

One and a Half Centuries of Forgetting and Rediscovering: Virchow's Lasting Contributions to Social Medicine

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Since Rudolf Virchow's classical work in social medicine appeared during the mid-nineteenth century, succeeding generations have largely forgotten its message and only later have rediscovered the conditions of society that generate illness and mortality. Now, when disease-producing features of the workplace and environment threaten the survival of humanity and other life forms, it is not surprising that such problems would receive attention. Current work on the social determinants of health outcomes, however, rarely traces its earlier intellectual history. Instead, this work tends to spring forth as new discoveries, as though prior generations had not made similar observations and had not reached similar conclusions about the social causation of illness and death.

Virchow's contributions to social medicine, as well as his life as a political activist trying to change the illness-generating conditions of society, remain vital, even as we confront the increasingly grotesque problems engendered by such problems as global warming, toxic wastes, occupational and environmental carcinogens, and

commercialization of water supplies. His vision of the largely social origins of illness deserves more than the obscurity into which much of his work has fallen. In this brief preface to Virchow's report on the Silesian typhus epidemic, which he published during the intense revolutionary struggles of 1848 in Europe, I try to put his report in the context of Virchow's life and social conditions. I also describe some of Virchow's later impacts on such fields as Latin American social medicine.^{1,2}

The development of Virchow's ideas and activism

Virchow's life spanned 80 years of nineteenth-century history, more than 2,000 publications, numerous contributions in medical science and anthropology, and activity as an elected member of the German parliament. His best known work is *Cellular Pathology*³, which presented the first comprehensive exposition of the theory of the cell as the basic unit of pathologic processes. Throughout his career, however, he tried to develop a unified explanation of the physical and social forces that cause disease and human suffering.

After a lengthy critique of the defects of detached science pursued "for its own sake," Virchow concluded: "It certainly does not detract from the dignity of science to come down off its pedestal - and from the people science gains new strength."⁴ From this perspective emerged Virchow's frequent assertion that the most

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successful science drew its problems largely from concrete social concerns. Science and scientific medicine, according to Virchow, should not be detached from sociopolitical reality. On the contrary, he argued, the scientist must seek to link the findings of research to political work suggested by that research.

Hegel was the main source of Virchow's dialectic approach to both biologic and social problems. On the biologic level, Virchow perceived natural processes as a series of antitheses, such as the humoral-solidistic or vitalistic-mechanistic dualities, that were resolved by syntheses such as cellular pathology. On the social level, Virchow also viewed historical processes dialectically. For example, in 1847, he anticipated the revolutions of 1848 by claiming that the apparent social tranquility would be "negated" through social conflict in order to reach a higher synthesis.⁵ Virchow used a similar dialectic analysis in tracing the process of scientific knowledge.⁴

While influenced by Hegel, Virchow rejected Hegelian idealism. Virchow argued for a new "materialism" in medicine that would replace dogma and spiritualism.⁶ In his attempts to construct a dialectic materialist approach in biology, Virchow cited with approval Engels' approach in *The Condition of the Working Class in England*⁷ and used some of Engels' data to demonstrate the relationships between poverty and illness.⁸ During his early years, Virchow was influenced to perhaps an even greater degree by Arnold Ruge, who with Marx edited *The German-French Yearbooks (Die Deutsch-Französischen Jahrbücher)*. Virchow referred frequently to Ruge's writings and speeches, especially those on the ambiguities of political authority and on the need to discover "natural laws" of human society.⁶

The Silesian typhus epidemic and similar socially determined health catastrophes

Virchow manifested these orientations - of applied science, dialectics and materialism - in his analyses of specific illnesses. He emphasized the concrete historical and material circumstances in which disease appeared, the contradictory social

forces that impeded prevention and the role of researchers in advocating reform. In the analysis of multifactorial etiology, Virchow claimed that the most important causative factors were material conditions of people's everyday lives. This view implied that an effective health-care system could not limit itself to treating the pathophysiological disturbances of individual patients.

In his classical work of what might be called epidemiological pathology, Virchow developed a theory of epidemics that emphasized the social circumstances permitting spread of illness. Virchow began his work on epidemics with his ground-breaking study of the typhus epidemic in Upper Silesia, reproduced in this journal. He also applied similar perspectives to a cholera epidemic in Berlin and an outbreak of tuberculosis in Berlin during 1848 and 1849.

