

How do health systems “software” factors affect integration of SRH and HIV services?

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Abstract

Despite a large and growing literature on SRH-HIV integration, the drivers of SRH-HIV integration from a health systems perspective are not well understood. These include both complex “hardware” (structural and resource factors) and “software” (values and norms, human relations and interactions) factors. This paper investigates the challenges and critical enablers for integrating SRH and HIV services, focusing on complex software issues.

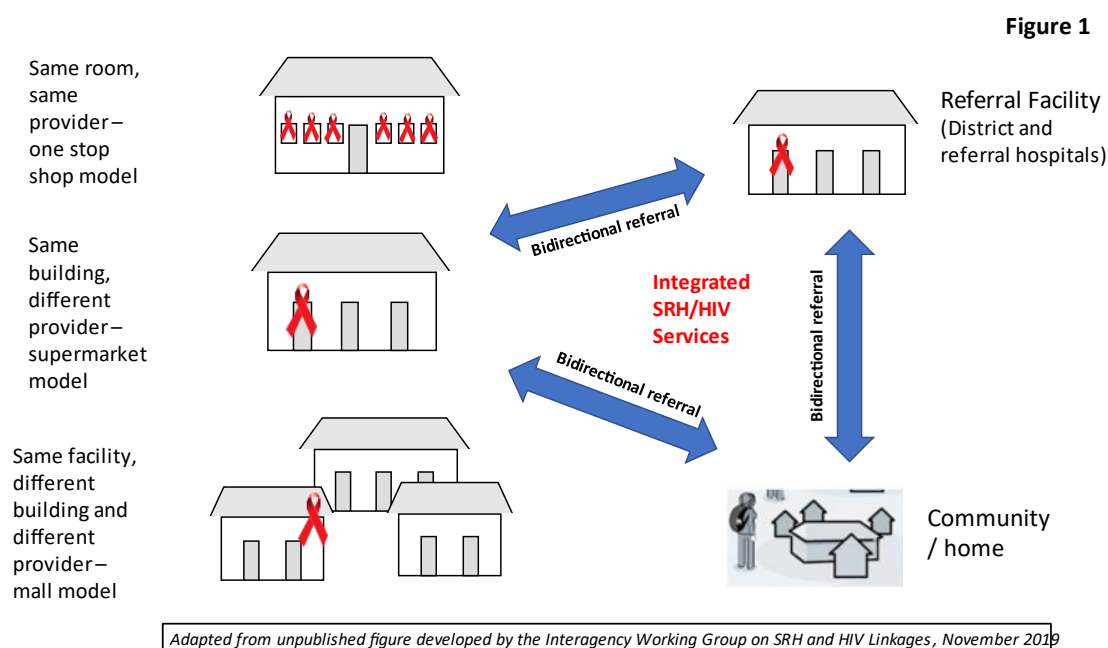
Two clusters of software factors emerge as critical enablers of effective SRH-HIV integration, that often interact with systems hardware: (i) leadership, management and governance processes; and (ii) provider motivation, agency and relationships. Evidence we reviewed suggests that there is potential for software elements that are critical enablers, to overcome some of the obstacles posed by non-integration of systems hardware elements (financing, guidelines, commodity supplies etc.). These enabling factors include: flexible decision making; inclusive management; and support to motivate frontline staff who can work with agency as a team. Improved software, even within constrained hardware (especially in low and middle income countries), can directly contribute to improved SRH-HIV service delivery.

Background: what we know about health systems and SRH-HIV integration of services

The past 25 years have seen growing commitment from global, regional and national bodies to the integration and linkages between sexual and reproductive health (SRH) and HIV programmes, policies and service delivery, particularly in sub-Saharan Africa where the intersection of SRH and HIV burden is greatest.^{1,2} For the purposes of this paper, linkages refer to investments, legislation, policies and programming at health system level.³ Integration, which is often used interchangeably, refers specifically to delivering SRH and HIV services together, for instance, by providing family planning jointly with HIV testing.⁴

High-level commitments have led to a wide variety of initiatives to improve linkages between SRH and HIV programmes and integrated delivery of care for better SRH and HIV outcomes. The range of potential models of SRH-HIV integration are illustrated in Figure 1.

Fig 1: Integrated SRH-HIV service configurations



Several recent reviews have taken stock of what we know about the impact of integrating particular combinations of SRH-HIV programme components on SRH and HIV outcomes.^{5,6,7} Echoing previous findings, these reviews show there are some successes; for example, the reduction of perinatal transmission of HIV (also known as prevention of mother-to-child transmission of HIV (PMTCT)) through integrating PMTCT services (i.e. HIV ART) into antenatal services, resulting in new HIV infections among newborns declining.⁸ Studies have also shown that integrating family planning and HIV services can increase contraceptive and

HIV testing uptake among clients.^{5,6} However, there are also many equivocal results of programme impact on target populations including no clear impact on unintended pregnancy or unmet need for family planning, and mixed evidence of impact on service quality.^{5,9} Earlier reviews highlighted that integrated services are desirable for clients, but they also found weak implementation of intended integration strategies¹ and that integrated service-delivery models needed to consider contextual and health systems factors.¹⁰

Few reviews have explicitly looked at the health systems dimensions of SRH-HIV integration. Hope and colleagues¹¹ reviewed core health systems elements of national integration strategies from five countries in sub-Saharan Africa. Mutabazi and colleagues highlight the importance of health systems factors affecting the PMTCT integration programmes.⁹ No other reviews have looked explicitly at health systems factors though many highlight the range of health systems challenges encountered in their studies that impede successful integration. Across these reviews, deficiencies in integrating higher-level health systems functions are highlighted: lack of coordinated leadership and unified national integration policies;¹¹ separate financing streams for SRH and HIV services;^{11,12,13} inadequate health worker training, supervision and retention;^{9,11,12} poor working conditions, as well as social and economic barriers to accessing health services.⁹ Approaches that have been identified as enabling integration include task shifting (i.e. from higher to mid- and lower-level healthcare providers), task-sharing between various cadres of healthcare providers^{13,14} and working with communities (e.g. through trusted frontline healthcare providers and peer mentors) to provide integrated outreach.^{13,14}

Health systems scholarship, a separate and rapidly growing literature, highlights the need to consider interrelationships between structures (“systems hardware”) and people-dynamics (“systems software”).^{15,16} Hardware encompasses infrastructure, commodities and supplies, management information systems, human resource training and logistics, financing as well as macro-policy and governance architecture.¹⁷ Systems software includes dimensions that are hard to quantify, but can to some extent be measured, such as norms, beliefs, ideas and values that people hold and the power-hierarchies and relationships between individuals and groups that play out to affect service delivery and support.^{15,16,18} Two recent reviews from this body of scholarship are relevant to this paper. Topp and colleagues¹⁹ reviewed issues related to (generic) health systems preparedness for integration of any services. They identified five contextual factors that could enable or constrain service integration: organisational framework of frontline services; healthcare provider preparedness; community and client preparedness; upstream logistics; and policy and governance issues. They also highlighted the importance of considering how these contextual factors intersect with four core health system “capabilities”: sufficiently functional frontline health services; sufficiently trained and motivated healthcare providers; availability of technical tools and equipment; and appropriately devolved authority and decision-making processes. The analysis considers a mix of hardware and software issues, but did not explicitly examine the nature or interactions of each type. Watt and colleagues looked at health systems facilitators and barriers to integration of HIV and chronic disease services.²⁰ This review found overarching themes similar to those in the Topp review, again exhibiting a mix of hardware and software factors: the need for effective collaboration and coordination (both formal and informal, throughout the system between providers, within teams, between

staff and clients); the need for adequate and appropriately skilled and incentivised health care providers; the need for supportive institutional structures and dedicated resources; and leadership in terms of political will, effective managerial oversight and organizational culture (noting that actual implementation is as important as programme design).

