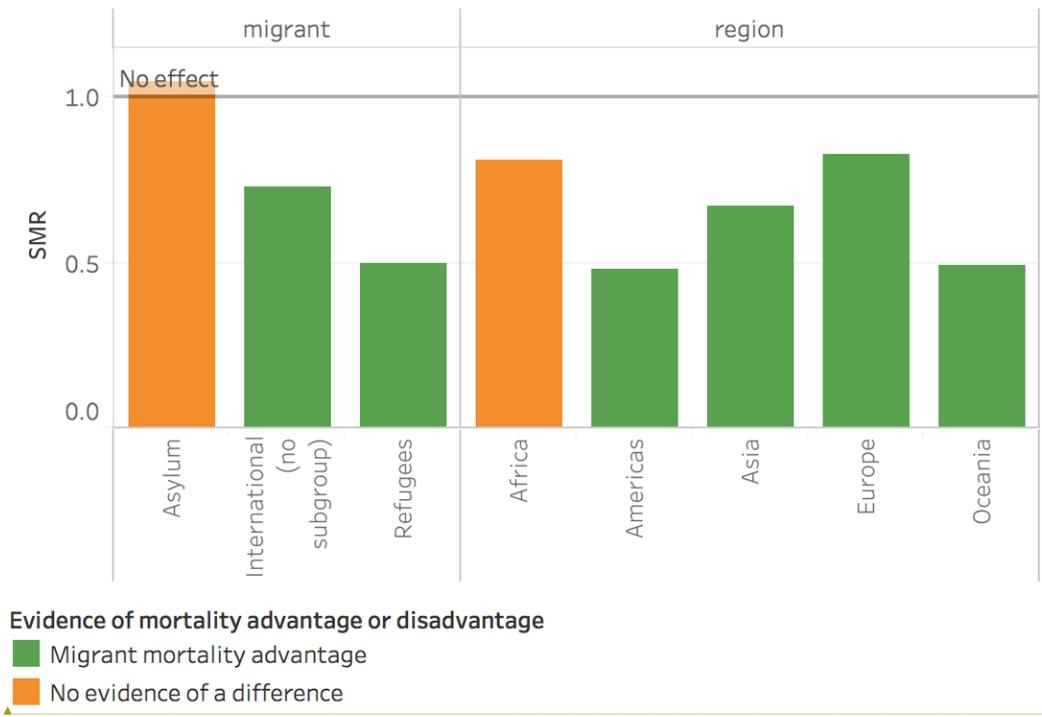
The limitations to this review, [that are](#) detailed in the full manuscript, [were including](#) that only SMR and absolute measures of mortality were included and [we were unable](#) ~~the inability~~ to examine

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whether the mortality advantage changed over time since migration, or whether voluntary versus forced migration, socio-economic status, levels of acculturation) were associated with mortality rates. ~~We also did not explore multi-generational effect. Our results point~~~~This points~~ to the need for improved data collection and reporting in migrant health research. ~~Due to the extent of the literature we only extracted data on SMRs (which adjust for age) and absolute rates (without general population comparators) but cannot exclude residual confounding. We were also unable to look at the association between the number and duration of migration episodes and how transit circumstances might have affected mortality.~~



**Figure 13. Summary of random effects meta-analysis of all-cause Standardised Mortality Ratios by migrant group and geographical region of migrant origin.**

## Internal Migration and Mortality

To explore internal migration and mortality, we conducted a case study using novel analysis of Health and Demographic Surveillance System data from Sub Saharan Africa (Panel 69). Findings indicate that in half of the study sites, migrants' mortality was 50% higher than among non-migrants. These findings are strengthened by results from a study of internal migration and AIDS/tuberculosis and non-communicable disease (NCD) mortality in 4 HDSSs in South Africa and Kenya, which showed that in-migrants, and return migrants even more so, had higher mortality risk attributed to both non-communicable and infectious disease.<sup>194, 289</sup>

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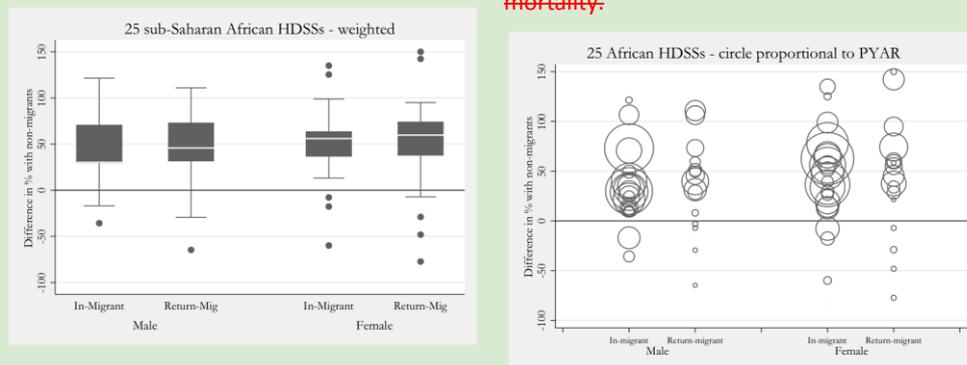
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## Migration and morbidity across the lifecourse

### Panel 9: Internal migration and mortality—an analysis of all-cause mortality in 25 Health and Demographic Surveillance System (HDSS) sites in sub-Saharan Africa

These data represent a mix of rural and urban settlement types, from the International Network for the Demographic Evaluation of Populations and Their Health (INDEPTH) iShare platform.<sup>290</sup> The datasets include individual-level information on all movements into or out of a surveillance area for durations in excess of 6 months. From these data, we can identify in-migrants (new residents) and return-migrants (former residents returning) to an area. After 5 years of residence, a migrant is considered a permanent resident, since prior analyses of the effect of duration following migration show that the mortality experience of migrants converges with that of permanent residents (non-migrants) after this length of time.<sup>291</sup> For each migration category (non-migrant, in-migrant, return-migrant) premature mortality is estimated using the probability of mortality before age 60 if a person is alive at age 15 (45q15). The percentage difference in 45q15 between migrants and non-migrants was estimated by sex for each of the 25 HDSSs from the year 2000.

The analysis reveals that in sub-Saharan Africa, the distribution of the difference in premature adult mortality between migrants and non-migrants is substantial, i.e. in half of the sites migrants' mortality was 50% higher than non-migrants' mortality.



**Figure 14: Difference in adult health probabilities (45q15) by migrant status in 25 African HDSSs**

Box-and-whiskers plots or bubble plots (size of the bubble proportional to the person-years at risk) PYAR = person-years-at-risk

These results suggest that internal migrants in the SSA sub-districts have a health disadvantage relative to the resident, non-migrant population. A study of internal migration and AIDS/tuberculosis and non-communicable disease mortality in 4 HDSSs in South Africa and Kenya affirmed these findings. In the Agincourt study population in rural South Africa, in-migrants and, even more so, return migrants had a health disadvantage in terms of mortality risk attributed to both non-communicable and infectious disease.<sup>292</sup> These findings suggest that relative to non-migrant mortality, the experience of migrants is demonstrably worse in many sub-Saharan settings—with limited access to healthcare a likely determinant along with poor social integration or inadequate living conditions. Further research into the circumstances at migrant destinations is a priority going forward.

The same methodology was used to examine child mortality (the probability of death in under 5-year-olds) by migrant status, where child migration status was considered independently of the

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migration status of their parents (Figure 15). The results present a striking contrast to those of adults. Both in migrant and return migrant children of both sexes have lower all cause mortality on average than non-migrant children. These results present an important direction for further research and challenge assumptions that determinants operate in the same way and have the same outcomes for adults and children.

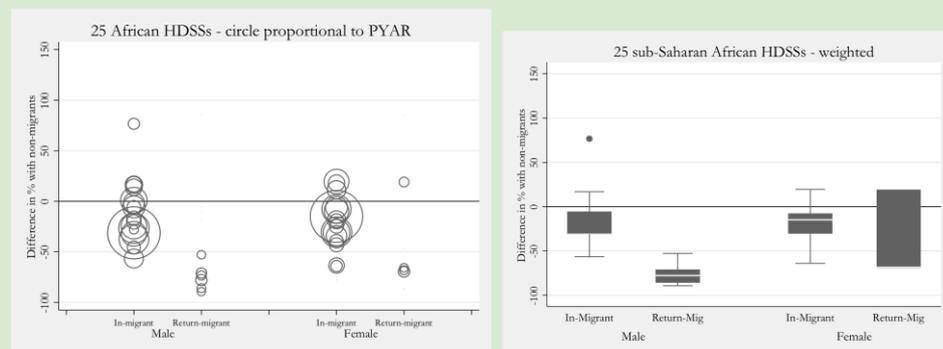


Figure 15: Difference in child health probabilities (45q15) by migrant status in 25 African HDSSs

In this section, we describe the health effects of migration on selected morbidity outcomes to illustrate varying impact through the life course and in different migrant groups and, where available, we summarise evidence of effective interventions. Health in different periods of life ~~that have a high morbidity~~, vary in important ways in comparison to non-migrants, and may lead to longer term or intergenerational effects. There is paucity of evidence comparing migrant groups with the population in the location of origin and, unless ~~Unless~~ otherwise stated, the studies relate to international migrants, with the comparison group being the host population. This makes it difficult to ascertain whether migration itself improves or worsens health. The reality is that it would improve and worsen different risk factors for health at an individual and population level. The health risk profiles of migrants are determined by their pre-migration status and is a complex combination of biological and socioeconomic factors developed over their lives. Moving to a new location will change someone's risk profile, with some determinants of health improving and others worsening. As people usually move to better their lives, risk factors for health will generally improve, resulting in better overall health than the counterfactual in their previous location. Comparing to the population in the destination location may make it appear that the morbidity in migrants is higher. Where available, we have summarised evidence of effective interventions.

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## Perinatal health

The evidence for perinatal outcomes is mixed. An umbrella review (including 19 systematic reviews) of perinatal outcomes amongst migrants and refugee women generally ~~found~~ showed worse outcomes amongst migrants for maternal mortality, maternal mental health, preterm birth and congenital anomalies.<sup>195,293</sup> A meta-analysis of maternal mortality shows a doubling of risk in migrant women in Western Europe.<sup>294</sup> A meta-analysis of 18 million pregnancies in Europe showed that migrant populations had an increased risk of perinatal mortality (OR 1.50; 95% CI 1.47, 1.53), preterm birth (OR 1.24; 95% CI 1.22, 1.26), low birthweight (OR 1.43; 95% CI 1.42, 1.44), and congenital malformations (OR 1.61; 95% CI 1.57, 1.65). Importantly, these risks were found to be

significantly lower in countries with policies promoting social participation and active integration with the host population (Belgium, Denmark, the Netherlands, Norway, Sweden).<sup>196</sup> ~~Conversely a~~<sup>295</sup> A further large meta-analysis including >20 million pregnant women moving to western industrialised countries, ~~found~~<sup>showed</sup> that ~~in the majority of studies,~~ children of migrants ~~generally~~ fared better. For subgroups of migrants from Asia and Africa, there were increased rates of preterm birth and mortality ~~but~~ Latin American migrants ~~however~~ were at a lower risk of preterm birth.<sup>197,296</sup> The reasons for adverse birth outcomes included underlying conditions in the mother which could be exacerbated by migration, such as heart disease or HIV, poor access to and interaction with the health service, communication problems, socioeconomic deprivation and the stress of migration. ~~Barriers to access included structural, social and personal/cultural, for example lack of knowledge about available services, language barriers and financial constraints. Similarly, an increased risk for maternal postnatal depression, perinatal mortality and preterm birth is found amongst refugee women and their offspring.~~<sup>293</sup>

Migration is also commonly associated with stressors that can have substantial effects on maternal mental health and ~~postpartum~~<sup>post-partum</sup> depression. ~~Prevalence rates of depression range from <1 to 60%.~~<sup>293,297</sup> In a meta-analysis ~~of studies~~ of perinatal mental disorders among women from LMICs in HICs, 31% had symptoms of any depressive disorder and 17% for major depressive disorder.<sup>198,298</sup> Estimates suggest that within the first year after childbirth, ~~20% of women experience depressive symptoms and~~ the risk of ~~postpartum~~<sup>post-partum</sup> depression is 1.5-2 times higher in immigrant versus non-immigrant women.<sup>199,299</sup> Risk factors included a shorter period of residence, lower levels of social support, difficulties adjusting to the new country and perceived insufficient household income.<sup>195,293</sup>

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## Children and adolescent health

~~Children and adolescents who migrate generally do well, as they adapt and integrate quickly into new environments, especially when supported by families and engaged in quality education with access to health services. The risk factors for health in the location of origin can be profound, for example huge health benefits result from escaping trauma or conflict settings.~~ Healthy development in infants, children and adolescents occurs in the context of stable and caring relationships, ~~and access to quality education and health services.~~ The extent to which migration can ~~alter~~<sup>interrupt</sup> these social determinants of health is immense ~~and,~~ especially if migration is associated with ~~individual or parent exposure to trauma and poverty.~~ Migration during sensitive developmental phases, especially when exposed to stressors, can determine later health outcomes and the health of the next generation. Migration can break up and alter family units and loss of parents and carers can lead to emotional and psychological harm ~~but it may also bring families together and new family and social networks form over time.~~ Migration can also ~~disrupt the provision of healthcare, for example immunisation schedules, threaten early childhood development and access to schooling.~~<sup>55</sup> ~~The situation is variable, however.~~ Maintenance of secure family structures and functions during the migration journey can help protect children and adolescents from some of the most adverse influences, while continued access to learning environments is critical for all children and adolescents. Migration can also ~~disrupt the provision of healthcare, for example immunisation schedules, threaten early childhood development~~ ~~bring families together~~ and ~~access to schooling.~~<sup>200</sup>

~~Overall there is far less evidence on new family and social networks form over time. Children and adolescents compared to young children, despite them constituting a larger proportion of migrants (figure 4b), are also highly adaptable, especially when supported by families and engaged in quality education.~~ As children mature through adolescence (10-24 years) they become more directly exposed to social determinants of health beyond the family (e.g. education, gender norms, racism). During puberty, brain maturation results in increased sensitivity to real and perceived differences related to migration. Beyond simply feeling “different”, the experience of stigma and social exclusion

by bullying can contribute to emotional distress, anxiety and depression, and self-harm, including suicide.<sup>201</sup> Some of these impacts can be intergenerational. For example, migration of the mother as an adolescent or young adult was found to be associated with lower sociability and problem-solving skills in her children at four years of age compared to children born in the country or mothers who migrated when younger.<sup>202,200,201</sup>

**Mental Health:** A systematic review of mental health outcomes in economic migrants found equivocal results, varying by the migrant group and host country.<sup>203,202</sup> A meta-analysis of internal migration in China showed that migrant children have a greater risk of internalising and externalising problems in public schools, but not in migrant-specific schools.<sup>204,203</sup> Amongst forcibly displaced children in HICs, higher rates of psychological morbidity have been recorded. Only a small number of studies have looked at the migration itself with inconclusive results, but the evidence shows that pre-migration factors, such as exposure to violence were predictors of mental illness. Comparison studies with children left-behind are lacking. Factors, such as support from families and friends and a positive school experience, can be protective. There is also evidence of increased mental illness<sup>205,204,205</sup> and autism<sup>206,206</sup> in second generation migrants, potentially mediated via epigenetic mechanisms. Children's development and mental health can be affected by their parents' experiences and reactions to trauma. Higher post-traumatic stress symptoms in refugee women were associated with poorer psychosocial functioning in 18-42 month old children but not with delays in emotional or psychomotor development.<sup>207</sup>

**Nutrition:** Rapid transitions associated with migration can lead to substantial changes in diet, exercise and infectious disease exposure, all of which can affect nutritional status. Improving the access to quality food by migrating would improve health but changes Changes in lifestyles, shrinking social networks are slim and the adoption of taste changes to high fat, high sugar or processed foods may are all negative dietary effects that lead to obesity.<sup>207,208-210</sup> Poor nutrition, particularly during foetal life and infancy, coupled with rapid weight gain in a new environment can lead to an ill health in the child and to increased long-term riskrisks of NCDs. As well as undernutrition, migration can lead to rapid weight gain,<sup>211</sup> with evidence that timing of migration alters obesity rates.<sup>208,212</sup> Children affected by migration may experience both undernutrition and overweight. For example, a Swedish study found an association between maternal migration and lower BMI in children <5 years old but higher BMI in older children.<sup>209</sup> 5 years old but higher BMI in older children.<sup>213</sup> Even older adults who migrated at a young age continue to show differences in health conditions, such as obesity and diabetes, compared to their non-migrant peers.<sup>214,215</sup> Apart from promoting breastfeeding, most other nutrition interventions vary according to the context and health outcome.<sup>210,216</sup> For example, tackling severe acute malnutrition in humanitarian settings may require ready-to-use therapeutic food, with improvement in food security.

