

The Health of Nations: International Health Accounting in Historical Perspective, 1925–2011

Christopher Sirrs

Introduction

The need for countries to reliably measure and compare how much they are spending on health is somewhat obvious today. By accounting for health, governments can identify how money flows through their health systems: who funds health care, who provides it, what the money is being spent on, and how much. In this way, governments can adjust their priorities, evaluate the impact of interventions, improve their services, and address various structural problems.¹ In practically all countries, achieving a more efficient distribution of resources and containing costs is a top priority, while in others, especially in the Global South, improving access to health care, fairness in financing, and tackling health inequalities are also important considerations. By relating health spending to key outcome indicators, such as healthy life expectancy (HALE), national health accounting is a critical input to the assessment of health systems performance, a task which in recent decades has fallen to international organisations including the World Health Organisation (WHO) and World Bank.² If national health accounting is performed systematically, with agreed rules and conventions, governments can tap into a valuable store of international policy experience.

Perhaps understandably, the complexity of health systems, and enduring methodological problems surrounding national health accounting, have undermined attempts to compare health expenditures globally over the last century. While the Organisation for Economic Co-operation and Development (OECD) has maintained a database of health spending for its member states since 1985, it is only since 1999 that a comparable database of health expenditures worldwide has been established by WHO.³ Even today, significant problems attend the collection of national health expenditures, with frequent gaps in the data and the need for adjustment to ensure compatibility. For many countries, including those yet to produce dedicated National Health Accounts (NHAs), the best WHO can do is provide ‘best estimates’.⁴ These problems aside, WHO’s database has become the definitive resource on national health expenditures, allowing global inefficiencies and disparities in health financing to emerge. For example, of the US\$ 6.9 trillion spent on health globally in 2011, 82 per cent was spent in well-developed OECD countries.⁵

This chapter traces the history of *international* health accounting: organised attempts to measure and compare health spending across national boundaries, including the accounting rules and conventions that ensure the coherency of this information. Although a comprehensive system of health accounts has been established only recently, it has had various precursors over the twentieth century.⁶ I trace its antecedents through the work of various international organisations, including the League of Nations Health Organisation (LNHO), United Nations, International Labour Organisation (ILO), OECD and World Bank. My analysis is bookended by two landmark publications: the first LNHO *International Health Yearbook* in 1925, which

contained crude government health budgets, and the latest system of health accounts (SHA) in 2011, which provides the underlying framework for WHO's Global Health Expenditure Database.⁷ In presenting a genealogy of international health accounting, I describe the evolving role of health financing in international health, and highlight the development of accounting technologies, such as standardised tables and accounting manuals, which have facilitated international measurement and comparison. The chapter begins with an overview of the existing, limited historiography on international health accounting, continuing with a chronological survey of the major concepts and technologies that have shaped its development. It concludes with a discussion of major themes, including the political agendas of the main actors, and the problematisation of financing in international health.

International health accounting in global health governance

Considering how important the international comparison of health spending is in contemporary health policy, remarkably little has been written on health accounting from an international comparative point of view.⁸ The origins of international health accounting have been briefly touched upon in numerous articles on *national* health accounting: how particular countries have measured their health spending, usually from the perspective of policy analysis and strategic health system governance.⁹ The accounting framework that surrounds these activities internationally, however, has been examined only superficially. The global politics which drive international health accounting have been neglected, in favour of a focus on the practical and methodological dimensions of national health accounts, and resulting policy implications. Important historical publications which have advanced international knowledge on health financing have featured, but usually as milestones on the road to present-day knowledge. The key institutions and individuals who helped shape the international framework barely figure in these more technical analyses.

The health financing literature tends to view measures such as health expenditure positivistically: self-evident and instrumental, rather than politically and socially mediated representations. Thus, this chapter connects with a wider critical literature on indicators as instruments of global governance: for example, the use of gross domestic product (GDP) to compare and rank countries based on notions of economic development.¹⁰ Indicators promulgated by international bodies are rarely straightforward metrics, but vehicles for global power, contention and debate.¹¹ Political scientists have shown how indicators can exert disciplinary power over actors, formulate organisational identities, articulate notions of transparency and scientific authority, and lower the costs of decision making by reducing decisions to a basic set of procedures or mathematical formulae.¹² Indicators may even create the phenomena they seek to measure.¹³

This chapter also speaks to a wider history of statistics and accounting. This book shows how international health accounting forms part of a long lineage of accounting practices connected to health. Tables, for example, have been central to health accounting for many centuries: recording births, deaths, illnesses, payments, and hospital resources. In the twenty-first century, tables continue to be the health accounting technology *par excellence*, vital to recording health expenditure.¹⁴ In epistemological terms, notions of objectivity and virtue have long been reflected in accounting cultures, as other chapters of this book clearly demonstrate.

International health accounting, however, is an intriguing case study and counterpoint, because the discipline is patently incomplete. Methodological issues and lack of systematic data have not prevented the use of comparative health expenditure data in global governance.¹⁵ Conceptually, too, international health accounting has echoes of earlier accounting practices. In the early twentieth century, measurement of national income helped shape the notion of a distinct ‘economy’.¹⁶ Later in the century, measurement of national health spending helped support the idea of the ‘health system’. My assertion is that international health accounting has not merely *analysed* health systems, but *constituted* them, visualising their shape and defining their boundaries in national and functional terms.

