

John R. Paul and the Definition of Preventive Medicine

ARTHUR J. VISELTEAR, Ph.D., M.P.H.

*Associate Professor of the History of Medicine and Public Health,
Yale University School of Medicine, New Haven, Connecticut*

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John R. Paul, Professor of Preventive Medicine at the Yale University School of Medicine, wrote numerous monographs and papers defining and delimiting the field of preventive medicine and its fundamental science, clinical epidemiology. For Dr. Paul, preventive medicine was part of the continuum of clinical medicine; others believed that it was a separate entity deserving of departmental status. This paper discusses Dr. Paul's definition and philosophy of preventive medicine in contrast to other disciplines, such as social medicine and public health.

In 1942, John R. Paul, Professor of Preventive Medicine at the Yale School of Medicine, wrote to his colleague C.-E.A. Winslow, Professor of Public Health, thanking him for a copy of Winslow's paper on preventive medicine and health promotion [1]. Winslow had sought to determine why medical practice was dominated by the treatment of disease rather than the promotion of health. His paper was one of many written in the decade 1940-1950 lamenting the fact that the potential of preventive medicine, so promising to many as the next step in medical progress, remained more of a dream than a reality. What was necessary, Winslow concluded, was a new orientation, one which started with disease and worked back, building on a positive ideal of health [2]. Dr. Paul, hoping that the two would soon get together to discuss the issue, "under a peaceful tree," wrote that he started from a different direction, working "backwards from the ideal":

. . . I believe that *disease* is the motivating force which stirs the clinician into action, and we can never be as excited about *HEALTH* as we can about disease. Perhaps this should be changed but it means changing our *Religion*,—and that means prophets crying in the wilderness . . . [3]

Winslow's preventive medicine was part of public health; Dr. Paul's was part of the continuum of clinical medicine. What Dr. Paul meant by preventive medicine is the subject of this paper.

I

John R. Paul, after early work with Walter Cannon, Hans Zinsser, and W.G. MacCallum, and serving in the early 1920s as Director of the Ayer Clinical

Laboratory, was called to Yale in 1928. His earliest work at Yale was a systematic study of rheumatic fever which he traced through a series of families in which the disease had developed. He gradually became interested in poliomyelitis, an interest piqued as early as 1916, the time of the New York City polio epidemic [4]. In the early 1930s, he and James Trask organized the Yale Poliomyelitis Study Unit, which began its work by observing familial contacts, employing the same methodology he had developed for his studies of rheumatic fever. The term applied by Dr. Paul to this approach was called "clinical epidemiology," a science which "described the involvement of clinicians in exploring the multiple factors contributing to the occurrence of disease in individuals and in population groups" [5].

Clinical epidemiology was coined in 1938 by Dr. Paul and appeared as the title of his President's Address to the American Society for Clinical Investigation. It was "a new discipline," as he described it, "a science concerned with circumstances," be they functional or organic, under which human disease is prone to develop. Clinical epidemiology, he wrote, differed from orthodox epidemiology in that orthodox epidemiologists dealt with large groups of people whereas the clinical epidemiologist dealt with small groups, those "whom he knows well and groups no larger than a family or small community." The clinical epidemiologist, he continued, started:

. . . with a sick individual and cautiously branches out into the setting where the individual became sick . . . He is anxious to analyze the intimate details under which his patient became ill. He is also anxious to search for other members of the patient's family, or community groups who are actually, or potentially ill. It is his aim to thus place his patient in the pattern in which he belongs, rather than to regard him as a lone sick man who has suddenly popped out of a health setting; and it is also his aim to bring his judgment to bear upon the situation, as well as on the patient.

Dr. Paul's clinical epidemiology, seeking to answer "why" as well as "how" questions, was concerned with what he termed the "ecology of human disease" [6].