**Unaccompanied minors:** Unaccompanied minors, typically 15-18 year olds who are 'separated from both parents and other relatives and are not being cared for by an adult who, by law or custom, is responsible for doing so'.<sup>211,217</sup> They are particularly vulnerable, both from the circumstances that have rendered them unaccompanied (e.g. war, parental death) and the risks that can arise when less protected by close family. The group is diverse and includes victims of trafficking or modern slavery, those reuniting with family, and those seeking a better life or reuniting with family. Less experienced than older adults, and generally impoverished, they are at great risk of exploitation. Unaccompanied minors can be subject to dispute over age (see Panel 71). While the younger the age, the greater the risks, unaccompanied young adults are also likely to be at greater risk than those protected by their immediate family. Health risks results from exposure to substances and unsafe sexual behaviours, and greater risk of early school completion and unsafe employment. -Unaccompanied girls are

particularly vulnerable to sexual violence and unwanted pregnancy.<sup>212,2348</sup> The accumulation of risks can result in complex health needs, especially mental health problems, which can then be compounded by issues around residency status.<sup>213,249</sup>

**Left-behind children:** Children may be 'left behind' when parents migrate usually for work. Though there are no global estimates for the number of left-behind children, there are an estimated 61 million in China alone. The impacts of parental migration on the health of left-behind children are mixed. In some settings there is evidence of a beneficial effect, for example through receipt of remittances, while in others, children suffer adverse consequences. We undertook a comprehensive systematic review of the literature in any language, including in Chinese, across key areas of child and adolescent mental and physical health, including the large Chinese databases (see accompanying paper). We identified 111 observational studies with outcomes for mental health, nutrition, infectious diseases, injuries and key determinants of health. The majority of studies addressed children of internal migrants in China and showed no difference or worse outcomes in children or adolescents left-behind compared to those of non-migrant parents. The meta-analyses showed an increased risk of anxiety (RR 1.85; 95% CI 1.36, 2.53), depression (RR 1.52; 95% CI 1.27-1.82), substance use (RR 1.24; 95% CI 1.00, 1.52), suicidal ideation (RR 1.70; 95% CI 1.28-2.26), stunting (RR 1.12 (95% CI 1.00, 1.26), and wasting (RR 1.13; 95% CI 1.02, 1.24) among left-behind children and adolescents. No differences were found in the risk of being overweight/obese or experiencing abuse. In all the meta-analyses, heterogeneity was high, however the results were robust to sensitivity analyses analysis removing low quality studies and subgroup. Separate analyses of considered internal migration in China, which showed little difference, and international migration, showed little difference in the rest of the world, for which there were generally a small number of studies for each outcome. Parental absence and lack of supervision may lead to unhealthy risk behaviours in left-behind adolescents.<sup>320</sup> Given the very large population of left-behind children globally, the increased risk of mental disorders, substance use and malnutrition represent a major concern.

## Women, Men and Sexual Minority health

The health and morbidity patterns among adult migrants are associated with a combination of pre-existing factors, their new environment and lifestyles, and exposures during their journey. This results in a great deal of variation in morbidity, with the prevalence of some conditions increasing, while others reduce. There are also commonly differences between certain health conditions among recent migrant populations versus long-term residents and in this section we review the latest evidence in these areas.

**Mental health:** In general, prevalence rates of mental illness vary widely.<sup>321</sup> Among first generation international migrants, individuals tend to have higher prevalence rates of depression, anxiety and post-traumatic stress disorder compared to the host population, with an increased risk in asylum seekers and refugees.<sup>214,224</sup> Men appear to have a higher risk of mood disorders (RR 1.29; 95% CI 1.06, 1.56), but no difference in women.<sup>205,206</sup> Psychosis and schizophrenia are consistently higher among migrants, approximately double the risk compared to the host population and these effects are carried over into the next generation.<sup>215,216 322,323</sup> For example a study of 1.3 million people from Sweden found adjusted hazard ratios of 1.7 (95% CI 1.3, 2.1) in migrants (non-refugees) and 2.9 (95% CI 2.3, 3.6) in refugees, with higher risks amongst men.<sup>324</sup> However, studies in HICs simultaneously indicate that psychiatric admission rates are low, potentially due to biased diagnoses or under-utilisation of hospitalisation.<sup>325</sup> Compared to those who did not move, a natural experiment following a random ballot that allows people from Tonga to migrate to New Zealand,

~~showed better mental health outcomes in the migrants, in particular for women.<sup>326</sup> To date, there are few studies exploring the mental health of migrant workers.<sup>327</sup> However, one review that compared labour migrants to refugees found that refugees had approximately double the prevalence rates of depression and anxiety. Importantly, the authors suggest that financial stress is a significant risk factor and that a higher Gross National Product in the country of immigration was related to lower symptom prevalence of depression and/or anxiety in labour migrants but not in refugees.<sup>328</sup>~~

The reasons for the differences in mental health outcomes and the variation between individuals and groups is multi-faceted. They reflect real differences in precipitating risk factors, for example exposure to violence and traumatic events, time in new setting, and, importantly, methodological variation. Discrimination is also implicated across a range of mental health outcomes including depression, psychological distress, anxiety, and well-being.<sup>217</sup> ~~according to both laboratory and community studies.<sup>329,330</sup> Perceived discrimination has also been linked to specific types of physical health problems, like self-reported poor health and breast cancer, as well as potential risk factors for disease, such as obesity, hypertension, and substance use.<sup>218,331,332</sup> As with other forms of cumulative stress, perceived discrimination may lead to chronic over- or underactivity of allostatic systems and other patho-physiological processes. However, few studies have documented the impact of discrimination specifically on migrants' health.<sup>333,334</sup>~~

~~Internal migration can have many of the same risk factors.~~ Mixed results were found in mental health status in Chinese rural to urban internal migrants compared to local urban migrants or no difference or worsening mental health status compared to rural migrants. Social and economic exclusion were both important determinants of mental illness.<sup>219 335</sup>

Research on the mental health of migrants typically focuses on refugees, asylum-seekers and torture survivors. ~~Studies commonly report on PTSD and depression.~~ Systematic reviews and meta-analyses often indicate inter-survey variability. A review and meta-analysis of 181 surveys from 40 countries, comprising 81,866 refugees and ~~other~~ torture and conflict-affected persons ~~from 40 countries~~ found the unadjusted weighted prevalence rate ~~across all surveys~~ was 30.6% (range: ~~from~~ 0-99%) for PTSD, and 30.8% (range: 0-86%) for depression.<sup>220,336</sup> ~~Another review of 29 studies on long-term mental health with a total of 16,010 war-affected refugees found significant between-study heterogeneity in prevalence rates of depression (range 2.3–80%), PTSD (4.4–86%), and unspecified anxiety disorder (20.3–88%), with prevalence estimates typically in the range of 20% and above.<sup>337</sup> When examining depression among refugees, a systematic review incorporating 6743 people across seven countries, found that 5% had depression and 9% had PTSD.<sup>338</sup> Compared to labour migrants, refugees experienced approximately double the prevalence rates of depression and anxiety.<sup>221,338</sup> Mental health interventions, including CBT<sup>222,339</sup> and trauma-focused therapy<sup>223,340</sup> have some efficacy in treating PTSD, and community-based mental health services have been consistently shown to improve outcomes.<sup>224,341</sup>~~

#### **Panel 10 Case study—Labour trafficked migrants, mental health and financial security.**

Employment is highly correlated to mental health, with job insecurity and financial insecurity closely linked to anxiety and depression. Most data on employment and health come from high-income settings and studies on higher wage jobs, with very little research on migrant workers in LMICs. The *Study on Trafficking, Exploitation and Abuse in the Mekong* documented forms of labour exploitation and health outcomes among men, women and children using post-trafficking services in Thailand, Cambodia and Vietnam. Findings showed high symptom rates of depression and anxiety disorders, post-traumatic stress disorder (PTSD) and suicidal ideation associated with sexual and physical violence and threats during trafficking; poor living and working conditions; excessive overtime and restricted freedom.

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Being deprived of wages was also a major stressor for formerly trafficked persons, many of whom experienced guilt and shame from failing to fulfil income expectations. In the STEAM study, most trafficked migrants (62.3%) reported being cheated of their wages. Among the few who were paid for their work, domestic workers (\$0.40), agricultural workers (\$0.70) and fishermen (\$1.10) received the lowest daily wages. Unsurprisingly, domestic workers and fishermen more frequently expressed financial concerns (75.9% and 71.1% respectively). The majority (81.6%) of domestic workers reported depression, anxiety and/or PTSD symptoms, similar to individuals trafficked for construction work (79.0%). Individuals who had been cheated over their wages or had financial concerns had approximately one and a half times the odds of being symptomatic of a mental health disorder.

Studies often overlook the significance of income security to a migrants' psychological well being because research on migrants' mental health frequently focuses primarily on past events versus current stressors. Especially for those who migrated to improve their family's economic circumstances and failed, mental health support will need to include job training and placement or small business grants. Moreover, for individuals who were exploited, cheated of their wages or injured on the job, legal aid should be provided to help with wage recovery and compensation for abuses, and injuries, including long term disability support.

**Communicable diseases:** Control measures for infectious diseases have long been established, including recognised, leading to the establishment of processes such as quarantine of visitors and animals at ports of entry. The true risk of transmission arising through migration is, however, a function of multiple factors and risk varies according to not just the underlying incidence in the country origin and the susceptibility of the receiving population. Important considerations include the route of transmission of the pathogen, its transmissibility, the degree of mixing between the infectious and susceptible population and the available control measures in place to mitigate transmission risks. Outbreaks In addition, outbreaks of infectious diseases may be sustained by population movement, for example during the West African Ebola outbreak, population movement within and between countries contributed to sustaining transmission.<sup>225342</sup> An important risk in relation to the spread of infections is the emergence and subsequent transmission of antimicrobial resistant strains that emerge in one part of the world and spread to other regions.<sup>226343</sup> However, the spread of such resistant pathogens is not due to migration but driven by international travel and tourism and the movement of livestock.<sup>226343</sup> The public health burden of infectious disease in migrant populations remains high in many settings. Strong preventive services, including immunisation and screening programmes, and curative services to ensure early detection and treatment of infections in migrants are needed. Where screening programmes are established, they need to be evidence-based and culturally acceptable. Ultimately, the enlightened self-interest approach is to strengthen global health security by supporting the establishment of sustainable health infrastructure and system in all countries.

**Physical disability:** For people of any age with a range of disabilities, such as those with mobility impairments, or visual, hearing, intellectual or mental health impairments, the process of leaving home and traveling elsewhere can be physically challenging, stressful and confusing especially in times of crisis. Difficulties are exaggerated for people who have difficulty walking, seeing or who are physically frail and transit accommodation may be physically difficult or impossible for people with disabilities to negotiate where there is competition for food and shelter. These difficulties also often lead to later departure in times of economic stress or humanitarian disaster, placing them at additional risk. Furthermore, migration can disrupt existing social and medical support networks. People with disabilities are frequently and incorrectly assumed to be less able or competent leading to inability to find work or find enough work in a new community to cover their expenses or

contribute to their households. Although the UN Convention on the Rights of Persons with Disabilities guarantees equal access across borders to all, people with disabilities find themselves victims of discrimination during the immigration process, struggling to pass immigration tests, understand oaths of alliance or to meet minimum income requirements. People with disabilities in all societies are significantly more likely to be victims of violence.

**Non-communicable diseases:** Increasingly people are moving with established non-communicable diseases (NCDs); and often combined with a double burden of NCDs alongside communicable disease. ~~) that reflects the epidemiological transition more broadly. Most migrants undergo rapid changes in environmental risk factor profiles.~~ The interruption of care during transit - due to barriers to health access, documentation, ~~or~~ lack of healthcare providers or disrupted health systems - prevents-disrupts the continuous treatment necessary for the effective management of many chronic health conditions.<sup>227</sup> The absence of effective prevention, screening and continuity of care in migrant populations result in higher burdens of NCD morbidity and mortality. Evidence has shown that migrants undergo rapid changes in environmental risk factor profiles. When compared to the native Danish population, migrants from Africa, Asia and the Middle East had 2.5 times the incidence of diabetes.<sup>228</sup> This difference could be due to various factors such as poor health literacy and language barriers leading to difficulties accessing services, shift in socioeconomic status, decreased rates of physical activity and changes in diet.<sup>244</sup> A systematic review of 37 studies of 'non-Western' migrants in Europe found lower morbidity due to any malignancy in migrants compared to the host populations. For specific cancers some exceptions existed, for example liver cancer, and incidence varied by the region migrants moved from.<sup>229</sup> Consequently, more effective integration of NCD care into health systems and humanitarian response is therefore essential.<sup>345</sup> ~~Studies investigating second generation migrations are limited. Evidence from Sweden shows a tendency for cancer incidence rates to converge towards the host population rates.~~<sup>346</sup>

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#### Tobacco and alcohol use

**Substance misuse:** While tobacco and alcohol~~substance abuse~~ in migrants has been shown to be heterogenous and context-dependent, a number of underlying risk factors were identified including unemployment, poor working conditions, language proficiency, level of integration, number of traumatic experiences and community cohesion. Studies suggest that migrant smoking prevalence rates are dependent upon the rates in the country of origin and the rates in the host country. For example, Ghanaian migrants in Europe were more likely to smoke than both rural and urban dwellers in Ghana but still smoked less than the host population.<sup>230,347</sup> Several studies in HICs and internal migrants in China have shown that migrants are less likely to smoke than non-migrants,<sup>231,232,348,349</sup> while male migrants from Europe, North Africa and the Middle-East in Australia were found to smoke more than Australian-born men.<sup>233,350</sup> A study in Kazakhstan demonstrated that international labour migrants reported higher rates of hazardous alcohol consumption compared to internal migrants and the host population.<sup>234,351</sup> Conversely, in Peru the prevalence and incidence of heavy drinking was the same for rural-to-urban internal migrants as their rural and urban counterparts.<sup>235,352</sup> ~~A systematic review found mixed results when comparing substance abuse in forced and non-forced migrant populations. In the US and Sweden, refugees were less likely than non-refugees to report substance use while there was no difference between IDPs and non-IDPs in Colombia.~~<sup>353</sup>

**Occupational health outcomes in labour migrants:** Rates of fatal and non-fatal injuries are higher in labour migrant populations compared to non-migrant populations. This is in part due to the type of employment, such as construction, fishing, and metallurgy, but even within these sectors, occupational morbidity and mortality is higher among migrants than native-born workers (Table

1).<sup>236</sup> 2).<sup>354</sup> Occupational harms differ by sector and include injuries, exposure to weather/pesticides, respiratory conditions, depression and anxiety, infectious diseases. As part of a new analysis done for this Commission, we did a systematic review and meta-analysis focused on international labour migrants (originating from 24 LMICs) which found a reported prevalence of 47% documenting at least one morbidity (7260 migrants; 95% CI = 29-64%; I<sup>2</sup>= 99.7%)– including predominantly musculoskeletal pain and dermatological conditions – and a prevalence of reported injury and accidents of 22% (3890 migrants; 95% CI=7-37%; I<sup>2</sup>=99.4%).<sup>237</sup>

However, there are studies that have shown no difference for migrant and non-migrant health in certain sectors.<sup>355</sup> In general, men are more likely to suffer workplace injuries, illness and fatalities.<sup>238,256</sup> In fact, migrant workers, operating in many of the most hazardous work sectors may not be aware of or have access to occupational health and safety training or personal protective equipment.<sup>236 354</sup>

To date, there are few studies exploring the mental health of migrant workers. A review that compared labour migrants to refugees found that refugees had approximately double the prevalence rates of depression and anxiety. Importantly, the authors suggest that financial stress is a significant risk factor and that a higher Gross National Product in the country of immigration was related to lower symptom prevalence of depression and/or anxiety in labour migrants but not in refugees.<sup>221</sup>

**Sexual and reproductive health (SRH):** Addressing SRHsexual and reproductive health (SRH) needs can be particularly challenging because of the risks of sexual abuse and exploitation,<sup>239,257</sup> especially among children and adolescents, and because of cultural practices that increase health risk, such as early or forced marriage,<sup>20,258,259</sup> genital cutting, and historical and cultural norms, such as unfamiliarity with or restricted use of gynaecological and obstetric care.