An uncertain quantity: measuring health spending before World War II (1925–45)

Established at the beginning of the twentieth century, the first international health organisations were not particularly concerned with health spending. The financing of health services was an uncertain quantity, largely of domestic interest to health practitioners or government officials, rather than an informed international readership. Not only was the role of finance in international health statistics unclear, but it could not be clearly related to health outcome. Instead, these organisations, such as the Office International D’Hygiène Publique, were preoccupied with accounting for disease: compiling mortality and morbidity statistics, overseeing international sanitary regulations, and providing quarantine assistance to governments.¹⁷ It was not until the 1920s, following the establishment of the LNHO, that the scope of international health statistics broadened to address wider issues of health services organisation and administration. Under its medical director, Ludwik Rajchman, the LNHO initiated an unprecedented drive to compile data on such subjects as health personnel, hospitals, disease control programmes, and health budgets. These were presented in a pioneering series of statistical annuals covering the period 1924–29, the *International Health Yearbooks*.¹⁸

Originating from LNHO’s epidemiological and statistical intelligence programme, the *Yearbooks* were designed to allow interested readers (principally health practitioners and government officials) to take a broad overview of public health developments around the world. Guided by a vision of ‘progress’, they were intended to inspire action on public health internationally. Each volume consisted of a series of country reports prepared by domestic experts. These comprised a statistical portion (vital and epidemiological statistics and health services and personnel), a descriptive portion (narrative accounts of recent events and trends, such as legislation), and a budgeting portion (health spending by central and regional authorities).¹⁹ Unfortunately, while each report followed the same general outline, they were otherwise unrelated. The reports were not directly comparable, since international standards on the causes of death were rudimentary, and those on health services and financing were non-existent. Data collection for the *Yearbooks* was a difficult, costly and time-consuming exercise. The requisite infrastructure was absent in many countries, and language barriers further complicated efforts.²⁰ From 1927, the League established model tables to improve the comparability of numerical data, an exercise condemned as an unwarranted display of supranational authority by conservative members of the League’s Health Committee, such as the British medical officer, George Buchanan. However, gaps and inconsistencies persisted.

While nearly 40 countries contributed to the final volume in 1930, the *Yearbooks* remained distinctly Eurocentric.²¹

Health budgets occupied an unusual position in the *Yearbooks* (Fig. 1). Considered neither ‘statistical’ nor ‘descriptive’, they constituted an anomalous third category.²² This conceptual difficulty stemmed from the complexity of presenting and analysing national health spending figures. As a guidance document to authors explained, ‘the public health budget is usually a complex affair, and it is almost always difficult to secure from the report a picture of the actual public health expenditure in a given country.’²³ Firstly, health budgets were presented in native currencies. This meant that health spending could not be compared without undergoing conversion. Secondly, due to differences in accounting conventions, and the structure of health services in countries, it was difficult to disaggregate health spending in a common way. What countries counted as a ‘health expenditure’ varied enormously: some countries presented their budgets with considerable precision, others provided only the most elementary breakdowns. This disparity not only reflected clear differences in national enthusiasm towards the *Yearbooks*, but the problem of disambiguating ‘health’ spending from other government expenditures; in many countries, health spending was reflected in the budgets of several government departments. Without a common definition of ‘health’, it was impossible to reliably compare health spending. Above all, health budgets were difficult because they were novel. Finance was a new factor in international health; it had yet to be fully conceptualised and incorporated into its statistical repertoire. The practical use of the budgets was unclear. Yet, as Iris Borowy argues, their ultimate value was that they could be seen and scrutinised.²⁴ The budgets signalled that finance was a consideration in public health and that figures on spending were needed alongside traditional metrics such as mortality and morbidity. In this way, the budgets created the precedent for more systematic attempts at health accounting later in the century.

Public Health Development in Germany during 1926,
by PROFESSOR HERRARD MÖLLEND (Dresden).

I. BUDGETS FOR 1927

The Public Health Budget of the Reich.
By the draft budget of the Reich Ministry of the Interior for the financial year 1927, the estimates are as follows:

(a) GENERAL APPROPRIATIONS FOR PUBLIC EDUCATION AND SCHOOLS.

For the promotion of gymnastics and sport (subsidies to the chief associations of the Reich concerned with gymnastics, sports and walking excursions; subsidies granted to representative sports institutions) 1,000,000
(same amount as in the preceding year)

Encouragement of efforts which aim at the moral improvement of the population and, in particular, of young persons, in so far as these efforts are of general importance (encouragement of welfare institutions and associations, particularly of those working for the young) 200,000
(same amount as in the preceding year)

(b) PUBLIC HEALTH.

Encouragement of work of general importance, directed towards the improvement of health conditions among the people, especially among the young, and, particularly, welfare work in connection with the health of infants, children and cripples, as well as popular teaching of hygiene 500,000
(same amount as in the preceding year)

Credits for the temperance campaign and the campaign against affections connected with alcoholism (tuberculosis, venereal diseases, care of persons suffering from mental disease and lunatics) 1,800,000
(same amount as in the preceding year)

The ordinary budget of the Reich Ministry of the Interior in respect of salaries and personal and material expenses amounts to 1,440,981
(1,303,883 M. in the preceding year)

VI. BUDGET.

The following tables summarise the principal items of expenditure in respect of health services incurred by the Ministry of the Interior and other Ministries, and by the provinces and communes, under the laws in force.

(A) EXPENDITURE INCURRED FOR THE PUBLIC HEALTH SERVICES BY THE MINISTRY OF THE INTERIOR DURING THE FINANCIAL YEAR JULY 1st, 1926, TO JUNE 30th, 1927.

Nature of expenditure	Lin
1. General expenses, personnel, inspections and upkeep of laboratories ..	9,857,571
2. General and international prophylaxis	5,175,000
3. Special prophylaxis (pellagra, venereal disease, tuberculosis, malaria, trachoma, leprosy, cancer, wet-nursing)	16,285,670
4. Prophylaxis of epizootic diseases	1,657,864
5. Sanitation and improvement works	7,769,322
Total	40,745,427

(B) HEALTH EXPENDITURE SANCTIONED IN THE BUDGETS OF THE FOLLOWING MINISTRIES.