In 1940, a few weeks after Dr. Paul had been promoted to full professor and appointed chairman of the Section of Preventive Medicine, newly established as a division of the Department of Internal Medicine, he discussed the philosophy and objectives of his new Section, building upon his president's address of 1938. Dr. Paul had no difficulty in defining preventive medicine, which he set forth as an activity "concerned with the study of conditions under which illness occurs in individuals (or groups of individuals) as well as with the technics of their control." How one "practiced" preventive medicine, however, was less simple to resolve. "Is it limited . . . to efforts designed to keep a well person from becoming sick, or to keep a sick person from becoming worse?" he asked. "Does it include the prevention of a relapse from a chronic disease in an individual whose illness, such as pernicious anemia, tuberculosis, or rheumatic fever, is for the moment quiescent? [And] even if the practitioner of preventive medicine should be limited in his activities preventing his well patients from acquiring illness," does preventive medicine differ from "good old-fashioned" clinical medicine?

Dr. Paul's answer to this latter question was "No." Preventive medicine perforce was part of clinical medicine. If it were separate, as it had an unhappy tendency to become, then logic would call for a term such as "curative medicine," or "adult" or "somatic" medicine as was found in some departments of internal medicine. Preven-

tive medicine, he concluded, "belongs to clinical medicine and should follow the doctrine of clinical medicine" [7].

Confusion also arose when one discussed public health. For Winslow and many others, public health comprised preventive medicine, as well as statistics, environmental science, orthodox epidemiology, bacteriology, and the control of the infectious and chronic diseases. Unlike preventive medicine, public health did not belong to clinical medicine. Its methods, wrote Dr. Paul, were "usually applied on a large scale, better administered by specially designed individuals vested with government backing or other types of authority." The approach and point of view of the public health official, moreover, differed from that of the clinician. The public health official tended to treat alike all members of certain groups, but the physician usually found that each individual must be treated differently. It was also a question of values. Physicians, Dr. Paul wrote ten years later, were apt to be interested primarily in disease, as many were "sentimental pathologists at heart." For them, disease was "positive" and the "absence of disease" a negative value. For the public health officer whose objective was not individual health but community health, however, the "absence of health" would be the negative value [8].

The issue was that public health's view of prevention was much broader than the approach of clinical epidemiology. The public health professional, and even those who had developed in the 1940s departments of preventive or social medicine, believed the desiderata for preventive medicine was not only clinical, but legal, political, and religious as well. In some medical schools, Dr. Paul wrote in 1950, an attempt even had been made to bring preventive medicine "under the wing of a university division of the social sciences" [9]. It was important to "hold the fort—to preserve [medicine] from growing demands arising from outside groups and agencies whose non-clinical philosophy, when brought to bear on the medical student too soon, could easily deflect his appetite from what has been called 'the hard core of science'" [10]. It was for this reason that Dr. Paul attempted to define the framework within which an academic program of preventive medicine would operate, recognizing, as he wrote, that the subject was "a philosophical rather than a technical craft."

Dr. Paul's program was limited to third- and fourth-year medical students serving as clerks on the wards or as assistants in the dispensary. The program was not designed to train medical students to become health officers, which Dr. Paul believed to be a postgraduate responsibility, but instead focused on "potential physicians and surgeons." The hope was that the students, by studying those aspects of clinical medicine which lay "outside of the immediate diagnostic and therapeutic consideration of hospital practice," would both recognize and appreciate the role that prevention could play in their practice. Hospital medicine, dealing primarily with sick people in bed, was but a "small part of comprehensive medicine," a position Dr. Paul was to affirm throughout his career.

The students were also to be taught epidemiology, particularly clinical and serum epidemiology, which for Dr. Paul were "the foundation for instruction in preventive medicine" [11]. Recognizing that students in their clinical years were totally absorbed by the wards, Dr. Paul organized a weekly seminar around sick patients who were already known to the students. This process, designed to lead the discussion "away from the bedside," went beyond the usual review of the patient record or laboratory reports. The student of course studied the chart, but also learned about the "family" history, with particular reference to the "family environment." Other

pertinent data were presented, with a history of various factors thought to be of etiologic importance or of importance as predisposing elements. The past history of the patient was then reviewed in the light of the epidemiologic data, followed by a consideration of the patient's present condition and prognosis. The conference concluded with a discussion of "how the situation which led up to the patient's illness might have been altered, how the situation should be handled from the viewpoint of prevention after the patient leaves the hospital, and how a similar situation with another potential patient could be handled" [12].

