

# EPIDEMIOLOGY *and Health Care Reform*

## The National Health Survey of 1935-1936

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The National Health Survey undertaken in 1935 and 1936 was the largest morbidity survey until that time. It was also the first national survey to focus on chronic disease and disability. The decision to conduct a survey of this magnitude was part of the larger strategy to reform health care in the United States. The focus on morbidity allowed reformers to argue that the health status of Americans was poor, despite falling mortality rates that suggested the opposite. The focus on chronic disease morbidity proved to be an especially effective way of demonstrating the poor health of the population and the strong links between poverty and illness. The survey, undertaken by a small group of reform-minded epidemiologists led by Edgar Sydenstricker, was made possible by the close interaction during the Depression of agencies and actors in the public health and social welfare sectors, a collaboration which produced new ways of thinking about disease burdens. (*Am J Public Health*. 2011;101:438-447. doi:10.2105/AJPH.2010.196519)

### THESE DAYS, REFORMERS

seeking to show the deficiencies of American health care point to embarrassing international statistics indicating that the United States pays far more for health care than other nations and gets inferior results. Early in the 20th century, however, such statistics were harder to come by. The tradition of using mortality statistics to mobilize investment in public health is an old one. In the United States, the economist

Irving Fisher used them to great effect early in the century to launch a debate about ensuring national vitality, a debate that deeply influenced many of those participating in the events discussed here.<sup>1</sup> However, during the interwar years, mortality data were fiercely contested and constituted a double-edged sword for those seeking change. American health reformers used mortality statistics but also created new kinds of data and, in the process, took the field of epidemiology in innovative directions. I describe one particularly salient effort.

The National Health Survey (NHS) undertaken in 1935 and 1936 was technically not the first national morbidity survey undertaken in the United States. John Shaw Billings used the censuses of 1880 and 1890 to collect data about sickness incidence, but his controversial effort was largely unsuccessful because of the refusal of both doctors and laymen to convey private health information to canvassers.<sup>2</sup> In contrast, the well-financed NHS

received wide popular support and was organized with industrial efficiency.<sup>3</sup> About 2 800 000 people in 19 states were surveyed regarding illnesses suffered during the preceding year. The NHS may well have been the first morbidity survey carried out by welfare relief recipients. Around 6000 unemployed workers were paid by the Works Progress Administration (WPA) to conduct the survey at an initial cost of 3.5 million dollars.

Although the survey was not the first one to verify interviews by contacting doctors, it may have been the first to pay physicians for such work. Data from business and industrial health plans were also collected. This survey was certainly the first morbidity survey using a sizable public relations apparatus. Its planning was a public event in which cities lobbied actively to be included. National media announced the start of the survey, and a local media campaign was launched as soon as the survey hit a city. An analyst reported on media reactions.

Even before the survey was completed, results were leaked by influential public figures. The publicity barrage intensified after publication and set new standards of media attention. Not least, this survey was the first national survey designed, in the words of H.S. Cumming, the about-to-retire surgeon general, “to study the extent and nature of disability in the general population, with special reference to chronic disease and physical impairment.”<sup>4</sup>

Why was such an unprecedented study undertaken at this time? I suggest that it was part of the larger strategy to reform health care in the United States that had been going on since the 1920s. The answer to a second question—why a morbidity study?—has to do with the way mortality statistics could be interpreted and the need to counter that interpretation. A third question—why the focus on chronic disease and disability?—is the most difficult to answer. Although concern with the problem of chronic disease had intensified during the previous decade, this issue was not yet a major one for most health reformers, including those initiating the survey. This orientation gradually emerged because of the coming together during the Depression of reform-oriented figures in the public health and social welfare sectors. New ways of thinking epidemiologically about disease burdens grew out of this interaction.