Studies from Europe show migrants have poorer rates of SRH service use due to a range of obstacles from legal or financial barriers to communication issues and a lack of knowledge about services.<sup>260</sup>

Similarly, studies in China and Thailand found that men and women who migrate for work had limited knowledge of SRH issues or access to SRH services when compared to the host populations.<sup>261</sup> Interventions such as gender-separated groups for SRH information uptake, provision of easily comprehensible SRH material, and cultural competency training for providers can be used to improve health literacy and service accessibility for migrants.<sup>262,263</sup>

-Sexual violence or threat of abuse exacerbates reproductive health problems and can deter women and youth from seeking care. Importantly, it is not uncommon for sexual abuse among boys to be overlooked, nor is it unusual for professionals to be ill-equipped to detect and treat men and boys who have experienced sexual abuse. Traditional practices and beliefs can also be a point of contention, as new migrant populations call upon local health services and social support organisations. For example, female genital mutilation/cutting (FGM/C) is a human rights violation, with substantial health implications. At least 200 million girls and women have been subjected to genital cutting in 30 countries.<sup>240,264</sup> Health systems in locations where FGM/C is uncommon need to be able to manage the resulting morbidity from this in migrant women and girls. Healthcare practitioners are well-positioned to detect and address the negative effects of FGM/C among pregnant women and to also help prevent FGM/C in girls in high risk families through provider training and guidelines on FGM/C, culturally appropriate information and engagement with self-help groups for the communities concerned.<sup>265</sup>

Forcibly displaced women and adolescent girls may have facilitated access to much needed SRH services if they enter well-equipped humanitarian aid settings. Yet, others may encounter barriers to care, because of failing health systems, real or perceived discrimination, marginalisation, or financial accessibility.<sup>266,267</sup> Without targeted SRH services in place, migrant women and adolescent girls may be more vulnerable to poor SRH outcomes, including unwanted pregnancy, pregnancy complications, sexually transmitted infections, and unsafe termination options.<sup>268,269</sup>

-Humanitarian

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aid agencies have established an agreed set of essential services to respond to reproductive health needs in humanitarian crises. The Minimal Initial Service Package (MISP) includes: preventing and managing the consequences of sexual violence; reducing HIV; and preventing maternal and newborn mortality and morbidity.<sup>370</sup> Where these targeted services are not in place, women are more likely to risk unwanted pregnancy, pregnancy complications, sexually transmitted infections and unsafe termination options.<sup>371,372</sup>

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**Violence**<sup>241</sup> While migration may be protective against mass violence, mobility and relocation can be also substantial risk factors for various forms of gender-based violence (GBV), including rape, intimate partner violence, sexual exploitation and human trafficking. Systematic reviews on health and human trafficking indicate that trafficking survivors are exposed to multiple physical and psychological abuses, sexual violence, confinement, occupational hazards and poor living conditions.<sup>373</sup> The physical, mental health, social and financial consequences of these extreme forms of exploitation are multiple, severe and often enduring, especially psychological consequences.<sup>373,374</sup> For example, a study among male, female and child trafficking survivors in the Greater Mekong Subregion found that 48% experienced physical or sexual violence, 43% reported symptoms of depression and 40% reported PTSD.<sup>67</sup> Children and adolescents were particularly likely to report suicide attempts and self-harm.<sup>375</sup> Gendered violence can also be a strategic and systematic tactic employed during conflict to forcibly encourage the movement of communities.<sup>376</sup> A meta-analysis of studies in complex humanitarian settings suggested that 21% of refugees or displaced women in complex humanitarian emergencies experienced sexual violence—a likely underestimation of the true prevalence.<sup>377</sup> Despite the prevalence of GBV in refugee populations, there is limited evidence on the effectiveness of prevention programmes, interventions and strategies.<sup>378,379</sup>

Research with LGBTI groups suggests individuals are especially likely to suffer gender-based bullying, isolation and, in some locations, state-sanctioned persecution.<sup>380</sup> Additionally, LGBTI groups are at substantial risk of mental disorders, alcohol misuse, smoking, illicit drug use, obesity cervical and breast cancer and unprotected sex and sexually transmitted diseases (STDs), including HIV/AIDS.<sup>381–383</sup> Mobility may increase or decrease these health and safety risks among LGBTI migrants, depending on the comparative levels of discrimination and stigma in origin, transit and destination locations.

People with disabilities in all societies are significantly more likely to be victims of violence and are less likely to be able to report such violence because of barriers, such as not being believed or an inaccessibility of reporting mechanisms. These factors are compounded in a new destination, leaving individuals with disabilities at increased risk of violence and abuse. Additionally, lack of employment options because of stigma, prejudice, lower access to education and job skills training result in many people with disabilities at increased risk of poverty and consequently increased risk of sexual violence and forced participation in prostitution and household slavery.

Migrant women and girls may be more vulnerable to sexual harassment and violence at work. This is particularly common among women working in the sex trade but also occurs in other sectors, such as domestic work, agriculture or manufacturing. The disadvantages for migrant women workers, such as being an outsider, lacking social support, being considered a lower status, enables perpetrators to commit acts of abuse, including rape, with few repercussions. For example, among female seasonal agricultural workers in Turkey, nearly 90% reported having experienced violence including human rights violations.<sup>384</sup> Low wage female migrant workers feel vulnerable to exploitation and less able to afford healthcare and are less likely to assert their rights. LGBTI migrants, like others in the LGBTI community, are also vulnerable to workplace harassment, including verbal harassment, physical abuse, and persistent questions about surgery.<sup>385</sup>

While sexual violence is more prevalent among girls, it is important to note that sexual abuse among boys is not uncommon, and importantly, health professionals are often ill-equipped to detect and treat men and boys who have experienced sexual abuse.<sup>386</sup> Similarly, for migrant sexual minorities

or LGBTI groups, appropriate and sensitive sexual services may be difficult to find. For example, in urban centres in China, approximately 70% of HIV/AIDS infections are among rural Chinese residents, of whom 80% are 16-29 year old men, a portion of whom are 'money boys' or those who engage in transactional same-gender sex.<sup>242</sup>

Forcibly displaced women and adolescent girls may have facilitated access to much-needed SRH services if they enter well-equipped humanitarian aid settings. Without targeted SRH services in place, migrant women and adolescent girls may be more vulnerable to poor SRH outcomes, including unwanted pregnancy, pregnancy complications, sexually transmitted infections, and unsafe termination options.<sup>243,244</sup> Humanitarian aid agencies have established an agreed set of essential services to respond to reproductive health needs in humanitarian crises. The Minimal Initial Service Package (MISP) includes: preventing and managing the consequences of sexual violence; reducing HIV; and preventing maternal and newborn mortality and morbidity.<sup>245</sup> Where these targeted services are not in place, women are at greater risk of unwanted pregnancy, pregnancy complications, sexually transmitted infections and unsafe termination options.<sup>246,247</sup>

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3 **Violence:** Migration can be a movement away from physical or structural violence. For people  
4 fleeing from violence, whether by crossing an international border or moving within their own  
5 country, migration allows people to move away from circumstances in which their life and freedom  
6 were at risk.<sup>247</sup> However, mobility and relocation can create substantial risk factors for various forms  
7 of gender-based violence (GBV), including rape, intimate partner violence, sexual exploitation and  
8 human trafficking. Systematic reviews on health and human trafficking indicate that trafficking  
9 survivors are exposed to multiple physical and psychological abuses, sexual violence, confinement,  
10 occupational hazards and poor living conditions.<sup>248</sup> The physical, mental health, social and financial  
11 consequences of these extreme forms of exploitation are multiple, severe and often enduring,  
12 especially psychological consequences.<sup>248</sup> Meta-analysis of studies in humanitarian settings  
13 suggested that 21% of refugees or displaced women in complex humanitarian emergencies  
14 experienced sexual violence—a likely underestimation.<sup>249</sup> Despite the prevalence of GBV in refugee  
15 populations, there is limited evidence on the effectiveness of prevention programmes, interventions  
16 and strategies.<sup>250</sup>

17 Mobility may increase or decrease these health and safety risks among LGBTI migrants, depending  
18 on the comparative levels of discrimination and stigma in origin, transit and destination locations.  
19 Research with LGBTI migrants suggests that these individuals are especially likely to suffer from  
20 mental health disorders as a result of cultural or even state-sponsored persecution and violence.  
21 Many LGBTI migrants report emotional, physical and sexual violence committed by their families,  
22 leaving them without a familial support network and even more vulnerable upon migrating.<sup>251</sup>  
23 Service providers in Nairobi have shown that LGBTI services for refugees need to be accessible and  
24 highly confidential to prevent further harassment or violence.<sup>252</sup>

25 Migrants with disabilities are significantly more likely to be victims of violence and are less likely to  
26 be able to report such violence. This can be due to barriers such as not being believed or an  
27 inaccessibility of reporting mechanisms. Additionally, lack of employment options because of stigma,  
28 prejudice, lower access to education and job skills training result in many people with disabilities at  
29 increased risk of poverty and consequently increased risk of sexual violence and forced participation  
30 in prostitution and household slavery.<sup>253</sup>

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Industry	Examples of occupational hazards and harms	Migrant health studies
Sex work <sup>388-390</sup>	<ul style="list-style-type: none"> <li>Weak condom negotiation @ STIs, unwanted pregnancy</li> <li>Sexual violence, confinement @ anxiety disorders, depression</li> </ul>	Migrant female sex workers in Africa (Benin, Kenya, Ethiopia) are at greater risk of HIV than non-migrant sex workers and higher risk of acute STIs in all settings. <sup>389</sup>
Construction <sup>391-393</sup>	<ul style="list-style-type: none"> <li>Work at heights @ fatal falls, disabilities</li> <li>Heavy lifting @ musculoskeletal problems</li> <li>Poor personal protective equipment (PPE) @ respiratory disease, dermatitis, eye injury.</li> </ul>	In the USA, Latino construction workers were nearly twice (1.84, 95% CI 1.60, 2.10) as likely to die from occupational injuries as their non-Latino counterparts. <sup>394</sup>
Manufacturing (e.g., textile) <sup>88,395,396</sup>	<ul style="list-style-type: none"> <li>Repeated bending &amp; fixed postures @ musculoskeletal damage, pain</li> <li>Sharp instruments @ puncture wounds</li> <li>Dust particles @ silicosis</li> </ul>	In Malaysia, 64.4% of migrant workers experienced musculoskeletal pain caused or worsened by work compared to 28% of Malaysian manufacturing workers. <sup>88</sup>
Commercial fishing <sup>88,397,398</sup>	<ul style="list-style-type: none"> <li>Environmental exposures (sun, cold, rain) @ skin cancer, dehydration, frostbite</li> <li>Long hours, weeks with no break @ exhaustion, pneumonia</li> <li>Unstable fishing vessels, inadequate life vests @ drowning</li> <li>Fishing net and knife hazards @ deep cuts, lost limbs</li> </ul>	Trafficking survivors of the Thai fishing industry reported higher injury rates (46.6%) than non-trafficked fishermen (20.6%). 53.8% of trafficked fishermen experienced severe violence versus 10.1% of non-trafficked fishermen. <sup>88,398</sup>
Agriculture <sup>399,400</sup>	<ul style="list-style-type: none"> <li>Pesticide exposure @ toxicity</li> <li>Environmental exposures (heat, cold, mosquitoes) @ dehydration, kidney failure, headaches, malaria.</li> <li>Heavy lifting, bending @ repetitive injury syndromes</li> </ul>	95% of the greenhouse workers in Oman were migrants. Poor practices related to pesticide use resulted numerous health problems, such as skin irritation (70.3%), headaches (39.2%), and vomiting (29.7%). <sup>401</sup>
Domestic work <sup>148,402</sup>	<ul style="list-style-type: none"> <li>Physical, sexual, verbal abuse, social isolation @ depression, anxiety, suicide</li> <li>Extensive working hours, food deprivation @ exhaustion</li> <li>Repeated lifting, bending and reaching @ musculoskeletal strain</li> <li>Chemical cleaning agents, cooking, ironing, knives @ skin damage, burns</li> </ul>	A two-year study in Kuwait found that hospitalisation for domestic workers (93% from Sri Lanka, India and Philippines) was 1.86 times higher than for Kuwaiti women. Stress-related disorders were more common (19.2 vs. 22.3%) in housemaids than the Kuwaiti female patients. <sup>403</sup>
Mining, quarrying <sup>404-406</sup>	Mercury extraction, lead exposure, mineral dust @ mercury poisoning (gold-mining), neurotoxic disorders, pneumoconiosis	China's Ministry of Health reports that 87% of occupational disease is pneumoconiosis (black lung disease), with a mortality rate higher than

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	<p>Heavy lifting, falls, falling rocks ☹ fatalities, traumatic injuries, disabilities</p> <p>Heavy equipment, extensive hours, repetitive lifting ☹ noise-induced hearing loss, chronic fatigue, musculoskeletal injuries</p> <p>Remote locations malaria ☹ venomous snake bites.</p>	<p>20%. Pneumoconiosis is a chronic lung disease that often affects miners, sandblasters and metal grinders, occupations undertaken primarily by internal migrant workers.<sup>405</sup></p>
Forestry <sup>407-410</sup>	<ul style="list-style-type: none"> <li>● Environmental exposures (heat, cold, mosquitoes) ☹ dehydration, malaria, parasites</li> <li>● Falls, sharp tools, machinery ☹ fatalities, broken bones, lacerations</li> <li>● Repetitive motions, long hours ☹ body pain, strains, chronic fatigue</li> </ul>	<p>A study of Burmese migrants found 87 of 105 (82.9%) rubber plantation workers had a suspected case of malaria in the past year. Workers had limited access to care due to their working hours and limited transportation.<sup>411</sup></p>
Leather and tanning <sup>412</sup>	<ul style="list-style-type: none"> <li>● Chemical exposure (i.e., chromium, benzene dyes, formaldehyde) ☹ respiratory illness, ocular damage, cancer, ulcers, toxicity, dermatological diseases (rashes), chronic / allergic bronchitis pulmonary tuberculosis</li> </ul>	<p>Higher morbidity was found in tannery worker (40.1%) than the control group (19.6%) in northern India.<sup>412</sup></p>
Brick kilns <sup>413-418</sup>	<ul style="list-style-type: none"> <li>● Unsanitary environment, air pollution ☹ bronchitis, asthma, silicosis, respiratory toxicity</li> <li>● Extremely high heat ☹, burns, fatalities</li> <li>● High rates of child labour ☹ Developmental problems</li> </ul>	<p>Migrant brick kiln workers in South India had higher prevalence of chest symptoms (9.4%) versus general population rates (4.9%) related to occupational hazards and poor healthcare access.<sup>414</sup></p>