	Lin
Ministry of Public Works ¹	100,000,000
Ministry of War ²	63,338,300
Ministry of Marine ³	8,160,000
Ministry of Air ⁴	2,967,416
Ministry of National Economy ⁵	45,351,222
Ministry of Communications ⁶	5,995,226
Total	227,015,264

(C) EXPENDITURE IN RESPECT OF LOCAL POLICE AND SANITATION SERVICES, PROVIDED FOR IN THE PROVINCIAL AND COMMUNAL BUDGET ESTIMATES UNDER THE LAW ORGANISING THE PROTECTION OF PUBLIC HEALTH OF DECEMBER 23rd, 1888.

	Lin
Provincial Administrations ¹	23,749,850
Communal Administrations ²	693,013,784

Rome, July 1928.

Figure 1. Health budgets in the International Health Yearbooks. Left: Germany, 1927 (extract); right: Italy, 1928

If finance had an uncertain status in international health, then it assumed a pressing importance during the Great Depression. On both sides of the Atlantic, officials grappled with difficult problems of health service organisation and administration, as governments cut public health spending. In 1933, a joint ILO/LNHO expert committee argued that that ‘compulsory sickness insurance must be regarded as the most appropriate and rational method of organising the protection of the working classes’.²⁵ Suddenly, money – and how it could be marshalled – became one of the most significant determinants of health. In the USA, a Committee on the Costs of Medical Care (CCMC) was formed in 1927 to consider ways of improving access to health care.²⁶ Highlighting major inequities in the distribution of medical costs across American society, its 1932 report presented essentially the world’s first national health accounts. It estimated total expenditure on medical care, both public and private (\$3.7 billion), and the share of health spending in the national income (4%).²⁷ The report formed part of a progressive-era push for national health insurance, with the CCMC recommending forms of cost-sharing, including federal aid and compulsory health insurance.²⁸ While the format of the accounts was not seen as especially innovative, it set a precedent for the visual representation of health spending. Presented via a bi-dimensional matrix (table), the report modelled the basic flow of funds through the American health system: where the money came from (what is now referred to as ‘sources’), such as patients, industry, and government, and what it was being

spent on ('uses'), such as physicians, hospitals and public health.²⁹ Bi-dimensional matrices continue to underpin NHAs today.

For the first time, the health sector's contribution to national income had been quantified. However, the concept of national income remained ambiguous.³⁰ It was not until 1934 that the economist Simon Kuznets defined gross national product (GNP), thus establishing a common basis for countries to compare social expenditures.³¹ Later, the vast logistical demands of the Second World War promoted a concerted effort to measure national income and relate it to the constituent transactions making up the economy. It was from this further strand of work that international health accounting stemmed.³² Starting with the League of Nations in 1939, work on a system of national accounts (SNA) was passed to the UN, which published its first national accounting manual in 1953.³³

The SNA was principally designed to measure economic inputs and outputs: the flow of money through a country's economy, from production to consumption. The 1953 manual outlined a system of six separate accounts and twelve supporting tables that represented the economy. Health or medicine featured in four of these tables, including industrial origin of GDP, and composition of private consumption expenditure. Unfortunately, while the SNA provided rudimentary figures on health spending, it was necessarily broad-brush, constructing broad aggregates that were not appropriate for detailed analysis of health spending. For example, school medical services were counted under education rather than health.³⁴ More seriously, health was considered from the viewpoint of consumption – as a 'good'. Consequently, the economic effects of improvements in population health were not considered; effectively, the SNA measured the value of *inputs* in health, such as physicians and hospitals, rather than the value of *outputs*, that is, 'health' itself.³⁵

Financing health systems (1945–70)

The end of the Second World War marked a major turning point in the development of international health accounting. The reorganisation of health systems and the growth of welfare states stimulated a wide-ranging search for new and better models of financing health care. As the international organisation with primary responsibility for workers' rights and social insurance, the ILO, established in 1919, was at the centre of this movement. At high-level meetings, the ILO facilitated international exchanges of social security expertise, but also had considerable autonomy to shape the policy agenda. Officials such as Laura Bodmer, an Anglo-German economist working in its Social Security Division, promoted a model of health care that was comprehensive in scope and universal in coverage, funded by general taxation.³⁶

It was in this dynamic post-war context that health spending was further problematised: to expand health coverage to entire populations, what was the most effective financing model? The need for detailed cross-national comparisons of health spending became more acute as concerns grew in the 1950s about health care costs. In 1956, Hernán Romero, a WHO consultant, expressed alarm at increasing costs worldwide, especially hospitals. For him it was apparent that that 'Better health conditions do not make health cheaper.'³⁷ The International Social Security Association was also anxious about the growing cost of pharmaceuticals.³⁸ Responding to these concerns, in 1959 Bodmer penned a ground-breaking report, comparing

the costs of medical care under the social security systems of 13 countries, including West Germany, England and Wales, and New Zealand. These were compared with costs under a system with predominantly private funding, the USA (Fig. 2).³⁹ Bodmer found that, contrary to expectation, costs under social security systems were relatively stable, and only in two instances, France and Italy, had they greatly increased, mainly due to inflation and the expansion of medical benefit. In fact, under a taxpayer-funded system, England and Wales, the cost per capita of providing services had decreased between 1945 and 1955. Bodmer's sights were fixed firmly on the USA, which vehemently defended its voluntary insurance model. Bodmer argued that while social security permitted much wider access to health care, 'it [did] not appear ... to have been more expensive ... than care privately obtained, or provided at the expense of public funds, in the United States.'⁴⁰ Thus, the ILO's health accounting did not occur in a political vacuum. Rather, the ILO deliberately chose its comparator and arranged its data in a manner that supported its political position, that comprehensive social security was the best way to secure populations from socioeconomic risks.