## THE SURVEY AND ITS ORIGINS

The two men who initiated the survey, Edgar Sydenstricker and Isidore S. Falk, are familiar to historians of American health care reform. Sydenstricker was undoubtedly the leading

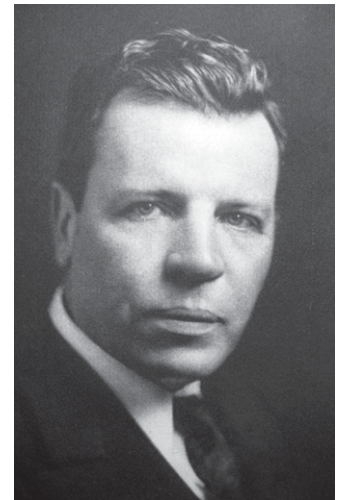
epidemiologist of his generation. A researcher for the US Public Health Service (USPHS) since 1915 (including a two-year leave to work for the League of Nations), he had participated in Joseph Goldberger’s famous pellagra investigations and gone on to pioneering work in the famous Hagerstown morbidity studies of the 1920s. In 1928, he became scientific director of the Milbank Memorial Fund while remaining a consultant to the USPHS. His work exemplified growing collaboration between private foundations and governmental agencies. Among his many activities was membership on the Committee on the Costs of Medical Care (CCMC), which began its work in 1927 with funding from eight private foundations. Charles Winslow of Yale, who was at the center of a group of progressive members of the commission that included Sydenstricker, arranged for Falk, a former student, to be appointed chief researcher for the committee.<sup>5</sup> Falk directed a morbidity study of nearly 9000 families. Enumerators visited families at two-month intervals over a full year and noted occurrence and duration of illness, as well as use and costs of medical services.<sup>6</sup>

Soon after the reports of the committee were completed, Sydenstricker and Falk began working on a book about health insurance systems.<sup>7</sup> The project was abandoned in June 1934, however, when both were named to the Council on Economic Security, which designed the Social Security Act of the following year. The committee took an expansive approach to its mandate to “provide at once security against several of the great disturbing factors in life”<sup>8</sup> and included a study of health insurance for which Sydenstricker served as director

and Falk as research associate. Sydenstricker’s brother-in-law, George St. John Perrott, a mining chemist who had lost his job during the Depression and gone to work for Sydenstricker, was listed as a consultant for this study. The committee as a whole included other individuals who would play a key role in the NHS. Harry Hopkins, responsible for New Deal Welfare policies, was among the five cabinet-level members who signed the letter submitting the committee’s report, and Josephine Roche, assistant secretary of the treasury in charge of public health, was a member of the technical board. Michael Davis, another veteran of the CCMC, was on the hospital advisory board.<sup>9</sup> Sydenstricker and Falk wrote a report calling for provision of a health program, including health insurance. This proposal was not included in the committee’s final report to the president.

Despite this setback, health care reform remained very much alive. In 1936, Sydenstricker and Falk collaborated on another governmental commission, the Interdepartmental Committee to Coordinate Health and Welfare, which brought together leading figures from the public health and welfare domains. The overextended Sydenstricker turned down an offer to become executive director and died later that year. A technical committee was formed in 1937 and included Martha Eliot of the Children’s Bureau; Falk, then working for the Social Security Board; and St. John Perrott, Joseph Mountin, and Clifford E. Waller from the USPHS. This committee produced the National Health Program, which served as the basis of a National Health Conference held in 1938.

Even before the formation of the Interdepartmental Committee,



**Edgar Sydenstricker.**

Source. Sterling Library. Yale University.

the federal government announced a new program of job creation, the WPA. Sydenstricker and Falk quickly submitted a proposal for a national health survey carried out by WPA workers. Falk later claimed that he had played a key role in convincing the New Deal's dominant figure on welfare matters, Harry Hopkins—who supervised the Federal Emergency Relief Administration, the Civil Works Administration, as well as the WPA—that such a survey would be a good investment.<sup>10</sup> Although the claim is not implausible, it is worth

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noting that Hopkins had a long career in medical and welfare administration in New York City before joining the New Deal and was deeply concerned with health issues; by 1936, he had successfully committed about \$29 million of WPA money for 650 studies in a wide variety of domains.<sup>11</sup>

