

International health work: the beginnings

Michael 2011;8: 210–221.

International cooperation in health began in the nineteenth century as a strategy to contain infectious diseases, notably cholera, while maintaining the benefits of increasing international movement of goods and people through trade and migration. A series of Sanitary Conferences addressed this problem and led to the establishment of several international health organizations. After World War I the League of Nations Health Organisation (LNHO) emerged as a particularly important institution with a profound impact on world concepts of health, health organizations and international cooperation.

The LNHO was active in various fields. Its work on biological standardization, malaria and housing are depicted as examples of its broad and evolving field of activity. Increasingly, the LNHO emphasized the social determinants of health. Its holistic understanding of health and its activist concept of an international health organization served as a model for the post-war World Health Organization.

The WHO constitution declares: “The objective of the World Health Organization ... shall be the attainment by all peoples of the highest possible level of health.”(1). This article rests on a series of assumptions: that an international health organization is in charge of improving health, as opposed to merely informing about it, that it addresses “peoples” rather than governments or scientific institutions and that it aims at “the highest possible” level of health instead of the same level of health for everyone. None of these decisions are self-evident or without alternative. The authors of the constitution were inspired by their predecessor institution, the League of Nations Health Organisation (LNHO).

International cooperation began in the nineteenth century as a way to reconcile the contradictory demands of, on the one hand, increasing international movements of goods and people through trade and migration and,

on the other, of a rising risk of infectious diseases, notably cholera, which ravaged Europe in several epidemic waves with terrifying ferocity(2).

Between 1851 and 1912 twelve Sanitary Conferences addressed quarantine regulation and similar measures in a series of sanitary conventions (3). Their object was not the well-being of individual citizens but the protection of state from external danger. Eventually, these irregular meetings inspired permanent agencies. The first was the International Sanitary Bureau, later renamed Pan American Sanitary Bureau established in 1902 (4). In Europe, an agreement “for the creation of an International Office of public Health” was signed in 1907, establishing the *Office International d’Hygiène Publique*. Unlike the Pan-American Sanitary Bureau, the *Office* should not actually act against disease or otherwise affect public health but merely distribute disease-related information. Meanwhile, the International Health Board (later Division) of the Rockefeller Foundation was developing into another formidable player in the field. By 1951, it was active in over eighty countries around the world. Until the establishment of the WHO, it was “arguably the world’s most important agency of public health work.”(5).

After World War I, the question of international health entered the international agenda during preparations of the League of Nations. Article 23 f committed member states to “endeavour to take steps in matters of international concern for the prevention and control of disease.”(6). Initially, this vaguely phrased sentence suggested an integration of the *Office International d’Hygiène Publique* into League structures, possibly after some modifications. However, neither France nor the USA was ready to place the *Office International d’Hygiène Publique* under League auspices, so that for the League of Nations to become active in health required creating a new institution. In a difficult process national officials at the League formed a Provisional (later Permanent) Health Committee consisting of twelve to twenty health experts from various member countries. Once or twice a year they discussed the agenda of the LNHO, deciding its work program and strategy. Their decisions were implemented by a small staff of League employees who formed the Health Section of the League Secretariat (7).

During the following years the LNHO adopted an ever-increasing number of topics with little systematic plan but largely as they were suggested by one of its members or – increasingly – by member governments. In hindsight, the various programs can be grouped into five fields:

1. The Permanent Programs: ongoing work that continued throughout the existence of the LNHO, most important biological standardization and epidemiological intelligence.

2. Efforts to assess world health through a variety of statistical publications, including statistical handbooks and the International Health Yearbook.
3. Programs to establish and maintain contact and communication between the public health community of different countries through meetings, study tours etc.
4. Individual diseases, addressed in specific commission.
5. Social medicine, the focus of LNHO activities in the 1930s.

A comprehensive description and analysis of all pertinent programs is beyond the scope of this paper, but some selected examples shall serve to illustrate the question.