Most studies on SHR-HIV service integration over the past decade have focused on programme inputs (training, infrastructure, technologies), and health-service and health outcomes. Primary data articles that did look at systems factors have tended to focus on hardware issues of infrastructure,^{21,22,23,24,25,26,27} training,^{25,27,28} and sometimes policy²⁹ rather than processes of integration. However, there is growing recognition that factors beyond policy, logistics and training affect the implementation and success of integrated programmes.^{30,31}

Twenty-five years after clear commitment to SRH-HIV integration from global, regional and national institutions, evidence suggests it still is not being translated into effective, widespread practice.² Yet more effective implementation of integrated SRH-HIV services at scale will accelerate progress toward HIV epidemic control and contribute to achieving several key sustainable development goals).³² An explicit analysis of systems software factors relating to people, including how they interact with systems hardware factors to enable or inhibit integration of SRH and HIV services is currently missing, but could offer a better understanding of why integration appears to be successful in some cases and identify what factors enable the effective delivery of integrated care.

Analytical Approach

The purpose of this review was to identify the systems software challenges and enablers associated with implementing integrated HIV and SRH services – in contrast with previous reviews which have focused on the “what” (systems hardware inputs) and the “impact” (health and service outcomes) of integration rather than the processes of “how to” implement integrated service delivery.

With this in mind, to guide our narrative review we drew on concepts from the WHO’s six health systems building blocks (leadership and governance; financing; health information systems; medicines and technologies; service delivery; human resources)³³, which are akin to systems hardware, and recent health systems scholarship that highlights the importance of systems software (people, relationships). Onto this we layered concepts from Donobedian’s quality of care framework (based on structure – processes – outcome) which is widely used in reproductive health.³⁴ Figure 2 indicates where our review focus sits in a bigger context and provides an overarching analytical framework for our data analysis.

Figure 2: Framework for analysis of health systems software elements of SRH-HIV integration

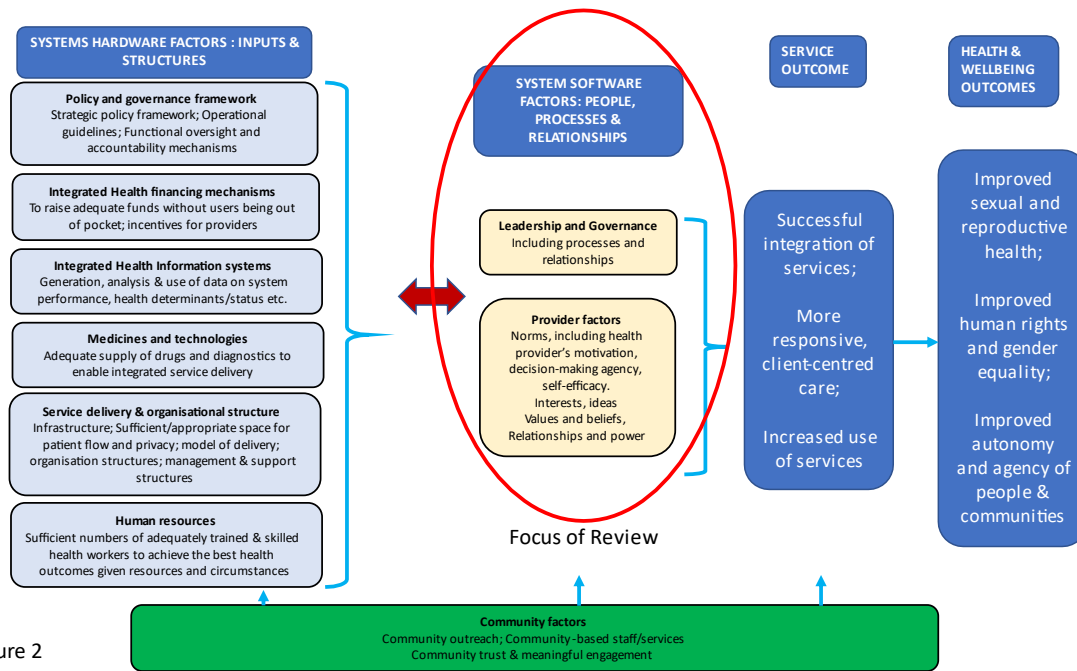


Figure 2

Search strategy and selection criteria

Inclusion/exclusion criteria

Included: English language studies; studies reporting primary data, including software factors, on implementation of integrated SRH-HIV programmes; implementation reports that include description and analysis of software factors; evaluation reports that include consideration of software factors. We recognise that many articles did not use the “software” terminology so we looked for descriptions of healthcare providers and managers and their interactions with each other, clients and community members.

Excluded: formative (including baseline) research; editorials/viewpoints; policy or guideline documents; literature reviews.

Search strategy

Three main search approaches were used in this review, which sought to identify both peer-reviewed literature and relevant “grey” literature in the form of NGO/UN reports and guidelines.

First, peer-reviewed journal literature was systematically searched from 2009 until October 2019 across five databases: Embase, Global Health, Medline, Cochrane & WHO RH Library. Full search terms are given in Appendix 1a.

Second, grey literature was searched (with no date restrictions) from Gates Open and 25 SRH/HIV organisational websites, including Ministries of Health in seven countries, UN agencies and global NGOs. Additionally, emails requesting key papers and grey literature (no date restrictions), were sent to high profile researchers in this field and expert members of the Inter-Agency Working Group on SRH-HIV Linkages (IAWG), co-convened by WHO and UNFPA.

After screening of titles, abstracts and full texts, data from the retained articles and reports were summarised in spreadsheet tables for analysis. Data were analysed according to the literature-derived software factors shown in Figure 2.

Evidence on the software factors affecting SRH-HIV integration

The majority of peer-reviewed evidence came from East and Southern Africa, while evidence from grey literature mainly related to less detailed multi-country analyses. Most evidence was from the public sector or NGO-supported facilities. The integration focus of most evidence was the integration of HIV services with either maternity services (including ante- and post-natal care) or family planning (FP) services. The selection process for articles is shown in Appendix 1a and details of the retained studies are shown in Appendix 1b.

Systems software dimensions emerge clearly as explanatory factors for implementing integrated service delivery. A number of papers pointed to the importance of factors beyond the hardware for successfully implementing integration,^{31, 38,42,43,50,51,,,} but our analysis shows that only a handful considered the interactions between hardware and software elements.^{38, 42,45,47}

Our review found agreement across a range of studies that hardware factors alone are insufficient for providing effective integrated care. Even where there are strong and relatively aligned national policies and guidelines on FP-HIV integration, this does not necessarily translate into integrated service delivery or clients' needs being adequately addressed in practice.^{43,51} A number of articles and reports pointed to the discrepancies between the availability of structural elements of integrated services (e.g. FP commodities available in HIV treatment facilities/rooms; HIV test-kits available in FP/ANC facilities/rooms; adequately trained staff), and the actual delivery of integrated care by providers.^{31,38,42,50} A paper from the Integra Initiative in Kenya (integrating HIV services into FP and postnatal services) concluded that "structural integration is not sufficient for integrated service delivery."³⁴ Another study from three cities in Kenya integrating FP into HIV services concluded that "*factors other than ability to offer short-term methods and LARC [long acting reversible contraception] played an important role in limiting provision of these services across [other services]*" and that training of providers alone cannot guarantee integration.³¹ The same conclusion is reached in Swaziland (also Integra) that "*Programmes should move beyond simplistic training and equipment provision...*".⁴²

Two clusters of software factors emerged across the studies as important for facilitating or impeding integrated SRH-HIV service delivery. First, leadership, management, governance and processes. This consists of leadership and accountability for aligning policies and systems functions; and supportive and inclusive management and leadership. Second, provider motivation, agency and relationships. This includes motivation and teamwork to support frontline providers; and flexible provider decision making for responsive delivery of integrated care. These are summarised in Table 1, with the strength of evidence and the research gaps and each cluster is discussed below.

