

From «Planning» to «Systems Analysis»: Health services strengthening at the World Health Organisation, 1952-1975

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SUMMARY: 1.—Introduction. 2.—The early WHO: from social medicine to planning. 3.—Health planning during the development decade. 4.—The 1970s: From planning to systems analysis. 5.—Conclusion.

ABSTRACT: This article discusses the early postwar history of international engagement with the strengthening of health services by the World Health Organisation (WHO). Standard narratives emphasise that the WHO prioritised vertical programmes against specific diseases rather than local capacity-building, at least until the Alma Ata Declaration of 1978 launched a policy focus on primary health care. There was, however, a longer lineage of advisory work with member states, and our aim is to examine this intellectual and policy history of health services planning and administration. We begin by surveying the relevant secondary literature, noting that this theme appears only briefly in the institution's first official histories, with minimal contextualisation and analysis. We then proceed chronologically, identifying an early phase in the 1950s when, despite its marginalisation at the WHO, the interwar European social medicine tradition kept alive its ideals in work on health planning. However, the sensitivities of the USA and of the colonial powers meant that consideration of social security, health rights and universal coverage was absent from this discussion. Instead it was initially concerned with propounding Western models of organisation and administration, before switching to a focus on planning techniques as an aspect of statecraft. In the 1960s such practices became incorporated into economic development plans, aligning health needs with infrastructure and labour force requirements. However, these efforts were entangled with Western soft power, and proved unsuccessful in the field because they neglected issues of financing and capacity. In the 1970s the earlier planning efforts gave rise to a systems analysis approach. Though in some respects novel, this too provided a neutral, apolitical terrain in which health policy could be discussed, void of issues of rights and redistribution. Yet it too foundered in real-world settings for which its technocratic models could not account.

PALABRAS CLAVE: sistemas de salud, planificación, Organización Mundial de la Salud, salud global, desarrollo.

KEYWORDS: health systems, planning, World Health Organisation, global health, development.

1. Introduction (*)

In twenty-first century global health, a key concern of international bodies such as the World Bank and the World Health Organisation (WHO) is the improvement of «health systems»¹. Technical guides and batteries of statistical indicators are available to assist governments, advising them on funding mechanisms, stewardship of services and regulatory structures². Underlying this is a burgeoning field of applied research, with its own scholarly journals and networks³. Yet, as the Ebola crisis of 2014-15 revealed, there are still parts of the world where administration and services remain fragile and population coverage incomplete⁴. Both its ubiquity and its persistence therefore make it worthwhile to interrogate the history of what we now call «health systems strengthening».

This though is a complex intellectual and policy history, entwining, *inter alia*, the disciplinary emergence of cybernetics and health services research and the activities of international organisations⁵. For some observers, it

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1. Tichenor, Marlee; Sridhar, Devi. Universal health coverage, health systems strengthening, and the World Bank. *BMJ*. 2017; 358: j3347; van Olmen, Josefein et al. Health systems frameworks in their political context: framing divergent agendas. *BMC Public Health*. 2012; 12: 774.
2. WHO. The World Health Report 2000. Health systems: improving performance. Geneva: WHO; 2000; WHO. Everybody's business: Strengthening health systems to improve health outcomes: WHO's framework for action. Geneva: WHO; 2007.
3. Health Systems and Policy Research (Insight Medical Publishing); Health Systems (Springer); Health Systems & Reform (Taylor and Francis).
4. O'Hare, Bernadette. Weak health systems and Ebola. *The Lancet Global Health*. 2015; 3 (2): 71-72.
5. Brailsford, Sally et al. Editorial. *Health Systems*. 2012; (1): 1-6; van Olmen et al., n. 1; Nolte, Ellen; McKee, Martin; Wait, Suzanne. Describing and evaluating health systems. In: Bowling, Ann; Ebrahim, Shah, eds. *Handbook of Health Research Methods: Investigation, Measurement and Analysis*. Maidenhead: Open University Press; 2005, p. 2-43.

was in the 1970s when «health systems» thinking had its inception⁶. By this time articulations of medicine as a holistic structure had begun to appear, and scholars proffered different typologies for cross-national comparison, based on criteria like modes of funding and forms of hospital ownership⁷. They also delineated generic features that could be quantified and compared, thus to illuminate different national approaches to marshalling the inputs and processes of health care, and the outcomes these produced⁸. Emanating initially from medical sociology and epidemiology, early cross-national comparisons brought a «systems approach» to investigating the balance between primary care and hospital services and early attempts at mathematical system modelling also appeared⁹.

These conceptual and methodological initiatives were concurrent with the flowering of health systems work as a field of international health. A pivotal moment was the Alma Ata Conference of 1978, whose closing Declaration had pledged the WHO to extending primary health care to achieve «Health for all by the year 2000». Standard narratives treat this as a turning point in the priorities of the WHO, the United Nations agency with a special remit for health¹⁰. Up until then it had concentrated primarily on «vertical» interventions against major communicable diseases, notably the victorious campaign against smallpox, and the less successful Global Malaria Eradication Programme. Alma Ata represented a change of tack, partly in recognition of the need for better local infrastructure to support

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6. Mills, A.J.; Ranson, M.; The design of health systems. In: Merson, M.H.; Black R.E.; Mills, A.J., eds. *International public health: diseases, programs, systems, and policies*. Gaithersburg: Aspen Publishers; 2001, p. 513-551; van Olmen et al., n. 1, p. 2-3.
 7. Logan, Robert. *International studies of illness and health services*. The Milbank Memorial Fund Quarterly. 1968; 46 (2): 126-140; Anderson, O.W.; *Health care: can there be equity? The United States, Sweden, and England*. New York: Wiley and Sons; 1972; Roemer, Milton. *Health care systems in world perspective*. Ann Arbor: Health Administration Press; 1976.
 8. Abel-Smith, Brian. *An international study of health expenditure and its relevance for health planning*. Geneva: WHO; 1967; Bice, Thomas; White, Kerr. *Cross-national comparative research on the utilization of medical services*. *Medical Care*. 1971; 9 (3): 253-271.
 9. Kohn, Robert; White, Kerr. *Health care, an international study: Report of the World Health Organization/International collaborative study of medical care utilization*. London: Oxford University Press; 1976, p. 10; Navarro, Vicente. *Planning personal health services: A Markovian model*. *Medical Care*. 1969; 7 (3): 242-249.
 10. Lee, Kelley. *The World Health Organization (WHO)*. London: Routledge; 2009, p. 72-9; van Olmen et al., n. 1, p. 2-3; Chorev, Nitsan. *The World Health Organization between North and South*. Ithaca, NY: Cornell University Press; 2012, p. 6-7; WHO, 2007, n. 2, p. 5; Prentzas, G.S. *The World Health Organization*. New York: Chelsea House; 2009, p. 31-33.

the objectives of externally driven programmes, and partly from growing awareness that existing hospital-centric services in many low-income settings were inadequate to the needs of rural populations. This agenda of «horizontal» programming did not endure¹¹. Resource constraints and political judgments in the early 1980s scaled back the universalist intent to focus on «selective» primary health care, with funding for a limited number of cost-effective interventions. Then came HIV/AIDS, and a reversion to vertical, disease-specific programmes as the priority for international health¹².

A more nuanced picture emerges from specialist historical studies, which note earlier «horizontal» initiatives by WHO to build national service capacity. These arose from Article 2 of WHO's Constitution, adopted at the International Health Conference of July 1946, which directed it «to assist governments, upon request, in strengthening health services» and to «study and report» on «administrative and social techniques» pertaining to «hospital services and social security»¹³. Some of this literature traces the precursors to the primary health care movement in local projects which sought to embed structures that would sustain vertical interventions¹⁴. Then there are the official histories of the WHO, which chronicle by decade the early approaches to health planning, and related country-level assistance. For example, volume 1 (1948-58) describes the committees concerned with «public health administration» and «organisation of medical services», noting their technical findings and advice¹⁵. In volume 2 (1958-67) the alignment of health services policy with programmes of economic development is noted, along with basic descriptions of planning initiatives in Latin America, Asia, the Middle East and various newly independent African nations¹⁶. The third volume (1968-77) does not revisit these, though it briefly charts planning efforts by the new division of Research in Epidemiology and Communications Science (RECS) and short-lived ventures into systems

11. The «vertical»/«horizontal» terminology was coined by a Venezuelan WHO consultant: González, Carlos. *Mass campaigns and general health services*. Geneva: WHO; 1965; 9, p. 11-12.