Standardization

Standardization of sera was an urgent issue since sera, which were produced in living beings (typically mice) did not automatically have identical qualities. Thus, the anti-toxin content in sera varied considerably, which complicated both the calculation of therapeutic dosage and inter-laboratory communication. Before World War I Paul Ehrlich (1854 – 1915) had devised a solution which combined several interlocking components all requiring standardization: the preparation containing the active substance, the unit in which measurements would be expressed, and the method of assay (8). Obviously, this strategy worked only if the standard preparation retained its potency over time and was available to others for reference. In other words, the system needed a caretaker laboratory. Until 1914, Ehrlich's Frankfurt Institute, assumed this task (9). But this became impossible during World War I and several new units, assays and tests for diphtheria as well as for tetanus came into use leading to a confusing and potentially dangerous situation (10). In 1921, the LNHO rose to the occasion and addressed the need for internationally accepted standards

Getting experts from enemy sides of the recent war around one table was a bold endeavor. HC president Thorvald Madsen (1879 – 1957), head of the Danish State Serological Institute, who had excellent contacts colleagues both in Germany and on the allied side made it possible. In December 1921 participants of a remarkably international conference agreed to engage in cooperative standardization efforts and named Madsen's institute as future caretaker laboratory and initiated the creation of an LNHO Standardization Commission (11). During the following years, its work continued on an ever-growing series of preparations and assays, and every success increased the load of routine activities. The caretaker laboratories in Copenhagen and later London (for vitamins and hormones) sent samples

literally around the world into all continents (12). Though the work was not without tension and rivalry, the record is impressive. In 1937, the Standardization Commission proudly announced:

Between 1922 and 1935, this Commission has established international standards for eleven therapeutic sera, one bacterial extract, four vitamins, three sex hormones, five gland preparations and five other therapeutic agents. For all important therapeutic substances requiring biological assay, standards and international units may now be said to be available. The Commission's recommendations in regard to assays have been followed out in all large laboratories, a result that may be ascribed to the scientific standing of its members and of the many experts it has associated with its work. ...

By now ..., thirty-one countries have officially recognised and adopted the units and standards, advocated by the Health Organization. These comprise nineteen countries in Europe, seven in the American continent, one in Africa, and three in Asia and Australasia. Further, it has been possible, so far, to preserve the principle of free distribution (13).

Although this report clearly had some propaganda value, this should not obscure the immense value of the Commission for laboratory work everywhere. Offering standards not only for preparations and units but also for tests, basic laboratory practices (such as container labeling), public health diagnostics and blood groups, it also provided a background for more far-reaching international and inter-laboratory considerations of what constituted laboratory work. By making laboratory research and its application in the real world more reliable, more efficient and more comparable, the overall effect of the LNHO Standardization Commission on medical science and pharmaceutical production was no doubt profound.

Malaria

The Malaria Commission, formed in early 1924, became one of the most long-lived and active bodies, over time recruiting a large number of experts from numerous countries.

Initially, LNHO activities consisted mainly of numerous, extensive study tours by Commission members to malarious areas. These tours served as fact-finding missions and as meeting grounds for international experts, notably those affiliated with the LNHO and the Rockefeller Foundation. Between themselves, these organizations attracted a substantial part of the international community of malariologists, representing all shades of anti-malaria concepts. Although, there was no sharp dividing line the main LNHO approach veered towards a comprehensive, horizontal strategy, which emphasized therapy, while the preferred focus of the Rockefeller Foundation

was on vertical and laboratory-based strategies that emphasized anti-mosquito measures. Implicitly, these differences juxtaposed a European, mainly Italian, subdued approach against American confidence in technological progress (14).

These difficulties surfaced after a study tour in 1924 when Colonel S.P. James, officer at the British Ministry of Health and co-founder of the Malaria Commission, emphatically called for improved nutrition and housing and for the large-scale use of quinine. Thus enraging Lewis Hackett (1884 – 1962), a senior official of the Rockefeller Foundation, who followed a strictly anti-anopheles approach (15). A 100-page document, published by the Malaria Commission in July 1927, was meant as a compromise paper but was clearly closer to James's views. It portrayed malaria not primarily as a scientific question but as a condition embedded in complex local circumstances. Rather than making suggestions for strategies where money was no object it took a more pragmatic approach. Although recognizing that indeed, the complete disappearance of malaria was preferable, the text declared that in the real world for the vast majority of places a substantial reduction of malaria was all that could be hoped for and, given the financial constraints and additional health concerns, all that should be tried. Within these limitations the report insisted on the necessity for some care for malaria patients and recommended a list of further measures such as malaria instruction in medical training in Europe, educating housewives to kill mosquitoes while cleaning house and generally improving people's living conditions and education standards (16).