The research program of the Section was devoted to clinical and serum epidemiology and motivated by questions, such as: "To what extent can we hope to develop new ideas and new techniques applicable in the laboratory, in the hospital wards, in the dispensary, and, most of all, in field work, which will lead to a better understanding of the natural history of disease, or of disease as a biological phenomenon?" Dr. Paul's principal research interests, which took him to all parts of the nation and many foreign countries, were rheumatic fever, poliomyelitis, viral hepatitis, and infectious mononucleosis, for which he and the members of his Section became world famous [13].

II

The themes and principles of research and teaching established by Dr. Paul reappeared in his major monographs, writings, and speeches. Preventive medicine was a clinical science, he said in his 1956 presidential address to the Association of American Physicians. It demanded high scientific acuity and required "clinical judgment, to decide what to measure, how and why; to consider the patient's resistance or ability to cope with or succumb to injurious agents whether they be bacilli, viruses, chemicals or traumatic experiences, or extra expenses to the family budget." Most of all, he concluded, clinical epidemiology required clinical judgment to estimate the "epidemiologic climate." The climate might be a single house, "but it was as important to the clinician as the pH is to the biochemist" [14].

The "climate" was intrinsic as well as extrinsic. The locus of preventive medicine, even the exact title of the discipline, profoundly affected its status and directional emphasis. In his last essay, a reminiscence, he reflected on the philosophical principles he had espoused throughout his life. Preventive medicine was not "Public Health," nor was it "Environmental Medicine" or "Medical Ecology in Community Medicine," all names of departments that had emerged in the period since his Section had been established. The title and philosophy which came closest to capturing the philosophy and content of prevention as he envisioned it was "Social Medicine," a term which embraced his own clinical investigations and those of other notable scientists he cited often, such as Thomas Francis, Jr., E.L. Opie and F.M. McPhedran, and A.F. Coburn and R.H. Pauli [15].

Dr. John A. Ryle was among those who came closest to Dr. Paul's thinking. Leaving the prestigious Regius professorship of medicine at Cambridge for a new post as Professor of Social Medicine at Oxford, Ryle set out, in Dr. Paul's words, "to prevent British medicine from a schism which would separate prevention from therapeutic medicine." When Ryle in 1948 came to America to expound on the subject, Dr. Paul commented in retrospect that the schism in the United States had already taken place [16]. Preventive medicine, he wrote, "had inadvertently drifted away from the medical sciences and had become practically synonymous with the techniques of public health," which for Dr. Paul was a "preposterous situation" [17].

III

Dr. Paul attempted in the 1930s to prevent this schism. When asked to occupy the Hermann M. Biggs Chair of Preventive Medicine at New York University, for example, he declined the offer in favor of leading not his own department, but a section within the Yale Department of Internal Medicine. Once departments of preventive medicine were established in medical schools, he wrote, the attitude of spokesmen for departments of internal medicine invariably would be: "Now . . . we can attend wholly to therapeutic matters" [18]. Departments of preventive medicine, cast off from their clinical base, were bound to fail because they promised too much and because they abandoned teaching the underlying principle of prevention, which was epidemiology. Restoring this focus, Dr. Paul believed, would permit the departments to take their place with other basic sciences, such as anatomy, physiology, and pathology. The idea of establishing preventive medicine as a separate and independent discipline meant for Dr. Paul the abandonment of the principles of clinical medicine and good patient care.

Dr. Paul concluded his 1971 reminiscence with a quote from the essayist E.B. White, who had written in *The New Yorker*: "Years ago I was sized up as a man who was amiable but impractical, and I also agreed with this estimation" [19]. Pleased that in retirement he had been asked to continue his lifelong discourse, "however impracticable my dreams may prove to be," Dr. Paul must nevertheless have smiled the smile of those who with unerring certainty know the strength and correctness of their position and who await that future moment in time when others will also see the light.

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