It is clear, however, that Falk played a key role in developing the survey. Sydenstricker produced a first draft<sup>12</sup> and Falk produced another more elaborate draft after consultation with Michael Davis and Mountin.<sup>13</sup> Although the organization of the survey fell to others, Falk produced a number of preliminary tables of results and presented a plan of analysis.<sup>14</sup> Perrott had no doubt that Falk viewed the survey as part of his wider strategy to promote national health

insurance.<sup>15</sup> Falk suggested that he stepped out of the picture because he or others believed that his active participation would provoke the opposition of the American Medical Association, for whose leaders he embodied socialized medicine. But there may also have been some turf warfare over control of the survey between the USPHS and the Social Security Board for which Falk now worked.<sup>16</sup> The former prevailed, and management of the survey fell to Perrott and Selwyn Collins, both young veterans of Sydenstricker's earlier Depression studies. The original plan for a National Health Inventory was extremely ambitious:

First, a house-to-house canvass in ninety-five communities, located in nineteen states, representing the various geographic divisions of the country; second, an inventory of public health and medical facilities throughout the nation; third, a study of morbidity and mortality according to occupation based upon the records of sick-benefit associations in industry; and fourth, communication with every physician attending a case of illness reported in the house-to-house canvass for the purpose of obtaining his technical knowledge of the nature of the disabling illness.<sup>17</sup>

Although a great deal of data was collected, much remained unanalyzed by the time the study was shut down in 1941. It was the first of the tasks in the preceding quotation, the morbidity study, that became the core of the NHS's contribution to US health policy.

Although there was no official link between the NHS and the Interdepartmental Committee, there were many personal ones, including Roche's overall leadership of both and Perrott's move from the NHS to the committee in 1937, where he helped write

the National Health Program and organized the National Health Conference. The results of the NHS served the needs of this reform-oriented committee, whose argument for health insurance and health reform generally was based on three practical arguments: (1) the health situation of Americans was very bad in the wake of the Depression, (2) the poor suffered disproportionately from illness, and (3) the poor had much less access to health care than did the more affluent. As a consequence of inadequate health care, more people than necessary were sicker longer than necessary at enormous social and economic cost.

The problem with this set of arguments was that mortality rates had been falling for decades and continued to fall during the Depression. This decline suggested to some that no health crisis existed.<sup>18</sup> To counteract this perception, reformers had to demonstrate that (1) national health status could be best understood through morbidity rather than mortality rates, (2) morbidity surveys presented a somber national health picture, and (3) morbidity surveys demonstrated that the poor, lacking adequate health care, also suffered disproportionately from illnesses that could be cured or mitigated. With this set of suppositions, a moral, economic, and medical argument for health reform could be made, including some form of insurance or public health care for the less affluent. But morbidity studies entailed their own problems. Opponents could argue that many of the illnesses reported were trivial. More important, such surveys provided only weak evidence for the link between

poverty and illness. The work of Sydenstricker and his associates, supplemented by unemployment and welfare surveys occurring simultaneously, overcame these problems by gradually focusing on chronic illnesses and longer-term disabilities.

### MORBIDITY STUDIES BEFORE THE NATIONAL HEALTH SURVEY

Sydenstricker was throughout his career concerned with morbidity, which he considered more indicative of health status and medical need than mortality. He experimented with different kinds of data: industrial disability data, the results of insurance medical examinations, and, especially, information collected during the morbidity surveys for which he became famous. His overriding interest was not in kinds of diseases but rather in distinguishing illness incidence among various groups by age, sex, ethnicity, and, increasingly, occupation and income. The most significant finding of his and other morbidity studies was that morbidity patterns differed from mortality patterns. In the latter case, “general diseases” like cancer and cardiovascular disease were taking a leading role, whereas respiratory and infectious diseases predominated in the former.<sup>19</sup> This distinction likely explains why he was not among those who warned about a “chronic disease” problem in the 1920s and early 1930s. The implications of his findings would be spelled out during the Depression; despite falling mortality rates, illness was far more widespread than generally believed.

