Emerging Themes in the History of Medicine

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Emerging Themes in the History of Medicine

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It is fitting that this issue of the Milbank Quarterly includes for review the field of the history of medicine. Its inclusion, however, is not self-evident. Rarely is history considered routinely to be a part of the so-called medical social sciences, nor is it included for analysis in conjunction with health policy issues. The Quarterly has, however, during the last 15 years, become a prominent home for historical scholarship. This reflected David Willis's commitment to the idea that a broad historical knowledge and perspective would help us understand the nature of medicine in society; it led him to offer the pages of the Quarterly to a wide variety of historical approaches and themes. Moreover, the historical scholarship appearing in the Quarterly is noteworthy for its significance, breadth, and lucidity, all of which bear David's editorial imprint.

The following essay in no way constitutes a complete review of recent writings on medical history or the Quarterly's contributions in history. Rather, in the course of examining emerging themes in recent medical history, I have tried to indicate, where possible, instances in which the journal contributed to and reflected these larger historiographic trends.
Medical History as an Emerging Field

Historians, not surprisingly, tend to be self-conscious in evaluating the history of their own studies. In 1947, Henry Sigerist, unarguably the leading figure in the field of medical history, addressed the Johns Hopkins Medical Club on the eve of his return to Europe. His lecture outlined the genealogy of the field he had played such a critical role in building. Paying homage to Billings, Osler, Welch, and Kelly, the great founders of “the Hopkins,” and noting their considerable interest in medical history, he outlined a critical shift in medical historiography that had occurred in the last years of the nineteenth century and the first years of the twentieth. Prior to this time, medical history as a field had little definition, but considerable significance. Indeed, the study of medical history could not be distinguished from the study of medicine. “The approach to the past was not a critical historical one but was taken from a medical point of view,” he explained. “Books were read for their factual content, irrespective of the period at which they had been written. Doctors read them in order to learn how to treat their patients” (Sigerist 1947 [1960]).

By the time the Johns Hopkins Institute of the History of Medicine was founded in 1929, the days of reading Hippocrates and Sydenham for therapeutic ideas had come to an end. As Sigerist noted, “Medicine was no longer the craft it had been, it had become very scientific.” He went on to ask, “Was there still room for the study of medical history?” Sigerist pointed out that it was the very men who had brought “scientific” medicine to the United States who now insisted on a critical role for the history of medicine: “They were medical humanists who were conscious of the point in the historical development at which they stood. Their teaching was scientific, but imbued with humane and historical considerations. . . .” (Sigerist 1947 [1960, 235]).

Sigerist’s evaluation reflected those forces generating a crisis in the meaning and nature of medicine. These forces helped to create the historiography of his time: concerns about the loss of humanistic traditions in an increasingly science-based medicine that emphasized laboratory, technology, and technique and the need to identify traditions and “the common bonds of the profession” in what was quickly becoming a fragmented and specialized medical culture.

The medical history of this era emphasized two critical themes in the medical past that were appropriate to these particular concerns. The
principal work focused on the development of medical knowledge—a clear attempt to connect contemporary aspects of medicine to past inquiry—and the rise of a medical profession with humanistic foundations. This, of course, is not to suggest that Sigerist (and others) were not aware of the broadest cultural questions confronting medicine and its practice both in his own time and earlier, but rather that studies in the history of medicine reflected the fact that they were primarily conducted by physicians within medical institutions (Fee 1989). Medical students and members of the profession of course constituted the principal audience for such studies, which were viewed as having a clear utility within the contemporary medical world. Medical history reflected the compelling issues and questions within the medicine of the day; history was the antidote for a brave new world of medical practice that many feared would lose its ties to the past (Reverby and Rosner 1979).

History Revised: The New Medical Historiography

It is among the most basic characteristics of historians that they write and rewrite. Every generation rewrites history, not so much on the premise that it can be done better (although some have made this claim), but that rather, with time, the questions inevitably shift; in this perspective, there is really no such thing as “definitive” history. Even the most scrupulously researched biography, acclaimed upon publication and tagged “definitive,” will a generation later begin to attract new “revisionist” attention. This occurs, in part, because new information may be found, but principally because the generative questions change. The study of history is inevitably a dialogue with the present; the study of medical history is inevitably a dialogue with contemporary medicine.