This clash has been interpreted as basic disagreements between the LNHO and the Rockefeller Foundation over malaria strategy. But the situation was more complex, since discussions really took place between different scientists within the Malaria Commission. Differences of concept and approach were in degree and emphasis more than in principle. Partly, they resulted from contradictory convictions in leading personalities of the Rockefeller Foundation and the Malaria Commission, but they also grew naturally from the different conditions in which both institutions acted. The LNHO coordinated and initiated research and formulated recommendations to governments and scientists. It had neither the means nor the mandate to conduct large-scale campaigns. Its skepticism about such campaigns was supposedly colored by its own inability to engage in them. And as the report showed, finances were a central factor in Commission considerations, and in this manner they may have been closer to the political reality of most affected countries: there was no alternative to trying to achieve the maximum effect with limited resources. In the Rockefeller Foundation, by contrast,



Meeting in the Comité permanent d'Hygiène (United Nations Office in Geneva, United Nations Library, League of Nations Archive. Photo col. com. 356).

abundant resources allowed a more science-driven approach. From the perspective of the Rockefeller Foundation, eradication was a natural goal, and anything less was, at best, a partial success and more likely a failure. Investing money in projects which at the outset already precluded full success did not make sense.

Meanwhile, in what may have been its most successful portion of malaria work, the LNHO engaged in teaching, after the Malaria Commission acknowledged a lack of qualified malariologists. Courses consisted of a first period of theoretical lectures and laboratory work and a second practical part of field work in a malarious region, usually anti-malaria stations in Italy, Spain or Yugoslavia. These classes were conducted by renowned experts and institutions including Arthur Balfour, Director of the London School of Hygiene and Tropical Medicine; Bernhard Nocht (1857 – 1945), Director of the *Hamburg Institute for Tropical Diseases*, and Emile Brumpt (1877 – 1951), Director of the Laboratory of Parasitology at the University of Paris, who founded an *École de Malariologie* for the purpose. In total, more than 250 people participated in these courses between 1926 and 1930 (17). Soon afterwards, Commission member, Mihai Ciuca (1883 – 1969), offered

the first course of malariology at the Hanoi Medical School, beginning the first lesson with in introduction of the LNHO Malaria Commission (18). Courses continued on a regular basis in Rome and Singapore (19).

During the following years the Commission tried to keep abreast of an increasingly complex program by co-opting new members and by specializing. In 1934, it split into several sub-groups, dealing, respectively, with clinical work, experimental malaria, epidemiology, and treatment and prevention (20). This measure helped the organization of activities but weakened the cohesion of the Commission. In 1937, counting roughly forty members, it had simply become too large for all members to meet. This made it increasingly difficult to claim that decisions taken by some members expressed the views of the entire Commission, particularly in instances of conflicting interpretations and convictions. Therefore, it was decided to reconstitute the Commission as a Reporting Committee of manageable size, taking care to give representation to the different schools of malariology. The health administrations of malarious countries were invited to nominate members to ensure permanent liaison with the new Commission and were encouraged to create national malaria commissions (21). However, by that time the focus of LNHO work and national attention had moved elsewhere and there appears to have been little response.

The overall record of LNHO malaria work is difficult to assess, profoundly ambivalent in its conceptualization of the disease. The various strands of its work, which should at some point have complemented one another to form a comprehensive strategy, were rather left in vague juxtaposition. On the positive side, this comprehensive view guaranteed that the LNHO never followed a simplistic, reductionist approach. Given more time and resources, the holistic perspective might have paid off. But by the late 1930s, time was running out.

Social medicine

The appreciation within the LNHO of the social context of health already showed in its malaria work during the 1920s. The economic crisis of the early 1930s strengthened this approach. The mass unemployment and misery naturally directed general attention towards the health consequences of living conditions. In addition, the depression drastically reduced the financial means of the LNHO forcing its members to focus scarce resources on fewer, more comprehensive issues and to encourage input from other institutions such as national commissions. In this context, several large-scale projects were launched: rural hygiene, studies on how to safeguard health in times of economic crisis, nutrition and on housing.

Housing

Despite the history of interest in housing since the days of rapid industrialization and urbanization in the nineteenth century, housing only entered the LNHO agenda in the early 1930s, first within discussion on rural hygiene and on the health implications of economic crisis. Eventually, in 1934, delegates from several countries called for LNHO studies on housing (22). After a period of data collection the HC formally adopted the topic into its work program and constituted a Housing Commission in October 1935 (23). The aim of studies was to define scientific standards and to suggest means of implementation. Coordinated and guided by the Section in Geneva most information should be provided by national commissions and their scientific networks, notably existing documentation and reports about pertinent experience, standards and methods in their specific countries. By 1936, there were national commissions in the United Kingdom, France, the Netherlands, Poland, Spain, Sweden, Czechoslovakia, Romania and the USA. In most cases, they were organized by people with close ties to the LNHO, usually HC members (24).