Table 1: Summary of Systems Software factors that affect SRH-HIV service integration

See end of paper

Leadership and accountability to align policies and systems functions: the importance of a policy framework for integration (including supportive laws and guidelines) to demonstrate government leadership was noted in two reports.^{51,53} Leadership was clear in the increasingly favourable international and national policy environment for integrating HIV and RH services now, but gaps remain.^{53,49,58} An analysis of SRH and HIV integration strategies from 60 countries found HIV policies/programmes with integration strategies in 53 countries (88%) and SRHR policies/programmes with integration strategies in 41 countries (68%), though with varying degrees of integration.⁴⁹ Elimination of Mother to Child Transmission (EMTCT) was most likely to be described in each, followed by STIs and condoms for prevention of HIV, STIs and unwanted pregnancy. Many countries have multiple, inconsistent integration policies and guidelines arising from different government departments.^{49,51,54,55} Many papers also showed how the lack of coordination within and between government departments, donors and third sector implementing agencies leads to continued separation of policies, planning, funding, budgeting, health management information systems (HMIS), procurement and monitoring and evaluation (M&E) functions, operational guidelines and accountability processes for integrated service

delivery.^{51,52,54,55,56,59} Lack of coordination had serious downstream effects at district and facility levels, which ultimately impedes delivery of integrated care.^{31,43,47,50,51,56,59} One study underlined the importance of political commitment for overcoming tensions between vertical programmes in order to secure changes to reporting forms and data systems as well as training curricula and operational guidelines that would support integration.³⁵

Supportive, inclusive management and leadership: at facility level, three papers described routine, inclusive management structures that positively affected implementation of integrated care. In Tanzania, routine management meetings were one of the significant determinants of facility readiness to implement integration of FP with HIV counselling and testing at primary healthcare level.⁴⁷ In Kenya, among 40 clinics, those facilities able to successfully implement HIV testing and treatment within FP and post-natal services held team management meetings with implementing staff to coordinate workload and enhance collegiality.³⁸ In Uganda, a non-government facility integrating paediatric HIV care into family health services developed innovative approaches to management: inclusive, multi-disciplinary teams (including community members and different cadres of health facility staff) met weekly to review operations, strengthen linkages across departments involved in delivering the family-centred care and engage in collective, participatory planning.⁴⁵ To support this, training on participatory planning and a “health systems approach to HIV/AIDS care” was provided for all project managers. Specific community decision making initiatives were also implemented (e.g., community members on facility management committees that plan service integration; quarterly meetings between community members and service providers; involvement of local councils and other local authorities). Collectively, this approach enhanced trust and engagement of the beneficiary communities, leading to significant increases in service utilisation and integrated care delivery.

Motivation and teamwork to support frontline providers: while off-site staff training and frequent rotation and turnover, are in themselves hardware factors impeding integrated services delivery,^{43,46,51} the way staff respond to different forms of training, and cope with shortages or turnover to enable integrated delivery, are software issues. Task-sharing, training a provider (e.g. HIV) in the skills of another (e.g. FP), or task-shifting, like enabling nurse-led service-delivery or service provision by community volunteers (e.g. to provide community-based HIV testing and contraception), are seen by many as important solutions to the staff shortages.^{14,45,43,53} In already overburdened systems, however, there are huge challenges in introducing additional skills as well as ensuring good supervision and retention.⁴³ A range of studies show that ongoing support for frontline providers to deliver integrated services in these contexts is critical and can be achieved in a number of ways.

Studies from several countries found the most effective forms of training to support enhanced provider skills and improve confidence to deliver integrated care were continuous, on-the-job, in-service training.^{42,43,47,48} In Kenya and Malawi, providers found the training made them feel more motivated, intellectually challenged and satisfied with their work and abilities. They also felt they could reach more clients and saw increased client satisfaction with services and better provider-client relationships, all of which increased their own job satisfaction.^{36,37,40,,48}

Mentorship schemes can also provide a useful approach for building skills and knowledge for HIV/SRH integration despite low staffing levels,³⁷ and were also found to be useful to support providers to deliver integrated care, share their concerns and cope with associated pressures, but proved hard to sustain with high staff turnover.^{31,37} In a South African study, a new (non-clinical) cadre, “health system navigators”, was introduced as a possible solution to difficulties around task shifting and referrals. Navigators provided information to clients and escorted them for internal referrals; nurses reported that time had been freed up for them to focus on both clinical and administrative duties, making this a promising intervention.⁴³

There remain concerns that integration will overburden staff, though in numerous settings it is evident that providers have non-busy times.^{39,43} One way of sharing workload pressures was through teamwork. Integra papers from Kenya and Swaziland highlight the positive impacts of health facility providers working together as teams to share workload and other pressures. Providers in Kenya reported improved communication and teamwork with their colleagues as a positive effect of integration, though many did not achieve this and noted that they faced increased occupational stress as a result of higher workloads, treating very sick (HIV) patients and reduced quality time with clients.³⁶ In Swaziland, supportive professional relations were found to be a necessary factor to promote effective, collaborative teamwork.⁴² Where it did not exist, there was frustration and tension between colleagues providing different services on the spectrum of care which inhibited a continuum of integrated care.⁴² In Kenya, facility managers’ support for frontline workers to make their own team-based decisions on how to manage workload and client-flow enabled successful delivery of integrated care.³⁸ The case-studies show the significant impact even small numbers of committed staff working together can have, even to the point of overcoming apparent structural barriers to integrated care.³⁸

Flexible provider decision making for responsive delivery of integrated care: a district-based study in South Africa suggested that flexible tailoring of interventions was needed for specific contexts.^{43,44} A study on integrated post-rape care in Kenya noted the importance of having the “*flexibility to develop creative solutions at local level*”.³⁵ For example, lack of physical spaces to integrate services and ensure adequate space for client flow and privacy is a common challenge to delivering integrated services.^{46,41} However, modifications (like removing stigmatising room labels) can be made at facility level if there is commitment to doing so,⁴¹ especially if health providers and managers from all levels are included in decisions and development of the integration model.^{43,44} Experiences from Global Plan Priority countries integrating PMTCT into MNCH services highlighted the need to support integration efforts with strategies to reconfigure service delivery at facility level (including task-shifting).¹⁴

The Kenyan Ministry of Public Health and Sanitation has for a long time enabled HTS sites flexibility to decide the degree of integration that was possible, based on its resources and capabilities – with a long term goal of increasing the range of integrated services.⁵⁷ In Kenya the highest performing clinic in the Integra case studies was one that controlled its own spending and showed a clear management commitment to integration through encouraging

agency (e.g. through inclusive decision making and peer-support) among frontline staff to enable integrated care even if resources were lacking.³⁸ Evidence from Uganda shows the benefits of co-creating interventions with frontline health workers to maximise acceptability and uptake.⁴⁵ For example, the inclusive, participatory decision-making approach at the Mildmay clinic in Uganda allowed staff to respond to felt community needs. For example, instituting a memorial service for people who died of HIV/AIDS encouraged reporting of deaths and improved trust of communities seeking care for their families.⁴⁵

In the Integra study papers from Kenya and Swaziland, a hallmark of successful delivery of integrated care appeared to lie in the ability of facilities to support their frontline staff.^{38,42} Key to this support was encouraging flexible decision making to provide the care needed to individual patients as they presented to the facilities. In Swaziland, *de facto* delivery of integrated care was influenced by the extent to which providers could (and were supported to) deliver tailored continuity of RH care within an HIV setting, rather than “routinised” care which focused on HIV services with only superficial check-box reproductive health elements.⁴² For example, FP counselling was given at initiation of treatment when most clients were sexually inactive, but was not repeated when they became sexually active again following improvement in health after taking ARTs. It was not included because no “checkbox” was provided then and staff were not empowered to provide care that was not indicated on their forms. In Kenya case studies highlight other “software” dimensions that promoted a flexible approach to managing workload and enabling integrated service delivery, including supportive, reflexive management, and promotion of teamwork to enhance trust, confidence and load-sharing.³⁸

Finally, this review inevitably has some limitations. Hearing the voices of users and potential users is essential to inform policies and programmes that affect them and examples of meaningful community engagement has already informed quality SRH-HIV global normative guidance.⁷⁷ – This is important for not only women living with HIV, but also young people at high risk of HIV acquisition, unwanted pregnancies and gender-based violence, and other vulnerable communities such as migrants, incarcerated, transgender and indigenous populations who have poor health outcomes, even in high income countries. However, we did not include a client perspective in this review, mainly because despite a large literature on client factors, most do not look explicitly at client interactions with the system and therefore fell outside our scope. This is a research gap which should be addressed in future studies.