In the last three decades we have witnessed the development of a radically new American medical historiography (see especially the critical essays by Ackerknecht 1967; Grob 1977; Leavitt 1990; Rosen 1949; Rosenberg 1986; Warner 1985). These studies were generated by a wholly new set of questions about the role and nature of medicine within culture; we have seen the rise of what has come to be called the “new social history of medicine,” transforming the “contours” of
American medical historiography. No longer is medical knowledge and the rise of the profession at the center of attention; the focus has shifted decisively to the nature and meaning of disease and social responses to disease; to the world of the patient; to the nature of moral systems as they are exemplified in the practice of medicine. This change in approach reflected, not surprisingly, a major shift in more general historical studies away from the traditional confines of political and economic history to a new emphasis on social history. Explorations in fields such as the history of women, gender, and sexuality—major aspects of the new historiography—led ineluctably into the medical domain. Studies of the family, population change, and the material conditions of life inevitably encouraged the examination of historical patterns of disease. The study of epidemic disease entailed an inquiry into how episodic and extraordinary medical events reflected and produced changes in the organization of cultural norms and values, institutions and intellect.

In attempting to define this change, rather than listing a compendium of books representing the diversity of approaches, I prefer to focus on three important works that, I will argue, represent the central features of how historians of medicine came to approach questions in the social history of medicine; even more important, these books reflect the primary theoretical questions that continue to attract considerable attention in contemporary medical historiography.

Perhaps the single most influential book in the new medical historiography has been Charles Rosenberg's *The Cholera Years*, first published in 1962 (Rosenberg 1962 [rev. ed. 1987]). By evaluating social, political, and medical responses to three discrete epidemics of nineteenth-century New York City, Rosenberg was able to explicate several more general themes about the changing role of religion, the medical profession, and the state as they confronted a deadly infectious disease. The book made two related points: First, it asserted that disease constituted a crucial force in the nature of the city, its material environment and institutions. In this way, it no longer made sense to consider patterns of social life without paying serious attention to the nature of the diseases and health conditions that a society identifies and confronts. Second, Rosenberg demonstrated that these experiences with epidemic disease not only told us about medicine and medical knowledge at a given moment in time, but they also opened up virtually every aspect of society and politics. In the debates about the *causes* of cholera, the
most basic social and scientific ideas of the era, as well as social and cultural values, became manifest. Implicit in the work was a critique of approaches to the history of medicine that had emphasized medical "knowledge" to the exclusion of its social and political meanings and significance. Although these two themes are so basic that it would be erroneous to argue that they appeared for the first time in *The Cholera Years*, rarely had they been so clearly and cogently articulated in a historical "experiment." In this respect, it would be difficult to overemphasize the impact this book had on historians of medicine.

*The Cholera Years* raised two other critical questions that have continued to receive sustained attention in the new historiography. First, the emphasis on public health and, in particular, the role of the state in organizing and generating institutional responses to disease has remained a central theme in the last quarter of a century (Leavitt 1982; Rosenkrantz 1972). Second, the problem of assigning "responsibility" for disease—central to Rosenberg’s assessment of the nineteenth century—has become a pivotal question in a wide range of studies covering a diversity of eras and diseases (Brandt 1988; Rosenkrantz 1979). The attribution of responsibility would figure prominently in studies attempting to use disease as a means of making historical assessments about social structure and relationships.