12. Lee, n. 10, p. 79-86.

13. *Constitution of the World Health Organization*, July 22, 1946, Chapter II, p. 129.

14. WHO. *The second ten years of the World Health Organization, 1958-1967*. Geneva: WHO; 1968, p. 40-44; Cueto, Marcos. *The origins of primary health care and selective primary health care*. *American Journal of Public Health*. 2004; 94 (11): 1864-1874; Litsios, Socrates. *The Christian Medical Commission and the development of the World Health Organization's primary health care approach*. *American Journal of Public Health*. 2004; 94 (11): 1884-1893.

15. WHO. *The first ten years of the World Health Organization*. WHO: Geneva; 1958, p. 335-342.

16. WHO, n. 14, p. 37-39.

analysis to support country health programming. Analytically, it emphasises some of the inadequacies of the early efforts to provide basic health services, and the way these informed the new thinking of Alma Ata¹⁷. The institutional history of the Pan-American Health Organization (PAHO) also covers early regional planning, linking this to the development projects championed by the USA to counter the appeal of Communism¹⁸. Otherwise there are brief retrospectives, which conclude that the WHO «lagged behind other sectors» in planning methodologies, and that its ventures in the field, such as PAHO's, were unsuccessful¹⁹.

The aim of this article is to document this «prehistory» phase of the WHO's health systems work prior to Alma Ata, and to analyse the intellectual and political framework in which it emerged. It is based on documentary research in both the WHO's Geneva archive, and its online IRIS repository. With respect to unpublished sources and grey literature, we have made particular use of the WHO N5 series, which contains internal records of health planning initiatives. The other key source is WHO's Technical Assistance publication series, which contains material on health services planning, training of personnel and systems analysis. In addition, we made a very limited survey of British and American press reports, for factual context and a glimpse of external reaction.

The article extends existing accounts in several ways. First, it brings into view individuals and groups with shifting locations within the WHO that maintained an interest in services and financing, and the context in which their work was done. Second, it examines the evolving content of the WHO's thinking on technical assistance for health planning, showing its direct lineage with what later became systems analysis. Third, it argues that while the adoption of systems thinking was partly driven by new disciplines, it also served a political purpose, providing a neutral language in which the

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17. Litsios, Socrates. *The third ten years of the World Health Organization, 1968-1977*. Geneva: WHO; 2008, p. 41-44, 91-94, 117-131, 293-307.
 18. Cueto, Marcos. *The value of health. A history of the Pan-American Health Organization*. Washington: PAHO; 2007, p. 131-132.
 19. Sapirie, Stephen. WHO and health planning — the past, the present and the future. *World Health Forum*. 1998; 19: 382-387 (382); Gutierrez, J. Garcia. Health planning in Latin America. *American Journal of Public Health*. 1975; 65 (10): 1047-1049; Packard, Randall. *A history of global health: interventions into the lives of other peoples*. Baltimore: Johns Hopkins University Press; 2016, p. 232.

otherwise value-laden terrain of health policy could be debated during the Cold War.

Two caveats must be entered. Although this essay includes discussion of one WHO-led country initiative, in Colombia, it does not pretend to address the history of health planning at national level. For this, there are many studies of health systems policy-making in the West, and a few, to which we will add in future, of planning or service development in post-colonial settings. Nor does it seek to explore the contributions to planning of the different regional offices of the WHO, although there is some discussion of PAHO's innovations²⁰. Rather, the concern here is to illuminate the work of officials and external advisers at the agency's headquarters, in Geneva. This will give the exposition a somewhat Western-centric focus, for reasons that will become clear.

We begin by discussing the WHO's first decade, when health services were only a minor area of activity, but early advisory positions were staked out. The central sections focus first on the 1960s and the consolidation of «planning», with the influence of epidemiologists and social medicine to the fore, then the 1970s, when the dominant strategy became «systems analysis», a method that blended cybernetics and operational research. While we cannot offer a retrospective evaluation of these strategies, we conclude with some general observations about their achievements and limitations.

2. The early WHO: from social medicine to planning

Historians have already documented how the European tradition of social medicine, with its long-standing concern for health services, was marginalised during the early years of the WHO. Consensus amongst member states around questions of social security, financing and coverage was impossible, not least because the politics of «socialized medicine» were fiercely contentious in the United States²¹. Another fissure within the UN system was that

20. WHO's six regional offices are: Europe (EURO), Africa (AFRO), the Eastern Mediterranean (EMRO), the Western Pacific (WPRO), Southeast Asia (SEARO), and the Americas (PAHO, or AMRO).

21. Farley, John. Brock Chisholm, the World Health Organization, and the Cold War. Vancouver: UBC Press; 2008, p. 111-118; Gillespie, James. Social medicine, social security and international health. In: Rodríguez-Ocaña, E., ed. The politics of the healthy life: an international perspective. Sheffield: EAHMH publications; 2002, p. 219-239; Packard, Randall. Malaria dreams: postwar visions of health and development in the third world. *Medical Anthropology*, 1997; 17 (3):

separating the remaining imperialist nations from the other great powers, fostering tensions over control of assistance and monitoring²². Instead the priority became campaigns against major infectious diseases premised upon biomedical technologies: penicillin, BCG, smallpox vaccine, DDT²³. In the 1950s then, health services work was a fairly minor activity.

A Division of Organisation of Public Health Services was established in December 1949, headed by the Brazilian physician Marcolino Candau (who in 1953 became WHO's second Director-General). Advisory support in the hospital field included survey work, construction expertise, programme consultancies and training in administration, in various countries of Latin America, South-East Asia and the Middle East²⁴. International actors also had some latitude to cultivate ideas about health services, though this was dissipated between two parts of the organisation. The result was a contradictory start to thinking about health services and development.

One thread of action began with the World Health Assembly of 1952, which focused on «health administration». It started with platform addresses by two eminent progressives who examined the case that health planning would deliver broad economic benefits²⁵. One was by Charles-Edward Amory Winslow, retired head of Yale's School of Public Health, veteran of the New Deal struggle for social health insurance in America, and recent survivor of McCarthyite slurs²⁶. The other was the economist Gunnar Myrdal, an

279-296; Packard, n. 19, p. 99-110; Starr, Paul. *The social transformation of American medicine*. New York: Basic Books; 1982, p. 266-289.

22. Pearson, Jessica Lynne. *Defending empire at the United Nations: The politics of international colonial oversight in the era of decolonisation*. *The Journal of Imperial and Commonwealth History*. 2017; 45 (3): 525-549; Mazower, Mark. *No enchanted palace: the end of empire and the ideological origins of the United Nations*. Princeton: Princeton University Press; 2009.
23. Lee, n. 10, p. 4-17; Litsios, Socrates. *Malaria control, the Cold War, and the postwar reorganization of international assistance*. *Medical Anthropology*. 1997; 17: 255-278. For the ubiquity of the infectious disease model in public representations, see e.g. Goldsmith, Michael. *UN 'health department' wipes out frontiers*. *The Washington Post*. 12 Mar 1950: B2.
24. WHO, n. 15, p. 341-2.
25. WHO. *Fifth World Health Assembly, 5-22 May 1952. Technical Discussions 1-28 (incl. addresses delivered by Prof. C.E.A. Winslow & Prof. Gunnar Myrdal)*. WHO Archive, Geneva, WHA 5 TD. For some of the world's press this Assembly was noteworthy only for a dispute over the WHO's position on birth control: *The Washington Post*. 20 May 1952: 11; others noted, but did not report on, the subject matter: *News in Brief. World Health Meeting*. *The Times*, 5 May 1952, 5.
26. Hirshfield, Daniel. *The lost reform: the campaign for compulsory health insurance in the United States from 1932 to 1943*. Cambridge, MA: Harvard University Press; 1970, p. 113-114; Brickman, Jane Pacht. *Medical McCarthyism and the punishment of internationalist physicians in the United States*. In: Birn, Anne-Emanuelle; Brown, Theodore M., eds., *Comrades in health: U.S.*

architect of the Swedish welfare state, early advocate of Keynesianism, and author of a seminal study of race in America, whose brand of internationalism appalled the US State Department²⁷. In the ensuing «Technical Discussion», 120 delegates worked in polyglot, cross-national discussion groups to pool experiences of local service organisation²⁸. The result was the establishment of a Committee on Organisation of Medical Care (COMC) to explore the «relationships between public health, medical care, and social security»²⁹. Its subsequent report advocated the general hospital as the fundamental building block of national «systems of health care», drawing on the then current Western model of regional integration of curative, recuperative and preventive functions³⁰.