PPE = personal protective equipment; STI = sexually transmitted infection

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Table 2: Low-wage labour sectors and associated occupational hazards among migrant workers

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## Older persons

There is relatively little evidence on the health effects of migration on ~~older~~elderly people, particularly from LMICs. ~~Older~~Elderly people may have additional health risks due to multimorbidity, for example from interruptions to the continuity of care that contribute to clinical decompensations and declines in their health status. ~~Elderly parents of migrants may also be left in the country of origin. The described differences in morbidity in elderly migrants are likely due to a number of causes or mediating factors including the circumstances surrounding migration, difficulties of living in a foreign, unfamiliar country, poor socio-economic conditions, and changed role in the family which relocation can bring. However, in most studies, the migration may have taken place decades earlier, so causal relationships are difficult to ascertain.~~

Despite lower mortality, morbidity is thought to be higher amongst ~~older~~elderly migrants. Analysis of population data from Belgium, England and Wales, and the Netherlands of healthy life expectancy at age 50 (HLE<sub>50</sub>) (~~expected number of remaining years in good health~~) found higher life expectancy in migrants compared to non-migrants, but HLE<sub>50</sub> was lower. This was particularly so for ‘non-Western’ migrants, i.e. not from Europe, USA, Canada, Australia, New Zealand or Japan.<sup>254449</sup> Multi-country studies from across Europe show higher self-reported morbidity in older migrants compared to native borns.<sup>255,256429,424</sup> A study from Sweden found a 50 to 80% increased risk in cardiovascular determinants, such as physical activity, smoking and body mass index in elderly migrants.<sup>257422</sup>

Studies of mental health in migrants across Europe found an increased risk of illness. Increased odds ratios of 1.4<sup>423</sup> ~~to 1.6~~ (men)<sup>258424</sup> for depression were found in ~~older~~migrants, despite lower rates of other chronic diseases. Research in forced migrants also points to an increase in depression but there is a dearth of evidence.<sup>259425</sup> The diagnosis and management of dementia is a particular concern amongst all migrants. With population ageing, dementia is becoming more common globally. Migrant or ethnic minority populations receive diagnoses later and have differences in their management, for example less medication and nursing home admission.<sup>260426</sup>

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## Section 4: Knowledge to address future migration and health challenges

Work of the Commission argues for a step-change in research on migration and health, joined with a deliberate effort to enhance the instruments and infrastructures supporting this. Synergistic work is needed which links academia, policy and frontline health and humanitarian workers. Research in migration and health has traditionally proven difficult to conduct, partially explained by migrants’ high mobility.<sup>427</sup> ~~The majority of available data on international migration provides a static picture focussed on populations moving for longer periods and updates in statistics are done annually. These data ignore large numbers of people moving around the globe on a shorter term basis and likely miss the most vulnerable groups. Traditional cohort studies are important to understand the life course and intergenerational effects of migration but these are expensive and can be inefficient when studying populations with high levels of loss to follow up.<sup>428-430</sup> Existing studies have therefore had sub-national coverage on less mobile migrants who have already moved.<sup>431</sup> Despite these difficulties, a recent systematic review of prospective migrant cohort studies found that using traditional survey methods, migrants have median uptake rates of 80% and median follow up rates at 1 year of 70% using traditional paper and telephone based methods.<sup>432</sup> By linking data from migrant screening processes to health records in the destination country it is possible to construct historical cohorts enabling burden of disease estimates to be created. Several examples of this work~~

46 have been conducted in the UK<sup>49</sup>, USA<sup>433</sup> and Israel<sup>434</sup> giving unique insight into the extent of, for  
47 example, tuberculosis burden after migration and providing evidence that tuberculosis spread from  
48 migrant to migrant and migrant to non-migrant populations is very low.

49 Additionally, migration has not been a priority amongst health funders. Review of the mission  
50 statements and strategies of the main global health funders (including the Global Fund, Gavi, the  
51 Vaccine Alliance, World Bank, Bill and Melinda Gates Foundation, European Commission, United  
52 States Agency for International Development, United Kingdom's Department for International  
53 Development, Wellcome Trust, Ford Foundation, Rockefeller Foundation, Medical Research Council  
54 and National Institute for Health) suggest that only two, the Global Fund and the European  
55 Commission, prioritise migrant health.<sup>261</sup> In this section we outline how we can generate better  
56 knowledge to meet needs of people on the move through better data collection, research, research  
57 funding and ethics. Research funding agencies including national government entities, charitable  
58 foundations and multilateral funding organisations should prioritise specific calls to address these  
59 gaps.

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## 61 Meeting the health needs of a mobile world

62 Research undertaken in migration and health has to respond to the whole population need, not only  
63 the migrants themselves, but also the other groups affected by migration, such as families left in  
64 countries of origin and host communities. To enable this, and to further build capacity, the migrant  
65 population themselves should be viewed as an asset and a participatory approach encouraged,  
66 where migrants and local communities are included in all stages of the research process. Further,  
67 mixed methods and qualitative work, including anthropological and sociological work, is needed to  
68 understand socio-cultural factors of the migration experience, how to reduce barriers to healthcare  
69 and how the determinants of health might affect migrants differently, alongside systems level work  
70 to develop processes to mainstream and normalise migration.

71 We used data from ourIn addition to the systematic review on mortality, (see section International  
72 Migration and Mortality) to systematically examine understand the types of research that have been  
73 conducted, we assessed the availability of mortality data on international migrants. We extracted  
74 5,498 mortality data points and mapped these to ICD-10 disease groups, and geographical regions of  
75 migrant destination countries in which disease areas have been the focus of historical research the  
76 studies were conducted. Our data suggest that despiteneoplasms (498 data points) and diseases of  
77 the circulatory system (303 data points) were the most extensively studied conditions (Figure 16a).  
78 Despite being the only ICD-10 disease categoriescategory with evidence of increased mortality,  
79 infectious and parasitic diseases and external causes of mortality were onlythe fifth and third most  
80 studied group respectively in international migrants (See supplementary appendix, Figure 9a). These  
81 data also suggested that (54 data points). Examining the data by migrant group and geographical  
82 region, international migrants were the most studied population (5,238 data points) and labour  
83 migrants have also been understudied relative to size of this population globally (See supplementary  
84 appendix, Figure 9b).the least (6 data points; Figure 16b).

85 These data can be used to inform future funding priorities, but this problem is compounded by the  
86 fact that migration has not been a priority amongst health funders.

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**Figure 16 a. Treemap of mortality data points included in systematic review, by ICD-10 group and summary SMR.**

**Note: 1=Diseases of the genitourinary system ; 2=Diseases of the musculoskeletal system and**

94 ~~connective tissue ; 3=Diseases of the nervous system~~

95

96 **Figure 16 b. Treemap of mortality data points included in systematic review, by type of**  
97 **migrant and geographical region.**

98

99 Review of the mission statements and strategies of the main global health funders (including the  
100 Global Fund, Gavi, the Vaccine Alliance, World Bank, Bill and Melinda Gates Foundation, European  
101 Commission, United States Agency for International Development, United Kingdom's Department  
102 for International Development, Wellcome Trust, Ford Foundation, Rockefeller Foundation, Medical  
103 Research Council and National Institute for Health) suggest that only two, the Global Fund and the  
104 European Commission, prioritise migrant health. Some funding streams exist that focus on research  
105 in humanitarian settings<sup>262</sup>, but generally opportunities in migration and health are limited and  
106 research funding agencies including national government entities, charitable foundations and  
107 multilateral funding organisations should prioritise specific calls to address these gaps.

## 108 Data collection, technology and innovation

109 ~~Traditional cohort studies are~~Our review of mortality and disease burden highlights important to  
110 ~~understand the life-course and intergenerational effects of migration but these are expensive and~~  
111 ~~can be inefficient when studying populations with high levels of loss to follow up. Existing studies~~  
112 ~~have therefore had sub-national coverage on migrants who have already moved.<sup>263</sup> gaps in data~~  
113 ~~availability.~~ One efficient way to produce health data for migrants is the use of electronic health  
114 records (EHRs) with national coverage.<sup>264,265,430,435,436</sup> However, in most countries (with one or two  
115 exceptions such as Sweden), migrants are not identifiable within these datasets. 'Big data', such as  
116 that collected from wearable devices, mobile phones, the internet and electronic health records, has  
117 the potential to provide new sources of information on migration and health and improve uptake  
118 and follow-up rates as migrant populations.<sup>266</sup> ~~tend to have high levels of use of the internet and~~  
119 ~~mobile phones.<sup>437</sup>~~ Progress in genomics, mapping and mathematical models, including mechanistic  
120 approaches that are driven by information from satellites, human behaviour data and pathogen  
121 characteristics will allow better elucidation of outbreaks and global mapping of infectious  
122 transmission.<sup>267,268,438,439</sup> ~~Accessing global passenger flow data is expensive and difficult, however,~~  
123 ~~work has been conducted to model passenger flow datasets.<sup>440</sup> These data have particular utility in~~  
124 ~~understanding the risk of the spread of communicable disease and have been applied to models~~  
125 ~~examining the risk of international spread of yellow fever virus.<sup>441</sup>~~

126 ~~Person held records will help address the issue of health data being lost in mobile populations. They~~  
127 ~~may also be empowering for migrants in allowing them to transfer their health data from one setting~~  
128 ~~to another. Previous reviews of person held records found that high uptake both providers and~~  
129 ~~patients is essential for success.<sup>442</sup>~~

130 A particular difficulty in migration research is understanding internal migration flows, where there  
131 are no border controls. A new method to map internal migrants is to use mobile phone data. Each  
132 time a mobile phone is used, the location of the individual is logged. Anonymised mobile phone call  
133 detail record (CDR) data can allow inferences about the movement patterns of individuals to be  
134 made, enabling the movement of populations to be tracked at scale, even in remote areas. ~~This sort~~  
135 ~~of information has the potential to be used in the control of outbreaks of infectious diseases such as~~  
136 ~~Ebola and to examine internal displacement after natural disasters.<sup>443</sup>~~ For example, in 2016 a  
137 monsoon in Nepal caused severe flooding and triggered a series of landslides ~~across the country.~~  
138 Using mobile phone CDRs, researchers were able to demonstrate that the monsoon resulted in large  
139 movements of people, examine the number of people who spent time outside their home area,  
140 identify where these areas of movement were and those that were ~~most~~more heavily affected ~~than~~  
141 ~~others.<sup>269,444</sup>~~

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142 These new techniques are not without risks and logistical problems: for example, if personal health  
143 records or mobile data can be used to track where people have been, migrants may be reluctant to  
144 use them. In the case of the Dublin Regulation in the European Union, this might mean that a  
145 migrant could be sent back to their first country of entry in Europe. The acceptability of mobile  
146 health records therefore needs to be assessed further and any implementation of these should have  
147 routine monitoring and impact evaluation conducted, to include qualitative perspectives. ~~Logistical~~  
148 ~~issues may include: translation, loss or theft of data and backups.~~ Health professionals must  
149 recognise the need to protect the data and safeguards, including firewalls to separate who can  
150 access the data. New technologies, such as the use of blockchains, can help to keep the data secure  
151 but may not be possible in low resource countries. ~~Advances in technology are also helping improve~~  
152 ~~our ability to understand the emergence and spread of infections with implications for public health~~  
153 ~~programmes trying to mitigate the potential risk of spread of infections from, and among, migrants.~~

## 154 Intervention research

155 While this Commission found ample evidence on differences in physical and mental health morbidity  
156 between migrants and host populations, information on specific interventions to improve the  
157 delivery of services or how diagnosis and treatment should be altered to better cater for the needs  
158 of migrants was limited. To complement our understanding of health consequences, resources have  
159 to be directed to find the best ways to improve health, from clinical and behavioural to health  
160 systems studies. Evidence on interventions outside the health system and focused on improving  
161 social, political and economics determinants of health are also critical. Outside of the humanitarian  
162 setting and in populations who have previously moved, robust interventions to improve the health  
163 of migrants are uncommon, particularly for neglected groups, such as elderly people left when their  
164 families migrate or LGBTI migrants. Where evidence of effectiveness exists, for example talking-  
165 based therapies for PTSD in refugees, data are needed on how to scale up and evaluate them. There  
166 may also be scope for adaptation and evaluation of interventions that work in other marginalised  
167 groups. ~~For example, methods to improve immunisation coverage in homeless populations could be~~  
168 ~~adapted to migrant groups.~~

169 ~~Understanding Mobility causes particular challenges with regards to the continuity of treatment and~~  
170 ~~medications for chronic diseases for example understanding~~ the best treatment regimens and  
171 modifications in mobile populations to ensure continuity of care is urgently needed ~~given the large~~  
172 ~~number of migrants moving from countries where the epidemiological transition has occurred.~~  
173 Advances in digital technology allow diagnosis and monitoring of treatment for infections to be  
174 undertaken remotely. Removing the need for a clinic visit opens up the prospect of remote-, and  
175 self-, management for mobile populations.

176 In populations that have been traumatised by violence, either at the individual or community level,  
177 research on pathways to prevent or improve management of both physical and mental health are  
178 needed. For example, schools have been suggested as important sites for mental health intervention  
179 research for both children refugees and their families, although studies conducted have been  
180 relatively small and difficult to replicate.<sup>270</sup> ~~Moreover, intervention~~ ~~intervention~~ implementation  
181 should include routine monitoring and evaluation of programmes in order to strengthen migration  
182 health interventions long-term.

## 183 Health policy and systems research

184 Our analysis of health systems and migration concludes that current thinking on health systems may  
185 well have a “migration problem”, since mainstream views of a health system tend to be of a  
186 jurisdiction defined by geopolitical boundaries within which services are provided, rather than –  
187 more appropriately and justly – a societal response to people’s needs regardless of their official  
188 status. Contemporary advances in trans-disciplinary health policy and systems research (HPSR) can  
189 partly address this problem. HPSR is concerned with answering evaluative, explanatory and

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190 exploratory questions focused on bringing change in health systems and the policy processes that  
191 | shape and underpin them.<sup>271,445</sup> Multiple disciplines, such as economics, political science, sociology,  
192 anthropology and public health, contribute towards this. Of late there has been a turn towards a  
193 people-centric approach to framing the field, with the recognition that changes in health systems  
194 are not unifocal but are driven by different people at different levels of the system, including service  
195 | users and communities.<sup>272,446</sup> As such, HPSR has the potential to include migration in relation to  
196 health system research questions. Under the umbrella question of how we can make existing real-  
197 world health systems become more responsive to human mobility, thereby improving individual and  
198 population health outcomes, there is a range of valuable lines of enquiry. More qualitative research  
199 focusing on the experience of healthcare from the perspectives of migrant service users and  
200 providers can broaden and enrich our understanding of their needs in different settings. Finally, and  
201 critically, implementation research on existing migration-friendly initiatives can help to identify  
202 bottlenecks and enablers, and which approaches work in which contexts and for whom, and  
203 translate those insights to other contexts.