Sydenstricker was equally convinced that disease was closely

correlated with poverty. He could draw on numerous mortality studies demonstrating this point.<sup>20</sup> But mortality rates were a double-edged sword that also suggested that things were improving. It was harder to make this link through morbidity studies. Sydenstricker could point to a number of industrial disability studies, as well as his own early work among South Carolina cotton-mill workers, that supported a link between disease and poverty.<sup>21</sup> The poverty–morbidity link in his Hagerstown studies, however, was not strong:

These differences are not of the same magnitude as those found previously for infant mortality, tuberculosis, or pellagra, for example. . . . A somewhat detailed analysis of the data, however, revealed the facts that the association of illness with poor economic status 1) appeared for certain causes only, and 2) was indicated in adult life and not in childhood or adolescence.<sup>22</sup>

On several occasions, Sydenstricker speculated on the reasons for the apparent weakness of this link,<sup>23</sup> but he never doubted that his data seriously underestimated this correlation and that poverty strongly affected health by shaping direct causal factors such as nutrition, sanitary conditions, and overcrowding. He would spend much of the first half of the 1930s trying to strengthen the case for the relationship between poverty and disease.

The Report by the Committee for the Costs of Medical Care convincingly demonstrated that great differences in unmet need for medical care were linked to economic status.<sup>24</sup> Much to everyone’s surprise, however, the report suggested that the more affluent suffered slightly more illness than did the poor. Neither the authors of the study nor

Sydenstricker believed these results. They explained them away by suggesting that investigators tended to subconsciously record as illnesses those conditions that entailed medical costs and ignored those that did not.<sup>25</sup> Several years later, Sydenstricker’s collaborator Collins reanalyzed the CCMC data without mentioning its findings about the link between economic status and morbidity rates.<sup>26</sup>

Most of the data for the CCMC studies were collected in 1926. The Depression created new needs and opportunities for morbidity studies. In 1933, Sydenstricker began directing a survey on behalf of the Milbank Fund and the USPHS that was connected to an international study by the League of Nations. This consisted of a sickness and mortality survey that canvassed about 12 000 wage-earning families in 10 localities, including eight large cities, a group of coal-mining communities in West Virginia, and a group of cotton-mill villages in South Carolina. The families were not meant to be representative; mainly poor districts (although not slums) were canvassed, because the goal was to gauge the effect of the Depression on families that had been self-supporting before the downturn. Wealthy neighborhoods were excluded on the assumption that living standards of inhabitants had not dropped enough to affect health. “Colored” neighborhoods were not canvassed to avoid the effect of race.<sup>27</sup>

The survey had an explicitly political rationale. Death rates and reports of communicable disease had not, it was admitted, risen during the worst years of the Depression. According to Perrott and Collins, “The comfortable conclusion is drawn by



**From left to right: Assistant Surgeon General Lewis Thompson, Selwyn Collins, Josephine Roche and George St. John Perrott examining survey data.**

Source. National Library of Medicine.

many that the physical well-being of the American people not only has not suffered but, in view of the continued low death rate, may have been benefited by the economic catastrophe. Such a conclusion, based upon mortality statistics alone, is open to question.<sup>28</sup> Morbidity studies, it was claimed, constituted a more reliable indicator of health status and medical need. Perrott and Collins reported that with the exception of only a few localities,

the disabling illness rate of families having no employed workers is consistently higher in each city than that of families having part-time or full-time workers. Inasmuch as most of the families having no employed workers in 1932 had one or more employed workers in 1929, these data are striking evidence of the association between a relatively high rate of disabling illness and loss of employment during the depression, with accompanying loss of income and reduced standard of living.<sup>29</sup>

The preceding analysis was based on “disabling” illnesses, conditions that prevented people from working or otherwise functioning normally for some period<sup>30</sup>; this choice emphasized more serious conditions and may also have been an attempt to avoid repeating the results of the CCMC survey, which were based on all reported illness. The rate of disabling disease among families classified as poor was 23% higher by per capita income and 30% higher by total family income than it was in the grouping classified as comfortable. Illnesses considered largely chronic that began prior to the Depression showed even higher rates of excess among the poor than among the comfortable—50% by per capita income and 80% by total family income. This fact, which might have directed attention to the chronically ill, was largely ignored;

what was emphasized instead was that families on public or private relief experienced more illness than any other group. And within this welfare population, the highest rates were among wage earners in 1929 that only later went on relief.<sup>31</sup> This finding suggested to the authors “that the highest illness rates were observed among those who had suffered the greatest change in standard of living.”<sup>32</sup> Aside from showing that the poor, who had the greatest need for health care, had the least access to it, the overrepresentation of the relief population among the ill suggested that it might make good economic sense to increase the availability of medical care and even to find ways to raise living standards to more healthful levels to reduce welfare spending.