The more substantial effort in the 1950s was that of the WHO Expert Committee on Public Health Administration (ECPHA). ECPHA's first report in 1952 established a platform for subsequent discussions by outlining at a generic level the diverse administrative functions of health authorities and the role of the state³¹. It also proselytised for change: «The authorities and functions of national, provincial, and local health administrations have not been clearly defined»; the integration of curative and preventive care was «not yet well established in most countries»; and «In general there is a lack of system in organising medical and health services»³². The committee's solution was to align all functions «under one system of health service», in which the state ensured coordination and smooth financing³³. The ECPHA's next report, in 1954, moved further towards instruction, proposing a model health programme that could be extended locally through the «rural health unit». This would serve as a community «nucleus» for «basic health services» including the protection of maternal and child health, control of

health internationalists, abroad and at home. New Brunswick, NJ: Rutgers University Press; 2013, p. 82-100, at 87-88.

27. Jackson, Walter A. Gunnar Myrdal and America's conscience: social engineering and racial liberalism, 1938-1987. Chapel Hill: University of North Carolina Press; 1990, p. 324-30.
28. Report of technical discussions on the methodology of health protection in local areas. Chronicle of the World Health Organization. 1952, 6 (7-8): 219-41.
29. Chronicle, n. 28, p. 175.
30. WHO. Role of hospitals in programmes of community health protection. World Health Organisation Technical Report Series, No. 122. Geneva: WHO; 1957, p. 3, 27-28.
31. WHO. Expert committee on public health administration. First report. WHO Technical Report Series, No. 55. Geneva: WHO; 1952.
32. WHO, n. 31, p. 11.
33. WHO, n. 31, p. 6.

communicable disease, environmental and sanitary services, health education and medical care located in health centres and sub-centres. These would map onto existing political or administrative areas to integrate with other local services «e.g. education and agriculture» and would be staffed by at least one physician, complemented by a variety of auxiliary health workers³⁴.

By 1961 however, the ECPHA began to focus on strategic national planning, rather than disseminating optimal structures. Committee members were asked «to pool their diverse experience» and «formulate some general principles for (...) drawing up long-term, flexible health plans» for countries at different stages of development³⁵. Health services strengthening was to begin with planning, then continue with «organization, operation and evaluation (...) a continuous, dynamic operational process and not merely a starting-point»³⁶. Planning would entail a comprehensive health survey to determine population health status and needs, then establish priorities for intervention. Next came the setting of targets and objectives, stakeholder consultation and the drafting of a national health plan. As before it advocated an active government policy, aiming for comprehensive services and broad population coverage³⁷.

The first phase had therefore begun with experts conceiving of «systems» first as forms of organisation, though without consensus on the preferred model, and then as planning processes. What explains this? The ECPHA seems to have been a bastion of the surviving social medicine movement, and its early work carried forward an interwar agenda. It was initially chaired by the Norwegian Karl Evang, a pioneer of that country's welfare state, and included James Mackintosh, founder of the Society of Social Medicine, and Andrija Stampar, health centre advocate and veteran of the League of Nations Health Organisation (LNHO)³⁸. Stampar's work in Yugoslavia with the LNHO had been the *locus classicus* of the rural health programme, combining health centre building and health education initiatives tailored to

34. WHO. Methodology of planning an integrated health programme for rural areas. Second report of the expert committee on public health administration. WHO Technical Report Series, No. 83. Geneva: WHO; 1954.

35. WHO. Planning of public health services. Fourth report of the expert committee on public health administration. WHO Technical Report Series, No. 215. Geneva: WHO; 1961, p. 3.

36. WHO, n. 35, p. 4.

37. WHO, n. 35, p.18-20.

38. Ringen, Knut. Karl Evang: a giant in public health. *Journal of Public Health Policy*. 1990; 11 (3): 360-367.

agrarian audiences³⁹. Aided by the work of the Rockefeller Foundation, this also made a transition to China, where the Ding County model exemplified development through auxiliary health workers rather than fully trained doctors⁴⁰. The LNHO's Bandung Conference, held in Indonesia in 1937 had crystallised these ideas about «rural hygiene» and the need to align health services with education, nutrition and economic reform in an interagency approach.⁴¹ Much in all this foreshadowed the «basic health services» agenda, which received widespread support in WHO in the 1970s, but it also sought to revive a past that was currently out of favour with the dominant member states⁴².

The COMC's hospital-based model also had its roots in interwar thought, although this committee was politically more centrist. It included, for example Michael Bluestone, of New York's Montefiore Hospital, and was chaired by T.C. Routley of the conservative World Medical Association, which fiercely opposed social health insurance⁴³. The core idea was hierarchical regionalism, premised on the spatial organisation of general hospitals around a central teaching hospital. This had emerged in the advanced industrial nations to integrate scientific expertise with the medical economy in the most rational and efficient way⁴⁴. Some of the report, including its annex summarising the history of the hospital from classical times, echoed the sense of progressive inevitability evident in key social medicine texts⁴⁵. On balance though, the experts on the COMC reflected the preoccupations of sophisticated health systems in rich countries, staking a neutral terrain that eschewed issues of financing, and was attuned to mainstream thought on the WHO's role⁴⁶.

39. Zylberman, Patrick. Fewer parallels than antitheses: René Sand and Andrija Stampar on social medicine, 1919-1955. *Social History of Medicine*. 2004; 17: 77-92, at 90-91.

40. Litsios, Socrates. Selskar Gunn and China: The Rockefeller Foundation's «other» approach to public health. *Bulletin of the History of Medicine*. 2005; 79: 295-318.

41. Brown, Theodore; Fee, Elizabeth. The Bandoeng Conference of 1937: A milestone in health and development. *American Journal of Public Health*. 2008; 98 (1): 42-43.

42. The Mahler revolution. *British Medical Journal*. 1977; 1 (6069): 1117-1118.

43. WHO, n. 30, p. 2; Preliminary report on social security and the medical profession. *World Medical Association Bulletin*. 1949; 3: 114-118.

44. Fox, Daniel M. Health policies, health politics: The British and American experience, 1911-1965. Princeton: Princeton University Press; 1986.

45. WHO, n. 30, p. 29-34; cf. Sand, René. *The advance to social medicine*. London: Staples Press; 1952.

46. Malmlose, Margit. National hospital development, 1948-2000: The WHO as an international propagator. *Accounting History Review*. 2015; 25 (3): 239-259.

By the end of the 1950s these early approaches were giving way to a new paradigm of planning for development. A language of «human capital» entered ECPHA texts, aligning them with the general economic planning currently pursued in both mixed and socialist economies, and increasingly within the development framework. Underwriting these efforts were new technologies of measurement, by which IOs could depict «the state of health of the nation in relation to its social and economic development»⁴⁷. ECPHA's secretariat was now joined by Satya Swaroop, the WHO statistician most engaged with the UN's «level of living index», through which nations would be ranked on a scale of development⁴⁸. In sum, during this first phase, lack of consensus among the member states meant that health services work was only a modest part of the WHO's activity. Nonetheless, groups within the organisation built expertise within the area, drawing on interwar thinking, and by the start of the 1960s an emerging consensus around development promised new possibilities.

3. Health planning during the development decade

During the 1960s, «planning» was the mode through which international organisations discussed health services in the Global South against the backdrop of decolonisation. It was also the vector through which they were aligned with the broader strategies of the UN Development Decade, heralded by President Kennedy in 1961 to promote «a substantial increase in the rate of growth» along with «social advancement»⁴⁹. The international consensus surrounding this was reflected in the consolidation of new mechanisms: the Expanded Programme of Technical Assistance (1949) and the Special Fund (1958) merged in 1965 to form the UNDP; these complemented World Bank bodies, including the International Finance Corporation (1956) and International Development Association (1960); and bilateral effort from

47. WHO, n. 35, p. 6-8.

48. Swaroop, S; Uemura, K. Proportional mortality of 50 years and above: a suggested indicator of the component «health, including demographic conditions» in the measurement of levels of living. *Bulletin of the World Health Organization*. 1957; 17 (3): 439.