TABLE B
TOTAL EXPENDITURE PER PERSON PROTECTED ON MEDICAL EXPENDITURE ON MEDICAL CARE IN THE UNITED STATES, IN

Year	Belgium	Chile	Denmark	England and Wales		France	Germany (Federal Republic)	Italy
				Without cost-sharing	With cost-sharing			
Percentage of income per head								
Prior to								
1945 . .	—	3.81 ¹	1.07 ¹	—	—	—	2.04 ²	—
1945 . .	—	3.94	0.90	—	—	—	—	—
1946 . .	—	4.16	0.90	—	—	—	—	—
1947 . .	—	4.40	0.91	—	—	1.84	—	1.13
1948 . .	—	3.93	0.89	—	—	2.10	—	1.97
1949 . .	2.10	3.76	0.91	4.18	4.21	2.60	3.05	2.11
1950 . .	2.12	4.60	0.84	4.11	4.14	3.04	2.89	2.03
1951 . .	2.03	4.25	0.86	3.86	3.95	3.06	2.66	2.15
1952 . .	2.05	—	0.90	3.92	4.08	3.41	2.78	2.32
1953 . .	1.93	—	0.99	3.50	3.69	3.72	2.95	2.34
1954 . .	1.98	—	1.02	3.45	3.60	3.73	2.89	2.44
1955 . .	2.01	—	1.07	3.52	3.70	3.79	2.78	2.60
Percentage of reference wage								
1945 . .	—	—	0.48	—	—	—	—	—
1946 . .	—	—	0.44	—	—	—	—	—
1947 . .	—	—	0.45	—	—	1.55	—	0.36
1948 . .	—	—	—	—	—	—	—	—
1949 . .	1.63	2.47	0.46	3.81	3.84	2.75	—	0.99
1950 . .	1.76	2.93	—	3.92	3.95	2.78	—	—
1951 . .	1.68	2.79	0.44	3.73	3.81	2.72	1.79	—
1952 . .	1.70	—	—	3.69	3.84	3.19	2.03	1.37
1953 . .	1.64	—	0.52	3.31	3.48	3.47	2.12	—
1954 . .	1.75	—	0.52	3.30	3.44	3.60	2.23	1.48
1955 . .	1.67	—	0.53	3.32	3.49	—	2.38	1.69

¹ 1943 or 1943-44. ² 1938. ³ 1937 (German Reich). ⁴ 1939. ⁵ Excluding dental care.

TABLE B
BENEFITS UNDER 13 SOCIAL SECURITY SERVICES, AND PRIVATE TERMS OF THE INCOME PER HEAD AND OF THE REFERENCE WAGE

Year	Mexico	Netherlands	New Zealand	Norway	Switzerland	Venezuela	United States (private and voluntary-insurance expenditure)	Year
Percentage of income per head								
Prior to								
1945 . .	—	2.12 ¹	1.46 ¹	1.34 ⁴	—	—	—	1945
1945 . .	—	3.04	1.60	—	—	—	—	1945
1946 . .	—	1.85	1.69	1.22 ⁵	1.31	—	—	1946
1947 . .	—	1.82	1.70	1.23	1.26	—	—	1947
1948 . .	—	1.81	1.87	1.26	1.32	—	—	1948
1949 . .	—	1.86	1.75	1.28	1.46	—	—	1949
1950 . .	7.13	1.97	1.43	1.31	1.47	—	—	1950
1951 . .	7.24	2.03	1.52	1.25	1.45	—	—	1951
1952 . .	7.43	2.04	1.61	1.38	1.47	6.16	—	1952
1953 . .	7.11	2.05	1.46	1.54	1.50	6.00	—	1953
1954 . .	—	2.03	1.57	1.52	1.47	—	—	1954
1955 . .	—	2.33	1.84	1.50	1.47	—	—	1955
Percentage of reference wage								
1945 . .	—	0.98	1.08	—	—	—	—	1945
1946 . .	—	0.87	—	1.14 ⁵	0.98	2.19	—	1946
1947 . .	—	1.04	1.18	0.87	0.98	2.49	—	1947
1948 . .	—	—	—	—	1.01	—	—	1948
1949 . .	—	1.28	1.25	1.01	1.08	—	—	1949
1950 . .	—	1.31	1.21	—	1.09	2.57	—	1950
1951 . .	—	1.45	1.16	0.99	1.08	2.70	—	1951
1952 . .	7.40	1.41	1.16	0.95	1.10	2.80	—	1952
1953 . .	—	1.53	1.04	—	1.12	—	—	1953
1954 . .	—	1.47	1.21	—	1.13	—	—	1954
1955 . .	—	1.86	1.43	—	1.13	—	—	1955

Figure 2. Comparative tables of health expenditure in 'The Cost of Medical Care', 202-3. Copyright © International Labour Organization, 1959.

In terms of accounting technologies, Bodmer's study relied on estimates of national income and social security medical expenditure. To ensure comparability, health spending was expressed in three ways: as a proportion of national income per capita, an annual reference wage, and the national income per economically active person. This circumvented the problems of currency conversion that undermined the LNHO *Yearbooks*, allowing broad trends in health spending to be determined. While the calculated figures were ultimately proportionate rather than absolute, this permitted the construction of international comparative tables representing the *sources* and *uses* of health expenditure. In this sense, Bodmer's study can be considered the first genuine exercise in international health accounting.

Within WHO, established as the UN's specialised health agency in 1948, interest in health financing was initially marginal. The WHO's constitution adopted a holistic vision of health, 'a state of complete physical, mental and social well-being', but considering the sensitivity attached to such issues as social security in the 1950s, WHO avoided tackling the economic determinants of health head on.⁴¹ Instead, it supported vertical interventions against specific diseases, such as malaria. Revealingly, health spending did not appear in the organisation's annual statistics until the 1990s. Rather, they focused on vital and epidemiological statistics and, from the 1950s, health services personnel and institutions.⁴² This neglect not only reflected WHO's vertical focus, but the problematic status of health financing in international health. Health financing was not only politically controversial, it was considered tangential to WHO's primary mission, 'the attainment by all peoples of the highest possible level of health'.⁴³ Accordingly, it was left to other organisations.