In September 1935, Roche made direct political use of this survey. In a *New York Times* article, she insisted that declining mortality rates were very poor indicators of the nation’s physical condition and that illness rates were a far better gauge. These rates demonstrated that the Depression had a serious effect on the “rate of acute and chronic diseases and serious physical impairments among families on relief rolls.” She specifically cited Sydenstricker’s study as having found “distressing conditions.”<sup>33</sup> After presenting a few statistics and emphasizing that sickness among the “new poor” was most prevalent, she concluded in language that Irving Fisher had popularized: “Obviously facts such as these reveal not only conditions of human suffering and wretchedness but economic waste, and challenge us to a swift-moving program of conservation of one of our

most valued national resources—the health and vitality of our people.”<sup>34</sup>

Chronic diseases played almost no role in these studies. This fact is surprising because chronic illness during these years became increasingly framed as a major health and welfare problem in the works of Ernst Boas and George Bigelow (on behalf of the Massachusetts Department of Health)<sup>35</sup> as well as numerous lesser-known figures. Concern with cancer in particular was spawning an impressive institutional apparatus and considerable public support, which was translated into political pressure to create special hospitals and research institutions. Much of this interest was based on mortality statistics that showed rising mortality for cancers, cardiovascular diseases, and other chronic conditions. The data were highly controversial, however, because of radical changes in disease categories, diagnostic procedures, recourse to the health care system, and the way death certificates were filled out. None of the principals involved in the survey had devoted much time to chronic disease or invalidity. Sydenstricker mentioned it only in passing in his wide-ranging book of 1933, *Health and Environment*. The only discussion of it in the unpublished report for the Committee on Economic Security was a paragraph in the conclusion noting that little was known about the incidence of permanent disability and recommending “that provision should be made for the further study of the occurrence of permanent disability and of measures to furnish protection against this risk.”<sup>36</sup>

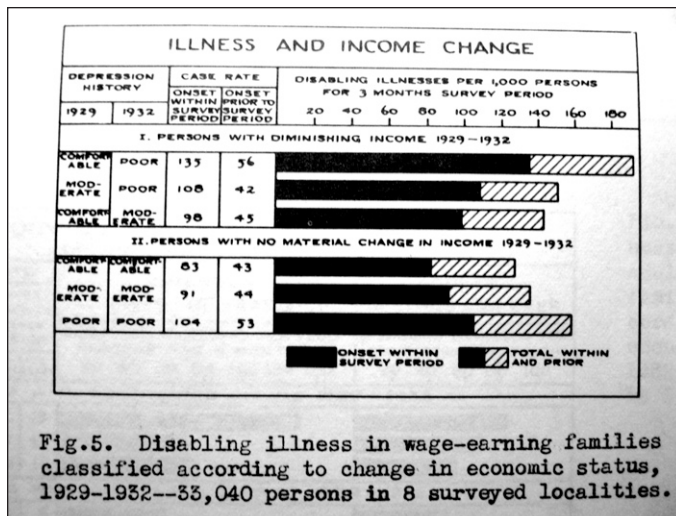
The emergence of chronic disease as a social problem had several sources. Two are central to

this discussion. The first was the movement to expand the scope of public health—beyond infectious diseases to include degenerative diseases and mental health, and beyond prevention to include diagnostic and curative services. In the latter case, there was some ambiguity about whether public health agencies should provide such services or coordinate the work of private practitioners, but the principle of public leadership was clear. Charles E. Winslow of Yale University was the leading spokesman for this position.<sup>37</sup> Some successes were achieved during the 1920s, notably the creation in 1926 of a state cancer hospital managed by the Massachusetts Department of Health and the endorsement the following year by the American Public Health Association of public action for the diagnosis and care of cancer.<sup>38</sup> But it remained a minority opinion until the Depression and New Deal made it the official position of the national public health leadership.