Systems software factors are key for successful integration

This review breaks new ground by focusing on the systems software factors that affect the delivery of integrated SRH-HIV care, particularly in sub-Saharan Africa. Despite searching for global literature, it is notable that only studies, or documents, relating to sub-Saharan Africa met the inclusion criteria. We found very few studies that explicitly considered software issues (people and their relationships) and almost none consider the interactions between people within the system or between people and the systems hardware factors.^{38,42,45,47} Yet people’s interactions are intimately connected with systems functioning and are critically

important for health outcomes, as recognised by WHO^{60,61} and for the wider achievement of Sustainable Development Goals.⁴

Our review suggests that while hardware factors can provide (or, more commonly, impede) an enabling environment, it is software factors that emerge as key to influencing whether integrated care is delivered or not. Four key messages can be synthesised from our review findings. First, despite some progress on integration policies, there is still a long way to go to integrate, or even **align, the necessary health systems functions** (finance, procurement, reporting systems) – this requires political leadership from governments, donors and implementing agencies. Second, facility **leadership needs to practice flexible, devolved decision making**, giving frontline staff the agency to make decisions and share their loads, while properly supporting them to deliver quality care. Related to this, there is need for an **inclusive approach to management** that can be supportive to staff at all levels as well as reaching out to secure the trust of beneficiary communities. Finally, there is need to **motivate, and support agency of, frontline staff through teamwork, mentorship and tailored on-the-job training**. Collectively these findings are critical because they suggest that ***the negative impact of systems hardware factors that impede integration can be mitigated through effective implementation of systems software.***

It must be acknowledged that the quantity of evidence on these software dimensions is still limited and the quality is also mixed – many research gaps (highlighted in Table 1) remain. Further research is needed on the nature and influence of different software elements on successful delivery of integrated care. This is particularly critical for adolescents and vulnerable groups – who are often neglected in the integration literature.² Trust in health providers and positive interactions, as well as provider’s own self-confidence to offer youth friendly services, make a very significant difference to whether young people (and vulnerable, stigmatised groups) will use health services. A study in Uganda found young people were unhappy using services with adults, they feared being recognised and judged, and the lack of privacy in consultations.⁶² WHO has identified a wide range of integrated interventions but notes that provision of integrated services for adolescent girls and young women remains particularly complex and challenging.⁶³

One reason for the current dearth of studies on critical software elements must lie in the difficulty of measuring factors like relationships and influence, although there are methods and tools that exist in the policy and systems analysis field as well as scholarship in other social sciences and in psychology.^{64,65,66} Other bodies of scholarship are also relevant. There is an established literature on management and leadership which shows that leadership styles focused on people and relationships lead to greater job satisfaction.⁶⁷ In healthcare, leadership and management styles are important for staff retention, motivation and performance.^{68,69,70} Related to teamwork and flexible decision making, health systems scholarship notes the importance of trust between colleagues⁷¹ which was also evident in some of the examples in this review. It is possible that implementation science can offer an approach to capturing some of the nuances of software factors and how they interact with systems hardware. In particular the sort of real-time, embedded research that implementation science requires can help identify whether and how services may be negatively affected by integration as practices change and trade-offs may be made, and what software or hardware reinforcements may resolve those challenges.

Clearly systems hardware issues cannot be ignored. As noted earlier, most studies on SRH-HIV integration focus on outcomes or look at systems hardware dimensions (infrastructure, training, financing, HMIS etc.). The legacy of integration of systems hardware remains weak. We found no papers that talked about the accountability of policy leaders, including donors, to act on their political commitments and support integrated service delivery by aligning not only their policies but more importantly their systems functions (hardware). There is continued separation of many HIV and SRH policies and guidelines, finance flows, commodity supply chains, data and reporting systems that could provide the necessary enabling environment for integrated delivery. We found no papers discussing the reasons for this continuing lack of coordination and alignment between government departments, donors and implementing agencies. It is likely, however, that much of this separation has to do with software issues like the perceived territory and priorities of one government department or donor vs. another. Even in 2020, HIV/AIDS conferences and Beijing25 (women's rights) conferences are being held at separate locations on similar dates. Political contestation (another software factor) of different actors for power and money (and sometimes ideology) is very evident, particularly in relation to SRHR; these policy level software issues have been analysed in relation to key players in HIV⁷² and abortion,⁷³ but not yet for SRH-HIV integration.

In this context, what is the future for client-centred integrated SRH-HIV care? More attention must certainly be given to developing software elements to support integrated care-delivery at facility level. This will be critically important also for new forms of integration. For example, there is growing interest in integration of pre-exposure prophylaxis (PrEP) within FP/SRH service delivery settings to increase access to HIV prevention among young women.⁷⁴ Beyond the current, formal health system, the rise in quality, evidence-based self-care interventions, including digital technologies, is expanding the scope and range of integrated SRH-HIV service delivery.⁷⁵ These can be provided fully or partially outside formal health services and can be used with or without the direct supervision of healthcare personnel. Self-care possibilities currently include HIV self-testing, contraceptive self-injection and HPV (pap smear) self-sampling,⁷⁶ though all require that the user has a degree of literacy and understanding. Research on the advantages and challenges of bundling these interventions into an integrated self-care package is needed.

In conclusion, our review findings suggest that while systems hardware factors can provide an enabling environment, it is systems software issues that emerge as explanatory factors for whether and how integration is implemented. Moreover, the evidence reviewed here suggests that there is potential for software elements that are critical enablers, to overcome some of the obstacles posed by non-integration of systems hardware elements (financing, guidelines, commodity supplies etc.). These include: flexible decision making; inclusive management; and support to motivate frontline staff who can work with agency as a team. Improved software, even within constrained hardware (especially in low and middle income countries), can directly contribute to improved SRH-HIV service delivery. It will help to deliver on past political commitments and, ultimately, better health outcomes for more people.

Table 1: Summary of Systems Software factors affecting SRH-HIV service integration

Leadership, management and governance processes	Provider motivation, agency and relationships
<p><u>Leadership and accountability to align policies and systems functions</u></p> <p>Leadership in development of policies integrating HIV and RH services.^{33,49,58}</p> <p>Lack of coordination within and between government departments, donors and third sector implementing agencies leads to continued separation of policies, planning, funding, budgeting, HMIS, procurement and M&E functions, operational guidelines and accountability processes for integrated service delivery.^{51,52,54,55,56,59}</p> <p>Political commitment needed to overcome non-alignment of policies, programmes and their supporting systems functions.³⁵</p> <p>12 studies; mixed quality (some strong; most not focused explicitly on software factors)</p> <p>Gaps: Reasons for lack of leadership on, or accountability for (non)action on, alignment of policies, guidelines and systems functions.</p>	<p><u>Motivation and teamwork to support frontline providers</u></p> <p>Provider motivation, job satisfaction, confidence and skills to deliver integrated care can be improved with on the job training and mentorship schemes.^{36,37,40,42,43,47, 48}</p> <p>Teamwork can improve load-sharing, provider peer-support and communication which can overcome some structural barriers to deliver integrated care.^{36,38,42,}</p> <p>Mentors and “health systems navigators” can support task-shifting.^{37,43}</p> <p>8 studies; moderate-strong quality.</p> <p>Gaps: Best-practices for developing and supporting frontline staff through functioning teams, task-sharing, tailored on-the-job training and mentorship.</p>
<p><u>Supportive, inclusive management and devolved leadership</u></p> <p>Facility level leadership to implement inclusive, supportive management processes (e.g. inclusive daily/weekly team meetings) improves motivation and agency of frontline staff to deliver proper integrated care for individual clients rather than unhelpfully routinised care.^{38,45,47}</p> <p>3 studies; strong-moderate quality</p>	<p><u>Flexible provider decision making for responsive delivery of integrated care</u></p> <p>Devolved decision making and leadership to enable flexible decisions on work-flow and implementation processes to be made at facility level.^{35,38,43, 57,60}</p> <p>Encourage agency in frontline staff through inclusive decision making and peer-support.^{38,42,45}</p> <p>7 studies: quality of most studies is strong-moderate</p>

Gaps: how to establish, promote and nurture “supportive, inclusive management”

Gaps: How to develop and support flexible decision making at facility level that enables quality integrated care

Indication of quantity is given in the number of studies (references) in each box. An indication of quality of evidence (robustness and replicability of the methods) is given based on an assessment of rigour and replicability of study methods.