For this research, Virchow argued that defects of society formed a necessary condition for the emergence of epidemics. Virchow classified certain disease entities as "crowd diseases" or "artificial diseases"; these included typhus, scurvy, tuberculosis, leprosy, cholera, relapsing fever and some mental disorders. According to this analysis, inadequate social conditions increased the population's susceptibility to climate, infectious agents and other specific causal factors - none of which alone was sufficient to produce an epidemic. For the prevention and eradication of epidemics, social change was as important as medical intervention, if not more so: "The improvement of medicine would eventually prolong human life, but improvement of social conditions could achieve this result even more rapidly and successfully."⁸ Health workers deluded themselves to think that effects within the medical sphere alone would ameliorate these problems. The advocacy of social solutions thus became the necessary complement of clinical work.

The social contradictions that Virchow emphasized most strongly were those of class structure. For example, he noted that morbidity and mortality rates, and especially infant mortality rates, were much higher in working-class districts of cities than in wealthier areas. As documentation he used the statistics that Engels cited⁷ as well as

data he gathered for German cities. Describing inadequate housing, nutrition and clothing, Virchow criticized the apathy of government officials for ignoring these root causes of illness. Virchow expressed his outrage about class conditions most forcefully in his discussion of epidemics like the cholera outbreak in Berlin:

Is it not clear that our struggle is a social one, that our job is not to write instructions to upset the consumers of melons and salmon, of cakes and ice cream, in short, the comfortable bourgeoisie, but is to create institutions to protect the poor, who have no soft bread, no good meat, no warm clothing, and no bed, and who through their work cannot subsist on rice soup and camomile tea... ? May the rich remember during the winter, when they sit in front of their hot stoves and give Christmas apples to their little ones, that the ship hands who brought the coal and the apples died from cholera. It is so sad that thousands always must die in misery, so that a few hundred may live well.⁶

For Virchow, the deprivations of working-class life created a susceptibility to disease. When infectious organisms, climatic changes, famine or other causal factors were present, disease occurred in individuals and spread rapidly through the community.

The social responsibilities of social medicine

Virchow's understanding of the social origins of illness comprised the source of the broad scope that he defined for public health and the medical scientist. He attacked structures of oppression within medicine, particularly the policies of hospitals that required payment by the poor rather than assuming their care as a matter of social responsibility. Virchow envisioned the creation of a "public health service," an integrated system of publicly owned and operated health-care facilities, staffed by health workers who were employed by the state. In this system, health care would be defined as a constitutional right of citizenship. Included within this right would be the enjoyment of material conditions of life that contributed to health rather than to illness.^{5,6}

The activities of public health workers, to whom Virchow referred as "doctors of the poor" (*Armendärzten*), would involve advocacy as well as direct medical care; in this sense, health workers would become the "natural attorneys of the poor." Even with the best of motivations, he argued, doctors working among the poor faced continuous overwork and their own impotence to change the social conditions that foster illness. For these reasons, it was naïve to argue for a public health service without also struggling for more basic social change.

Two other principles were central to Virchow's conception of the public health service: prevention and the state's responsibility to assure material security for citizens. Virchow's stress on prevention again derived mostly from his observation of epidemics, which he believed could be prevented by fairly simple measures. He found a major cause of epidemics in poor potato harvests; government officials could have prevented malnutrition by distributing foodstuffs from other parts of the country. Prevention, then, was largely a political problem: "Our politics were those of prophylaxis; our opponents preferred those of palliation."⁶ It was foolish to think that health workers could accomplish prevention solely by activities within the medical sphere; material security also was essential. The state's responsibilities, Virchow argued, included providing work for "able-bodied" citizens. Only by guaranteed employment could workers obtain the economic security necessary for good health. Likewise, the physically disabled should enjoy the right of public compensation.⁶

Virchow's vision of the social origins of illness pointed out the wide scope of medical task. To the extent that illness derived from social conditions, the medical scientist must study those conditions as a part of clinical research, and the health worker must engage in political action. This is the sense of the connections Virchow frequently drew among medicine, social science, and politics: "Medicine is a social science, and politics is nothing more than medicine in larger scale."^{4,6}

Conservative political forces that shaped the course of scientific medicine during the late

nineteenth and early twentieth centuries caused Virchow's social analysis to fall from sight. Virchow himself suffered from political repression by right-wing groups within both the national political sphere and German universities. In this repressive environment, Virchow left his position in the national parliament and retreated into his focus on cellular pathology in his academic life. He described the personal challenges of the sociopolitical context in some of the collected letters to his parents.⁹

Virchow's legacy in Latin American Social Medicine

Although Virchow's influence has spread worldwide, his most important impacts in social medicine have occurred in Latin America. Most Latin American accounts of social medicine's history emphasize its origins in Europe.^{10;11} Such historical accounts usually cite the work of Virchow in Germany.¹² Adherents of Virchow's vision immigrated to Latin America near the turn of the twentieth century. Virchow's followers helped establish departments of pathology in medical schools and initiated courses in social medicine. For instance, Max Westenhofer, a prominent German pathologist influenced by Virchow, directed the department of pathology at the medical school of the University of Chile for many years and influenced a generation of students, including Salvador Allende, a medical student activist and future president of Chile.¹³ The same perspective has influenced the concepts, methods, and activism of contemporary Latin American social medicine.^{14;15}

Allende's experiences as a physician and pathologist shaped much of his later career in politics. Acknowledging debts to Virchow and others who studied the social roots of illness in Europe, Allende set forth an explanatory model of medical problems in the context of underdevelopment. Although parallel developments in social medicine were occurring during the same period in North America and Europe, Allende's writings did not indicate a direct influence of this latter work.