The second source involved the recognition by numerous local welfare agencies from the early 1920s that a large proportion of the indigent welfare population was in fact sick, infirm, or disabled and that little was being done to cure or rehabilitate them, which would have allowed at least some of them to work and get off the welfare rolls. Studies documenting this situation were produced in cities like Philadelphia, Boston, and New York as well as the state of New Jersey.<sup>39</sup> Characteristically, they quantified cases of chronic morbidity and disability within local welfare populations and found them to be high. Ernst Boas’s numerous articles and his 1929 book were influential in suggesting strategies

to deal with this problem, and they had a major impact on hospital policy in New York City. As a result of the New Deal’s efforts to cope with the Depression, the issue of welfare chronicity moved beyond such local arenas and took on national dimensions. By the mid-1930s, welfare surveys merged with morbidity surveys to generate new sorts of questions.

While Sydenstricker’s group was doing its Depression study, national welfare institutions were collecting data for their own purposes, and these were available to Sydenstricker’s team at the USPHS. In 1936, Perrott and H. C. Griffin published an article based on a survey undertaken in 1934 by the Federal Emergency Relief Administration—also under the authority of Hopkins—of the occupational characteristics of more than 165 000 relief families in 79 cities. This study was in some ways similar to earlier local welfare surveys but done on an immeasurably greater scale. This survey defined serious disability as “physical or mental handicaps of a serious and permanent nature that impeded ability to work.”<sup>40</sup> These disabilities could include conditions like infantile paralysis, loss of limb, mental defect or nervous condition, or diseases like tuberculosis, heart disease, or epilepsy. Twenty-one percent of those older than 16 years reported some handicap, similar to results of a separate study based on medical examinations in Chicago.<sup>41</sup> Most serious by far were orthopedic problems (37%), followed by heart and circulatory issues (33.2%), rheumatism (20.2%), and senility (20.9%). Here was an old welfare concern—chronic disease and disabilities among the relief population—now recorded by a



Original table maquette from Depression Survey, 1934-1935, reproduced in several articles.

Source. Sterling Library, Yale University.

national welfare agency and analyzed by public health experts in morbidity studies.

Sydenstricker reacted immediately to this report by changing gears. That same year, he published an article based largely on a section of the surgeon general's annual report that had been written by Selwyn Collins. Sydenstricker's paper brought to the fore what had been a minor point in the 1935 paper by Perrott and Collins: the relief population not only suffered from higher rates of illness, it also "contains a disproportionately large number of persons who have chronic diseases or physical defects or who are susceptible to frequent attacks of acute illness."<sup>42</sup> He then went on to cite the data on physical impairment revealed by the Federal Emergency Relief Administration survey:

These data indicated that (a) a much higher proportion of persons on relief had serious physical defects or chronic diseases than those of the same occupational class who were not on relief; (b) in both the relief and nonrelief populations the proportion with impairments and

diseases increases regularly from the lowest rate in professional, proprietary, and clerical classes to the highest among unskilled laborers;<sup>43</sup>

Point A reinforced the link between disability and chronic disease on one hand and welfare spending on the other. Point B introduced a relatively new notion: chronic diseases were not just linked to welfare; like diseases in general, they were far more prevalent among the poor than among the comfortable, with increases directly proportional to income levels.

In an article published that same year, Perrott made another intellectual leap by introducing "days of disability."<sup>44</sup> Determining the number of days of disabling illness in surveys was hardly new. Studies of industrial disability usually included such information. Sydenstricker himself, a labor economist by training, used such data in his early studies with Goldberger on South Carolina cotton-mill workers. In fact, the working definition of illness for these studies was inability to work. Such data, moreover, were used to confirm the link between poverty and illness.<sup>45</sup> In his Hagerstown studies, however, Sydenstricker chose another measure of illness: "The measure of the incidence of any specific disease was the extent to which it manifested itself in visible illness."<sup>46</sup> This measure presumably did away with the ambiguity involved in interpreting why someone stayed away from work, and it was applicable to nonindustrial populations. Still, information about the duration of disease was collected, and it was specified that 60% of the illnesses recorded lasted eight days or longer. Sydenstricker promised in a footnote that a future article

would thoroughly analyze duration.<sup>47</sup> Somewhat inexplicably, no article on this subject ever appeared, and neither the Hagerstown study nor his later Depression studies dealt with disease duration. One might plausibly surmise that such information was not considered reliable in retrospective accounts to surveyors.<sup>48</sup>