204 |

## 205 **Research ethics**

206 Migration should be an essential component of public health ethics, in particular in relation to social  
207 justice. Migration is a good example of where ethical issues related to health and determinants of  
208 | health exist across state boundaries, ~~and is coherent with a cosmopolitan view of the world, i.e. one~~  
209 ~~with little recognition of nationality.~~ Many important ethical issues exist - including ~~for example~~ the  
210 prioritisation of services, the detention and deportation of migrants, and the labelling of and  
211 discrimination against migrant groups- yet there is little literature on migration and public health  
212 ethics beyond issues of access to healthcare. ~~There is a clearly a need for further public health~~  
213 ~~ethical discourse and research on migration.~~<sup>449</sup>

214 Compliance with ~~established~~ standards of research ethics is essential ~~for all research~~ and can be  
215 particularly challenging in vulnerable and mobile populations. The social, cultural, legal and political  
216 aspects of migration status are often associated with higher levels of vulnerability. Due to this  
217 inferior social position and the particular risks from suffering deprivation of rights and dignity,  
218 researchers have to be highly sensitive and responsive to unintended and possibly harmful  
219 consequences of their work. The particular vulnerability to abuse and discrimination of  
220 disadvantaged groups demands the inclusion of the social and historical contextualisation of  
221 research. Systematic reflection on ethical questions thus has to be a part of all steps in the research  
222 process. When defining the research question, it is crucial to reflect on whether the research is likely  
223 to produce valuable data to improve living and health conditions.

224 Data collection may cause fear and distrust in populations with ~~shared~~ experiences of exclusion and  
225 persecution, and ~~may~~ trigger traumatising events in case of victims and witnesses of torture, sexual  
226 | and other types of violence ~~or trauma~~. Communication of research results, ~~finally~~, has to be sensitive  
227 to the risk of directly or indirectly sustaining or promote stereotypes and stigma. The principle of  
228 “first do no harm” thus applies to all steps of the research process, while issues of confidentiality  
229 and informed consent especially apply to data security and the risk of abuse of medical and personal  
230 data (e.g. migration routes reflected in the medical record) by migration authorities. Little is known  
231 about whether migrants are willing to share their data and the perspectives they may have on this.  
232 Research activities have to be sensitive to systematically include ethical reflection and accountability  
233 in the research process and be “responsive” to findings that encourage a reconsideration of research  
234 questions and methodological and moral challenges.<sup>282,447-449</sup> Institutional Review Board (IRB)  
235 approval is mandatory, yet not sufficient, ~~as it lacks the required~~ ~~flexibility and responsiveness.~~  
236 A key process conflicts with the need to ensure that the define rigid research is fit protocols in  
237 advance for purpose is IRB approval.<sup>450</sup> The particular vulnerability to engage with the public on  
238 migration abuse and health. This is in the design of the discrimination of disadvantaged groups

239 ~~demands making the social and historical contextualisation of~~ research, participatory methods in the  
240 conduct of the as well as continuous reflection and accountability on moral and ethical challenges, a  
241 key aspect of research and in the dissemination and discussion of the results. with migrant and  
242 mobile populations.

243

## 244 Conclusions

245 Migration must be urgently treated as the central feature of the 21<sup>st</sup> century which is a core  
246 determinant of health and well-being, and addressed as a global health priority (further details in  
247 supplement). Migration and global health are each defining issues of our time. How the world  
248 addresses human mobility will determine public health and social cohesion for decades to come. Our  
249 work for this ~~Commission~~ commission aimed to provide robust evidence on migration and health and  
250 examine the structures and systems at the intersection of human mobility and individual and  
251 population health. By systematically presenting evidence on what is known about health and  
252 migration, it has been our intention to dispel populist myths about a ‘perceived other’ and to  
253 suggest promising strategies for a highly mobile world. Amidst current international dialogues about  
254 safer, healthier migration, substantial gains can be achieved towards multiple Sustainable  
255 Development Goals by resisting the turbulence of nationalist xenophobic discourse.

256 In summary, our findings highlight that modern migration is a diverse and dynamic phenomenon and  
257 the health of people who migrate generally reflects the circumstances of migration. ~~That is, people’s~~  
258 ~~health depends greatly on the structural factors that create the conditions for their migration and~~  
259 ~~that establish the responses by which their health can be protected. Importantly, our findings also~~  
260 ~~indicate that amidst contemporary mobility, we indeed have means and mechanisms through which~~  
261 ~~to achieve better health for all.~~ Our evidence indicates that, with sufficient political will, the  
262 international community, states and local providers have the knowledge and resources necessary to  
263 ensure those who are most vulnerable to harm are not health-marginalised. But, at the same time,  
264 our findings suggest that attitudes, misperceptions and cynical political motivations can hinder  
265 rights-based approaches to global health for migrants—especially for those seeking safety and  
266 economic security for themselves and their family. We must ensure that migrant’s equal right to  
267 health is respected and implemented.

268 Our multiple analyses also contradict myths about who is migrating where and the health burden of  
269 migration on recipient locations. Data on migration tell us that more people from LMICs are  
270 migrating within their own countries and region than across high-income country borders—even if  
271 vocal political rhetoric implies otherwise. And, migrants are, on average, healthier, better educated  
272 and employed at higher levels than those in destination locations. However, many individuals who  
273 migrate are subjected to laws, restrictions and discrimination that put them at risk of ill-health.  
274 Certain mobile subgroups are especially likely to be exposed to migration-related harm and excluded  
275 from care, such as trafficking victims, irregular migrants, low-wage workers and asylum-seekers.  
276 These highly vulnerable migrant subgroups are also frequently individuals who have been forced to  
277 move because of global economic and political forces well-beyond their control. This also applies to  
278 the populations left-behind, when family members migrate for work or groups who are unable to  
279 flee from conflict areas or environmental dangers. The evidence indicates that through targeted  
280 rights-based laws, inclusive, migrant-friendly health systems and mobile medical services, it is  
281 possible to reduce migration-related risks and increase people’s access and use of health services.  
282 Migration-informed laws, services and public perceptions can increase determinants of good health,  
283 such as social inclusion, safe versus hazardous, low-wage employment, good nutrition, decent  
284 housing and hygiene, and universally accessible health systems that does not create catastrophic  
285 costs for families.

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286 ~~Moreover, Moreover, our findings from both theory-based and empirical evidence on the stages of~~  
287 ~~the migration process suggest that~~ there are multiple opportunities to intervene to address health  
288 throughout the phases of a migrant's journey.

289 We believe that now, as we have the evidence, tools and potential international political will via the  
290 Global Compacts on Migration and the Sustainable Development Goals, is the time to call on our  
291 humanity and to take advantage of worldwide mobility to secure global health—especially for  
292 migrant groups who are most at risk of exclusion. ~~It is in this light, that we offer our~~  
293 ~~recommendations below.~~

294 ~~In preparing this report, the Commissioners have reviewed a mass of data collected by researchers~~  
295 ~~from around the world. These data describe the scale and nature of migration and the many threats~~  
296 ~~to the health of those migrating. But it is impossible, on the pages of a scientific journal, to capture~~  
297 ~~the entire distressing picture. That would require the many individual accounts of tragedy, of~~  
298 ~~children drowning in parents' arms or dying by the wayside, or of individual heroism among those~~  
299 ~~who risk their own lives to rescue them. For those stark realities, we must look to those few~~  
300 ~~journalists and humanitarian organisations who have recorded these accounts, such as the now~~  
301 ~~iconic picture of the lifeless body of Aylan Kurdi being lifted from a Turkish beach. Anyone viewing~~  
302 ~~those images must surely ask: Why has the international community done so little to live up to its~~  
303 ~~commitments to advance the health of migrating populations, and especially those who have been~~  
304 ~~forced to migrate? How can we explain this inertia?~~

305 ~~There are no simple answers to this question, but one indisputable reality is that, in the discourse on~~  
306 ~~migration, health is far down the list of priorities. International meetings on migration are instead~~  
307 ~~dominated by other considerations, such as domestic politics, especially where populist politicians~~  
308 ~~ruthlessly exploit migration for their own purposes, national security, international trade, and~~  
309 ~~commerce. These almost always take precedence over the health needs of migrants. Indeed, if~~  
310 ~~health is discussed at all, it is often framed, unjustifiably, as the migrant posing a threat to the~~  
311 ~~population in the destination country, either as a vehicle for infections or a terrorist risk. Health and~~  
312 ~~migration have competing, if not conflicting, policy goals: health goals are inclusive (better health for~~  
313 ~~all, the Hippocratic oath) and international migration policy goals are exclusionary (secure borders,~~  
314 ~~national trade). The other key challenges are: a) the money; and 2) the leadership.~~

315 ~~Investing in health of populations and individuals is generally an expensive long-term commitment,~~  
316 ~~such as providing medical services over lifetimes, whereas, for state budgets, protecting borders and~~  
317 ~~arranging deportation can seem a lesser investment for greater political gain. Health leadership in~~  
318 ~~the realm of migration policy-making often seems like the poor sister to other policy interests. Why~~  
319 ~~are health leaders absent from the top table, engaging proactively in high level debates on~~  
320 ~~migration? Instead, the health sector is often left to pick up the pieces of those migration policies~~  
321 ~~that leave the lives of migrants in tatters. And, because the health sector will remain dedicated to~~  
322 ~~these humanitarian ideals, policy makers can continue to prioritise security, exclusion and trade,~~  
323 ~~while discriminatory rhetoric re-enforces the neglect and abuse of migrants. A second, much~~  
324 ~~simpler, question is: why do some migrants have better health and health services than others? The~~  
325 ~~answer is quite obviously related to the individual's social and economic status and the power this~~  
326 ~~wields. So, perhaps the greatest challenge to achieving health equity for disadvantaged migrating~~  
327 ~~populations will be promoting rights and empowerment that enables individuals to assert their~~  
328 ~~rights to health. The publication of the Global Compacts with numerous references to health in the~~  
329 ~~context of migration and for refugees presents an unprecedented opportunity that should be~~  
330 ~~leveraged for specific action. Investments should be shifted towards empowering migrants through,~~  
331 ~~for example, migrant worker insurance schemes or regional health and social accords.~~

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# Recommendations

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The Commission makes the following recommendations that aim to maximise the health of people on the move and societies more broadly. We call for urgent action to raise migration and health on the political agenda in an objective manner, increase multi-stakeholder action and create robust accountability and monitoring mechanisms.

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1. Dedicate political capital, financial and human resources to fulfil our ~~We advocate for clarity in global commitments to secure healthy migration and improve the security and well-being of mobile groups, especially the most vulnerable and marginalised.~~

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~~a. leadership and for support to national actors, the public health workforce and civil society to develop the skill set required<sup>451</sup> - <sup>452</sup> to influence the political and social determinants of migration and health. The Commission recommends further inter-sectoral and multi-disciplinary collaboration moving beyond traditional silos, while recognising the pivotal role of the health sector in moving beyond perceptions and prejudices in bringing the health needs of migrants, communities and States closer together. Migration must be urgently treated as the central feature of the 21<sup>st</sup> century which is a core determinant of health and well-being, and addressed as a global health priority (further details in supplement).~~

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## **1. Challenging common myths and misconceptions**

a. We urge all levels of society, in particular health workers, advocacy groups and politicians, to use the evidence in this report and beyond to challenge policy makers to create narratives that respond to the truth and show the positive contribution that migrants make to the health of all. We have provided evidence which disprove the commonly voiced myths that migrants are ‘overwhelming high-income countries’ and ‘damaging their economies’, that they are a ‘burden on services’, that they ‘have more children’, and they ‘pose a disease risk’.

## **2. Addressing wider determinants of health**

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a. ~~States and the UN system need to commit develop stronger multi-sectoral partnerships, both cross-border and within countries, which should implement a strong leadership to meet their commitments to the 2030 Sustainable Development Goals, and fulfil the health objectives and clear health and migration strategy including international and internal migration rights and health services. These actions should build on existing World Health Assembly Resolutions bringing together the work of the health sector, the mechanisms of implementation and monitoring of the Global Compacts on Migration and Refugees as well as other and the wider implementation of SDGs across all sectors.~~

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b. Policy makers should integrate the health effects of migration into all relevant global policies through mainstreaming the health of migrants within relevant national, regional and international platforms of negotiations; implementing mechanisms to enhance multi-sectoral collaboration, cross-sector policy coherence, and multi-stakeholder partnership; and providing resources to monitor and evaluate progress.

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c. At a state level, policy makers must ensure that policies address the needs of migrants and mobile populations in sectors that determine health, for example providing an education system suitable for new migrants.

## **3. Key challenges to healthy migration**

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### **Culture and identity**

a. Healthcare professionals should be aware that migration and discrimination are determinants of health with consequences. Addressing, preventing or combatting discrimination should be considered an important public health intervention and incorporated into service provision.

b. To confront anti-migrant discrimination and racism, a zero-tolerance approach to discrimination is needed at all levels. Politicians and policy-makers should confront racism and prejudice and

civil society organisations should combine existing advocacy efforts into simple, clear and coordinated messages around equality, humanity and dignity for migrants within transit and destination countries. Anti-discrimination and racism policies and legislation must be extended to include all migrant groups.

#### Rights and legal structures

- a.—States and the global community need to direct policies, resources and their leadership towards interventions to improve the rights of migrants, and especially migrant workers. Migration-targeted and migrant appropriate resources need to promote mechanisms to strengthen workplace health and safety, monitoring strategies, and easy migrant access to healthcare and worker compensation entitlements.
- b.—Policy makers should ensure that measures are taken to guarantee migrants' rights and inclusion which should be incorporated into health and other health-related policy-making and services (refugee services, labour rights and regulations). All states should recognise this entitlement and as well as rights to the underlying social, political, economic, cultural, and determinants of physical and mental health.
- c.—States should abolish arbitrary arrest or the detention of migrants, including children and adolescents, health restrictions on entry, stay and residence and deportation of individuals with certain health conditions. This should be codified in international agreements, and advocated for inclusion in national law.

#### Environmental conditions and anthropogenic climate change

- a.—States and the global community need to join together to establish sustainable health infrastructure models and systems that ensure migrants and mobile populations are included in health protections and responses including, where appropriate, disaster risk reduction mechanisms. Models should draw on 'migrant friendly' approaches currently in operation in several migrant receiving and transit countries.—

#### 4. Equity in access to health and health services

- a.—To tackle inequities in delivery and access to health and non health services, policy makers and practitioners must design services that provide non-discriminatory access to healthcare that are migrant sensitive and age- and gender sensitive. No migrant should be denied access, or provided poorer access to care based on ethnicity, colour, sex, or documentation. Migrants are entitled to equal access to preventive, curative and palliative healthcare without the need for out-of-pocket payments; this includes the same human rights protection as any other person, including the right of migrants to be free from criminalisation, trafficking and exploitation; and these rights move with them.
- b.—Universal health coverage and equitable access to healthcare must be ensured through application of "health for all" principles and values and the principle to "leave no one behind". The explicit inclusion, based on local laws and priorities, of different typologies of migrants within the country UHC framework is paramount, including a full consideration of population coverage, services provided, and funding whether in the immediate pre-migration, transit, destination or return phase. Creation of UHC that includes migrants will also benefit the local populations and will reduce overall inequities. The development of such a framework led by politicians, with the technical support of WHO and partner agencies based on health and migration profiles should have the participation of migrants, civil society actors, relevant UN agencies, researchers, and healthcare leaders.
- c.—Adherence to core equitable healthcare access principles should be ensured including through:
  - i)—Integration of migrants into all existing health systems and structures of provision of country adapted universal basic services, to include preventive and curative care as well as wider determinants of health such as access to employment, education and social support throughout their journey allowing them to contribute maximally to society. To support the

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- 432 achievement of this goal, this commission report has presented health system financing  
 433 models for further consideration.
- 434 ii) Better access to migrant sensitive health systems at all points of the migration process.  
 435 Migrants' and mobile populations' specific needs must be explicitly recognised and featured  
 436 within health strategies and plans, and supported by dedicated competencies and  
 437 structures.
- 438 iii) Improving acceptability of services through implementation of cultural competence at both  
 439 individual and policy levels. It is imperative that all healthcare programmes and projects  
 440 have a mandated, funded cultural component that is regularly reviewed and evaluated to  
 441 ensure they are meeting the needs of the populations they are serving.
- 442 iv) Policy makers and service providers should support migrant friendly health systems that  
 443 integrate mobility models to reach out to migrants where they live or work. They should  
 444 support the adaptation of healthcare systems to meet the needs of communities at risk (e.g.,  
 445 because of environmental change), of migrants moving to urban areas; and communities  
 446 affected by disasters.