Implicit in Rosenberg’s account of nineteenth-century cholera was a relativism about the very nature of disease; cholera, "caused" by the same organism, was assigned different meanings and generated different responses in each of the three historical instances it appeared. Susan Sontag’s brilliant polemic, *Illness as Metaphor*, offered the techniques of literary analysis to pursue further this question of the changing meanings of disease (Sontag 1979). *Illness as Metaphor* is not, of course, in any traditional sense a work of history (and it is flawed by a rather naive view of biomedicine). Nevertheless, by directing attention to the meaning of disease and the profound effects of these "definitions," within both medicine and the broader culture, Sontag’s essay underscored a critical aspect of the work of social historians of medicine. The metaphors of disease became a basic tool for understanding the nature of morals, values, and beliefs at a particular moment, in a particular culture. The question at the heart of *Illness as Metaphor* was, What does it mean to have tuberculosis or cancer? In this respect, she suggested the significance of a more concerted focus on the patient’s experience in illness, a theme that has had important ramifications in medical social science and humanities
since that time. Sontag's work directed attention to the critical role of language, symbol, and ideology in this larger process of the historical definition of disease. This theme, for example, was recently taken up by a group of historians in a special Quarterly supplement, “Framing Disease” (Rosenberg 1989).

Although Sontag's focus was on literary representations of disease, her analysis did have an explicitly historical argument. She suggested that as scientific understandings of disease processes replaced metaphorical views, the metaphors of disease would wither away. “My point,” Sontag explained, “is that illness is not a metaphor, and that the most truthful way of regarding illness—and the healthiest way of being ill—is one most purified of, most resistant to metaphorical thinking” (Sontag 1979, 3). In Sontag's positivist view, science would free disease of metaphor, making disease simply “disease.” As recent writings in the history of medicine have made clear, however, disease is inevitably rife with meaning and values (Brumberg 1988). Over time, these meanings may in fact change, but even science cannot "purify" disease. Sontag's ultimate mission—to free disease of its metaphors—appears in retrospect naive, if not misguided.

Nonetheless, despite this essential flaw, Sontag's essay focused attention on the social and cultural dynamics that contribute to the specific meanings of particular diseases, as well as techniques for their elucidation. Although some critics argued that notions of the social construction of disease suggested a fundamental relativism that denied the reality of the universal biological nature of pathology, the "constructivist" position generally held that biology could not be understood outside of culture, and that culture was rooted in and shaped by the nature of human biological potentials and limits. To say that disease is "socially constructed" is not to deny its fundamental biological qualities; to recognize those biological parameters is not to deny that disease only achieves particular meaning and significance within specific historical cultures.

If the new social history of medicine has directed attention to the social construction of disease—the ability of disease to capture meanings and values—it has also addressed the fundamental biological and material aspects of disease as well. Thomas McKeown's The Role of Medicine (1979), employing techniques of historical epidemiology and demography, attempted to assess the changing nature of mortality over time. McKeown's book is critical for at least two reasons. First, it made
clear that it was possible to come to some approximation of patterns of disease and mortality in the past; in the context of a growing medical relativism it reminded that “real” people experienced “real” disease throughout time. Second, by evaluating the relative contribution of medical interventions to changing mortality patterns, the book raised a critical question: does medicine work? What are the determinants of patterns of health and disease? McKeown concluded that, to a remarkable degree, medicine had not been the essential factor in changing patterns of health. As David Willis noted in an issue of the Quarterly devoted to the McKeown thesis, “The nature, extent and consequences of a cherished deception are called into question: that the contribution of medicine to prevention of sickness, disability, and premature death must be taken at its own evaluation” (Willis 1977, 343). For McKeown, the sociopolitical implications of his findings were clear: Western developed nations had invested far too heavily in a technologically based, individual care system that offered limited returns at considerable cost.

The questions at stake, however, actually go far beyond any immediate policy implications of the study. Although McKeown’s conclusions were reductionist, relying essentially on a single criterion—the reduction of mortality—the question itself, of “the role of medicine,” was of elemental importance. It forced historians and medical social scientists to reflect more carefully on the nature and meaning of effectiveness. How does medicine work? How has it worked at various historical moments in specific historical contexts (McKinlay and McKinlay 1977)? If, in fact, medicine has not always had a powerful impact on health “indicators,” it nevertheless has provided compelling explanatory frameworks that typically received social sanction.