In stages the Commission addressed several issues related to housing. Early studies focused on warmth and noise. For both topics it proved difficult to find exact measurements of all relevant factors and to relate these to the actual well-being of inhabitants. A report, published in August 1937, tried to explain the complexities but also the importance of the issues. The principal function of housing, it stated, was to protect the inhabitants against the vicissitudes of the climate, notably cold and heat, and to allow them a sensation of comfort. Thermal well-being depended on a balanced interplay of the temperature, humidity and movement of the air, on the nature of the surrounding material such as the walls, the ground, the roof, windows, on the heating devices used and, finally, of the human body itself. Regarding noise, the report pointed out the recent dramatic increase in noise levels in most people's environments, which disturbed not only people's work but also impaired their health by preventing indispensable relaxation and sleep. A number of anti-noise measures were recommended, some of them applicable by individuals such as using ear-plugs or choosing noise-reducing carpets or curtains. Others required the initiative of public authorities or industry: offering or requiring the use of noise-absorbing materials, double windows, floors with no or elastic connections and the avoidance of metal continuity in water pipes.

The list of annoying noise is noteworthy: radio, elevators, running water and central heating (25). Given that houses and apartments were usually shared by numerous adults, children and – occasionally – animals, presum-

ably twenty-first century ears would have picked out different noises. But interwar hearing singled out noises which were new, the results of recent technological innovations, and which stood out from the customary acoustic spectrum. Inadvertently, Housing Commission members were part of a broad process of changing cultural constructions of some of the most basic sensual perceptions like hearing or the feeling of warmth or comfort.

In June 1938 an expert group met to discuss sunlight and indoor lighting (26). Once again, the issue was complex. What was sunlight after all? How could it be measured and what were its effects? A resulting report concluded that man experienced both direct and indirect sunlight and that it comprised both visible and invisible rays. It had a proven curative and preventive effect for several diseases in addition to positive psychological and apparently bactericidal effects. The optimal amount of sun for the human body was still unknown so that the best orientation at the moment was the subjective sensation of comfort and well-being. Given the prevalence of dark accommodation in terraced houses with few and small windows, it was important to provide urban populations with ample opportunities for outdoor activities.

The report on natural and artificial lighting considered light-related national standards, which, if they existed, differed widely. Even more than before authors insisted that all physical findings had to be considered in their real-world environment, since, as a Dutch researcher pointed out, people acted not according to scientific recommendation but to social customs and norms. Thus, calls for larger windows and brighter lighting were useless if people dimmed available light with curtains, plants or lampshades in order to safeguard privacy, to prevent fading of carpets and wallpapers or to keep out noise (27). Here, long-term improvements in spaced housing construction or sun-proof dyes might help.

This tendency to broaden the issue continued into 1939 during discussion of the environment of houses. The Commission flatly states that towns should provide comfort, protection from diseases, and the conditions for physical and psychological well-being. Therefore, town inhabitants had to be able to enjoy sun, light, clean air, a low noise-level and have access to recreational space. This, in turn, required intelligent town planning. Air pollution was harmed the respiratory system in known and suspected ways though the report remained conspicuously silent on recommendations for improvements. It merely listed measures taken in various places such as limiting the time allowed for industrial smoke emission or the quantity of dust it contained, installing modern furnaces with cleaner combustion, building higher chimneys or using suitable combustion material and adequate ventilation. Regarding water pollution the Commission emphasized

its increasing burden on drinking water through industrialization. However, the report felt confident that the combined expertise of hygienists, geologists, engineers and public health officers could find ways to ensure an adequate supply of clean water.

This 1939 report ended the work of the Housing Commission. Further plans for work on housing were prevented by the war, whose shadow clearly loomed large since the report warned of the danger of aerial bombings as a future concern of housing relevance (28). In some ways, the outcome of the housing project was disappointing. It produced neither general standards nor final conclusions, and the recommendations were sometimes contradictory. However, the sheer mobilization of national and international resources was impressive. In its insistence on the complexity and social comprehensiveness of the issue, the Housing Commission implicitly established healthful housing as a good which all people need and are entitled to. As such it helped prepare the way towards the upcoming discourse of health as a human right.