447

448 **5. Synergistic, ethical policies and feasible strategies to inform and inspire action**

- 449 a. Public health communities and civil society should challenge and positively influence the  
 450 current xenophobic political movement which threatens the health of migrants and other  
 451 vulnerable groups in society.
- 452 b. To ensure action on health related aspects of migration, states must be answerable and held  
 453 to account for the observance of healthcare as a human right; and monitoring of  
 454 implementation of non-discriminative programmes ensured.

455

456 **6. Research, monitoring and accountability**

457 As the Global Compacts on Refugees and on Safe, Orderly and Regular Migration are developed and  
 458 endorsed by nations, research to monitor how countries are adhering to their principles is of utmost  
 459 importance. Governments and international organisations should dedicate resources to implement  
 460 and evaluate evidence based interventions identified in this report and other promising measures  
 461 against the major causes of morbidity and determinants of health and health system innovations.  
 462 Specific recommendations for research are outlined in greater detail in Panel 11 and were reached  
 463 through a consensus approach by Commissioners. Further research is needed to (i) improve the  
 464 evidence base on health outcomes in subgroups that have been largely neglected, such as disabled  
 465 people, LGBTI or populations left behind when parents migrants, including children and elderly  
 466 parents; and (ii) identify the health risks and solutions among migrants who face additional needs,  
 467 including unaccompanied children and adolescents, undocumented and irregular migrants and  
 468 victims of violence, trafficking or forced labour.

- 469 a. We advocate for clarity in leadership at the global level and for support to national  
 470 actors, the public health workforce and civil society. We urge the Secretary General  
 471 of the United Nations to appoint a Special Envoy on Migration and Health, regional  
 472 bodies to appoint a regional representative, and national governments to have  
 473 country-level focal points for migration and health. ~~to develop the skill set~~  
 474 required<sup>451</sup>, <sup>452</sup> to influence the political and social determinants of migration and  
 475 health. This will require facilitation of work on migration and health within and  
 476 between the UN bodies and within and between states to address the migration  
 477 health agenda. In each region and country a focal point for migration and health to  
 478 support the development of a whole system multi-sectoral plan for migration and  
 479 health. The appointment of a United Nations Special Envoy on Migration and Health  
 480 should foster inter-sector dialogue and help remove political hindrances.
- 481 b. International and regional bodies need to utilize existing agreements, such as the  
 482 Global Compacts and the WHO Action Plan, to prioritise the health, rights and

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483 security of migrating populations. Decision-makers should allocate sufficient funding  
484 to create equitable health protection mechanisms for mobile groups, such as joint  
485 health insurance or social safety net schemes, mutual health accords and other  
486 mechanisms to integrate these groups into health systems.

487 c. Multilateral funding organizations should have clear mechanisms to include  
488 migrants into national and regional proposals. Ultimately the inclusion of migrants  
489 into existing health systems should improve such systems to benefit nationals and  
490 migrants.

491 d. States and the international community must urgently develop policy links that  
492 recognize the integral connections between environmental conditions and  
493 anthropogenic climate change, migration and health. Decision-makers should join  
494 forces to predict and respond to the effects of climate change on population  
495 mobility. Investments are needed in sustainable health infrastructure models that  
496 respond to migrants' health protection needs, including disaster risk reduction  
497 mechanisms.

498 e. States must go beyond rhetoric to tackle modern slavery by recognizing the  
499 exploitation of migrant workers, especially in informal labour, and trafficking of  
500 individuals and families displaced by conflict, natural disasters and environmental  
501 degradation.

502 2. Re-balance policy-making in migration, trade and environment and foreign affairs to give  
503 greater prominence to health. Foster cross-sector, complementary decision-making that  
504 integrates health considerations across policies and services that determine the health of  
505 migrants.

506 a. International and regional bodies and states must create a prominent place for  
507 health representatives at high-level policy-making fora for migration-related sectors  
508 e.g. (immigration, trade, labour, environment, security, education). Health leaders  
509 must assert their rights to participate in these policy fora. Conversely, high-level  
510 representatives from other sectors must be encouraged to participate in similar  
511 health policy-making fora.

512 b. Health leaders and practitioners must fully engage in policy dialogues that affect  
513 migration, including the macro-economic forces that affect population mobility.  
514 They must participate in multi-sector budgeting and programme planning for  
515 migrants.

516 c. Migrants and their advocates must have a voice in strategies that affect their health  
517 and safety.

518 3. Confront urgently, vigorously and persistently divisive myths and discriminatory rhetoric  
519 about migrants.

520 a. Political leaders and elected officials must resoundingly and consistently condemn  
521 misinformation and disinformation about migrants, especially xenophobia proffered  
522 by divisive and populist voices. Fact-checking, promoting truth and vociferous  
523 objections should not be left to migrants and their advocates alone.

524 b. Governments, international agencies and civil society must stay ahead of  
525 developments in social media and digital technology to shut down anti-migrant  
526 abuse and promote fact-based portrayals of global migration, particularly the  
527 widespread reliance on migrants for economic development, health services,  
528 educational institutions and cultural richness.

529

- 530 4. Advocate for and improve the rights of migrants to ensure safe and healthy educational and  
 531 working conditions that includes freedom of movement with no arbitrary arrest.
- 532 a. States, regional bodies and the international community must utilize policies, laws  
 533 and resources to improve the rights of migrants, especially for labour migrants.  
 534 States and businesses must ensure workplace health and safety measures,  
 535 employment conditions and implement inspections and monitoring tools targeted to  
 536 protect migrant workers. Migrants must be assured easy-to-access, equitable  
 537 healthcare and worker compensation entitlements. Transparent reporting using an  
 538 agreed upon framework should occur.
- 539 b. Policy-makers must guarantee migrants’ rights and inclusion across sectors that  
 540 affect the health of migrants, including workers, internally displaced persons, asylum  
 541 seekers, refugees, and empower migrants to assert their rights to the underlying  
 542 social, political, economic, cultural, and determinants of physical and mental health.
- 543 c. Social and health sector leaders and educational institutions should offer training to  
 544 promote cultural competency, cultural mediation and migrant-sensitive services,  
 545 including outreach programmes for hard-to-reach individuals and groups.
- 546 d. States must abolish arbitrary arrest and the detention of all migrants, especially  
 547 children and adolescents. They must remove health restrictions on entry, stay and  
 548 residence as well as the deportation of individuals with certain health conditions.  
 549 These measures should be codified in international agreements and included in  
 550 national law.

551 5. There is an urgent need to ensure adequate monitoring, evaluation and research to  
 552 support the implementation of the Global Compacts.

- 553 b.a. States, coordinating with the global community and relevant local professionals (e.g.  
 554 health, refugee services, labour, civil society), should put into place robust  
 555 monitoring frameworks and independent reporting mechanisms to ensure  
 556 accountability in the delivery of the Migration and Refugee Global Compacts.  
 557 Strategies should include transparent and comparable monitoring frameworks and  
 558 mechanisms to report how regions and countries are adhering to the policy  
 559 principles and implementation components on migration and health. The  
 560 Commission, therefore, recommends that To support global monitoring, reporting  
 561 and the development of robust policy and intervention focused data, we propose a  
 562 Global Migration and Health Observatory is established to develop with the aim of  
 563 developing evidence-based, including monitoring indicators and measurement  
 564 methods, and, to improve responses to ensure improved reporting, transparency  
 565 and accountability on the implementation of the Migration and Refugee Global  
 566 Compacts migration and health and to assess our global progress.
- 567 b. Specific recommendations for research are outlined in greater detail in Panel 9 and  
 568 were reached through a consensus approach by Commissioners.

570 **The post-Commission phase**

571 The Commission plans to inspire action, building on the health and health determinant aspects of  
 572 the Global Compacts on Migration and on Refugees, through a number of key initiatives. There is  
 573 considerable momentum in the migration and health community to move from recommendations to  
 574 action. We plan to engage at multiple levels of society to raise the profile of migration and health.  
 575 This would be at the community level with the public, including migrants themselves and  
 576 populations at all stages of the migration process. Secondly, we plan to support the establishment of  
 577 an inclusive global mechanism that will bring together civil society with researchers, non-  
 578 governmental bodies and charities, and multilateral organisations including the World Health

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579 Organization, the global Migration Agency (International Organization for Migration) and the UN  
580 Refugee Agency to establish a distributed observatory to develop agreed indicators and a monitoring  
581 framework which has local, regional and global reach. The governance, reporting and advocacy  
582 efforts will include the use of reports, media, and the arts to challenge elected officials and will  
583 support research to generate new evidence on implementation best practice. We expect the  
584 observatory to report annually and liaise with regional stakeholders for adapted versions of the  
585 report to allow local and inter-regional action.

586  
587

#### **Panel 11: Research recommendations and priority research questions**

- 1.—To address the health needs of migrants, high-quality data collection for migration and health must:
  - a.—Add migration-related questions to regularly administered surveys such as Demographic and Health Surveys, population surveillance sites and censuses.
  - b.—Examine the multiple interactions between migrant populations and between migrant and non-migrant groups.
  - c.—Include health outcomes of migrants that are more closely aligned with the drivers of migration and the geographical region of origin of migrants, internal migrants and the interaction with aging in order to better understand health needs.
- 2.—To provide an evidence base for health-related drivers and outcomes of migration, it is essential to focus on the processes and implementation of migration and health research, through:
  - a.—Undertaking research that responds to the population need, including through increased focus on the health effects and needs during the migrant life cycle.
  - b.—Analysis of best treatment regimens and modifications to these treatments required by mobile populations.
  - c.—Implementing evidence-based health interventions, with a focus on data collection, assessment of cost-effectiveness and analysis of intervention impact and effectiveness.
  - d.—Increasing the evidence base describing the consequences of discrimination against migrants and racism, and ways to prevent this.
  - e.—Considering the health of migrant groups in all areas of research.
- 3.—To provide and use better data to reduce inequities, changes in the migrant health research process and methods are needed, through:
  - a.—Use of globally accepted definitions to guide comparable data collection and disaggregation, with a recognition that the categories used in human mobility and health are not static, but fluid.
  - b.—Viewing the migrant population themselves as an asset and encouraging a participatory approach, where migrants and local communities are included in research prioritisation, policy making and decision process.
  - c.—Including qualitative, adaptive and context-sensitive approaches in order to understand socio-cultural factors of migration, the barriers to healthcare and how the determinants of health might affect migrants differently.
- 4.—To provide evidence for health policy and systems research, the following questions should be considered:
  - a.—What financing models are most effective in extending access equitably to migrants?
  - b.—How can prevailing jurisdiction-based health governance and citizen participation

- approaches be made more sensitive to the needs of migrants?
- c.— How can healthcare providers be equipped with necessary multicultural competencies for migrant care?
  - d.— How can information systems be made more portable and interoperable while still preserving patient rights and privacy?
- 5.— To produce ethical research, there should be incorporation of ethics, data protection, monitoring and evaluation into all stages of the research process. The following questions should be considered:
- a.— Does the research meet the particular needs and priorities of the research population, as well as goals like equity, integration, health protection and/or universal health coverage?
  - b.— When defining the sample and the distinguishing categories of “migrants”, what are the sources of information that this relies on and how do these categories resonate with the individual’s self-perception?
  - c.— Does the research deal with the challenge to understand social boundaries by providing scientific evidence of “differences” between and “homogeneity” within social groups and/or populations?
  - d.— To what extent does the research reflect social, structural and political determinants of health and their implications on social gradients, historical power relations, and probably stigma?
- 6.— To provide adequate funding, health funders should:
- a.— Make migration and health a priority research area.
  - b.— Ensure that funded research always endeavours to include migrants within it.

589 | **# The Migration and Health Commission:** In addition to the commissioners, authors include Mustafa  
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607

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## Figures

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[Figure 1: The Migration cycle](#)

[Figure 2 A. Global map of the total number of international migrants \(2015\); B. Proportion of population that were refugees by World Bank Income group \(1960-2015\). Analysis conducted using data from UN DESA, UNHCR and World Bank. Online interactive versions of figures 2A and 2B](#)

[Figure 3. Weighted percentage of men and women using modern methods of contraception by migration status.](#)

[Figure 4a. Percentage of all international migrants that were refugees, asylum seekers and labour migrants, 1960-2015. Note: Labour migration data for 2013 used in estimates for 2015. No historical estimates for labour migration available.](#)

[Figure 4b. International migrant numbers at mid-year by age, sex and region \(2015\)](#)

[Online interactive version of this figure](#)

[Figure 5. Total annual new displacements due to conflict and disasters](#)

[Online interactive version of figure](#)

[Figure 6. Estimated refugee numbers by region, 1990-2017.](#)

[Online interactive version of figure here](#)

[Figure 7. Weighted mean number of years of education by internal migration status \(Source: DHS\)](#)

[Figure 8. Historical Evolution of the Migration and Health Agenda: Selected International instruments and events](#)

[Figure 9. A health systems framework for migrants' access to health and social protection Adapted from Levesque et al. 2013<sup>166</sup> Note: Factors on the supply side can affect demand and vice versa.](#)

[Figure 10. Summary of random effects meta-analysis of Standardised Mortality Ratios for international migrants by ICD-10 disease category. Online interactive version of figure:](#)

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## Panels

### **Panel 1 Projection for internal migrant numbers for Bangladesh by 2050 driven by hydrometeorological hazard risks under certain assumptions of social and political developments**

Three different scenarios based on the combination of two development pathways and two climate trajectories were modelled by the World Bank,<sup>68</sup> along with three environmental variables, water stress, crop failure and sea level rise, using a gravity model based on distance and attractiveness of the destination compared with the source area. The report defines climate migrants as people who have moved from their place of origin for at least 10 years and travelled over 14 kilometres within country because of climate change. The report aims to present a plausible range of outcomes rather than precise forecasts. It is based on a single model but has positive aspects such as the inclusion of socioeconomic factors, the choice of slow onset climate change parameters, the use of whole globe decadal changes and that downscaling can easily be achieved. The modelling was calibrated by the highest resolution population census data available at that time. The World Bank report projects that by 2050 there will be 13.3 million climate migrants in Bangladesh applying pessimistic-realistic reference scenario with high emissions and unequal development.

To test the World Bank projection, the 2011 population and housing census data were collected from the Bangladesh Bureau of Statistics. This database was prepared from household surveying in Bangladesh using a questionnaire that covered the respondents' household characteristics, demography, migration details, economic activities etc. 50 districts out of 64 in Bangladesh were identified as vulnerable to hydrometeorological hazard risks: 1) flooding and river erosion (23 districts); 2) cyclones and storm surges (19 districts); 3) drought and groundwater depletion (8 districts). Some districts are affected by multiple hazards. Then in each district, the total number of life-time (greater than 10 years) and inter-district migrants (travelled more than 14 km away) were identified. The migrants constitute about 9%, 12% and 5% of district-wise total population categorised according to flooding and river erosion, cyclone and storm surge, and drought and groundwater depletion as reasons to migrate. They were then filtered by selecting only people migrating from rural areas, based on an assumption that the adaptive capacity to climate-change is lower in rural communities in Bangladesh due to lack of development and poverty. They constitute about 8%, 11%, and 4% respectively. After applying these filters it is possible to assess the number of internal migrants attributed to hydrometeorological hazard risks in Bangladesh and that this figure is compatible with the local context by analysing primary data collected through actual field surveying under the supervision of BBS.