This is not to say WHO's interest in health financing was non-existent. Rather, it emerged in response to more logistical concerns, such as the rising costs of health care in the Global North, and health planning in the Global South. WHO's work on health planning and financing was mutually reinforcing, since the long-term planning of health programmes by countries required an understanding of how financial, human and other resources were distributed. In the 1960s Brian Abel-Smith, Reader of Social Administration at the London School of Economics and WHO consultant, brought a crucial economic perspective to these areas. In *Paying for Health Services* (1963), Abel-Smith built on the UN system of national accounts, constructing an 'international language of health-service finance' to classify and compare health spending.⁴⁴ His framework was applied to six countries with different models of organising and financing health care: Ceylon (Sri Lanka), Chile, Czechoslovakia, Israel, Sweden, and the USA. The report's major innovation was that while the ILO's 1959 report was mainly based on existing data, and expenditures under social security programmes, *Paying for Health Services* relied on primary data collected by questionnaire, and notionally covered the entire health system. To do this, Abel-Smith provided a working definition of 'health services', subdivided into medical care services, public health services, and research and training. Respondents had to supply data meeting these classifications.⁴⁵ From this raw data, Abel-Smith could derive total spending on health services as a proportion of national income (gross national expenditure), and thus, for the first time, draw direct comparisons between the actual health spending of countries. In 1967, Abel-Smith's pilot study was extended to 30 different countries, including 'underdeveloped' countries such as Kenya and Tanganyika (Tanzania).⁴⁶ Further, a more detailed questionnaire was used which parsed health spending through six inter-related tables. In effect, these tables were the first internationally comparable system of health accounts: bi-dimensional matrices disaggregated the sources of health expenditure into a series of pre-defined uses.

Perhaps the most important outcome of Abel-Smith's research was the observation that a country's 'need' for health services, considered in terms of mortality, bore little relation to health spending. The countries with the highest mortality, and supposedly greatest 'need' for health care, tended to spend the least on health services, while those with the lowest mortality, and thus the least 'need', tended to spend the most. The implication was that an array of factors influenced spending, including sociocultural factors.⁴⁷ This had profound consequences for health planning, determining the proportion of national resources countries were willing to

devote to health. It also shone light on the expense of pluralistic systems such as the USA, reinforcing the claim that publicly funded systems were more efficient and effective.

The Alma-Ata Declaration of 1978 marked a movement within WHO to more horizontal programmes, based on the concept of comprehensive primary health care.⁴⁸ However, even under this new agenda, health financing remained in WHO's peripheral vision. The march was stolen by other organisations, who had other motives for measuring and comparing health spending.

Reforming health systems (1970–2000)

By the 1970s, concern about the rising costs of health care had reached new heights. Inflation, prompted by the rising cost of oil, generated a crisis in the post-Second World War welfare states, attracting renewed political attention to the need to contain health systems. Within public health, tightened belts encouraged a search for new metrics to represent health status and evaluate interventions. These included the Quality-Adjusted Life Year (QALY), described by the Harvard academics Richard Zeckhauser and Donald Shepard in 1976.⁴⁹ These metrics defined illness and disability as an economic 'disutility', susceptible to improvement through effective medical care. Money (cost) assumed a profound importance in determining the most cost-effective interventions. Hence, financial resources became a recognised 'input' to an overall calculation of health; the marriage of expenditure and epidemiology.

Within international organisations, such as the OECD, the policy agenda turned to questions of efficiency and health system reform. A 'think-tank' of predominantly developed nations, established in 1961, the OECD's primary source of influence lay in its facilitation of a 'global policy network', allowing member countries to exchange experience in various fields.⁵⁰ The OECD's interest in health was largely dictated by its concern with economic and social policy, which by the 1970s revolved around controlling rising social expenditures. This interest was signalled with the report *Public Expenditure on Health* (1977), part of a wider study of government expenditure and resource allocation.⁵¹ Subsequently the OECD began to focus on health more directly, promoting system reform and the need to make health financing more efficient and effective.⁵² This remit relied on member states being able to exchange accurate data on health spending, but by this point very few countries had produced dedicated NHAs. From 1985, the OECD began to compile a health database with data on health spending for some countries dating back to 1960.⁵³ Initially disseminated on paper, from 1991 the health data file was distributed electronically via floppy disk and CD-ROM, and provided the impetus for many countries to standardise their health accounting framework.⁵⁴

The OECD's methodology differed significantly from the UN and WHO. Firstly, it initially relied on 'massaging' existing data that was routinely produced by governments, instead of analysing new data submitted by questionnaire. Secondly, the focus at first was elaborating the SNA, rather than establishing a new basis for health accounting.⁵⁵ In the 1980s, the French economist Alain Foulon proposed a methodology to more precisely define health in the SNA, relying on the generation of additional tables and encouraging the development of 'satellite health accounts'.⁵⁶ Foulon's methodology informed the OECD, but ultimately required new data which the organisation was unprepared to process.⁵⁷ Finally, OECD accounting was fundamentally exploratory, designed to avoid 'conceptual procrastination' among

policymakers, and stimulate the production of more accurate statistics. The OECD was guided by a philosophy of ‘learning-by-doing’, in which it co-operated with members to reduce statistical discrepancies. Thus, the OECD essentially aimed at adequacy rather than completeness, with the belief that the data would get better over time.⁵⁸ While the data were imperfect, they nonetheless revealed widespread variation in health spending, prices and utilisation among member countries, with the US emerging as a ‘persistent outlier’.⁵⁹