49. UN. A United Nations development decade: a programme for international co-operation. 1961. A/RES/710/XVI. UN Official Document System; US Department of State. Address by President John F. Kennedy to the UN General Assembly. September 25, 1961. Available from: <http://www.state.gov/p/io/potusunga/207241.htm>.

the US ran through the newly founded USAID (1961)⁵⁰. Economic plans demonstrating systematic thought about resources and personnel, and subject to evaluation according to the increasingly definitive indicator, GNP, were the prime means through which states could access this largesse.

From the perspective of the WHO, however, where vertical disease programmes still dominated the agenda, it was far from certain that health services planning was set to become «(...) part of a comprehensive approach to the socio-economic development of a country»⁵¹. Advocates inside WHO therefore strove to set the agenda. There was a spate of major conferences and meetings on health planning, several of which were convened in the WHO Region for the Americas, but also in Manila, Philippines in 1964, and Addis Ababa, Ethiopia in 1965. Candau prioritised «national health planning» in the WHO's 1965 programme, and appealed for «simultaneous advances in the closely related fields of health and of social and economic development»⁵². The technical discussions at that year's 18th World Health Assembly were dedicated to health planning, while in 1966, WHO convened an Expert Committee on National Health Planning in Developing Countries, chaired by the Indian doctor Nowshir Jungalwalla (from 1967, the head of the WHO Division of Organisation of Health Services)⁵³. WHO's Expert Committee on Health Statistics improved and standardised indicators of provision, utilisation and population health, which were increasingly deemed vital to planning⁵⁴. Even the politically contentious area of health financing was broached, with an early, though unsustainable, effort led by the British health economist Brian Abel-Smith to construct an «international language of health-service finance» to inform international comparison⁵⁵.

50. Rist, Gilbert. *The history of development: from Western origins to global faith*. London: Zed; 2008 [1997], p. 89.

51. WHO. *Training in national health planning*. Report of a WHO expert committee. WHO Technical Report Series, No. 456. Geneva: WHO; 1970, 8.

52. 1,000 Projects for World Health. *The Times*. 2 Mar 1964: 8

53. WHO. *National health planning in developing countries*. Report of a WHO expert committee. WHO Technical Report Series, No. 350. Geneva: WHO; 1967.

54. WHO. *Expert committee on health statistics*. Seventh report. WHO Technical Report Series, No. 218. Geneva: WHO; 1961; WHO. *Expert committee on health statistics*. Eighth report. WHO Technical Report Series, No. 261. Geneva: WHO; 1963; WHO. *Expert committee on health statistics*. Thirteenth report. *Statistics of health services and of their activities*. WHO Technical Report Series, No. 429. Geneva: WHO; 1969.

55. Abel-Smith, Brian. *Paying for health services*. A study of the costs and sources of finance in six countries. Geneva: WHO; 1963; WHO, n. 35, p. 23.

These efforts unfolded against a confused backdrop, for, despite the consensus around the desirability of planning, there were very different views of what it entailed. Indeed, part of its appeal was that of a primarily technical discourse that could be widely deployed precisely because its political locus was unfixed. Planning had been instrumental in the recovery of post-war capitalism, through the Marshall Plan; it had bipartisan support in Britain's mixed economy, manifest in its welfare, employment and industrial policies; it was «the political religion of post-war Europe»⁵⁶. On the other side of the Iron Curtain were the Five-Year Plans first devised in 1927-8 under Stalin to drive the Soviet command economy, later adopted by communist China and Eastern Europe, and apparently successful in speeding industrialisation⁵⁷. For the rulers of newly independent African nations, development planning was resonant of purposeful modernisation, providing a language in which bids for financial aid could be articulated⁵⁸.

In these circumstances, WHO officials positioned themselves as brokers of the different styles of planning that member states pursued. Their expert study refrained from endorsing a single optimal model. Instead it presented a range of national techniques from which others could learn, on the grounds that no one method was of proven superiority, and that all had common features⁵⁹. The text therefore spanned approaches pursued in India, Sweden and Peru, devoting special mention to Soviet methods, and studiously including the United States, even while acknowledging it «has neither a comprehensive health policy nor a national health plan»⁶⁰. Thus did «détente» over planning efface the more contentious ideological questions of redistribution and human rights which otherwise attended health systems policy.

However, as well as performing a balancing act acceptable to the member states, WHO officials sought to innovate, by endorsing and applying two distinct approaches which they then applied themselves. The first was the

56. Judt, Tony. *Postwar. A history of Europe since 1945*. London: Vintage; 2010 [2005], p. 67; O'Hara, Glen. *From dreams to disillusionment, economic and social planning in 1960s Britain*. Basingstoke: Palgrave Macmillan; 2007.

57. Nove, Alec. *An economic history of the USSR*. Harmondsworth: Penguin; 1969, p. 136-159.

58. Ake, Claude. *Democracy and development in Africa*. Washington: Brookings Institution; 2003, p. 3-14.

59. Hilleboe, Herman; Barkhuus, Arne; Thomas, William. *Approaches to national health planning*. Geneva: WHO; 1972, p. 10-11.

60. Hilleboe; Barkhuus; Thomas, n. 59, p. 69.

so-called PAHO/CENDES method, specific to Latin America, where the Pan American Health Organization (PAHO) pioneered a technique named after the Centre for Development Studies (CENDES) at the Central University of Venezuela. The second was produced in Geneva, and was intended as a practical demonstration exercise for newly independent African nations seeking to include a health component in their medium-term economic development plans⁶¹. Put crudely, the former was more rigorous and precise in its use of quantitative data, while the latter was more pragmatic⁶². What was involved with each?

The PAHO/CENDES planning model drew on technical assistance from the United Nations Economic Commission for Latin America (ECLA), PAHO, and WHO⁶³. Its philosophy was that planning was a «state of mind», not just a «method», whose core principle was to maximize technical and allocative efficiency⁶⁴. Priority-setting was determined partly by cost-benefit analysis of different interventions, using indicators of disease prevalence, estimates of deaths prevented, and inventories of personnel, equipment, supplies and facilities. Partly it reflected societal choice. Planners would agree the weight attached to different problems, and the trade-offs between a general mortality reduction and a concentration on economically productive life years; ethics figured too, ensuring geographical equity⁶⁵. Health plans for local «program areas» of 100,000-150,000 inhabitants would provide the basis for regional plans catering for around 250,000-600,000 inhabitants, which would in turn inform the national health plan⁶⁶.

Despite its promising start the PAHO/CENDES approach was abandoned by the WHO at the end of the 1960s⁶⁷. Several Latin American countries had quickly formed national health planning agencies, and over 2,500 professionals were eventually trained by PAHO⁶⁸. As of mid-1964, only six

61. See Manton, John; Gorsky, Martin. Health planning in 1960s Africa: international health organisations and the post-colonial state. *Medical History*. 2018; 62 (4): 425-448.

62. Hilleboe; Barkhuus; Thomas, n. 59, p. 10-12.

63. Gutiérrez, n. 19.

64. Hilleboe; Barkhuus; Thomas, n. 59, p. 52.

65. Hilleboe; Barkhuus; Thomas, n. 59, p. 59; Roemer, Milton. *National health systems of the world*, Vol. 2. New York: OUP; 1993, p. 160.

66. Roemer, n. 65.

67. Gutiérrez, n. 19, p. 1049; Roemer, n. 65; Barrenechea, J.J.; Williams, Jr. C.L. Planning of external assistance to the countries: The quadrennial projections. *American Journal of Public Health*. 1975; 65 (10): 1050-1051.

68. Gutiérrez, n. 19; Hilleboe; Barkhuus; Thomas, n. 59.

countries (Bolivia, Colombia, Cuba, El Salvador, Honduras and Panama) had completed or implemented a national plan⁶⁹. To rectify this a new Pan American Center for Health Planning (PLANSALUD) was proposed in 1965, to be based in Santiago de Chile⁷⁰. This would train for more «dynamic» planning, conceptualising the health system holistically and alert to the different levels of government where implementation would occur. Social science analysis would treat «administrative and political factors not as «external features but rather (...) essential elements», sensitive to ethics, emotion and values⁷¹. However, it was slow to commence, only becoming fully operational in 1970, and suffered apathy from member states; by 1976 it had folded, possibly as a casualty of the turbulence in Chile that followed Pinochet's coup⁷².