4.07 million internal migrants were identified for the period of 2001-2011 migrating because of these hydrometeorological hazard risks. They represented about 4% of country's total population and 41%, 42%, and 31% of total migrant population for the flooding, cyclone, and drought hit districts, respectively. Now, by considering Bangladesh's population growth rate (varying between 0.22-1%) and a similar scenario (without new climatic and development interventions) up to 2050, it can be assessed that the total number of internal migrants attributed to hydrometeorological hazard risks of 19.4 million will surpass the World Bank projection of 13.3 million internal climate migrants by 2050. However the projected increase in the frequency and intensity of hydrometeorological events with global warming cannot all be identified as being caused by climate change. However these hydrometeorological hazard risks (e.g. river erosion and groundwater depletion) cannot all be identified as being caused by climate change.<sup>67</sup> So while showing greater number of people potentially affected than the World Bank report projects, our analysis of primary data does not validate their projections for internal climate migrants.

### **Panel 2: Gender, law and health: a four country analysis**

Rape, sexual servitude, child marriage, and sex trafficking lead to substantial risks of transmitted infections, poor maternal health outcomes, and enduring mental health problems. But, access to protections, medical treatment and legal recourse, especially for women, are often dictated by laws and customs. An in-depth legal analysis of four countries in which migrants form a substantial portion of the population, Chad (519,968), Jordan (3,112,026), and especially in Lebanon (1,997,776) and Turkey (2,964,916), demonstrates the highly gendered –and sometimes contradictory– nature of the laws and customs governing the rights and safety of women and girls (See supplementary appendix, Table 6 ). Among Syrian refugee communities especially, rates of child marriage are high.<sup>273</sup> While many countries have established a legal minimum age of marriage, the practice of early and forced marriage prevails due to weak enforcement, cumbersome marriage registration laws and cultural norms. In Jordan, for example, the legal age of marriage is 18, yet children can be married with the approval of a Sharia court judge starting at age 15.<sup>274</sup> Although Chad criminalises child marriage under age 18, the child marriage rate was 68% between 2004-2017.

Although countries may sign conventions and draft legislation against gender-based violence, migrant women are often unable to access justice due to cultural norms, language barriers, and limited legal representation. Countries often have plural legal systems that provide complete defences or reduced sentences for honour crimes. In Chad for example, adultery is a criminal offence and murder committed because of adulterous behaviour is excusable. Women inhabiting migrant camps have faced months-long detention on grounds of adultery, while men rarely face punishment for rape and sexual assault.<sup>275</sup> In both Jordan and Lebanon, perpetrators can avoid prosecution by marrying their victims<sup>276</sup> as marital rape is not a crime in many host countries. For unmarried and displaced adolescent girls, failing health systems, limited providers, and domestic legal frameworks are significant barriers to reproductive health service access. Individuals under the age of 18 must obtain parental consent prior to receiving or undergoing any sort of medical treatment,<sup>277</sup> including contraceptives in Jordan, Lebanon, and Turkey and in Jordan, spousal consent is also required.<sup>278</sup> Migrant women also have limited access to abortion in the four countries reviewed. In Chad, Jordan, and Lebanon, abortion is not legal in cases of rape. Globally, intimate partner violence is reported to affect one in three women,<sup>279</sup> and displacement appears to exacerbate conditions of abuse,<sup>279,280</sup> triggered by destabilization of gender norms and roles, men's substance use, women's separation from family, and rapid remarriages and forced marriages. Laws are often limited to protect women from sexual abuse, for example, among the migrant-recipient countries analysed, only Turkey has legislation against marital rape and only Chad had legal termination to save the life of the mother—even in cases of rape. Countries are often reluctant to make commitments to protect women, for example, only Chad had signed and ratified without reservations the Convention on the Elimination of All Forms of Discrimination against Women and Convention on the Elimination of All Forms of Discrimination against Women Optional Protocols (CEDAW). While international instruments such as CEDAW and the UN Convention on the Rights of the Child (CRC) exist to protect women and children, implementation is often poor, especially during humanitarian crises. Dismantled or ineffective justice systems result in weak protections and responses for sexual and gender-based violence.<sup>281</sup> And, even where laws are in place, migrants who have tenuous legal status or are not aware of their rights, especially common among women, are much less likely to benefit from health protections and medical treatment.

### **Panel 3: Healthcare for migrant and seasonal farmworkers in the US - improving access and cultural competence**

A high proportion of migrant and seasonal farmworkers in the US are uninsured or underinsured, due to both lack of eligibility and extremely low incomes. It is estimated that at least 75% of farmworkers, and up to 90% of their children do not have health insurance.<sup>282</sup> Many of these individuals do not qualify for government provided or subsidised insurance (e.g. Medicaid) because they are undocumented.

There are positive examples of programmes that have been established to address the health needs of these populations, however. At a national level, the Health Resources and Services Administration funds 137 migrant health centres and 955 community health centres across the US aimed at improving access to services for marginalised groups such as farm workers, including a voucher programme enabling farmworkers to obtain care from community centres, as well as funding non-profit organisations such as Migrant Health Promotion, and Farmworker Health Services.<sup>282</sup> However, there is a significant gap in the literature in terms of robust evaluations of the effectiveness or acceptability of such programmes. There are also numerous local programmes in the US focused on accessible culturally appropriate health assessments, or the use of mobile outreach clinics to migrants, for uninsured farmworkers who are considered to be working in a hazardous industry and are mostly foreign migrants. For example, there are clinics targeting farmworkers in the USA,<sup>283</sup> and the Migrant Health Outreach program (federally funded) mobile clinic to farmworkers staffed by nurses, which seems to be a successful approach.<sup>284</sup>

Outreach services offer the benefit of going to the locations where migrants are working, living, going to school or to houses of worship,<sup>285</sup> reducing many of the main access barriers. In the US, for example, there are an estimated 1500 mobile clinics, receiving 5 million or more annual visits nationwide, which are becoming an integral component of the healthcare system to serve vulnerable populations. Findings from a study on outreach to migrants and seasonal farmworkers in the US shows that workers and their families make very limited use of clinic-based services because of their mobility (constant residential changes), work hours, poor knowledge of the US health system (almost 40% of the population is new each year) with a majority preferring to seek care in Mexico—even those who have US health insurance, but that clinic outreach programmes are overcoming many of these barriers. Research suggests, however, that mobile clinics for migrants have been more often disease-focused, to offer testing and treatment, for example, for HIV, especially for sex worker populations.<sup>285,286</sup> Evening cluster clinics targeting migrant workers were considered by migrants themselves to be excellent or good.<sup>287</sup> Six characteristics were believed contributed to the successful delivery of healthcare and education through cluster clinics, including: provision of both direct and referral services for this underserved population; comprehensive delivery of services in a single setting; collaborative delivery of services; access-driven delivery of services; delivery of culturally sensitive and linguistically appropriate services; and evidence-based service delivery. Free or mobile clinics and health and wellness programmes specially targeted for migrant workers are relatively rare.

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### **Panel 4: Leadership in Migrant Population Accessibility and Affordability of Healthcare Services**

#### **China**

Since the launch of the new round of medical reform in 2009, China has almost achieved full coverage of its medical insurance system for urban and rural residents, with a stable coverage rate of above 95% for the whole population. The medical insurance system mainly consists of three types of schemes, including urban employee basic medical insurance (UEBMI), urban resident basic medical insurance (URBMI) and new rural cooperative medical scheme (NCMS). Among

them, the number of people participating in NCMS reached 670 million, with a coverage rate of 98.8%. However, despite the high coverage rate achieved, there is concrete difference among the coverage scope of those three medical insurance schemes, with a higher insurance level by UEBMI and URBMI than by NCMS. In addition, since the off-site medical expense settlement information system for NCMS has not been fully established, medical expenses of migrant populations cannot be directly deducted when they seek medical care in urban areas. Many of them still have to pay medical expenses first out of pocket and afterwards return to rural areas for reimbursement. Besides, the reimbursement review procedures are quite cumbersome and usually take a long period, resulting in a considerable number of the migrant population actually not being able to enjoy concrete insurance security.

Faced with the demand of nearly 200 million migrants, in 2016, the government promulgated a relevant document on off-site medical expense settlement under basic medical insurance schemes, which clarified the responsibility of all levels of governments in ensuring migrant population's right to medical insurance and defined the unified management requirements for locations providing medical treatment. At the same time, the off-site medical expense settlement information system was established and improved. Using social security cards distributed, migrant population can equally enjoy the convenient services of medical expense settlement across provinces. Through those policies and measures, the accessibility and affordability of healthcare services for migrant population have been greatly enhanced. Meanwhile, in order to promote the health of migrant workers working outside, the Health and Family Planning Commission in migrant-sending areas also established a health education group on WeChat, sending them health education messages and keeping track of their health status for better health management.

#### **Switzerland**

“Similar to all other areas of corporate governance, diversity policies need assertiveness by the highest management level”, Peter Saladin says.<sup>288</sup> The economist and former president of the H+ Swiss Hospital Association headed the Swiss “Migrant-Friendly-Hospitals”-project implemented in 2003–2007, as part of the Confederation's strategy on migration and public health.<sup>289</sup> According to the recent Migrant Integration Policy Index (MIPEX) Health Strand, and international comparative study health systems' responsiveness to immigrants needs, the endeavour was successful: Switzerland scored second of 38 nations, and has established a “world-leading ‘Migration and Health’ programme”.<sup>290</sup>

On the political level, Switzerland chose to turn “health” into a priority area of its integration policy. Legal entitlements and access to coverage within the insurance based Swiss healthcare system is nearly identical for nationals, legal migrants, asylum-seekers and undocumented migrants. Health care providers are informed by the Federal Health Office or NGOs (like the Swiss Red Cross) about immigrant's entitlements to health care and migrant patients are provided access to health relevant information in multiple languages.<sup>291</sup> Data collection and funding for migrant relevant health data is well developed, just as training of health professionals in transcultural competencies. The actual adaptation and responsiveness of health services, however, vary between regions (cantons) and institutions. The implementation of federal policies and provisions depend on political and institutional structures, priorities, and leadership on regional and local level. Interpreters and cultural mediators, for example, are available only at certain health centres, mainly large and university hospitals. As costs are charged on hospital budgets, a negative incentive for using interpreting services still exists. Specific services and support for undocumented migrants are also only available in a small number of cantons and political and administrative barriers to the actual realisation of formally granted rights are still prevalent.

### **Panel 5: Inappropriate health data sharing for immigration enforcement in the UK**

On 1 January 2017 a memorandum of understanding (MOU) between the UK Home Office and National Health Service (NHS) Digital was signed.<sup>292</sup> The MOU formalised existing processes and data sharing that had occurred between NHS Digital and the Home Office.<sup>293</sup> The MOU described how any data shared had to comply with the legal obligations under the Data Protection Act 1998 (DPA), the Human Rights Act 1998 (HRA) and the Health and Social Care Act 2012. Requests were used by the Home Office to track down migrants for the purposes of immigration enforcement. Upon publication, the MOU generated significant media interest, particularly as it became apparent that there had been an increasing use of these requests since 2010. The report led to a request for clarification about the issue from the Health Select committee, which received several responses from NHS Digital, Home Office, The National Data Guardian, Public Health England and the UK General Medical Council.<sup>293</sup> In their responses, NHS Digital and the Department of Health outlined the basis by which the MOU had been written and the impact and equity considerations that had been reviewed. NHS Digital confirmed that no privacy impact statement had been undertaken, but that instead a public interest test was carried out in each individual tracing request.

In their response to the Health Select committee, Public Health England (PHE) stated they were unable to find statistical evidence about the impact of knowledge of data sharing on deterring immigrants from accessing healthcare treatment and agreed to undertake a full review within two years. However, in their testimony, PHE experts working in the field of communicable diseases stated that “sharing of personal information by NHS commissioners or healthcare providers, which has been provided to them by patients on an understanding of absolute confidentiality, with other government departments, law enforcement agencies or immigration enforcement authorities risks undermining public confidence in the public health system and could have unintended and serious consequences affecting the health of individuals and the risk to the public health of the wider community”.

The General Medical Council (GMC), the governing body for UK doctors, only permits clinicians to share patient information ‘if failure to disclose may expose others to a risk of death or serious harm’. Suspected immigration offences do not fall under this category. In the GMC’s response to the committee, they stated that: “The memorandum of understanding sets out clearly the public interest in maintaining effective immigration controls. It does not however reflect the public interest in there being a confidential health system, or consider how those two public goods should be weighed against each other”.

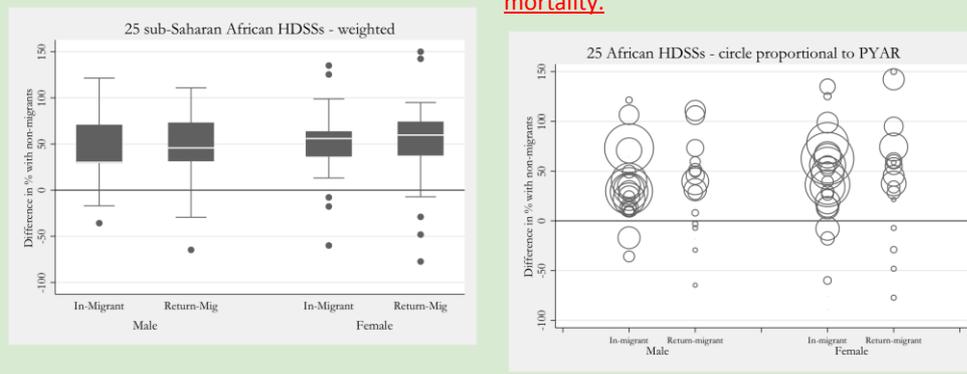
The National Data Guardian, Dame Fiona Caldicott, also expressed her concerns about this issue: “any perception by the public that confidential data collected by the NHS is shared for a purpose that they had not anticipated or without appropriate controls may well lead to a loss of people’s trust” and that “trust would have been better maintained had there been more public debate about where the balance should be struck between the public interest in maintaining an effective immigration service and the public interest in a confidential health service before an agreement was made between NHS Digital, the Home Office and the Department of Health. This would have allowed more scrutiny of the reasoning and factors which led to the policy position which has been taken.”

During a parliamentary debate in May 2018 about new data protection regulations, a member of the UK parliament with the Conservative party and chair of Health Select committee committee, Dr Sarah Wollaston, tabled an amendment to end the data-sharing arrangement between NHS Digital and the Home Office. During the debate the Government announced a reversal of policy and accepted Dr Wollaston’s amendment which significantly narrowed the scope of the MOU in order that it only covered sharing in cases where a person was suspected of serious criminality.

**Panel 6: Internal migration and mortality - an analysis of all-cause mortality in 25 Health and Demographic Surveillance System (HDSS) sites in sub-Saharan Africa**

These data represent a mix of rural and urban settlement types, from the International Network for the Demographic Evaluation of Populations and Their Health (INDEPTH) iShare platform.<sup>294</sup> The datasets include individual-level information on all movements into or out of a surveillance area for durations in excess of 6 months. From these data, we can identify in-migrants (new residents) and return-migrants (former residents returning) to an area. After 5 years of residence, a migrant is considered a permanent resident, since prior analyses of the effect of duration following migration show that the mortality experience of migrants converges with that of permanent residents (non-migrants) after this length of time.<sup>295</sup> For each migration category (non-migrant, in-migrant, return-migrant) premature mortality is estimated using the probability of mortality before age 60 if a person is alive at age 15 (45q15). The percentage difference in 45q15 between migrants and non-migrants was estimated by sex for each of the 25 HDSSs from the year 2000.

The analysis reveals that in sub-Saharan Africa, the distribution of the difference in premature adult mortality between migrants and non-migrants is substantial, i.e. in half of the sites migrants' mortality was 50% higher than non-migrants' mortality.