Author Contributions

Data searching, extraction and initial analysis was conducted by Mayhew, Warren, Colombini and Ndwiga. Abuya presented preliminary findings at the Inter-Agency Working Group annual meeting where Narisimhan, Wilcher and others commented. Mayhew drafted the initial manuscript with significant inputs from Colombini and Warren. Narisimhan, Wilcher, Abuya and Mutemwa also provided intellectual input to the manuscript particularly in terms of interpretation and discussion.

Conflict of Interest Statements

All authors declare that they have no conflicts of interest.

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ANNEXES

Appendix 1a: Methods and Search Strategy

Objective

To identify the health systems software factors that affect integration of SRH and HIV services; and identify critical enablers of successful integration for scale-up.

Definitions

For the purposes of this review, we used the following definitions:

Linkages refer to bi-directional synergies in policy, systems, and services between sexual and reproductive health and rights and HIV. It refers to a broader human rights-based approach, of which SRH service integration is a subset.³

Integration refers to the service delivery level and can be understood as joining operational programmes to ensure effective outcomes through many modalities (such as multi-tasked providers, referral, and one-stop shop services under one roof).⁴

Integrated SRH-HIV services was defined by the authors as a service that offered at least one non-HIV sexual or reproductive health service (e.g. contraceptive/family planning, ANC, youth sexual health services) with at least one HIV-related service (including prevention, testing, counselling, treatment) at the same service delivery site (which therefore provided the theoretical possibility of providing both services in a single visit).

Articles and reports were retained if they included information on both SRH service(s) and HIV service(s) **and** a description or analysis of health systems software issues affecting integration of the services.

Inclusion/exclusion criteria

Included: English language studies; studies reporting primary data, including software factors, on implementation of integrated SRH-HIV programmes; implementation reports that include description and analysis of software factors; evaluation reports that include consideration of software factors. We recognise that many articles did not use the “software” terminology so we looked for descriptions of healthcare providers and managers and their interactions with each other, clients and community members.

Excluded: formative (including baseline) research; editorials/viewpoints; policy or guideline documents; literature reviews.

Search strategy

Three main search approaches were used in this review, which sought to identify both peer-reviewed literature and relevant “grey” literature in the form of NGO/UN reports and guidelines.

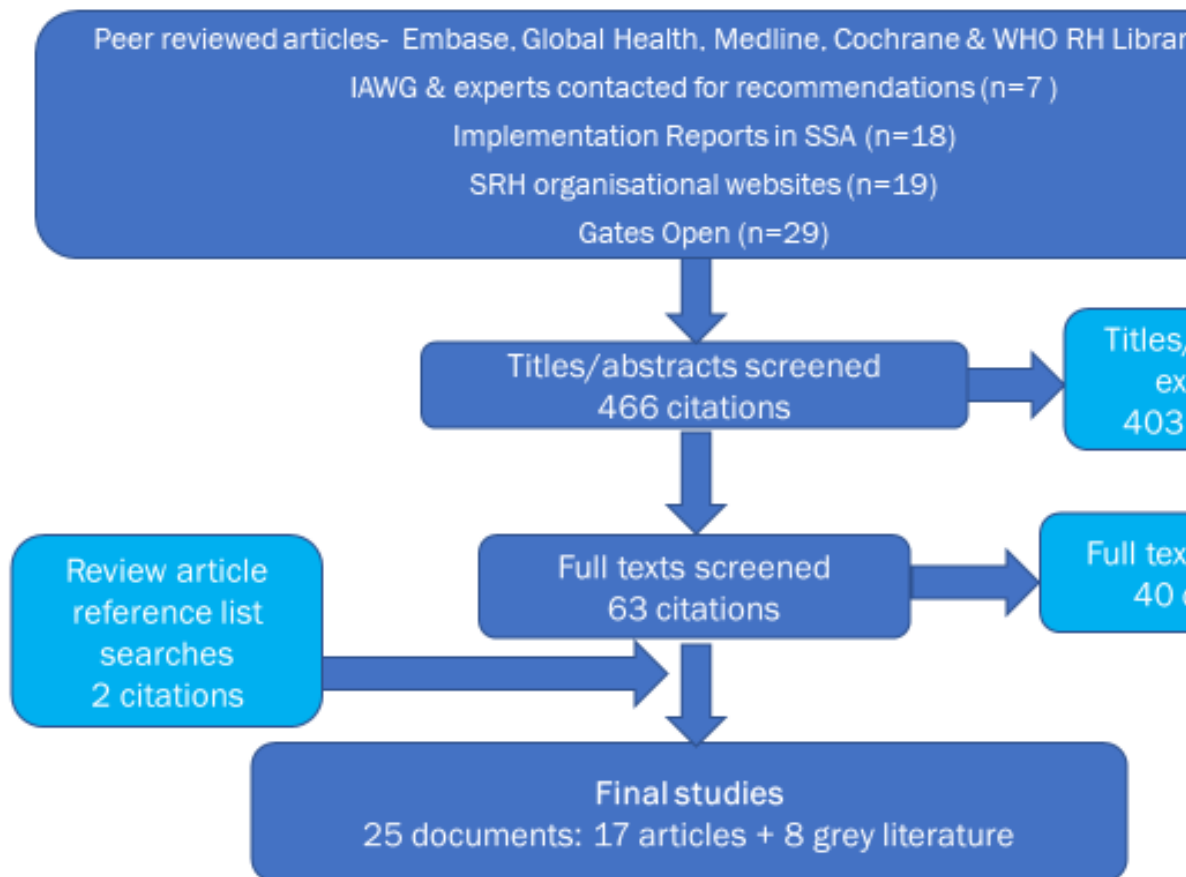
First, peer-reviewed journal literature was systematically searched from 2009 until October 2019 across five databases: Embase, Global Health, Medline, Cochrane & WHO RH Library.

Search terms used were: (exp HIV/ OR exp HIV Infections/ OR (HIV* or HIV-1 or HIV-2 or human immunodeficiency virus or human immuno-deficiency virus or acquired immunodeficiency syndrome or AIDS).mp.) **AND** (adolescent health/ or family health/ or reproductive health/ or sexual health/ or maternal health/ OR exp Abortion, Induced/ OR ("sexual and reproductive health" or reproductive health or sexual health or abortion or maternal health or adolescent health or family health).mp. OR Uterine Cervical Neoplasms/ OR (cervi* adj3 cancer*).mp. OR cervi* neoplasm*.mp. OR reproductive tract infections/ or sexually transmitted diseases/ OR peripartum period/ or postpartum period/ or labor, obstetric/ or labour, obstetric/ or maternal-fetal exchange/ or maternal-foetal exchange/ or reproductive behaviour/ or reproductive behaviour/ or sexuality/ OR (peripartum period or postpartum period or labor, obstetric or labour, obstetric or maternal-fetal exchange or maternal-foetal exchange or reproduc* behavio* or sex*).mp.) **AND** (exp counseling/ or counselling/ or family planning services/ or exp maternal health services/ OR adolescent health services/ or counseling/ or counselling/ or diagnostic services/ or post-exposure prophylaxis/ or school nursing/ or reproductive health services/ or women's health services/ OR (adolescent health serv* or counsel* or diagnos* serv* or post-exposure proph* reproductive health serv* or women's health serv*).mp. OR Infectious Disease Transmission, Vertical/ or PMTCT.mp.) **AND** (service integrat*.mp. OR "Delivery of Health Care, Integrated"/ or Systems Integration/ OR (integrated and delivery and (healthcare or health-care)).mp. OR systems integrat*.mp.)

Second, grey literature was searched from Gates Open and 25 SRH/HIV organisational websites, including Ministries of Health in seven countries, UN agencies and global NGOs. Additionally, emails requesting key papers and grey literature, were sent to high profile researchers in this field and expert members of the Inter-Agency Working Group on SRH-HIV Linkages (IAWG), co-convened by WHO and UNFPA.