The pragmatic approach, meanwhile, was trialled in five sub-Saharan African countries, Gabon, Liberia, Mali, Niger, and Sierra Leone, in which the WHO, with USAID funding, helped prepare ten-year national health plans⁷³. The first step was to recruit and train suitable international experts; WHO achieved this, and the five Africa plans were written between 1965 and 1967⁷⁴. As a generic model they bore strong similarity to that developed in 1961 by ECPHA, in that they proposed a four phase process: fact-finding; planning and implementation; evaluation; training and capacity-building for renewal of the cycle. Unlike PAHO/CENDES, they contained no rigorous attempt to quantify demand or cost-effectiveness, instead sketching a more

69. PAHO. Status of national health planning. CD15/4. 18 June 1964. PAHO IRIS.

70. Tejada De Rivero, David A. The Pan American health planning program. *American Journal of Public Health*. 1975; 65 (10): 1052-1057; Pan American Health Organization and World Health Organization. Pan American Center for Health Planning. CD21/20. 8 September 1972. PAHO IRIS, p. 30.

71. PAHO/WHO 1972, n. 70, p. 13, 25, Annex III p. 3-8.

72. Pan American Health Organization and World Health Organization. Report on the Pan American Centers. CD27/23. Washington D.C: Pan American Health Organization; 25 August 1980. PAHO IRIS, p. 9-10; PAHO/WHO 1972 n. 70, p. 30. Chile provided office space and local personnel: See Pan American Health Organization and World Health Organization. Health Planning in Latin America. Scientific Publication, No. 272. Washington D.C: Pan American Health Organization; 1973, p. 32.

73. National Health Planning. Aide-memoire of meeting. 24 Apr 1963; Memorandum, Israel to Schofield, Brief on the Five African Plans. 10 September 1973. WHO Archives, N5/372/3 Jacket 1.

74. Progress report on national health planning in Gabon, Liberia, Mali, Niger and Sierra Leone. 1968. WHO Archives, N5/372/3 Jacket 1.

loosely justified expansion of facilities and personnel to improve population coverage⁷⁵.

The outcome was a worse failure than the PAHO/CENDES initiative. Early reports by WHO's Africa Regional Office (AFRO) revealed the plans had not been implemented, but «put away in filing cupboards»⁷⁶. Within WHO there were then calls for rigorous outside evaluations, overruling pleas by African officials for light touch monitoring. These revealed at best a very partial attempt to fulfil the plans: for example, Niger had only invested one-tenth of the sum planned for 1965-7, Mali had recruited only 4 new doctors, not 34, and Sierra Leone had undertaken no capital spending⁷⁷. This episode exposed the limits of technocratic plans hatched in Geneva and shaped by Western preferences for hospital-centric systems, going back to the colonial era. There was not sufficient statistical capacity to make economic and demographic projections and no proper consideration was given to economic and political context. Questions of financial resourcing or of social security were entirely omitted: the plans simply projected continuous growth in investment, under an anticipated economic expansion that never occurred⁷⁸.

Are there general explanations for this failure of 1960s health planning? In both Latin America and Africa, it is reasonable to observe that the economic development on which welfare growth was premised never came⁷⁹. For the newly independent African nations, health planning was an external imposition, which proved as inappropriate as much economic development initiatives⁸⁰. However, this was less true of Latin American nations, which had decolonised long before and had their own strong traditions of medical innovation and public health⁸¹.

75. See e.g. Sierra Leone, Ministry of Health. National Health Plan, 1965-1975. Freetown: Ministry of Health; 1965; République du Mali. Plan Décennal (1er Juillet 1966-30 Juin 1976) de Développement des Services de Santé. Bamako; 1966.

76. Karefa-Smart to Siegel. Memorandum. Five national health plans in Africa: Gabon, Liberia, Mali, Niger and Sierra Leone. 28 January 1969. WHO Archives, N5/372/3 Jacket 1.

77. Adjou-Moumouni to Chief NHP. Evaluation plan national de developpement des services de sante publique, Niger. 31 July 1968; Adjou-Moumouni to Chief NHP. Evaluation (Mali) Plan National de Developpement. 31 July 1968. WHO Archives, N5/372/3 Jacket 1.

78. Evaluation of the five African health plans. WHO Archives, N5/372/3 Jacket 1.

79. PAHO/WHO 1973 n. 72, p. 4-16.

80. Manton; Gorsky, n. 61, 429-32, 440-442.

81. Cueto, Marcos; Palmer, Steven. *Medicine and public health in Latin America: a history*. Cambridge: Cambridge University Press; 2015.

Why then did PAHO member states either fail to produce plans, or implement them at best partially? Official explanations were that the PAHO/CENDES methodology was administratively and technically demanding, and despite the effort expended on capacity-building, staffing was insufficient⁸². Planners also proved unrealistic in assuming existing structures of health services could be easily reworked. Consequently, their efforts «remained more a theoretical affirmation than a practical accomplishment»⁸³. Lack of concern for financial «feasibility» was one problem, and another was their detachment from harsh political realities. Events soon revealed that the «'formal' truth of the technician» was insufficient to influence the «instrumental thinking» of the policy-makers, who were often beholden to interest groups with very different objectives⁸⁴. This was because health coverage was divided between the social security enjoyed by better paid workers, the private medical insurance of the wealthy, and the general public health system that provided for the rest. Mechanisms for either formal integration or co-ordinated administration were absent⁸⁵. Vested interests opposed the redistributive implications, and there was unnecessary bureaucratic rivalry arising from «separate clientes»⁸⁶.

In light of all this, do the 1960s development plans therefore show the WHO as ultimately in thrall to great power interests? In some respects, this seems plausible, not least because the development project has since been heavily critiqued as an exercise in Western soft power⁸⁷. The Africa plans evince marked continuities with the colonial development model favoured by departing imperialists, and ultimately failed thanks to their neglect of African

82. Gutiérrez, n. 19; PAHO/WHO 1972 n. 70, p. 2, 5; Tejada De Rivero, n. 70.

83. Gutiérrez, n. 19, p. 1049; PAHO/WHO 1972 n. 70, p. 5; Tejada De Rivero, n. 70, p. 1054; Tejada De Rivero, David A. Discussion. In: Pan American Health Organization and World Health Organization. Systems analysis applied to health services. Washington D.C: Pan American Health Organization; 1972a, p. 21.

84. PAHO/WHO 1972, n. 70, p. 25, Annex II p. 3, Annex III p. 2-3; PAHO/WHO 1973 n. 72, p. 13, 28.

85. International Labour Office and Pan-American Health Organization. Primary health care and health strategies in Latin American social security. Geneva: International Labour Organisation; 1986, p. 93, 102-103, 145-146.

86. J. Castellanos. Co-ordination between the public sector bodies which provide health care services. Washington: PAHO, 1985; p. 190-193, 199-207, 214, p. 207. PAHO/WHO 1972 n. 70, Annex II, p. 4.

87. Escobar, Arturo. Encountering development. The making and unmaking of the third world. Princeton: Princeton University Press; 1995.

realities⁸⁸. Similarly, the genesis of the PAHO/CENDES work lay in the social and political tensions of the late 1950s, when a worsening economic situation in Latin America sparked anti-American sentiment, most dramatically in the Cuban Revolution (1959)⁸⁹. Development therefore provided the channel for financial aid that would restore the United States' benign hegemony. In close succession, an Inter-American Development Bank (1959) was established; the Act of Bogota (1960) committed the Organisation of American States to «economic and social progress»; and the Charter of Punta del Este (1961) pledged financial and technical assistance from the US government and UN agencies⁹⁰. Again, the geopolitical drivers set the context.

Yet in both cases, the WHO/PAHO actors worked within that context to advance their own agendas. In a series of interventions in 1960-61, PAHO's Chilean director, Abraham Horwitz, successfully fought to place health on the planning agenda, asserting its importance to productivity and steering the US to support of social reform⁹¹. As a result, health planning became functionally integrated with national economic plans, and indices like life expectancy and infant mortality were adopted alongside others, like adult literacy and per capita income, as markers of development⁹². The WHO Africa initiative exemplifies the same process, fulfilling the earlier aims of ECPHA to assert that health must run in tandem with development, and not be treated as an after effect. And it was representatives of recently independent African nations that made this case, like Sierra Leone's John Karefa-Smart, who became WHO's Assistant Director General (1965-70) and keenly advocated

88. Constantine, Stephen. *The making of British colonial development policy 1914-1940*. London: Frank Cass; 1984; Ityavyar, Dennis. *Background to the development of health services in Nigeria*. *Social Science & Medicine*. 1987; 24 (6): 487-499.