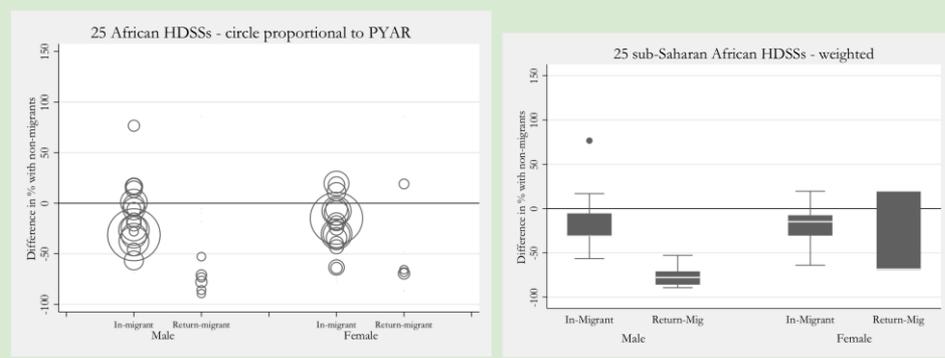
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**Figure 1: Difference in adult health probabilities (45q15) by migrant status in 25 African HDSSs**  
Box-and-whiskers plots or bubble plots (size of the bubble proportional to the person-years at risk) PYAR = person years at risk

These results suggest that internal migrants in the SSA sub-districts have a health disadvantage relative to the resident, non-migrant population. A study of internal migration and AIDS/tuberculosis and non-communicable disease mortality in 4 HDSSs in South Africa and Kenya affirmed these findings. In the Agincourt study population in rural South Africa, in-migrants and, even more so, return migrants had a health disadvantage in terms of mortality risk attributed to both non-communicable and infectious disease.<sup>296</sup> These findings suggest that relative to non-migrant mortality, the experience of migrants is demonstrably worse in many sub-Saharan settings - with limited access to healthcare a likely determinant along with poor social integration or inadequate living conditions. Further research into the circumstances at migrant destinations is a priority going forward.

The same methodology was used to examine child mortality (the probability of death in under 5-

year olds) by migrant status, where child migration status was considered independently of the migration status of their parents (Figure 2). The results present a striking contrast to those of adults. Both in-migrant and return-migrant children of both sexes have lower all-cause mortality on average than non-migrant children. These results present an important direction for further research and challenge assumptions that determinants operate in the same way and have the same outcomes for adults and children.



**Figure 2: Difference in child health probabilities (45q15) by migrant status in 25 African HDSSs**

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**Panel 7: Age assessment – an unresolved challenge for unaccompanied minors and refugee children**

Though migration to Norway is not a new phenomenon, the number of refugees that came to Norway in 2015 was unprecedented. Over 30,000 sought asylum, of which 5000 were unaccompanied minors. This group is at increased risk of child trafficking, abuse and violence and requires guardianship and protection. However, instead of focusing on their rights and obligations to this group of children and adolescents, regrettably governments often seek to skirt these obligations.

Age determination has been a substantial challenge and source of debate amongst child rights groups and immigration officials. Though there are universally agreed definitions of a ‘child’ there are no agreed methods regarding the assessment to determine the age of a child. Unaccompanied minors often have no reliable information about their age or date of birth. Authorities deploy techniques and investigations that are, at best, approximations.<sup>297</sup> But the consequences of these approximations can be devastating for this group of children. In Norway, if the age assessment shows that someone is less than 18 years of age, they will be cared for by the Norwegian Child Welfare Services. The Child Welfare Services statutory obligation is “to ensure that children and youth who live in conditions that may be detrimental to their health and development receive the necessary assistance and care at the right time”. In addition, non-resident minors are entitled to receive the same help from these services as any other Norwegian child. In contrast, if the assessments conclude that a person is over 18 years old, they will be treated as an ordinary adult asylum seeker, with few such rights.

Thus, it comes as no surprise that the techniques to determine the age of a child are controversial. In Norway, the measurement of age by x-rays of the hand (‘bone age’) and teeth are routinely used, despite long-standing dispute about these techniques. The x-rays assess ossification and presence of molar teeth and can be used to estimate age. However they are not an accurate method and unnecessarily expose the adolescent to radiation. In response to the gravity of

concerns expressed by both the Norwegian Paediatric Society and the Ethical Committee in the Norwegian Medical Association in the context of critical significance of these procedures, the responsibility for conducting these was transferred from the private sector to the Oslo University Hospital from January 2017.

Age assessments, where necessary, should integrate the clinical history and physical assessment, taking into account the person's development (physical, cognitive and emotional). A report on age assessments<sup>298</sup> concluded that "There is evidence that radiography (X-rays) of bones and teeth, which is increasingly relied upon by immigration authorities, is imprecise, unethical and potentially unlawful, and should not be used for age assessment". Despite this, x-rays are perpetuated as the gold standard. As this jeopardises the current and future situation of unaccompanied minors, many have no other alternative but to resort to other even more dangerous choices of living as undocumented minors on the streets of other European cities exposing and endangering them to further perils. Moreover, there is substantial evidence that even adolescents over the legal age for mandatory support services and guardianship, i.e., 16-24, have need of protection and support.<sup>299</sup>

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#### **Panel 8 Case study – Labour trafficked migrants, mental health and financial security.**

A study among male, female and child trafficking survivors in the Greater Mekong Subregion found that 48% experienced physical or sexual violence, 43% reported symptoms of depression and 40% reported PTSD.<sup>300</sup> Employment is highly correlated to mental health, with job insecurity and financial insecurity closely linked to anxiety and depression. Most data on employment and health come from high-income settings and studies on higher wage jobs, with very little research on migrant workers in LMICs. The *Study on Trafficking, Exploitation and Abuse in the Mekong* documented forms of labour exploitation and health outcomes among men, women and children using post-trafficking services in Thailand, Cambodia and Vietnam. Findings showed high symptom rates of depression and anxiety disorders, post-traumatic stress disorder (PTSD) and suicidal ideation associated with sexual and physical violence and threats during trafficking; poor living and working conditions; excessive overtime and restricted freedom.

Being deprived of wages was also a major stressor for formerly trafficked persons, many of whom experienced guilt and shame from failing to fulfil income expectations. In the STEAM study, most trafficked migrants (62.3%) reported being cheated of their wages. Among the few who were paid for their work, domestic workers (\$0.40), agricultural workers (\$0.70) and fishermen (\$1.10) received the lowest daily wages. Unsurprisingly, domestic workers and fishermen more frequently expressed financial concerns (75.9% and 71.1% respectively). The majority (81.6%) of domestic workers reported depression, anxiety and/or PTSD symptoms, similar to individuals trafficked for construction work (79.0%). Individuals who had been cheated over their wages or had financial concerns had approximately one and a half times the odds of being symptomatic of a mental health disorder.

Studies often overlook the significance of income security to a migrants' psychological well-being because research on migrants' mental health frequently focuses primarily on past events versus current stressors. Especially for those who migrated to improve their family's economic circumstances and failed, mental health support will need to include job training and placement or small business grants. Moreover, for individuals who were exploited, cheated of their wages or injured on the job, legal aid should be provided to help with wage recovery and compensation for abuses, and injuries, including long-term disability support.

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### **Panel 9: Research recommendations and priority research questions**

1. To address the health needs of migrants, high-quality data collection for migration and health must:
  - a. Add migration-related questions to regularly administered surveys such as Demographic and Health Surveys, health and population surveillance systems and censuses.
  - b. Examine the multiple interactions between migrant populations and between migrant and non-migrant groups.
  - c. Include health outcomes of migrants that are more closely aligned with the drivers of migration and the geographical region of origin of migrants, internal migrants and the interaction with aging in order to better understand health needs.
  - d. In addition to comparisons with the host population, conduct research that, for example, compares to the population at origin to ascertain the consequences of moving on health, ideally using longitudinal data collection methods.
2. To provide an evidence base for health-related drivers and outcomes of migration, it is essential to focus on the processes and implementation of migration and health research, through:
  - a. Engagement with the population using participatory approaches to ensure that migration and health research meets their needs and does not result in harm.
  - b. Undertaking research that responds to the population need, including through increased focus on the health effects and needs during the migrant life cycle.
  - c. Analysis of best treatment regimens and modifications to these treatments required by mobile populations.
  - d. Implementing evidence-based health interventions, with a focus on data collection, assessment of cost-effectiveness and analysis of intervention impact and effectiveness.
  - e. Increasing the evidence base describing the consequences of discrimination against migrants and racism, and ways to prevent this.
  - f. Considering the health of migrant groups in all areas of research.
3. To provide and use better data to reduce inequities, changes in the migrant health research process and methods are needed, through:
  - a. Use of globally accepted definitions to guide comparable data collection and disaggregation, with a recognition that the categories used in human mobility and health are not static, but fluid.
  - b. Viewing the migrant population themselves as an asset and encouraging a participatory approach, where migrants and local communities are included in research prioritisation, policy making and decision process.
  - c. Including qualitative, adaptive and context sensitive approaches in order to understand socio-cultural factors of migration, the barriers to healthcare and how the determinants of health might affect migrants differently.
4. To provide evidence for health policy and systems research, the following questions should be considered:
  - a. What financing models are most effective in extending access equitably to migrants?
  - b. How can prevailing jurisdiction-based health governance and citizen participation approaches be made more sensitive to the needs of migrants?
  - c. How can healthcare providers be equipped with necessary multicultural competencies for migrant care?
  - d. How can information systems be made more portable and interoperable while still

preserving patient rights and privacy?

5. To produce ethical research, there should be incorporation of ethics, data protection, monitoring and evaluation into all stages of the research process. The following questions should be considered:

- a. Does the research meet the particular needs and priorities of the research population, as well as goals like equity, integration, health protection and/or universal health coverage?
- b. When defining the sample and the distinguishing categories of “migrants”, what are the sources of information that this relies on and how do these categories resonate with the individual’s self-perception?
- c. Does the research deal with the challenge to understand social boundaries by providing scientific evidence of “differences” between and “homogeneity” within social groups and/or populations?
- d. To what extent does the research reflect social, structural and political determinants of health and their implications on social gradients, historical power relations, and probably stigma?

6. To provide adequate funding and appropriate research, health funders should:

- a. Make migration and health a priority research area.
- b. Ensure that funded research always endeavours to include migrants within it.
- c. Support capacity development among migration and health researchers and institutions in the global south through specific funding initiatives and support of research networks.

# Tables

Industry	Examples of occupational hazards and harm	Migrant health studies
Sex work	<ul style="list-style-type: none"> <li>Weak condom negotiation ⇒STIs, unwanted pregnancy</li> <li>Sexual violence, confinement ⇒anxiety disorders, depression</li> </ul>	Migrant female sex workers in Africa (Benin, Kenya, Ethiopia) are at greater risk of HIV than non-migrant sex workers and higher risk of acute STIs in all settings.
Construction	<ul style="list-style-type: none"> <li>Work at heights ⇒fatal falls, disabilities</li> <li>Heavy lifting ⇒musculoskeletal problems</li> <li>Poor personal protective equipment (PPE) ⇒respiratory disease, dermatitis, eye injury.</li> </ul>	In the USA, Latino construction workers were nearly twice (1.84, 95% CI 1.60,2.10) as likely to die from occupational injuries as their non-Latino counterparts.
Manufacturing (e.g., textile)	<ul style="list-style-type: none"> <li>Repeated bending &amp; fixed postures ⇒musculoskeletal damage, pain</li> <li>Sharp instruments, ⇒puncture wounds</li> <li>Dust particles ⇒silicosis</li> </ul>	In Malaysia, 64.4% of migrant workers experienced musculoskeletal pain caused or worsened by work compared to 28% of Malaysian manufacturing workers.
Commercial fishing	<ul style="list-style-type: none"> <li>Environmental exposures (sun, cold, rain) ⇒skin cancer, dehydration, frostbite</li> <li>Long hours, weeks with no break ⇒exhaustion, pneumonia</li> <li>Unstable fishing vessels, inadequate life vests ⇒drowning</li> <li>Fishing net and knife hazards ⇒deep cuts, lost limbs</li> </ul>	Trafficking survivors of the Thai fishing industry reported higher injury rates (46.6%) than non-trafficked fishermen (20.6%). 53.8% of trafficked fishermen experienced severe violence versus 10.1% of non-trafficked fishermen.
Agriculture	<ul style="list-style-type: none"> <li>Pesticide exposure ⇒toxicity</li> <li>Environmental exposures (heat, cold, mosquitoes) ⇒dehydration, kidney failure, headaches, malaria.</li> <li>Heavy lifting, bending ⇒repetitive injury syndromes</li> </ul>	95% of the greenhouse workers in Oman were migrants. Poor practices related to pesticide use resulted numerous health problems, such as skin irritation (70.3%), headaches (39.2%), and vomiting (29.7%).
Domestic work	<ul style="list-style-type: none"> <li>Physical, sexual, verbal abuse, social isolation ⇒depression, anxiety, suicide</li> <li>Extensive working hours, food deprivation ⇒exhaustion</li> <li>Repeated lifting, bending and reaching ⇒musculoskeletal strain</li> <li>Chemical cleaning agents, cooking, ironing, knives ⇒skin damage, burns</li> </ul>	A two-year study in Kuwait found that hospitalisation for domestic workers (93% from Sri Lanka, India and Philippines) was 1.86 times higher than for Kuwaiti women. Stress-related disorders were more common (49.2 vs. 22.3%) in housemaids than the Kuwaiti female patients.

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<u>Mining, quarrying</u>	<p><u>Mercury extraction, lead exposure, mineral dust ⇒mercury poisoning (gold-mining), neurotoxic disorders, pneumoconiosis</u></p> <p><u>Heavy lifting, falls, falling rocks ⇒fatalities, traumatic injuries, disabilities</u></p> <p><u>Heavy equipment, extensive hours, repetitive lifting ⇒noise-induced hearing loss, chronic fatigue, musculoskeletal injuries</u></p> <p><u>Remote locations malaria ⇒venomous snake bites.</u></p>	<p><u>China’s Ministry of Health reports that 87% of occupational disease is pneumoconiosis (black lung disease), with a mortality rate higher than 20%. Pneumoconiosis is a chronic lung disease that often affects miners, sandblasters and metal grinders, occupations undertaken primarily by internal migrant workers.</u></p>
<u>Forestry</u>	<ul style="list-style-type: none"> <li>● <u>Environmental exposures (heat, cold, mosquitos) ⇒dehydration, malaria, parasites</u></li> <li>● <u>Falls, sharp tools, machinery ⇒fatalities, broken bones, lacerations</u></li> <li>● <u>Repetitive motions, long hours ⇒body pain, strains, chronic fatigue</u></li> </ul>	<p><u>A study of Burmese migrants found 87 of 105 (82.9%) rubber plantation workers had a suspected case of malaria in the past year. Workers had limited access to care due to their working hours and limited transportation.</u></p>
<u>Leather and tanning</u>	<ul style="list-style-type: none"> <li>● <u>Chemical exposure (i.e., chromium, benzene dyes, formaldehyde) ⇒respiratory illness, ocular damage, cancer, ulcers, toxicity, dermatological diseases (rashes), chronic / allergic bronchitis pulmonary tuberculosis</u></li> </ul>	<p><u>Higher morbidity was found in tannery worker (40.1%) than the control group (19.6%) in northern India.</u></p>
<u>Brick kilns</u>	<ul style="list-style-type: none"> <li>● <u>Unsanitary environment, air pollution ⇒bronchitis, asthma, silicosis, respiratory toxicity</u></li> <li>● <u>Extremely high heat ⇒burns, fatalities</u></li> <li>● <u>High rates of child labour ⇒Developmental problems</u></li> </ul>	<p><u>Migrant brick kiln workers in South India had higher prevalence of chest symptoms (9.4%) versus general population rates (4.9%) related to occupational hazards and poor healthcare access.</u></p>
<p><u>PPE= personal protective equipment; STI= sexually transmitted infection</u></p>		

Table 1: Low-wage labour sectors and associated occupational hazards among migrant workers (see appendix for full list of references)

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