After screening of titles, abstracts and full texts, data from the retained articles were summarised in spreadsheet tables for analysis. Data were analysed according to the literature-derived software factors shown in Figure 2 of the main text.

The Figure below shows the Analytical Review Process *Also provided as a separate file*



Assessment of retained papers

Based on the guiding framework (Figure 2, main text), we assessed the quantity and quality of the evidence available to assess each software component. Quantity was derived from the number of papers that addressed each software issue. We did not conduct a formal quality assessment of the papers, given the wide variations of study designs used (and also because this is not a systematic review) however we did assess the robustness of the methodology used and of the data analysis. quality was assessed by three authors (SM, CW, MC) in terms of rigour and replicability of the reported study design – this was not possible for most grey literature documents.

Annex 1b: Retained documents: Peer Reviewed Articles

Across all the data sources 466 unique documents were identified. Of these, a total of 25 documents (17 peer-reviewed articles and eight grey literature documents) were ultimately included.

Of the 17 peer-reviewed articles, seven were from Kenya (four studies)^{31,35,36,37,38,39,40}, three from Swaziland (one study)^{39,41,42}, two from South Africa (one study)^{43,44}, two from Uganda (two studies)^{45,46}, one from Tanzania⁴⁷, one from Malawi⁴⁸ and two covered multiple countries^{14,49}. Papers covered a range of facility types from hospital to primary health centres, and most were public sector or NGO-supported facilities. Of the eight grey literature documents, five related to multiple countries (mainly sub-Saharan Africa)^{50,51,52,53,54}; one was specific to Zambia⁵⁵ and two to Kenya^{56,57}. In terms of focus, the majority of peer-reviewed papers (13) dealt with integration of HIV services (including PMTCT) and ante- or post-natal care or other maternal health-related services (which sometimes included family planning (FP))^{14,36,37,38,39,40,41,42,43,44,46,48,49}; nine looked specifically at HIV into FP and/or FP into HIV integration^{31,36,37,38,39,42,44,47,48}; and two others looked at more specialised aspects (HIV-FP within post-rape services³⁵; paediatric HIV services within primary “family care”⁴⁵). Of the grey literature, seven documents looked at FP-HIV/HIV-FP integration^{50,52,53,54,55,56,57} and just one at broader Maternal Neonatal and Child Health (MNCH)-FP-HIV integration⁵¹.

Details of each document are shown in the Table below.

Authors	Title and Source	Methods	Key Findings
Ahumuza SE Rujumba J Nkoyooyo A Byaruhanga R Wanyenze RK	Challenges encountered in providing integrated HIV, antenatal and postnatal care services: a case study of Katakwi and Mubende districts in Uganda . Reproductive Health. 13:41, 2016 Apr 18.	Qualitative: 10 focus group discussions with 89 women attending ANC and postnatal care and 21 key informant interviews with district managers and health workers who were involved in the integrated service delivery.	Description of implementation challenges in two district case studies in Uganda. Major challenges included inadequate staff, gaps in knowledge of service providers especially with regard to provision of long-term family planning, limited space, shortage of critical supplies such as HIV test kits, drugs and gloves. Interaction of providers/staff and clients with these systems hardware issues are not explored.
Bintabara D Nakamura K Seino K	Determinants of facility readiness for integration of family planning with HIV testing and counseling services: evidence from the Tanzania service provision assessment BMC Health Services Research. 17(1):844, 2017 12 22.survey, 2014-2015.	Quantitative: Survey of 1188 health facilities. Good data set but not many process variables analysed.	Ostensibly a "readiness" study but facilities are already offering joint services. Of all of the health facilities, 915 (77%) reported offering both family planning and HIV testing and counselling services, while only 536 (45%) were considered ready to integrate these two services. Significant determinants of facility readiness for integrating these two services included were being government owned [AOR = 3.2; 95%CI, 1.9–5.6], having routine management meetings [AOR = 1.9; 95%CI, 1.1–3.3], availability of guidelines [AOR = 3.8; 95%CI, 2.4–5.8], in-service training of staff [AOR = 2.6; 95%CI, 1.3–5.2], and

Authors	Title and Source	Methods	Key Findings
			availability of laboratories for HIV testing [AOR = 17.1; 95%CI, 8.2–35.6].
Church K. Wringe A. Fakudze P. Kikuvi J. Simelane D. Et al	Are integrated HIV services less stigmatizing than stand-alone models of care? A comparative case study from Swaziland Journal of the International AIDS Society. 16 (no pagination), 2013. Article Number: 17981. Date of Publication: 11 Jan 2013.	Mixed methods: Survey and in-depth interviews in four case study clinics implementing different models of integration. Well detailed paper; robust analysis.	Variety of process issues are described in relation to stigma (e.g. structural improvements to avoid stigma of labelled rooms etc.)
Church, K. Wringe, A. Lewin, S. Ploubidis, G. B. Fakudze, P. Mayhew, S. H.	Exploring the feasibility of service integration in a low-income setting: a mixed methods investigation into different models of reproductive health and HIV care in Swaziland PLoS ONE; 2015. 10(5):e0126144. 40 ref	Mixed methods (survey and in-depth interviews) in four case study clinics implementing different models of integration.	Multiple contextual factors influenced integration practices, including provider de-skilling within sub-specialist roles; norms of task-oriented routinised HIV care; perceptions of heavy client loads; imbalanced client-provider interactions hindering articulation of RH needs; and provider motivation challenges. Thus, despite institutional support, factors related to the social context of care inhibited provision of fully integrated RH-HIV services in these clinics. Programmes should move beyond simplistic training and equipment provision if integrated care interventions are to be sustained.
Duma S. Lapani E. Ngala C.	Nurses' practice of integration of HIV prevention and sexual and reproductive health services in Ntcheu District, Malawi July 2019 Curationis 42(1) DOI: 10.4102/curationis.v42i1.1919	Qualitative: interviews with 10 providers. Very small study, but some good detail.	The purpose of this study was to determine and describe the nurses' practice of integration of HIV prevention and sexual and reproductive health (SRH) services as a strategy to effectively combat the spread of HIV and promote family planning in Malawi. It notes the increased motivation and job-satisfaction of providers after training and practice of delivering integrated care and the importance of delivering on the job training.
Hopkins J and Collins L 2017	Review of SRH and HIV integration policies	Analysis of policy documents from 60 countries.	robust review and analysis of 60 country documents

Authors	Title and Source	Methods	Key Findings
Kilonzo N Theobald SJ Nyamoto E Ajema C Muchela H Kibaru J Rogena E Taegtmeier M	Delivering post-rape care services: Kenya's experience in developing integrated services. Bulletin of the World Health Organization. 87(7):555-9, 2009 Jul.	Qualitative case study (with interviews) of multisectoral teams working in casualty departments and HIV facilities at district level in Kenya and their experiences providing post-exposure prophylaxis, physical examination, sexually transmitted infection and pregnancy prevention services.	All three districts experienced significant challenges in implementing the new services, many of which related to the lack of coordination between vertical and horizontal systems. Key lessons learned were: the importance of a participatory policy development process; the central role of political commitment in overcoming tensions between vertical and horizontal programmes (e.g. securing changes in reporting forms/systems; in national training curricula and operational manuals); and the flexibility to develop creative solutions at local level (but no evidence given of this).
Kiragu K Collins L Von Zinkernagel D Mushavi A	Integrating PMTCT Into Maternal, Newborn, and Child Health and Related Services: Experiences From the Global Plan Priority Countries. Journal of Acquired Immune Deficiency Syndromes: JAIDS. 75 Suppl 1:S36-S42, 2017 May 01.	Desk-based descriptive analysis of programme documents and literature.	Approaches to integrated services have increased access to a broader range of PMTCT interventions, and they also have proved to be largely acceptable to clients and providers. The integration of PMTCT interventions with maternal, newborn, and child health settings was supported by strategies to reconfigure service delivery to provide additional services, including shifting tasks to nurses (such as initiating antiretroviral therapy and providing long-term follow-up). This was complemented by supporting community outreach and integrating HIV and sexual and reproductive health services bi-directionally, including by providing family planning through antiretroviral therapy clinics and HIV testing in family planning clinics.
Luyirika E. Towle M.S. Achan J. Muhangi J. Senyimba C. Lule F. Muhe L.	Scaling Up Paediatric HIV Care with an Integrated, Family-Centred Approach: An Observational Case Study from Uganda . PLoS ONE. 8 (8) (no pagination), 2013. Article Number: e69548. Date of Publication: 06 Aug 2013.	Qualitative: key informant interviews with programme management and families, and a desk review of hospital management information systems (HMIS) uptake data. Retrospective case study examined best practices and enabling factors during scale-up of family-centred care in ten health facilities and ten community clinics supported by a	In the 84 months following the scale-up of the family-centred approach in HIV care, Mildmay experienced a 50-fold increase of family units registered in HIV care, a 40- fold increase of children enrolled in HIV care, and nearly universal coverage of paediatric cotrimoxazole prophylaxis. Key factors leading to success included: A multi-disciplinary team of clinicians, nurses, social workers, counsellors, pharmacists, monitoring and evaluation team members, and psychosocial programming staff meet weekly to review operations and strengthen linkages across departments; Task shifting towards a nurse-led approach with community volunteer support; Variety of community engagement