These explorations into the nature, meaning, and authority of explanatory schema have produced some of the most basic questions of contemporary historical studies. They are so important and complex that they are likely to continue to attract investigation in an enduring way. This line of inquiry has encouraged historians (and other social scientists) to begin to attempt more fully to articulate the nature and meaning of healing systems, with their complex relationship of scientific, technological, and cultural components (Kleinman 1982; Rosenberg 1979). According to this research, shared and negotiated therapeutic frameworks—historically and culturally specific—are the very basis of “effective” patient-healer encounters. Quite simply, what works in one time and place could be quackery in another.
The Social Context of Medicine as an Emerging Field

These three books by Rosenberg, Sontag, and McKeown, which are distinguished in their analytic clarity, help to define certain principal challenges of the new historiography, to rough in its parameters and demonstrate its focus on disease (and social responses to disease), but they do not account for the fundamental shift from centering attention on medical knowledge to newer attempts to see medicine and patterns of disease in a broad social context. To argue for contextualizing medicine was, of course, not new. Many of the founders of the field—Henry Sigerist, Erwin Ackerknecht, Richard Shryock (and others)—had perceptively made the case in the past. They viewed disease as a socially produced phenomenon and medicine as a culturally embedded activity (Ackerknecht 1967; Shryock 1966). What has been most striking is that in the 1960s, and especially the 1970s and 1980s, historical studies began to appear on both sides of the Atlantic that actually accomplished aspects of the "project" that the founders had defined (Warner 1985).

The appropriate historical question, then, is, What accounts for the emergence of this new historiography over the last 30 years? What has led to the significant broadening of this area of inquiry to include historical epidemiology, popular healing systems, and disease meanings? To answer the question, Why these studies at this specific time?, we need to look more closely at the particular issues and conflicts relating to medicine in the last three decades.

Patterns of Medicine: 1960–1990

During the course of the 1960s and 1970s, medicine and its practice was subject to a searching sociopolitical critique. The "Golden Age of American Medicine"—in which the medical profession symbolized science and power—came to a crashing conclusion (Burnham 1982). The legitimacy of medicine was subjected to a newfound relativism. Medicine came under attack from both the right and the left; in the crossfire emerged a new set of questions about its role, values, impact, and authority. The recognition that medicine could harm, even while trying to help, that it was not always effective (and that effectiveness was difficult to define and measure) led to fundamental ambivalence about the notion of "medical progress" (Illich 1976). The intensive introduc-
tion of medical technologies, capable of extending the limits of life, created new dilemmas about the ultimate goals of medicine. In this context, the definition of death itself came under scrutiny (Pernick 1988). Medicine, for more than a generation an unambivalent "good," had with relative suddenness become a focus for debate and ambiguity, if not skepticism and hostility.

With major shifts in patterns of disease from the infectious, communicable diseases of the early twentieth century to the systemic, chronic diseases so prevalent today, there occurred a new recognition of the multicausal nature of disease and a growing recognition of the limitations of the biomedical model (Dubos 1959). Further, the inadequacy of medical technology to address effectively the persistent substrate of chronic disease became clear (McDermott 1977). In this context, the most basic assumptions about medicine, its role and effectiveness, came under scrutiny from an increasingly critical medical social science. At the same time, medicine became an ever more powerful cultural convention invoked to define and classify an expansive range of social activities and behaviors. This increasingly pervasive biomedical idiom provided a context for the new work in medical history. It had become clear that, in addition to its explicit rationales, medicine served many purposes, constituencies, and interests.

**The New History of Medicine**

This new set of recognitions, calling into question traditional functionalist notions of medicine, led to the questions that spawned the new social history of medicine. For example, if the hospital had not become such a fundamentally problematic and contested institution within contemporary American medicine, would we have seen the efflorescence of historical scholarship seeking to understand its multiple roles and functions within American culture (Rosenberg 1982, 1987; Stevens 1982, 1989)? If a feminist critique of women's health care had not emerged, would we have seen such a productive scholarship investigating the issue of gender and sexuality as it related to medicine in the past (Leavitt 1985)? The same could be said for issues of race, class, and ethnicity, although many of these issues have yet to be adequately explored in the context of the history of health, disease, and medicine (Ewbank 1987). The important spate of writings on the history of occupational health and safety similarly reflects the recognition of the significance of
workplace health risks and their regulation in recent years in American society (Markowitz and Rosner 1986; Sicherman 1984). Each of these themes, of course, reflected the increasing centrality of medical discourse in everyday contemporary life.