89. Durán, Hernan. *Health planning in the countries of Latin America*. *Canadian Journal of Public Health*. 1965; 56 (7): 271-75; Butterfield, Samuel Hale. *U.S. development aid – An historic first: achievements and failures in the twentieth century*. Westport, CT: Greenwood Press; 2004.

90. http://avalon.law.yale.edu/20th_century/intam08.asp. Accessed 14 April 2016; http://avalon.law.yale.edu/20th_century/intam16.asp. Accessed 10 May 2016.

91. Pires-Alves, Fernando; Chor Maio, Marcos. *Health at the dawn of development: The thought of Abraham Horwitz*. *História Ciências Saúde-Manguinhos*. 2015; 22 (1): 69-93.

92. Gutiérrez, n. 19, p. 1047-49. For background: Mascarenhas, R. dos Santos. *Indicadores de saúde para regiões subdesenvolvidas*. *Arquivos de Higiene e Saude Publica*. 1961; 26: 291-303; Molina, Gustavo; Noam, Ilana Freda. *Indicators of health, economy, and culture in Puerto Rico and Latin America*. *American Journal of Public Health and the Nation's Health*. 1964; 54 (8): 1191-1206; Balinsky, Warren; Berger, Renee. *A review of the research on general health status indexes*. *Medical Care*. 1975; 13 (4): 283-93; WHO. *Measurement of levels of health. Report of a study group*. WHO Technical Report Series, No. 137. Geneva: WHO; 1957; Durán, n. 89, p. 271-275.

development funding⁹³. Similarly, it was at the periphery that the PAHO/CENDES method was devised, bringing a conceptual sophistication to health systems thinking that would not be revived until the 1990s.

4. The 1970s: From planning to systems analysis

By the early 1970s the language of health planning began to give way to «systems analysis»⁹⁴. The impetus behind development had begun to fade, as conflict in Vietnam and Nigeria and disappointment with aid efforts in India fuelled growing pessimism⁹⁵. Meanwhile the endgame of smallpox eradication, coupled with the now evident limitations of the malaria programme, began the shift towards horizontal interventions which would culminate in the Alma Ata Declaration. This became visible in a more active field policy of building up «basic health services», which in turn began to shift the public image of international health⁹⁶. Local WHO projects sought to establish «networks of health centres and sub-centres» with appropriately trained staff, intended to integrate maternity and child health, preventive programmes and communicable disease control, particularly of tuberculosis and malaria⁹⁷. Activists and clinicians now argued that neither single disease programmes, nor capital investment in hospitals or health centres, provided an integrated solution attuned to local needs. What was required was a holistic view of population requirements and appropriate programmes to address these⁹⁸.

Despite this changing context, the member states had not delegated significantly greater leadership powers to the WHO. This was not for want of trying on the part of the Director-General. In the mid-60s, Candau had sought to establish a global observatory, endowing the WHO with a substantial research capacity well beyond its ad hoc technical assistance committees⁹⁹.

93. Karefa-Smart, John. Africa and the United Nations. International Organization. 1965; 19 (3): 764-773.

94. WHO. The work of WHO, 1972. Annual report of the Director-General to the World Health Assembly and to the United Nations. Geneva: WHO; 1973, p. 114-115.

95. Butterfield, n. 89, p. 57-97.

96. Cueto, n. 14, p. 1864-1874; World Health Organization celebrates 25 years of impressive successes. The Times, 6 Apr 1973; 10; Ashford, Nicholas. Giving developing countries the health service they can afford. The Times. 28 Feb 1975; (59332): 9.

97. WHO, n. 94, p. 112-113.

98. Bryant, John. Health and the developing world. London: Cornell University Press; 1969, p. 110-113.

99. Rose, Hilary; Rose, Steven. Science and society. Harmondsworth: Pelican; 1970, p. 219-232.

President Kennedy had endorsed this idea of a «world centre for health and communications» shortly before his death, and the ambitious proposal went to the WHO's Seventeenth Assembly in 1964¹⁰⁰. There was to be an institute located at the University of Edinburgh, with 400 scientists, and a \$300 million budget, to provide epidemiological and biomedical research according to criteria of social need. However, this was rebuffed, and the following year Candau submitted a more limited version, pitched as a resource for developing countries «to frame rational and long-range health planning»¹⁰¹.

Despite this, the major powers, including Great Britain and the USA, voted it down¹⁰². Nominally the objection was to cost, bureaucracy and the separation of research from training, with the subtext that the focus on biomedical research risked undermining leading national universities in the West. For example, the British delegation to the WHO, led by the Chief Medical Officer, Sir George Godber, jealously protected the country's own research resources. It feared that the establishment of an institution in Edinburgh would detract from research conducted elsewhere in Britain, and that other countries would send «propagandists and favourites» rather than their best scientists, leading Britain to commit expert personnel it could ill-afford to lose. Institutions in Scotland were not informed about the delegation's decision, much to the chagrin of leading Scottish academics, who were conscious of the prestige such a research centre would bring¹⁰³. However, developing countries such as Indonesia and Mali were also opposed, fearing a distraction from more pressing public health problems and a brain drain of scientific talent¹⁰⁴. In the end Candau had to be satisfied with a

100. Rose; Rose, n. 99, p. 221.

101. WHO. Official records of the World Health Organization. No. 144. Eighteenth World Health Assembly, Geneva, 4-21 May 1965. Part II. Plenary meetings verbatim records. Committees minutes and reports. Geneva: WHO; 1965, p. 29; Need for World Research Centre Emphasized. The Times. 6 May 1965; (56314): 12.

102. WHO. Official records of the World Health Organization. No. 143. Eighteenth World Health Assembly, Geneva, 4-21 May 1965. Part I. Resolutions and decisions. Geneva: WHO; 1965, p. 26, 146-151; World Health Centre Plan Shelved. The Times. 20 May 1965: 11.

103. Rose; Rose, n. 99, p. 225-234; Britain opposes world research centre. The Times. 3 May 1965; (56311): 8; Scotland not asked, professor says. The Times. 3 May 1965; (56311): 8; Look at it again. The Times. 5 May 1965; (56313): 13.

104. WHO. A18/P&B/Min/13. Eighteenth World Health Assembly. Committee on programme and budget. Provisional minutes of the Thirteenth Meeting, Palais Des Nations, Geneva. May 18, 1965; WHO 1965, n. 101, p. 148, 320-328.

small, in-house Division of Research in Epidemiology and Communications Sciences (RECS), established in 1967.

These developments were the context for WHO's Systems Analysis Project, begun in 1969 under Halfdan Mahler, the charismatic Dane who would be WHO's Director-General between 1973 and 1988. The initiative represented a broader shift within the technical assistance programme, which intensified the level and range of support offered to states, now under the banner of technical «co-operation» to signal a less hierarchical approach¹⁰⁵. Between 1970 and 1975 WHO sponsored 26 systems analysis projects, all but one in the Global South, and geared towards different national or regional programmes¹⁰⁶. WHO's Project team also produced a manual in 1974, which provided Ministries of Health with step-by-step guidance. This steered planners through the phases of problem formulation, preliminary analysis, objective-setting, implementation and creating sustainable control structures¹⁰⁷. An Expert Committee on Systems Analysis in Health Management was then established, containing representatives from the US, USSR, Africa, Asia and Europe, as well as from the World Bank and other organisations¹⁰⁸.

This Committee, and the related technical reports, illuminate some of the antecedents and purpose of the «systems» approach, which, despite the novel label, bore strong likenesses to the WHO's earlier work. By the late-1960s another Expert Committee, on National Health Planning in Developing Countries, had embodied an organisational consensus that the WHO should offer practical advice, training schemes, «norms» of provision and the requisite data¹⁰⁹. As the shortcomings of the Africa planning episode became apparent, so the focus moved to more logistical questions; this had led to a new Expert Committee on Training in National Health Planning (1969), chaired by Lopes da Costa of the School of Public Health, Rio de

105. Beigbeder, Yves; Nashat, Mahyar; Orsini, Marie-Antoinette; Tiercy, J.F. *The World Health Organization*. Dordrecht: Martinus Nijhoff; 1998, p. 118-119.