Authors	Title and Source	Methods	Key Findings
		non-governmental organization, Mildmay, in Central Uganda.	activities including participatory management and accountability.
Mayhew S.H., Sweeney S, Warren C.E., Collumbien M., Ndwiga C. et al. 2017	Numbers, systems, people: how interactions influence integration. Insights from case studies of HIV and reproductive health services delivery in Kenya . Health Policy & Planning. 32(suppl_4):iv67-iv81, 2017 Nov 01.	Mixed-methods data for four case-study facilities offering reproductive-health and HIV services in Kenya: (i) time-series client flow, tracking service uptake for 8841 clients; (ii) structured questionnaires with 24 providers; (iii) indepth interviews with 17 providers; (iv) workload and facility data using a periodic activity review and cost-instruments; and (v) contextual data on external activities related to integration in study sites.	Although structural factors like stock-outs, distribution of staffing and workload, rotation of staff can affect how integrated care is provided, all these factors can be influenced by staff themselves: both frontline and management. Facilities where staff displayed agency of decision making, worked as a team to share workload and had management that supported this, showed better integration delivery and staff were able to overcome some structural deficiencies to enable integrated care. Integra has demonstrated that structural integration is not sufficient for integrated service delivery. Rather, our case studies show that in some cases excellent leadership and peer-teamwork enabled facilities to perform well despite resource shortages.
Milford, C. Greener, L. R. Beksinska, M. Greener, R. Mabude, Z. et al. 2018	Provider understandings of and attitudes towards integration: implementing an HIV and sexual and reproductive health service integration model, South Africa . African Journal of AIDS Research; 2018. 17(2):183-192. 27 ref.	Mixed methods: Four FGDs were conducted with healthcare providers at study facilities. Cross sectional survey with 46 providers in the baseline survey, and 44 in the endline survey.	A district-based model for integrating SRH and HIV services was developed and implemented in a district hospital and six feeder clinics in eThekweni District, South Africa. Concerns raised were that integration would increase workload and time per client. Physical structure of facilities was not always conducive to referral or integration. Perceived benefits of integration and actual integration of services improved between baseline and endline. Enhanced understanding of integration and increased levels of reported integration over time imply that providers are more aware, suggesting that the model was effective. Provider perspectives and understandings are important for the successful integration of services.
Milford C. Beksinska M. Greener L.R. Mabude Z.	Implementation of a sexual and reproductive health service integration	Quantitative: A cross-sectional survey was conducted before and after	Overall, training undertaken did not change between baseline and endline. The proportion of providers performing HIV testing when providing other SRH services, and those

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Smit J. 2019	model: South African providers' reports. Cogent Medicine. 6 (1) (no pagination), 2019. Article Number: 1592740. Date of Publication: 01 Jan 2019.	implementation of this model and explored training and SRH service integration. Forty-six providers participated in baseline, and 44 in an endline survey. Data were descriptively analysed using SPSS.	counselling on family planning during HIV counselling and testing and STI services increased at endline. The proportion offering family planning counselling to HIV infected and antenatal clients decreased at endline. Overall, service integration improved modestly after integration model implementation, which could impact positively on uptake of SRH services. In most cases, there were improvements in integration of services, although minor. Although data showed only modest increases in healthcare provider integration behaviour between baseline and endline, they demonstrate a shift in practices in an under-resourced environment.
Mutemwa R Mayhew S Colombini M Busza J Kivunaga J Ndwiga C	Experiences of health care providers with integrated HIV and reproductive health services in Kenya : a qualitative study. BMC Health Services Research. 13:18, 2013 Jan 11.	<u>Methods</u> : mixed methods: survey and semi-structured interviews.	Providers reported delivering services in provider-level and unit-level integration, as well as a combination of both. Provider experiences of actual integration were mixed. At personal level, providers valued skills enhancement, more variety and challenge in their work, better job satisfaction through increased client-satisfaction. However, they also felt that their salaries were poor, they faced increased occupational stress from: increased workload, treating very sick/poor clients, and less quality time with clients. At operational level, providers reported increased service uptake, increased willingness among clients to take an HIV test, and reduced loss of clients. But the majority also reported infrastructural and logistic deficiencies (insufficient physical room space, equipment, drugs and other medical supplies), as well as increased workload, waiting times, contact session times and low staffing levels.
Mutisya R Wambua J Nyachae P Kamau M Karnad SR Kabue M	Strengthening integration of family planning with HIV/AIDS and other services: experience from three Kenyan cities. Reproductive Health. 16(Suppl 1):62, 2019 May 29.	Qualitative: 103 providers from each of 20 NGO-supported facilities were interviewed; 96 clients from across the 20 facilities were interviewed.	<u>Results</u> : The findings suggest that integration of FP services with other critical health service areas such as HTC or HIV/AIDS care services in CCCs can occur with concerted efforts in training and mentoring of providers to improve knowledge of integrated service offerings, strengthening supply chain support, and improving health service infrastructure [...] factors other than ability to offer short-term methods and LARC played an important role in limiting provision of these services across HTC,

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			ANC, PNC, and CWC. [...] Findings clearly demonstrates that training of service providers alone cannot guarantee FP integration. Hence, programs should pursue holistic approaches that addresses capacity shortfalls and attitude of the service providers as well as strengthening the human resource systems that create a supportive working environment in addition to equipping facilities to accommodate the extra services.
Ndwiga, C. Abuya, T. Mutemwa, R. Kimani, J. K. Colombini, M. Mayhew, S. Baird, A. Muia, R. W. Kivunaga, J. Warren, C. E.	Exploring experiences in peer mentoring as a strategy for capacity building in sexual reproductive health and HIV service integration in Kenya . BMC Health Services Research; 2014. 14(98):(1 March 2014). 27 ref.	Methods: Qualitative: in-depth interviews conducted with 12mentors and 23 mentees trained in SRH and HIV integration.	Results: Mentorship was perceived as a feasible and acceptable method of training by mentors and mentees. The success of peer mentoring largely depended on good teamwork and agreement to work together to achieve a specific set of skills. Mentees reported improved knowledge, skills, self-confidence, in providing integrated SRH and HIV services. They also associated mentoring with an increase in the range of services available and the number of clients seeking those services. Successful mentorship was conditional upon facility management support, supplies and commodities, a positive work environment, and mentors selection.
Sweeney, S. Obure, C. D. Terris-Prestholt, F. Darsamo, V. Michaels-Igbokwe, C. Muketo, E. Nhlabatsi, Z. Warren, C. Mayhew, S. Watts, C. Vassall, A.	The impact of HIV/SRH service integration on workload: analysis from the Integra Initiative in two African settings. [Kenya; Swaziland] Human Resources for Health; 2014. 12(42):(7 August 2014). 39 ref.	Detailed costing data collection tools to analyse workload	Improvements in the range of services provided by staff (HR integration) were more likely to be achieved in facilities which also improved other elements of integration. While there was no overall relationship between integration and workload at the facility level, HIV/SRH integration may be most influential on staff workload for provider-initiated HIV testing and counselling (PITC) and postnatal care (PNC) services, particularly where HIV care and treatment services are being supported with extra SRH/HIV staffing. Our findings therefore suggest that there may be potential for further efficiency gains through integration, but overall the pace of improvement is slow.
Winestone LE Bukusi EA Cohen CR Kwaro D Schmidt NC Turan JM	Acceptability and feasibility of integration of HIV care services into antenatal clinics in rural Kenya : a qualitative provider interview study.	Qualitative: in-depth interviews and thematic analysis; 36 healthcare providers from six health centres in Nyanza Province, Kenya participated.	Effects on service providers included increased workload due to the incorporation of specialised HIV services into ANC clinics. Providers observed that integration results in decreased patient time spent at the health facility, increased efficiency and closer provider-patient relationships; all leading to increased patient satisfaction. Providers also said that women would be more likely to