The history of medicine in the last three decades has opened a new window on the past; indeed, the distinction between medical history and social history has become increasingly obscure (Leavitt 1990). There is a growing awareness that the field offers critical insights for all historians. To overlook the changing material conditions of life, changing age structures, and shifting patterns of births and deaths was to neglect the most basic parameters of social institutions and activity. Moreover, assessing how specific cultures responded to radical changes in the material environment, such as epidemic and endemic disease, provided a direct approach to understanding the most profound and significant aspects of scientific, social, cultural, and political history (McNeill 1976).

Does the fact that the present fundamentally influences the questions that are asked compromise the integrity of this work? Does the new social history of medicine suffer from the historian's fallacy of "presentism"? Is the past viewed through the distorting lens of contemporary values and attitudes? Although it is undeniable that historical studies are driven by contemporary concerns and questions, they need not inevitably be presentist. To offer but one significant example, for many years the dynamics of the doctor-patient relationship were considered relatively unproblematic: the role of the doctor and the role of the patient were essentially well defined; expectations were shared. Beginning in the 1960s, relations between doctors and patients became—for many historically specific reasons—unsettled and problematic (Eisenberg 1977; Rothman 1991). Prior to this time, it seems relatively unlikely that historians would have made the doctor-patient relationship the focus of inquiry; it had been made largely invisible by contemporary culture. As traditional views of authority and power within medical science came to be questioned, however, the nature and meaning of this relationship came under new scrutiny. These contemporary questions served as a signal that the doctor-patient relationship was neither static nor concrete, that, in fact, it was subject to a range of forces over time that would succumb to sophisticated historical investigation (Porter 1985). The work here has only just begun, but a vast area of medical history was essentially reopened by this contemporary—and admittedly often critical—assessment.
Changes in the nature of patient–doctor interactions reflected, in part, a deeper transformation in medical ethics. During the last 25 years debates about ethics and values in health care became the essential public discourse for a broad range of moral and political dilemmas in an increasingly secular culture. In these contemporary conflicts, historians discovered a new set of questions regarding the nature of medical authority and individual autonomy. How, for example, had the ethics of human experimentation in medical research changed over time? What forces had driven these changes? How had the experience of death been transformed by the rise of the modern hospital and new, powerful medical technologies deployed at the margins of life? What was the locus and authority of what came to be called “medical decision making”? In this contemporary discourse, historians discovered a new research agenda—with a clear set of empirical questions—about the nature of medical interactions in the past. Medical ethics were subject to the vicissitudes of culture and time; investigation of changing ethics suggested the range of forces—scientific, political, and economic—that shaped the medical world (Jonsen 1990; Rothman 1991).

The Impact of AIDS on Historiography

Given my essential argument that medical historiography is fundamentally influenced by the principal questions affecting medicine in contemporary life, there is every reason to believe that the study of the history of medicine will necessarily continue to change in the future as medicine and its meaning, nature, and knowledge base continue to change. Indeed, we currently have an example of this process. It now seems clear that any consideration of contemporary historiography must take into account the impact of the AIDS epidemic on medical history. AIDS has forced us to reevaluate a whole series of questions about the scientific, biomedical, social, and cultural responses to disease. As the introduction to a Quarterly supplement on the epidemic noted: “. . . the effects of the epidemic extend far beyond their medical and economic costs to shape the very ways we organize our individual and collective lives” (Nelkin, Willis, and Parris 1990, 1).

AIDS has already influenced the course of American medical historiography in at least three important ways. First, it has generated a new (or at least altered) set of questions about the social responses to epi-
demic disease. Questions have arisen, for example, about the physician’s responsibility in times of epidemics, notions of risk taking and risk aversion; the nature of voluntarism, experimentalism, the role of the state in relation to public health and individual liberties; the boundaries between public and private (Bayer 1989). Although these issues are in some ways familiar, they have been recast in the age of AIDS.