Writing in 1939 as Minister of Health for a

newly elected popular front government, Allende presented his analysis of the relationships among social structure, disease, and suffering in his classic book, *La Realidad Médico-Social Chilena* (*The Chilean Medico-Social Reality*).¹⁶ *La Realidad* conceptualized illness as a disturbance of the individual fostered by deprived social conditions. Breaking new ground in Latin America at the time, Allende described the "living conditions of the working classes" that generated illness. Allende emphasized the social conditions of underdevelopment, international dependency, and the effects of foreign debt and the work process. In *La Realidad*, Allende focused on several specific health problems, including maternal and infant mortality, tuberculosis, sexually transmitted and other communicable diseases, emotional disturbances and occupational illnesses. Describing issues that had not been studied previously, he analyzed illegal abortion, the responsiveness of tuberculosis to economic advances rather than treatment innovations, housing density in the causation of infectious diseases, and differences between generic and brand name pricing in the pharmaceutical industry.

The Ministry of Health's proposals that concluded *La Realidad* took a unique direction by advocating social rather than medical solutions to health problems. Allende proposed income redistribution, state regulation of food and clothing supplies, a national housing program, and industrial reforms to address occupational health problems. Rather than seeing improved health-care services as a means toward a more productive labor force, Allende valued the health of the population as an end in itself and advocated social changes that went far beyond the medical realm.

Allende's analytic position in social medicine lay behind much of his political work until his death in 1973 during the military coup d'état. As an elected senator in the early 1950s, inspired in part by Virchow's concept of the "public health service," Allende introduced the legislation that created the Chilean National Health Service, the first national program in the Americas that guaranteed universal access to services. He linked this reform to other efforts that aimed to achieve

more equitable income distribution, job security, improved housing and nutrition, and a less dominant role for multinational corporations within Chile. Similarly, as a senator during the 1960s and elected president between 1970 and 1973, Allende sought reforms in the National Health Service and other institutions that would have achieved structural changes throughout the society.

Social origins, social reconstruction

Although Engels' revolutionary politics influenced him, Virchow ultimately chose a less confrontational approach. He participated in the political struggles of the late 1840s and doubted that the ruling circles would permit needed changes in response to peaceful challenges. However, he eventually opted for reform rather than revolution. While the conditions he witnessed in the Upper Silesian typhus epidemic proved horrifying, he believed that a series of reforms could correct the problem. The reforms he advocated transcended medicine to include rationalized food distribution, modifications in the educational system, political enfranchisement, and other changes at the level of social structure. He also adopted a broad view of the systematic reforms that were necessary in health care. An adequate health system, for example, demanded a public health service, in which health-care professionals would work as employees of the state and would act to correct maldistribution across class, geographical and ethnic lines.

As an overall political goal, Virchow favored a constitutional democracy that would reduce the power of the monarchy and nobility. He supported principles of socialism, particularly those that involved public ownership and rational organization of health and welfare facilities. However, Virchow argued against communism, mainly, he said, because of its naïve view that a just society was feasible without a strong state apparatus. Virchow clearly believed that limited reforms within capitalist society were both appropriate and desirable, and he was optimistic that they would prove effective. During his later life, the reformist slant of his strategic thinking

became even clearer.

The social origins of illness are not mysterious. Yet, more than a century and a half after Virchow's analysis first appeared, these problems remain with us. Public health generally has adopted the medical model of etiology. In this model, social conditions may increase susceptibility or exacerbate disease, but they are not primary causes like microbial agents or disturbances of normal physiology. Since investigation has not clarified the causes of illness within social structure, political strategy - both within and outside medicine - seldom has addressed the roots of disease in society.

Social pathologies that distressed Virchow continue to create suffering and early death. Inequalities of class, exploitation of workers and conditions of capitalist production cause disease now as previously. Likewise, the constraints of profit and lack of societal responsibility for individual economic security still inhibit even incremental reforms. The links between social structure and disease become ever more urgent, as economic instability, unreliable food supplies, depletion of petroleum, nuclear and toxic chemical wastes, global warming and related problems threaten humanity's very survival. Understanding these roots of illness also reveals the scope of reconstruction needed for meaningful solutions.

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