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	Global Public Health. 7(2):149-63, 2012.		receive HAART and adhere to their treatment as a result of improved confidentiality and decreased stigma. However, a minority of providers noted that integration could result in longer appointment times for HIV-positive women at ANC clinics leading to inadvertent disclosure. Integration could lead to strengthened ANC, postpartum care, prevention of mother-to-child transmission and HIV care for women and their families. However, integration efforts need to take into account potential negative effects on ANC provider workload, disclosure and the quality of care.

Retained documents: Grey literature

Author	Title	Key Findings
The Division of Reproductive Health Ministry of Public Health and Sanitation.	Best Practices in Reproductive Health in Kenya August 2009. Nairobi, Kenya Kenya MOH department and implementing partners	In 2008, the Department of Reproductive Health (DRH) commissioned to identify and document the best practices in reproductive health that been implemented in the country. A call to all organizations running or implementing programmes in RH to submit entries to be considered for documentation as best practices. Fifty programmes were submitted, and these, 37 were scored using the evaluation tool. Emerging evidence from this exercise indicates that integrating FP into services is acceptable and has the potential not only to improve the quality of care, but also to help prevent mother-to-child transmission (PMTCT) of HIV. In Kenya, to integrate FP into HTS, a strategy flexible enough to allow each site to determine the degree of integration that was possible, based on resources and capabilities was developed. At all sites, the strategy involved assessment of risk for STIs and unintended pregnancy, provision of counselling on contraceptive methods, and referral for methods not available at the centers.
Kiersten Johnson, Ilona Varallyay, and Paul Ametepi. 2012. Maryland, USA: ICF International.	Integration of HIV and Family Planning Health Services in Sub-Saharan Africa: A Review of the Literature, Current Recommendations, and Evidence from the Service Provision Assessment Health Facility Surveys. DHS Analytical Studies No. 30. Calverton, Maryland, USA: ICF International.	The study uses national health facility survey data from the MEASURE DHS project's Service Provision Assessment (SPA) surveys to establish an HIV services integration baseline in five countries in sub-Saharan Africa that have been hard-hit by the HIV epidemic: Kenya, Namibia, Rwanda, Tanzania, and Uganda Findings reported show considerable disparities between the availability of key elements of integrated HIV/FP services, and the actual delivery by a health provider of ANC or STI services that are fully integrated—where both HIV-related elements are actually incorporated into the visit. Further research is required to determine the reasons for these disparities.
African Institute for Development Policy (Afidep) 2014	Landscape Analysis of MNCH, FP and HIV/AIDS Integration in Eastern and Southern Africa. Final Report, June 2014.	This analysis undertook a rapid national level assessment of the status and opportunities for MNCH, FP and HIV/AIDS integration in Democratic Republic of Congo (DRC), Malawi, Tanzania and Zambia. The study combined both qualitative and quantitative methodologies, including document review, collation and analysis of quantitative data, policy audits, key informant interviews and validation meetings.

		<p>The findings show that although there are marked differences in the way the four countries have approached MNCH, FP and HIV/AIDS integration at policy and program framework level, they face similar integration challenges at the system and service delivery levels.</p> <p>A policy framework on MNCH, FP and HIV/AIDS service integration does not automatically translate to effective delivery of integrated services, but it does demonstrate government leadership on the issue and provides guidance for donors and other stakeholders involved in programming and service provision.</p> <p>The study confirmed health system challenges to integration, including: fragmented structures and planning mechanisms within the government (e.g. within MoH and the national AIDS commission); inadequate funding, especially for SRH issues; insufficient and inadequately skilled health workers; lack of equipment; weak supply chain systems occasioning frequent commodity stock-outs; weak M&E systems to monitor integrated services, and weak institutional coordination mechanisms, especially on the SRH side.</p> <p>At service delivery level, there are many poorly coordinated integration efforts being implemented in the four countries. The PMTCT program remains a key integration effort.</p>
JSI Deliver Project (2014)	Family Planning and HIV Integrated Supply Chains	<p>This brief provides an analysis of FP and HIV commodity supply chains. It finds that FP and HIV commodities often travel through distinct distribution systems because of program and product requirements.</p> <p>It notes that integrated systems work together at one or many points in the logistics cycle— product selection, quantification, procurement, storage, distribution—leveraging resources, linking operations, and sharing expertise. It provides an analysis of common challenges when offering FP commodities at HIV service delivery sites and solutions HIV program managers can use to address them, including mechanisms to coordinate different actors and activities.</p>
FHI 360 (2013)	Integrating Family Planning into HIV Programs: Evidence-Based Practices	<p>This brief observes that- policy and financial support for integrating family planning and HIV services is robust and continues to grow.</p> <p>A synthesis of evidence-based practices identified the following facilitators for successful integrated programmes:</p> <ul style="list-style-type: none"> - Government leadership (supportive laws, guidelines, framework, technical working groups, coordinated planning, budgeting, implementation and M&E bet related departments); - Meaningful involvement of intended beneficiaries, govt and private sector and community leaders; - Levels of integrated services tailored to local context and facility capacities - Pre/in-service cap bldg. of staff; - Task shifting - Strong referral systems – incl “facilitated” referrals bet HIV/FP - Functional supply chains and commodity security measures - Designed to attract and include men and youth - Collaborate with local groups
FHI 360 (2012)	“Strengthening Family Planning in a Large-Scale PEPFAR-Supported HIV Program”	<p>This brief synthesises lessons from three years into a 5-year PEPFAR funded program in the Zambia Prevention, Care and Treatment Partnership (ZPCT). Implementers learned much about how to integrate family planning into an HIV program within numerous health system constraints.</p> <p>Activities that facilitate integrated delivery include: training of providers; task shifting; facilitated referrals (allowing FP delivery at all times); commodity security; monitoring and evaluation; supportive supervision and mentorship; quality assurance/quality improvement; community mobilisation.</p>
Okundi B, Aloo-Obunga	Rapid Assessment on Policy and Operational Barriers to	<p>This rapid assessment found that policymakers, program managers and service providers supported the concept of integration and concurrent</p>

<p>C, Sanders R, C. Shepherd, and C. Green. 2009</p>	<p>the Integration of FP/RH/HIV Services in Kenya. Washington, DC: Health Policy Initiative, Task Order 1, Futures Group International</p>	<p>integrated services add value to service delivery, are efficient, save and empower clients to make informed choices about their RH needs. We found that service integration can lead to: increased uptake of services; provision of comprehensive, high-quality services; development of standardized training materials that reduce service delivery costs; reduction of stigma and discrimination in FP sites offering HIV counseling and testing and increased acceptance of condoms as a method to prevent HIV, sexually transmitted infections, and pregnancy. Respondents identified key challenges: 1) the lack of a national policy and guidelines and 2) many operational barriers to implementation, including the lack of government framework and budget to support the process.</p>
<p>Adamchak S, Janowitz B, Liku J, et al. 2010</p>	<p>Study of Family Planning and HIV Integrated Services in Five Countries. Washington, DC: USAID, Family Health International; 2010.</p>	<p>This study concludes that the mode of service delivery of FP/HIV should be tailored to the context in which each clinic functions. Administrators and HIV programs must take into account the human and financial resources available to them and make rational decisions based on local data. The characteristics of their clients and local availability of complementary services should drive the particular components included in integrated services.</p>