Second, the epidemic has reemphasized the significance of historical studies of the nature and process of social policy as it relates to disease. This, of course, is not to argue that historians have special claims or particular skills in adjudicating conflicts regarding policy initiatives in times of epidemics, but rather that their studies may illuminate the range of options and, more important, the nature of the multifarious forces that promote or inhibit effective social policies, even defining the meaning of “effective” policies. Few would argue that history has no significance to the world of policy making; more complex is to define the role that historians might undertake in this endeavor. Recent work on the history of public policy suggests that historians may be able to demonstrate how certain fundamental social policy options are related to a variety of political and cultural forces that need to be brought into fuller consideration (Fox 1986; 1991). Prior to the epidemic, most historical studies of health policy emphasized a single issue: the evaluation and organization of national health systems. AIDS has reemphasized the full dimensions of health policy in connection with such questions as civil liberties and the state, public health and the delivery of services, and policies at the hospital and local level. A critical issue virtually ignored in many earlier studies is the relationship between health policy and scientific knowledge.

Third, and finally, the epidemic has reminded medical historians—as it has American culture more generally—of the visceral, cutting nature of epidemics. The epidemic provides a sad but powerful reminder of our relative inability—in spite of a remarkable knowledge and technology—to rationally shape the nature of our world (Brandt 1988; Farmer and Kleinman 1989; Rosenberg 1986). It provides something of an antidote to Whiggish historical assumptions regarding rationality and change. AIDS has reminded historians of the deeper relationships of patterns of disease to enduring social structures and economic conditions. Although there will undoubtedly be a considerable body of historical scholarship on HIV disease and its impact emerging in the
future, it will be important as well to assess how the epidemic shapes
and reshapes our assessment of other diseases, at other times (Duffin
1989).

It seems something of an irony that the study of the history of medi-
cine would fundamentally be shaped by the contemporary course of an
epidemic disease. This, however, underscores my essential point that
no area of social existence or inquiry can be too distant from the effects
of disease, and that tracing those effects provides grist for the histor-
ian's mill. In this sense, it seems absolutely clear that the study of his-
tory itself is no more isolated than any social venture from the critical
biological and cultural aspects of disease. Our ability to understand and
recognize their impact is the nature of the historian's task. It was this
undertaking that David Willis so carefully and critically nurtured in his
work on the Milbank Quarterly.

Conclusion

The project is still before us—but it is a project that will be changed,
no doubt, in the context of our times as medicine and the problems it
identifies and confronts change in the future. History offers us an ave-
 nue to better understand critical aspects of human motivation, organi-
zation, and relationships. In the crucible of sickness, these relationships
 are thrown into a sometimes stark and dramatic relief, enhancing our
 ability to see and perhaps understand them.

Ultimately, then, in studying the history of medicine we learn about
the constraints and prospects of the human condition across time and
cultures. The dimensions of the inquiry are vast. Just as it did for
Sigerist, the present will continue to shape our questions, approaches,
and concerns. In the years ahead, historians of medicine will look again
to the past, to cull the historical record for new and more sophisticated
ways of understanding the present and facing the future.

References

Ackerknecht, E.H. 1967. A Plea for a Behaviorist Approach in Writing
the History of Medicine. Journal of the History of Medicine and


Markowitz, G., and D. Rosner. 1986. More Than Economism: The Pol-
Emerging Themes in the History of Medicine

itics of Workers’ Safety and Health, 1932–47. Milbank Quarterly 64:331–54.
McKeown, T. 1979. The Role of Medicine: Dream, Mirage, or Neme-

McKinlay, J.B., and S.M. McKinlay. 1977. The Questionable Contri-

Nelkin, D., D.P. Willis, and S.V. Parris. 1990. Introduction: A Dis-

ease of Society: Cultural Responses to AIDS. Milbank Quarterly 68 (suppl. 1):1–9.

phia: Temple University Press.
Rosen, G. 1949. Levels of Integration in Medical Historiography: A Re-

Rosenberg, C.E. 1962. The Cholera Years: The United States in 1832,
———. 1982. From Almshouse to Hospital: The Shaping of Philadel-

———. 1989. Disease in History: Frames and Framers. Milbank Quar-

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