RELATIONSHIP BETWEEN THE WORK SETTING AND PROFESSIONAL EDUCATION IN PUBLIC HEALTH

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The Changing Domain of Public Health

The domain of public health, as we are now beginning to redefine it, is of far greater scope and complexity than it was earlier in this century. In fact, the field has only recently been stirred from a somnolence extending back some 30 to 40 years. During that period the boundaries of public health changed only marginally, few new initiatives were undertaken, and its institutions changed little. The extension and improvement of curative services monopolized both attention and resources; prevention was an afterthought, if considered at all.

The largely laissez-faire evolution of medical and health practice relegated public health professionals to the periphery, and educational institutions for public health reflected this fact. Their academic offerings were geared largely to producing graduates whose professional activities and responsibilities were expected to be little different from those of graduates in the 1930s and 1940s. Not surprisingly, these institutions were regarded as stodgy and inward-looking, and, lacking of a broader public interest, their research products largely served to inform other academics.

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Public health was not a field which by either practical challenge or compensation attracted the best minds. Relationships between those in the work setting and the academic community were limited, and there were few incentives to encourage such relationships. In their isolation, public health faculties came to resemble more the graduate faculties of schools of arts and sciences and less those of the practicing professional faculties of schools of medicine. The schools did, however, sustain a unique and diverse multidisciplinary group who could bring to problems a needed breadth of skills and knowledge. The existence of these groups is of importance to the future of public health education.

During the past decade, revolutionary changes began to occur as we perceived that we were approaching a ceiling in the quantity of resources that should be expended for health care. Increasingly difficult questions began to be posed with regard to cost, quality, and access. These, in turn, have raised questions regarding resource allocation and systems. The private sector, both as consumer and organizer, entered and sharpened the debate. Environmental legislation, coupled with successful litigation against offenders, gave new impetus to the hitherto neglected field of environmental health. These engines of change have been further fueled by a rapidly growing understanding of the basic biology of disease and, the discovery of measures to avert or retard disease processes. A burgeoning surplus of physicians has begun, happily, to translate into recruitment of some of the most talented physicians into public health. Let us not forget, however, that we are only in the early stages of revolutionary change in our health care system, an unlikely time for defining accurately either its scope or its outcome.

During a revolution, one hopes for gradual restoration of the more stable institutions and programs, albeit with a different, more appropriate character. This requires imaginative solutions and new directions. Without them, the outcome is chaos, or perhaps anarchy. Our thesis is that the schools of public health are a critical resource which would have to be invented if they did not already exist. To play the role which we believe they must, however, will require a serious examination of the relationship between academia and both the public and private sectors. This examination can help to redefine the educational mission of the

schools and the content and quality of their curriculum. This we believe will occur only if public health educators are immersed in the realities of the work setting.

Education and Practice in the 1950s

The base from which we are now departing can be more explicitly illustrated by my [D.A. Henderson's] introduction into public health and my observations during the decade 1955–1965, when I served with the Communicable Disease Center. I believe these experiences are not atypical. I graduated from a respectable medical school which, at that time, taught neither epidemiology nor biostatistics. The course in public health was considered to be dull, stodgy, and more relevant to the 1930s than the 1950s. There was no one on the faculty who specialized in either public health or preventive medicine, and no one in the class is known to have entertained any thought of these specialties as possible career options. Having decided to be an internist–cardiologist, I joined the Epidemic Intelligence Service, not from interest but because it appeared to be the least undesirable way to discharge a two-year military obligation. Under the tutelage of Alex Langmuir, I learned of the excitement of epidemiology and of public health, of work in the field and of dealing with community problems. I stayed on and for most of a decade dealt with the real-world problems of public health colleagues at national, state, and local levels. Other physicians were recruited, but rarely did any apply who had a career interest in public health. When such applicants were encountered, there was suspicion that they were in some way flawed or ingratiating themselves in order to be accepted.

The demographics of public health practitioners were strangely skewed. Most of the leading figures on all levels of public health at that time were in their late 40's or older, having entered the field during the Depression or immediately after military service in the 1940s. Many were excellent, but it was difficult to identify their successors. Remuneration was low and the status of public health even lower. At the Communicable Disease Center, efforts were made to foster academic relationships, but, receiving little response from schools of public health,

attention was directed to the few departments of microbiology and pediatrics with which there were common interests. As gradually became apparent, most faculty in schools of public health were unaccustomed to and uncomfortable in dealing with untidy, real-life programs and the rough and tumble of political policymaking. Few had ever managed a public health program, and fewer still had done so recently. In truth, many demeaned those who did. The fact that such activities were characterized patronizingly as "service activities" rather than "professional practice activities" exemplifies this. Not surprisingly, the health services research then being conducted was often characterized as "precious" and "irrelevant"—and, indeed, much of it was. Elements of this legacy are still with us.

From a heritage so recent, it is evident that a significant, major reorientation is required to meet the new challenges. As the profession changes, so must its educational institutions. It may be tempting to believe that we can now redefine a profession of public health and identify a body of knowledge specific to it. Indeed, this has proved endlessly diverting to many academic committees and others who enjoy this form of Augustinian discourse. We regard it as being both premature and futile. An illustration of this is the comment made a few months ago by the president of a major academic medical center. "The unthinkable of 12 months ago is now not only thinkable but is being implemented."