By the 1990s, economists increasingly recognised the futility of adapting the SNA for measuring health spending. Even in developed countries, the production of routine NHAs was disappointing, and in developing countries, the lack of statistical capacity was an additional factor, with most data on health spending available only in the ‘grey literature’ of international donors such as the World Bank. This prompted calls for a dedicated system of health accounts.⁶⁰ The OECD’s expertise in health accounting placed it in an opportune position to begin the construction of an accounting manual, beginning in 1996.⁶¹

Published in 2000, the System of Health Accounts (SHA) established a new international basis for measuring and comparing health spending. Central to its methodology was a ‘tri-axial’ system for recording spending, promulgated via an International Classification of Health Accounts (ICHAs). Previously, NHAs had tended to break down health spending in two dimensions: sources and uses.⁶² The new ICHA introduced an additional dimension, ‘health care function’, that significantly improved comparison. Instead of deriving health spending from national accounts, the SHA established ten new tables that measured financial flows more narrowly through the health system. The effect was that the boundaries of the health system were drawn in functional terms; from these tables, important aggregates could be calculated, such as total expenditure on health, which could be mapped onto major economic aggregates in the SNA.

Monitoring health systems (1990–2016)

Despite the creation of a new comparative framework, international health accounting continued to reflect the interests of the Global North. Issues central to developing countries, such as the role of external resources (donor loans and funds), were not considered, even though they were integral to monitoring the impact of interventions and measuring system performance in these countries.⁶³

It was largely for this reason that the World Bank’s role in global health grew. By the 1990s it had become the dominant external funder of health sector investment in developing countries, arguably displacing WHO as the principal driver of international health policy. Founded in 1944, the World Bank was initially designed to assist the reconstruction of war-torn Europe. Its interest in population health started in 1970, when it approved a loan to Jamaica, used to develop its health sector. Under the presidency of Robert McNamara, the former US Defence Secretary, the World Bank’s interest in health blossomed. While it initially refrained from providing direct loans to the health sector, by the 1980s it began to do so under the rationale it could lend vital health programming expertise.⁶⁴ However, this lending became conditional on various changes in national governance, such as privatisation and civil service reform. Hence, health lending became an instrument of the Bank’s structural adjustment agenda. In 1987, the

World Bank began to divert lending away from health systems to specific interventions that reflected these priorities.⁶⁵ Prioritising interventions based on cost-effectiveness, this signalled the weakening of the ‘comprehensive primary health care’ approach to health, and the rise of a new, attenuated model of ‘selective primary health care’.⁶⁶

As part of this transformation, in 1992 the World Bank initiated a five-year programme to measure the ‘global burden of disease’. Its rationale was not only to formulate a composite index of mortality and morbidity that could gauge the extent and severity of ill-health around the world (‘a comprehensive, comparable measure of almost everything wrong with everyone everywhere’), but to establish a practical outcome measure that, when aggregated in various ways (for example by cause, sex, or age group), could evaluate the cost-effectiveness of interventions.⁶⁷ This new metric, first described in the World Bank’s 1993 report, *Investing in Health*, was the disability-adjusted life year (DALY), formulated by the health economists Christopher J. Murray and Alan Lopez.⁶⁸ For arguably the first time, information on health financing and outcomes could be related systematically within populations, and this information fed back into health policy to assess health system performance. This new way of thinking about health reached its apogee in WHO’s *World Health Report 2000*. Controversially, the USA was ranked 37th in the world on overall system performance, despite spending by far the most on health as a proportion of GDP (13.7 per cent).⁶⁹

Investing in Health was the first systematic effort to collect health expenditure data for low income countries, building upon Abel-Smith’s pioneering work in the 1960s.⁷⁰ It argued that governments should open health financing to greater competition, and that scarce government funds should be directed to the most cost-effective interventions, such as preventing infectious disease, rather than the least cost-effective options, such as specialised tertiary care.⁷¹ By this point, health economists recognised that health outcomes in countries were not perfectly correlated with health spending: for countries at a similar level of development, they could differ dramatically, with some countries getting considerably more ‘bang for buck’ than others. The implication for international development was that health sectors needed reform to better match disease priorities. For this to happen, however, both donors and recipients needed better information on health spending and outcomes.

In this way, international health accounting became an instrument of global health governance; accounting as accountability. With the DALY, the link between expenditure and epidemiology was made more explicit, enabling policymakers to direct national resources to interventions that were the most cost-effective in terms of reducing aggregate years of life lost from disease, such as immunisation.⁷² While previously, the link between national health expenditure and population health was tenuous, under the World Bank it assumed a critical dimension. Health expenditure could serve as an indicator of health and development, and, combined with the DALY, help define global health priorities.

From the late 1990s, World Bank reports included health spending data.⁷³ To construct this database, the World Bank relied on existing data sources (including the OECD Health Database), national accounts, and government surveys. In 2003, the World Bank collaborated with WHO and USAID to produce a national accounting guide for developing countries (the Producers Guide), thus attempting to address the systemic problems that undermined national health accounting in these countries.⁷⁴

In the twenty-first century, technological developments such as the internet have accelerated the processes by which health finance statistics are compiled and disseminated. Furthermore, with the Producers Guide, international health accounting has become truly international, with the qualification that many countries have still to produce NHAs. The fracturing of WHO's empire over international health has created a more complex institutional landscape, with a variety of bodies, from aid organisations to 'philanthrocapitalists', having a stake in the accounting process.