106. WHO. *Application of systems analysis to health management*, WHO Technical Report Series, No. 596. Geneva: WHO; 1976, p. 44-45.

107. Bainbridge, J; Sapirie, S. *Health project management: a manual of procedures for formulating and implementing health projects*. Geneva: WHO; 1974.

108. WHO, n. 106, p. 4.

109. WHO, n. 53; WHO. *Report of the technical discussions at the Eighteenth World Health Assembly. Health Planning*. May 12, 1965, A18/Technical Discussions/6 Rev. 1. WHO IRIS, p. 8.

Janeiro¹¹⁰. Reporting in 1970, it articulated a systems-based approach to planning, with discrete inputs, processes and outputs, as the basis for training. This conceptual shift paralleled the contemporary attempt of the Expert Committee on Health Statistics (1969) to formulate a compendium of health service statistics encompassing financing (inputs), utilisation (processes), and outcomes (outputs)¹¹¹. In some respects then, these cumulative activities in the fields of health planning, training and metrics laid the foundation for considering healthcare as a complex system.

The Systems Analysis Project also reflected the changing skills and backgrounds of WHO officials. Hitherto, the planning agenda had been taken forward largely by clinicians qualified in public health, or in the fledgling area of «health services research». In the late 1960s a new breed entered the field, versed in the current management sciences of industry and public policy: cybernetics and operational research. This was particularly evident in RECS, which was initially composed of 26 scientists engaged in epidemiology, mathematical modelling and operational research techniques¹¹². These were not entirely technocratic developments, for systems analysis also incorporated figures embodying WHO's social medicine lineage. The Expert Committee was chaired by Sir John Brotherston, Chief Medical Officer for Scotland and a key progressive figure, while the Fabian socialist Brian Abel-Smith had sat on the 1967 Expert Committee and was instrumental in harmonizing health system statistics¹¹³. However, the recruitment of operational researchers like Socrates Litsios and subsequently Dev Ray, brought a different and more contemporary skill set.

The idea of systems analysis also drew on a new body of theory. It denoted a formalised approach to problem solving, by understanding complex phenomena as «systems», considered both holistically and in dynamic interrelation with their constituent parts and subsystems. This facilitated rational decisions under conditions of uncertainty: «a systematic examination of a problem of choice in which each step of the analysis is made explicit

110. WHO. Training in national health planning. Report of a WHO expert committee. WHO Technical Report Series, No. 456. Geneva: WHO; 1970.

111. WHO, n. 54, p. 7-8.

112. WHO. Activities of the Division of Research in Epidemiology and Communications Sciences. 1971. WHO Archive, RECS/MM/INF/71.1.

113. Pemberton, J. Origins and early history of the Society for Social Medicine in the UK and Ireland. *Journal of Epidemiology and Community Health*. 2002; 56: 342-346; Sheard, Sally. *The passionate economist*. Bristol: Policy Press; 2014.

wherever possible»¹¹⁴. It had a conceptual foundation, propounded by scholars such as the Austrian biologist Ludwig von Bertalanffy, whose «general systems theory» claimed to reveal underlying symmetries and structures in the natural world. In fields as diverse as theoretical physics, psychology and even history, systems theory proffered a ready supply of analogues that could transcend academic specialism, and reduce complexity to a series of common principles¹¹⁵. Practically though, it emerged from operational research during the Second World War, which applied quantitative and probabilistic methods to problems of military logistics, like maximizing the efficacy of weapons¹¹⁶. After the war it was the American RAND Corporation (a non-profit think tank spun off from the 'Research and Development' section of the Douglas Aircraft Company) that began to apply systems analysis in peacetime, initially contracting with the United States Air Force, then advising government on public and social policy¹¹⁷.

In the context of the WHO, systems analysis refreshed the presentation of the planning process. Health systems could now be conceived in organic terms, «such as a flower or a forest», with interacting component parts to which calculable change could be applied¹¹⁸. The approach had a «common logic» that was «content-neutral», a tool which empowered the user, rather than a prescription handed down¹¹⁹. Planning could now be led by health outcome goals, and the system elements quantified, particularly through «effectiveness indicators» to maximise resources¹²⁰. Application could be at either a national or local level of programming, but the ambition was to provide a «scientific basis» to health policy-making and targeting aid¹²¹.

114. Hoag, Malcolm W. An introduction to systems analysis. RAND Corporation; April 18, 1956.

115. Von Bertalanffy, Ludwig. General systems theory: foundations, development, application. New York: George Braziller; 1968.

116. Feldstein, Martin. Economic analysis, operational research, and the National Health Service. Oxford Economic Papers 15. 1963; 1: 19-31; Kirby, M.W. Operational research in war and peace: the British experience from the 1930s to 1970. London: Imperial College Press; 2003; Royston, G. One hundred years of operational research in health: UK 1948-2048. The Journal of the Operational Research Society. 2009; 60: s169-79.

117. Abella, Alex. Soldiers of Reason: The RAND Corporation and the rise of the American empire. Orlando: Harcourt, Inc.; 2008.

118. WHO, n. 106, p. 6.

119. WHO, n. 106, p. 6, 16.

120. WHO, n. 106, p. 7, 9, 21, 25.

121. WHO, n. 106, p. 8, 25-28, 39-42.

However, in the era of detente, it was the *rhetoric* of systems analysis that mattered. Because it was, explicitly, a «content-free way of thinking», in which cost/benefit and effectiveness were integral, it could sidestep initial political contentiousness en route to «a considerable amount of reform»¹²². This flexibility of systems analysis within international discourse is nicely illustrated by the presence on the WHO Expert Committee of advisers from the International Institute for Applied Systems Analysis (IIASA)¹²³. IIASA had been founded in 1972 as a scientific forum where nations could set aside Cold War hostilities and co-operate on areas of global concern, such as the environment, the oceans and energy.¹²⁴ Because scale and interdependence were common issues, systems analysis entered the discourse both from its Soviet military application and from global economic modelling¹²⁵. Although management science, operations research, policy analysis and cybernetics were also touted as the organisation's purpose, the umbrella term «applied systems analysis» was adopted. According to IIASA's first director, its appeal was that «...nobody will know what it means and then we'll have a clean slate»¹²⁶. It was neutral, technocratic and opaque, providing a banner for convening interdisciplinary, cross-national participants¹²⁷. Its «method» was essentially a stepped policy-making programme: problem formulation; response identification; predictive modelling and assessment of options; then implementation and evaluation¹²⁸. Thus it could proffer generic advice that was acceptable on either side of the Iron Curtain.

So much for the theory. What about the application by WHO in the field? Within RECS, the Organisation and Strategy of Health Services (OSHS) section led various research projects that aimed to translate this

122. WHO, n. 106, p. 23, 33, 36.

123. WHO, n. 106, p. 6-7.

124. Brooks, H.; McDonald, A. The International Institute for Applied Systems Analysis, the TAP project, and the RAINS Model. In: Hughes, A.C.; Hughes, T.P., eds. Systems, experts, and computers: the systems approach in management and engineering, World War II and after. Cambridge, MA: MIT; 2000, p. 411-431, 429; Rindzeviciute, Egle. The power of systems: how policy sciences opened up the Cold War world. Ithaca: Cornell University Press; 2016.

125. Brooks; McDonald, n. 124, p. 413-415.

126. Brooks; McDonald, n. 124, p. 41; Raiffa, Howard. The Founding of the Institute. URL: http://www.iiasa.ac.at/web/home/about/whatisiiasa/history/founding/the_founding_of_the_institute.html accessed 20 March 2014

127. Brooks; McDonald, n. 124, p. 418-420.

128. François, Charles, ed. International encyclopedia of systems and cybernetics, Part 1. München: K.G. Saur; 1997, p. 1757.

abstract, quantitative approach into an «operationally significant» form¹²⁹. Of particular importance was a project in Colombia, conceived as a 5-10 year programme that would «develop, test and propagate a comprehensive health planning system» making available «new mathematical, decision analysis and managerial techniques»¹³⁰. This was institutionally separate from the systems analysis project, though closely related in its attempt to derive a generally applicable planning model. It would ultimately be unsuccessful, but in the process it would provide important lessons about the realities of health planning.