Conclusions

In a nutshell, one could sum up that the LNHO provided a vision of health as a holistic phenomenon from which no group could distance itself and for which national governments retained the ultimate responsibility. It established the concept of an international health organization as a body in charge of providing guidelines and standards in health-related matters on the basis of broad equality of people and nations.

Thus, the key function of the LNHO in twentieth century history may have been the introduction and consolidation of the idea that international health relies on international cooperation - for the benefit of mankind.

This paper is based on Borowy I. *Coming to Terms with World Health. The League of Nations Health Organisation*, Frankfurt/Main: Peter Lang, 2009.

Literature

1. Constitution of the World Health Organization, <http://www.who.int/library/collections/historical/en/index3.html>.
2. Howard-Jones N. *The scientific background of the International Sanitary Conferences 1851-1938*, Geneva: WHO, 1975.
3. Goodman N. *International Health Organizations and Their Work* Edinburgh / London: Churchill Livingstone, 1971, 46-71.
4. Cueto M. *The Value of Health. A History of the Pan American Health Organization* Washington: PAHO, 2007, 39-44.
5. Farley J. *To Cast Out Disease. A History of the International Health Division of the Rockefeller Foundation 1913-1951*, Oxford: Oxford UP, 2004.
6. The United Nations Library at Geneva, ed., *The League of Nations 1920-1946*, New York/Geneva: UNO, 1996, 166.
7. Borowy I. *Coming to Terms with World Health. The League of Nations Health Organisation*, Frankfurt/Main: Peter Lang, 2009: 57-71.
8. Gautier R. The Health Organisation and Biological Standardisation, "LNHO Bulletin henceforth: *Bulletin* IV: 3, 1935, 502.
9. Cockburn WC. "The international contribution to the standardization of biological substances. I.," *Biologicals*, Volume, 19: 3, 1991 162-163.
10. Mazumdar P. "The Silence of the Laboratory": The League of Nations standardizes Syphilis Tests," *Social History of Medicine*, 16: 3 2003, 437-459.
11. *Report on International Conference on the Standardisation of Sera and Serological Tests*, London Dec. 12 to 14, 1921, C.533.M.378.1921.III.
12. Annual Report for 1929, A.9.1930.III, July 1930, 28-30.
13. Report to the Council on the Work of the Twenty-fourth HC Session, Feb 1937, C.148.M.96.1937.III, 11-12.
14. Harrison G. *Mosquitoes, Malaria and Man* New York: E.P. Dutton, 1978, 121 – 190.
15. LNHO, Malaria Commission, *Report on its tour of investigation in certain European countries in 1924* C.H.273, 1924.
16. *Principles and Methods of Anti-Malarial Measures in Europe*, C.H./Malaria/73, July 1927, 9.
17. Annual Report for 1927, A.10.1928.III, for 1928 A.8.1929.III, and for 1930 A.7.1931. III.
18. *LNHO Report*, January 1931 to September 1932, A.28.1932.III, 12 Sept 1932, 24-26.
19. Report to the Council on the Work of the Twenty-fifth HC Session, C.219.M.159.1937. III, 1 May 1937, 5.
20. Rajchman, *Rapport sur les travaux de la Section d'Hygiène pendant le mois de Novembre 1934*, 5 Dec 1934, LONA, R6116/8A/15026/13812.
21. *Report to the Council on the Work of the Twenty-fourth HC Session*, C.148.M.96.1937. III, 4.
22. *L'hygiène de l'habitation*, LNHO Bulletin VI 1937, 543.
23. *Report to the Council on the Work of the Twenty-second HC Session*, C.426.M.218.1935. III, Oct 1935, 8.

24. Documentation in LONA, R 6122/8A/20823/20823.
25. *Procès-verbal. Reunion d'Experts pour la question de la lutte contre le bruit*, 28 June 1937, LONA, R 6125/8A/28261/20823.
26. "L'insolation et l'éclairage naturel et artificiel des point de vue de l'habitation et de l'urbanisme," *Bulletin VII* 1938, 628-656.
27. Zwikker C. *Lighting of Dwellings*, C.H./Com.Hab./47, 8 April 1938, LONA, R 6127/8A/31846/20823.
28. "Rapport de la Commission de l'Habitation sur les réunions tenues du 26 juin au 1er juillet 1939," *Bulletin VIII* 1939, 812.

Iris Borowy
Centre Alexandre Koyré / CNRS / Cermes3
7 rue Guy Môquet
94801 Villejuif Cedex
France
iaborowy@vjf.cnrs.fr