The CCMC survey also collected such data, which the report's authors did not bother to discuss. In his 1936 article, however, Perrott reanalyzed the old CCMC morbidity data. Viewed by annual case rates, respiratory diseases including tuberculosis predominated, with degenerative diseases being not very significant. But when Perrott measured sickness disability "expressed in terms of total duration, time lost through disabling illness and days of confinement in bed,"<sup>49</sup> everything changed. Chronic disease was transformed into a central cause of morbidity as well as mortality:

The average total duration, the average amount of disability, and the bed days per case for this group, represented by the degenerative diseases, rheumatism, and nervous conditions, are of a definitely higher order of magnitude than those for the typically acute illnesses caused by the minor respiratory and communicable disease. . . . A study of the relative severity of the various disease groups in terms of duration thus introduces a new basis for their evaluation. . . . [I]llness due to chronic disease, although relatively low in incidence, becomes of major importance when the severity of the average case is considered.<sup>50</sup>

Perrott closed the circle by returning to the question of illness and economic status. Although frequency of illness in the CCMC study was more or less the same or slightly greater

for the well-off than for the poor, things looked very different if one focused on duration of disability. This study showed, according to Perrott, that the poor suffered far more days of disability than the rich. Those earning under \$1200 annually had more than twice the disability days of those earning \$3000 or more.<sup>51</sup> All the pieces were now in place. By quantifying chronic diseases and disabilities as days of disability, one could demonstrate how pervasive these were, and how much more the poor, with less access to health care, suffered from disease. Elementary social justice and economic interest would dictate a reform of health care to correct this situation. In this way, chronic disease and disability became the focus of the NHS.

### A SURVEY OF CHRONIC DISEASE AND DISABILITY

Although it was shut down before most of its data were analyzed, the NHS produced an enormous amount of information. In the 20 years that followed, more than 200 reports, articles, and comparative studies based on this survey were published.<sup>52</sup> The immediate impact of the study, however, and the one reported on most widely focused on the morbidity situation in the United States, which was purportedly serious enough to demand major reform of the health care system. Well before its completion, Roche described its conclusions and consequences:

The survey provides national recognition of the fact that the health service of the future will probably be expanded to cover other fields than control and prevention of the communicable diseases. With the cooperation of the medical profession, the control, prevention, and cure of

all the ills of the flesh must be the ultimate goal of the health department. . . . It is becoming widely recognized that physicians and hospitals cannot be expected to render service to the indigent without remuneration and that there must be public responsibility for the medical care of these unfortunates who otherwise must depend upon the charity of physicians.<sup>53</sup>

And the point was indeed demonstrated—with the help, it must be said, of some sleight of hand. The phenomenon measured by the survey was

Disabling illness which had kept persons away from work for seven consecutive days or longer during the 12 months preceding the day of the canvass; and other handicapping disease or condition including orthopedic impairment, blindness and deafness.<sup>54</sup>

Through use of such broad and largely unprecedented criteria, it was not hard to provide devastating statistics regarding the health status of the nation. *The New York Times* blared on its front page that six million people daily were incapacitated in the United States. The survey's Preliminary Report framed it differently:

[I]t is estimated that 23,000,000 persons, or more than one person in six in the United States have some chronic disease, orthopedic impairment or serious defect of hearing or vision. By reason of these disorders almost a billion days annually are lost from work or other usual pursuits and a minimum of 1,500,000 persons are disabled for such long periods of time (12 months or more) that they can be considered permanent invalids.<sup>55</sup>

A closer look at the reports makes it clear that true prolonged illness was defined as three months or more of disability and that only about 45% of those

classified as ill in the study actually suffered from chronic disease or disability. The one-in-six figure nonetheless stuck and would be cited for the next 20 years as the incidence rate of chronic disease and disability. It would remain a key argument in favor of some form of health reform, although the precise nature of that reform would remain contentious.