By 1999, sufficient data was available for WHO to construct its own database. Over a decade later, this surfaced online as the Global Health Expenditure Database (GHED), part of the Global Health Observatory (Fig. 3). Covering all 194 member states, the GHED is updated annually, drawing upon information collected from national statistical agencies, questionnaires, and other official sources. The GHED is one of the main inputs to WHO's annual statistical publications, such as *World Health Statistics*. In turn, it provides input to the work of other organisations, such as the UN, demonstrating the increasing globalisation and interconnectivity of health accounting in the present century.⁷⁵

HFxHP	HF.1.1 - Territorial government	HF.1.2 - Social security funds	HF.2.1 - Private insurance	HF.2.3 - Private households out-of-pocket exp.	HF.2.4 - Non-profit institutions serving households	HF.2.5 - Corporations (other than health insurance)	Row Total
	A	B	C	D	E	F	G
HP.1 - Hospitals	1 1,932.85	5,564.09	708.08	3,905.18		1,745.50	13,855.71
HP.2 - Nursing and residential care facilities	2 102.94			38.29	13.76		154.98
HP.3.1 - Offices of physicians	3 405.22	4,058.55	545.47	2,045.49		7.23	7,061.96
HP.3.2 - Offices of dentists	4 23.61	584.57	0.00	2,199.45			2,807.63
HP.3.3 - Offices of other health practitioners	5 39.17	604.69	0.00	1,470.25			2,114.11
HP.3.4 - Out-patient care centres	6 14.91	95.94		50.40		0.41	161.67
HP.3.6 - Providers of home health care services	7 5.01				2.13		7.14
HP.3.9 - Other providers of ambulatory health care	8 67.16			25.93			93.09
HP.4 - Retail sale and other providers of medical goods	9 425.68	3,932.49		4,517.03			8,875.20
HP.5 - Provision and administration of public health programs	10 349.56						349.56
HP.6 - General health administration and insurance	11 723.80	689.00					1,412.80
HP.7 - General health administration and insurance	12	21.14			158.99	285.58	465.72
Column Total	13 4,889.91	15,559.47	1,253.55	14,247.03	174.88	2,038.73	

Figure 3. NHA table for Republic of Korea, 2004. Source: WHO Global Health Expenditure Database, <http://apps.who.int/nha/database/Matrices/Index/en>.

This interconnectivity is evidenced in the latest accounting standards. From 2007, a group of accounting experts from WHO, OECD and Eurostat co-operated to create the latest revision of the SHA, SHA 2011. While further embedding the 'tri-axial' classification of health expenditures, it facilitated a more comprehensive picture of health systems by detailing a wider range of providers and health care functions. It also developed understanding of the sources of health spending by providing new classifications for health financing agents and the revenues of health financing schemes. Most notably, the SHA 2011 developed new 'analytical interfaces' that allowed analysts to visualise health systems from the separate perspectives of provision, consumption and financing.⁷⁶

The politics and technology of international health accounting

Evidently, the development of international health accounting has been a complex and multi-pronged affair. A range of international organisations, with a variety of motives, have had a stake in its evolution. At the most basic level, the particular calculative practices and accounting 'vehicles' used to measure and compare health spending have been informed by

practical realities. The availability of data, most obviously, has dictated the methodologies organisations have used to analyse health spending. International health accounting has also been shaped by various functional and policy ‘needs’: the need for countries to learn from each other, to disaggregate health spending into analytically useful categories, to develop indicators to evaluate health spending, and to monitor health systems performance. At the heart of international health accounting has also been a desire to develop a common language of health systems finance.

Behind these superficial explanations, however, lie more nuanced political realities. International health accounting has been shaped by the aims and worldviews of the institutions doing the accounting. In the LNHO, it was accounting for ‘progress’. Under Rajchman’s charismatic leadership, the LNHO sought to stake out its authority as the world’s leading health organisation, and pushed the envelope of what international health statistics encompassed. For the CCMC and ILO, health accounting took place against the drive to promote compulsory sickness insurance. For WHO after 1948, it was concern about rising costs and the need to support health planning in developing countries. For the OECD, it was about system reform; for the World Bank, it was fundamentally about performance monitoring, to make better lending decisions. There is a sense in which international health accounting has been self-reinforcing: as ever more detailed measures and comparisons have been produced, the demand for more sophisticated accounting systems has grown, which in turn has stimulated more detailed measures and comparisons. Through this circular accounting, the existing policy ‘needs’ of international actors have been legitimised, while new ‘needs’ (such as performance monitoring) have been facilitated.

An institutional focus might suggest that international health accounting has been performed for separate, institutionally specific reasons. But this fails to tell the whole story. As this chapter has shown, international organisations increasingly work together to develop statistics on health spending. To develop an accurate picture, international organisations rely on data produced by other organisations. This exemplifies the ‘complex interdependence’ which some political scientists believe underpins the current international order.⁷⁷ The professional movement of expert international health accountants also implies we cannot think about health accounting in institutional silos: one of the key architects of the SHA, Jean-Pierre Poullier, subsequently moved to WHO in Geneva. The water is further muddied when we consider the role of these international accountants alongside national statistical agencies and experts, who have their own reasons for constructing health accounts, such as financial prudence, health planning, and general administration of health services. In constructing NHAs, some international bodies have worked more closely alongside governments (for example, WHO), others more remotely (for example, OECD). In this respect, international health accounting is best seen as a negotiation between the national and international policy levels.

A variety of accounting technologies have underpinned the systematisation of health accounting. Standardised tables have attempted to present data on health spending in a uniform format. Common units, such as total expenditure on health as a percentage of GDP, have been developed to express health spending in a consistent ‘currency’. Questionnaires have been used to collect figures on health spending according to a pre-determined system, and idea of what constitutes the health system.⁷⁸ Finally, accounting manuals such as the SHA have defined the rules and conventions that guide data collection by national authorities. By establishing

accounting standards, organisations such as the OECD and WHO have encouraged countries to report data in a consistent way. Historical experience, however, reveals that this power has been inconsistently applied. The current discourse of ‘institutionalisation’ reflects how many countries have resisted, or escaped, concepts and systems applied from above.⁷⁹

Perhaps the greatest influence international organisations have wielded is conceptual. In standardising international health accounting, international organisations have in turn constructed their object of analysis, the health system. The proto-NHAs developed by the CCMC in the 1920s visualised the health system in just two dimensions: sources and uses. Seventy years later, the SHA defined the health system in functional terms, according to health care function, source of finance, and provider. This chapter highlights how health experts in part define and visualise health systems through accounting constructs. The constructs chosen are usually instrumental to the analytical or policy aims of the institution in question.