It began in 1968, when Dr Gabriel Velásquez Palau, Dean of the Division of Health Services at the Universidad del Valle formally requested the assistance of RECS in establishing a new collaborative research programme in his region¹³¹. Valle, with its main city Cali, was considered of ideal size and structure for a pilot study¹³². The Colombian initiative also built on existing strengths, for its government had previously worked with PAHO and the US Milbank Memorial Fund on a national survey of health manpower and medical education, used subsequently in the reorganisation of Colombia's public health sector¹³³. In WHO's judgment though the connection between development and health planning was still only «a well accepted theoretical concept to which (...) lip-service has been paid»¹³⁴. Now the Colombian Comprehensive Health Planning Project (COLINPLAS), launched in July 1970, would develop a planning system for the region that could be scaled up to the entire nation¹³⁵.

129. WHO, n. 112, p. 4; Request for tapes for Colombian manpower study. 31 October 1968. WHO Archive N5/445/4, Jacket 1; Litsios, Socrates. General Introduction to the organization and strategy of health services research. 1970. WHO Archive RECS/OSHS/70.3; Brown, Gordon. Colombian Research Program in Health Planning (COLINPLAS). 11 March 1971. WHO Archive N5/445/4 Jacket 4.

130. Bennett, Stephen (RECS) to Weir, John (Medical Director, Rockefeller Foundation). 1 July 1969. WHO Archive N5/445/4 Jacket 1.

131. Palau, Gabriel Velasquez (Universidad del Valle) to Payne, Anthony (Assistant Director-General, WHO). 16 April 1968. WHO Archive N5/445/4 Jacket 1.

132. Brown, n. 129.

133. Badgley, Robin; Robertson, Alexander. Foreword. The Milbank Memorial Fund Quarterly. 1968; 46 (2): 11-15.

134. Mejia, A. Report on duty travel by Dr A Mejia, Community Health Services. October 1970. WHO Archive N5/445/4 Jacket 3, p. 3.

135. Palau, n. 131.

Thus conceived as a global laboratory, COLINPLAS mobilised an international research consortium, including experts from WHO, and PAHO, and academic consultants such as health system experts Kerr White and Vicente Navarro (Johns Hopkins), decision analyst and simulation modeller Richard Smallwood (Stanford), and the economist Dieter Zschock (Stony Brook). Grants to RECS were provided by the Milbank Memorial Fund, and to the Universidad del Valle by the Rockefeller Foundation. A related study of decision making in the Colombian Ministry of Public Health was led by Anthony Ugalde, a sociologist at the University of New Mexico. WHO played a central coordinating role, providing officials to the core planning team in Cali¹³⁶.

Before long, however, the challenges and «impossible expectations» of planning health in Colombia became apparent¹³⁷. The intricacy of the project, with its co-operative, multidisciplinary and multi-institutional character, introduced considerable administrative complexity and problems of communication. Organisation was sometimes poor and the number of consultants, while initially a boon, soon inundated the Cali field team¹³⁸. Tensions arose with competing planning projects in Colombia such as a PAHO/CENDES initiative in Antioquia, and existing national health planning in Bogotá, against which COLINPLAS was «inhibitory»¹³⁹. There was also considerable political instability, including a student occupation of the office where the project was based. This came to a head in the 1970 presidential election, unsuccessfully contested by the former dictator General Rojas Pinilla; significant unrest, and a threatened military coup, further destabilised the COLINPLAS programme¹⁴⁰.

Although no evaluation survives of the project's accomplishments in Valle, the documents reveal a larger disappointment. The aim of creating a generic systems analysis model that could be scaled up nationally was not met, and the accompanying commentaries suggest several reasons. For comprehensive health planning to work, close co-operation between relevant

136. Colombian members included Rodrigo Guerrero and Hipólito Pabón of the Universidad del Valle. Brown, n. 129.

137. White, Kerr. Report of trip to Cali. 4 September 1970. WHO Archive N5/445/4 Jacket 3.

138. Mejia, n. 134; Gross, P.F. to Bennett, S. (RECS). 13 August 1970. WHO Archive N5/445/4 Jacket 3.

139. Mejia, n. 134; Consultant report from Dieter Zschock, Stony Brook University, 2 December 1970. WHO Archive N5/445/4 Jacket 3.

140. Ugalde, Antonio [Anthony]. First and third reports of decision making project at the Ministry of Public Health of Colombia. February and April 1970. WHO Archive N5/445/4 Jacket 2.

state agencies was needed, but poor coordination between the Ministry of Health and Social Security Institute meant that budgeting practices were opaque. Matters were not helped by political upheaval following the 1970 presidential election, when the Minister of Health was replaced by a less sympathetic conservative. Ugalde's ethnography of the machinations of Colombian policy-making captured a prevailing mood of anxiety, reporting a strike of hospital residents and then the elections preoccupying health officials¹⁴¹. Here was the first close insight for WHO into «... planning health services in the 'real world' of people, patients, physicians, and politicians»¹⁴². Though generally pessimistic, Ugalde felt that the health demands of the Colombian public were articulated by its labour movement, free press, and political parties, and partially translated into policy by relatively conscientious decision-makers. But he concluded that there was a «vicious circle» of poor implementation at the centre, which in turn bred disillusion, and disinterest in data and evaluation¹⁴³.

So, to summarise, in the early 1970s, eclectic planning approaches were replaced by the aspiration to develop a single, multi-purpose «systems analysis» model that would be generally applicable. Though buoyed by new disciplines and techniques, there was considerable continuity with what had gone before. The language of systems also appealed because it was technocratic, allowing the planning process to be conceived in isolation from the politics of resourcing and implementation. The elaborate and impressive RECS initiative revealed what could happen to systems analysis in the real world. However elegant a national health plan might be, if it was to succeed a state needed effective, sustainable policy-making machinery.

5. Conclusion

This article has explored the early history of international engagement with health services (later «systems») strengthening. It adds to the critical historiography of the WHO, in which the initial emphasis on vertical

141. Ugalde, n. 140.

142. White, n. 137.

143. Ugalde, Antonio. Health decision making in developing nations: a comparative analysis of Colombia and Iran. *Social Science & Medicine*. 1978; 12: 1-7.

programmes over local capacity-building is well established. It argues that despite the political considerations that side-lined the European social medicine tradition, its ideals did survive in work on health planning. However, because conservative American sensibilities and those of the colonial powers found it contentious, discussion of social security, health rights and universal coverage were omitted from these first planning ventures. What remained was a consensual area of discourse, concerned initially with recommending Western models of organisation and administration, then increasingly focused on planning techniques as an aspect of statecraft. In the 1960s such practices were elaborated as an element of economic development plans, with refinement of methods for estimating population needs and gauging infrastructure and labour force requirements. However, these efforts were entangled with soft power objectives on the part of the West, and proved unsuccessful in the field, not least because they ignored issues of financing and capacity. Although the subsequent systems analysis approach had a distinctive theoretical foundation, and drew on new disciplinary expertise, it was rooted in these earlier planning efforts. Like them it provided a neutral, apolitical terrain in which health policy could be discussed, but it too foundered when trialled in real world settings for which its technocratic models could not account.

Yet, within these larger constraints, the WHO did sustain a community of experts who produced policies that went beyond the positions of the leading member states. The discourses of planning and systems analysis in which these were framed were dry and managerial, but they contributed to the course of international health policy-making in several ways. First, they established the principle that health improvement must be treated as a contributory element of development and not as one of its outcomes. Second, by their nature they argued that state agency mattered, and that governments had a duty of stewardship over their citizens' health services. Third, while they could not claim much success, in their failings they opened up questions that would be salient for the future: what forms of financing might practically be introduced?; how should demand be articulated by the community being served?; and how could member states establish effective health policy-making mechanisms?

In these ways, the early health planners in Geneva, along with their transnational network, contributed to practices of health system strengthening that would develop further in the later twentieth century. Going forward, our research aims to move beyond the narrow technocratic focus of this article,

which concentrates on ideas generated at the centre. In addition, we should consider not just the work of the WHO's regional offices, but also experience at national level, to gain greater insight into the gaps between the ideal and the reality of health planning on the ground¹⁴⁴. ■

144. Current research from our team examines the cases of Colombia, Nigeria, and Malaysia, see Health Systems in History: Ideas, Comparisons, Policies. c. 1890-2000. [cited 7 January 2018]. Available from <http://systemshistory.lshtm.ac.uk/>