We believe it is more important to recognize that we know a great deal more than we ever did about the antecedents of illness and the potential for promoting health and preventing disease. Moreover, we can expect a logarithmically increasing array of effective interventions, but as yet we have little expertise and few effective models to guide us in implementing them. Our sophistication in evaluating their effect is in an embryonic stage at best. It is apparent that terms such as "marketing" and "merchandising" are necessary and appropriate to our lexicon, but in this field we are neophytes. We now appreciate that health care is a major industry, the largest sector of our economy; that systems for curative care delivery are evolving and that others will emerge; that future policies and plans will need to consider measures of quality of care and disease incidence as well as cost; that the systems will involve

both public and private entities; that attempts to measure the effects on populations of social, medical, economic, and political upheaval in the health care system are only beginning; and that there is a need for skilled professionals whose concern extends beyond individual components to the whole system and its rationalization.

Strategies for Change

We can all agree on common objectives of improved quality of life and diminished disease and disability at a cost we perceive we can afford. How we decide on strategy and tactics to achieve these objectives, how and by whom decisions are to be reached, and how we monitor performance of the system are the central issues. Certainly, the problems and quandaries before us will not be quickly or simply resolved, nor will they be addressed primarily by a single professional group or discipline, nor will they be addressed similarly in all geographic areas.

Rather than trying to define a field and a profession in transition, we believe the profession would be best served by identifying strategies that could catalyze a process of rational change. We offer two strategies, both of which will require changes in the worksite and the schools of public health and in their relationship to each other. The first is to focus on improved measurement and its application to policy formulation and resource allocation. The second is to facilitate the development of schools of public health as professional schools of defined quality which are fully relevant to the work-place.

Measurement

Measurement in the health sector has lagged far behind that in other sectors of the economy. With the vast bulk of resources allocated to demand-side curative care in a laissez-faire patchwork of systems, there was little motivation to collect and analyze such conununity-based data as disease prevalence, utilization and costs of service, and

environmental and behavioral risk factors. This has begun to change with the identification of health goals for the nation, with the aggregation of data on curative services from hospitals and prepaid insurance schemes, with the development of postmarketing schemes for drug surveillance, with national surveys to assess nutritional status, and with a variety of other efforts. These efforts, however, are all comparatively recent, the data are highly variable in quality and still grossly incomplete, and as yet, the data are only marginally employed in health policy formulation. The data in no way compare to the detail and sophistication of available data regarding wheat or milk production or the performance of large corporations.

This situation will inevitably change as more difficult resource allocation decisions are required; however, we need to begin the time-consuming process of developing appropriate data collection systems and gaining experience in their use. Such activities depend heavily on the central disciplines of public health—epidemiology and biostatistics—but in order for them to operate effectively, the best efforts of persons in the work setting and in the relevant academic departments are required. Many epidemiologists and biostatisticians will have to be transformed from professional academics into academic professionals, and professionals at the work site will have to understand and bear with their academic colleagues. If progress is to be made, this change is essential.

Professional Schools

The second strategy, not unrelated to the first, is for schools of public health to accept full and appropriate responsibility for their role as professional schools. The original models bore similarities to the better schools of medicine of the time; they emphasized the need for research to advance knowledge, and they trained men and women to "improve the standards of public health organization and administration" *and* to participate in work in the field. The last of these has its analogue in the medical faculty's participation in the care of patients—the process of both teaching and learning at the bedside. The bedside for us is the

public health worksite. There is nothing which so tests the relevance and applicability of both teaching and research as subjecting them to the crucible of diagnosing and teaching practical problems. Nor is there a better stimulus for redirecting both curriculum and research. We suggest, however, that we in public health, have done a lamentable job of bringing public health to the bedside, of actively working on-site with practicing colleagues. Note that we refer to active participation, not service as consultants or committee members which so many persons offer as their meaningful involvement in public health practice. To offer a blunt analogy, there is a difference between being a stud on a breeding farm and being either witness to the process or a member of the committee that selected the mare.

With the new challenges now being presented us, such as in environmental health and AIDS, new paradigms are possible. For example, a senior faculty member in the department of epidemiology has assumed direction of the Johns Hopkins Hospital's AIDS outpatient clinic, which now has 600 patients. From this limited beginning there emerged prospective studies on the disease and its treatment and equally important, activities progressively extended to include participation of community groups, the health department, the schools, and others. In all, some 25 faculty members are participating directly in activities which require the best of epidemiology, virology, health education, health systems management, health economics, and other disciplines. Instead of simply a rich data base that would have been grist for an epidemiological mill, we have a resource at the heart of an educational enterprise which is invaluable both to the community and to the university—for research, for teaching and for advancing the state of the art. We need to learn from this experience.

Meaningful collaboration between professionals at the work-site and those in academia will cause new policies, new strategies, and new tactics in public health to emerge—and far sooner than they would have through any other approach. Such efforts will be strengthened by a multidisciplinary faculty within a single academic center who can rapidly and effectively communicate new observations to others. We see no academic entity other than a school of public health which could adequately meet this responsibility.

As a group, schools of public health are not now prepared to discharge this function. It is important to develop financial and administrative mechanisms, for facilitating faculty and student involvement in practice—a need no less real than the need to provide patients for surgeons to operate upon. Many faculty members must accept a different role for themselves, and due credit must be given for contributions to professional practice. Those in practice must be prepared for and receptive to such change. To this end, a far more extensive continuing education program would be invaluable; but here, too, incentives will be required. No less important, we need to remember that, as medicine progressed from art toward science, Simon Flexner redefined what was acceptable medical education, and the profession grew and prospered. If the schools of public health are to assume the broader mandate that seems both logical and necessary, we must define more rigorously what is an accreditable academic public health institution.

Ultimately, public health will be best served by a network of greatly strengthened professional schools that are adequate in size to encompass the far broader expertise needed to address contemporary public health issues and that collaborate with professionals in nearby work-sites.