What is further apparent is just how central finance has become to global health in recent decades, and how health spending has come to stand in for the health (or ill-health) of systems, and by extension the health (or ill-health) of the populations they serve. When global investment decisions need to be made, when resources need to be allocated, when the performance of systems needs to be assessed, it is to spending – not just traditional measures such as mortality and morbidity – that experts now turn. This is a very recent phenomenon: it was only in the 1990s that information on health spending and outcomes could be systematically related at the population level. Hence, it is only relatively recently that comparative health spending data has had any direct bearing on global health, informing how international organisations like the World Bank allocate their resources.

It is not that such information was irrelevant in earlier times; indeed, as the LNHO *Yearbooks* reveal, it was probably always central. However, developments over the twentieth century problematised health spending and positioned it as a key determinant of health. For example, the Great Depression raised questions about how health services should be effectively organised and financed, leading to calls for compulsory sickness insurance. Following World War II, cost pressures transformed what was previously a fiscal imperative to record health budgets into a more deep-seated desire to guide resource allocation decisions. If, for the LNHO, the numbers meant little beyond their immediate domestic and fiscal context (and, indeed, could not, for a comparative framework did not exist yet), for organisations in the later twentieth century, such as the OECD and World Bank, they served a deeper rhetorical purpose, used to monitor systems performance and influence investment decisions. The key point is that these monetary figures could never directly construct or constitute ‘health’ on their own; they have always been an imperfect mirror for what is, by any account, a highly complex and fuzzy phenomenon. However, by the late twentieth century, comparative health expenditure data had become an invaluable *input* into decisions about health globally. Financial aggregates, such as total expenditure on health, joined metrics derived from epidemiology, such as the under-five mortality rate, as key indicators to assess the health of nations.

This prompts a final question: how has changing technology influenced international health accounting, and the political and epistemological issues discussed above? While the computer played an increasingly important role in international health from the 1960s, the medium for international health accounting remained fundamentally paper-based until the mid 1980s, when the OECD began to compile their electronic database. Paper technology has increasingly given

way to digital, although the underlying rationale – to record, process and analyse – has remained the same. With the exception, perhaps, of the LNHO, whose work was groundbreaking, international health accounting has rarely been performed simply to *record* health expenditure, but to *transform* this data into something useful for policymakers. Hence, the goals of accounting and data processing coincide.

Today, the GHED provides an online portal to WHO's expenditure data. The OECD Health Database is also available online, and other organisations such as the World Bank have similar data repositories. Data on national health spending has thus become more widely accessible, able to reach communities far beyond the traditional constituencies of international organisations, national governments and academics. Thus, national health spending has arguably become more politically transparent, though expert communities such as economists still play a central role in negotiating the mass of information now available. Using NHA data, civil society organisations, think-tanks and other expert groups can make claims about government health spending, such as it is too small in relation to GDP.⁸⁰ The process of compiling data has also been facilitated by the internet. Even WHO consults the websites of national statistical agencies when compiling data.⁸¹

Despite this brave new world, much older technologies still have a fundamental role in facilitating international health accounting. Notably, the GHED and constituent NHAs are still powered by bi-dimensional tables of health expenditure, although these can now represent information along multiple dimensions. Behind the major aggregates in GHED charts are the 'raw data', consisting of hundreds, if not thousands of tables breaking down health spending. The table thus remains the fundamental health accounting technology.⁸²

Conceptually, the GHED also embodies ideas from another age. The idea that national health spending can be compared at all is a legacy of the LNHO, which opened the initial space for comparing health systems. Estimates of national income, used as denominators in international comparison, were pioneered following the Great Depression. The methods and rules used to guide accounting have been revised several times, but the underlying concepts are very much the same as in 1953 (the first UN manual on national income accounting) or 2000. The GHED and SHA 2011 are merely the latest iterations of an ongoing process of development.

Conclusion

The intellectual development of international health accounting has been slow and difficult process with many false starts. It is only recently that a coherent international framework for measuring and comparing health spending has been established, and even today, problems with statistical capacity in many countries inhibit the 'institutionalisation' or routine production of NHAs. International health accounting thus continues to be a discipline under formation, despite the combined efforts of a multitude of organisations over the last century. While information on health spending has undoubtedly improved, it is by no means a straightforward story of success.

This is evident from the unfortunate fact that WHO and other organisations are still forced to make projections and estimates for many countries. As of 2012, over 100 LMICs had

produced NHAs, but only 41 countries, predominantly OECD members, produce them regularly.⁸³ The focus of international and national agencies has increasingly turned to embedding health accounting in national statistical systems.⁸⁴ Efforts are also underway to improve the accuracy of measures, such as out-of-pocket spending, essential for measuring health spending in developing countries.⁸⁵ Nevertheless, the fact that WHO and other bodies have been able to construct a vast, publicly accessible database of health expenditures with consistent time-series information has been a boon for global health researchers as well as other scholars, such as historians, who wish to reconstruct past health expenditures. The wider consequences of this transformation are yet to be felt.

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- ⁸⁴ Office for National Statistics, 'SHA Guidelines: Practical Guidance for Implementing A System of Health Accounts in the EU', 2004 <<https://circabc.europa.eu/sd/d/598bd3f5-faf3-4e5c-a844-66304c2d4b10/SHA%20Guidelines.pdf>>.
- ⁸⁵ Rannan-Eliya and Berman, *National Health Accounts in Developing Countries: Improving the Foundation*.