### CONCLUSIONS

The original NHS, conducted in the winter of 1935 and 1936, may well have been the last large-scale publicly financed epidemiological survey in the United States originated and organized to support radical health care reform. Its successor, the permanent NHS established in 1956, was something very different. In the view of one of its architects, none other than St. John Perrott, the Republican administration needed a health bill to satisfy public opinion. The least controversial option, and the one least likely to lead to “socialized medicine,” was the creation of a permanent data-gathering agency<sup>56</sup> that would be innocuous enough to gain bipartisan support and, although hardly reactionary, would primarily serve to produce information useful to health policy planners of all political stripes.<sup>57</sup>

Nonetheless, the first NHS had major long-term consequences. On the technical level, the combination of public health morbidity and welfare disability studies introduced—or more correctly, reintroduced—a powerful new tool, “days of disability,” that quantified and standardized the amorphous notion of serious disease. This tool was flexible as well. Depending on context and motivation, one could define serious disease as seven days, three

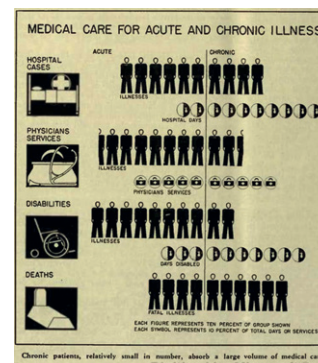


Illustration in M. Ross. *How Healthy Are We? 1937*.

Source. Survey Graphics. Internet Archive: Digital Library. Available at: <http://www.archive.org/stream/surveygraphic26survrich/page/372/mode/2up>. Accessed January 4, 2011.



months, or a year of disability. It also had consequences for the field of epidemiology. Although it is difficult to demonstrate causality, the first NHS—along with the next major survey, the East Baltimore Longitudinal Study, which was organized before World War II by the USPHS and the Milbank Memorial Fund and was specifically devoted to chronic disease<sup>58</sup>—likely played a significant role in US epidemiology's postwar turn to chronic disease, an orientation that has been only slightly modified by AIDS and severe acute respiratory syndrome (SARS).

The survey also had major political implications. It became the main data source on which the government framed its health proposals.<sup>59</sup> Fox has argued that NHS data played a key role in policies to plan and construct hospitals, fund biomedical research, and expand education for the health professions.<sup>60</sup> The result most emphasized initially was that low-income groups suffer disproportionately from diseases and disabilities and are least able to afford health care. This outcome supported arguments for some form of public health care for the poor, arguments that led eventually to Medicaid. In the longer term, the survey established in the public consciousness that chronic disease was a major public health problem. A section of the National Health Program of 1938, written by the ubiquitous Perrott, was devoted to the subject. In 1940, the American Hospital Association and the American Public Welfare Association published a statement about the need to improve institutional care for the chronically ill.<sup>61</sup> This document was only the beginning. Interest in and anxiety

about the problem of “chronic disease” would expand exponentially after World War II, turning chronic disease into a major health policy issue, buttressed by the now-dated statistics of the NHS.

In recent years, chronic disease has continued to be near the center of health policy discussions—overshadowed by the more urgent, ongoing, and controversial health insurance debate but never far from the surface. During the last presidential election, a pressure group was formed to push presidential candidates to develop policies for dealing with chronic diseases,<sup>62</sup> and now-President Barack Obama mentioned it in one of the televised debates. Our current and by now long-standing anxiety about the effects of chronic disease is perhaps the most enduring legacy of the NHS. ■

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This article was accepted May 26, 2010.

#### Acknowledgments

Research for this article was made possible by the Social Sciences and Research Council of Canada (grant 410-2008-0619).

I am grateful to the archival staff of the National Library of Medicine, National Archives, and Sterling Library of Yale University for invaluable help in tracking down sources.

#### Endnotes

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