"Future Directions in Public Health"

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(cancelled at last moment!)

It is a pleasure to celebrate with you - and with many old friends - the 60th Anniversary of the dedication of the School of Hygiene, a School which was one of the first of its kind in North America - and indeed of the world. Although our own School at Johns Hopkins is acknowledged to have been *per se* the first School of Public Health in North America, the claim has a hollow ring given the fact that the Senate of the University of Toronto had established a Diploma in Public Health fully 12 years before and had already conferred its first degrees. The formality of creating a School only awaited contributions from the Rockefeller Foundation. Thus, with a span of only two years, new buildings were dedicated at Johns Hopkins and the University of Toronto which today share the elegance of the architecture of the 1920s, along with its rusty pipes and aging electrical systems. ~~As a school,~~ the history of this School has truly been a distinguished one; its graduates have made important contributions to the health of Canadians, of Americans throughout this hemisphere and of the world's citizenry. The Connaught Laboratories with which it was so closely associated has likewise enjoyed world stature and respect. With the administrative changes which have taken place in both institutions over the past decade, I am pleased that traditions and roots have not been forgotten.

1987 is a very different world from that of 1927, and so is the world of public health. In fact, I believe it is not unreasonable to suggest that no other profession has seen its agenda of concerns change so

substantially over this period of time or experienced the same degree of controversy regarding its domain and role. Indicative of the state of current concern is the attention given to these issues in the ~~recent~~ forthcoming ~~lamentable~~ report of the Institute of Medicine on public health, a forgettable special conference on the future of public health education last spring, and the creation by the APHA of yet another committee, presumably with report, to deal with public health education. Charles Schultz, in his cartoon strip succinctly summed up current thinking in the words of Charlie Brown. Lucy in her role as psychiatrist pointed out to Charlie that life is like a great ocean liner. Some passengers place their deck chairs so as to look ahead to see where they are going and some so that they can view where they have been. She asked Charlie which type he was. He said that he hadn't managed to get his chair untangled yet. In my reflections this evening, I shall both reflect briefly on the past and look to the future but I will primarily address the question of untangling deck chairs.

As I was told that my remarks should be limited to not more than two hours, I can't really do justice to the profound thoughts and ideas which have emanated from this year's distinguished deliberations on public health.

However, you will be relieved to know that I have borne in mind the advice given to the young Dean of Canterbury when he was approached by the Lord Chamberlain prior to giving his inaugural sermon. The Lord Chamberlain explained that the Queen would be attending and wished to know something about the sermon. The Dean anxiously queried if there

was some subject about which the Queen would like him to speak. The Chamberlain replied that, in fact, the Queen hadn't the slightest interest in the subject matter - only the length of the sermon - which had best be brief.

For nearly 11 years, I had the opportunity to work as part of the World Health Organization in the campaign which for the first time succeeded in eradicating a disease. On return, I was asked by many as to what was the most important thing I learned from that experience. The unanswerable question, I finally decided, deserved an appropriate answer. "Choose your specialty with care." It is really quite an awkward problem when, upon reaching the preeminent position of being an international authority on a disease, one finds that the disease has vanished. It is akin to pulling the rug out from under one's own feet. Amongst such circumstances, deans are made! Mind you, I don't expect that many others will face similar problems over the coming decade - and, fortunately so, as there are not that many vacancies for deans.

As we look to future directions in public health, it is necessary that we recall our history in order to better understand the future. None can deny but that the period extending from the late 1800s through perhaps 1940-1950 was an extraordinary period in the improvement of health of populations throughout North America. Bill Foege has translated this into comprehensible numbers, pointing out that from the turn of the century, life expectancy increased, on average, about 15 minutes every hour. What accounted for this? We tend to forget that it was primarily community-based initiatives subsumed under the generic

title of public health programs - purification and chlorination of water, food and drug laws, improved nutrition with vitamin fortification of milk and wheat, the addition of iodine to salt, pasteurization of milk, immunization against diphtheria, tetanus and smallpox, maternal and child health clinics, better sewerage and the like. Most of these changes, we now take for granted but at the time, each change was controversial and was accomplished only with difficulty. Undoubtedly, an improved economy, better housing and other factors also played a role but little is said or can be said about the contributions of traditional curative medicine - not that it wasn't needed or sought, only that its contributions to better health and to longevity are acknowledged to have been marginal, at best. Indeed, it was sobering to me as a young medical student and as a resident as recently as the 1950s to realize how infrequently the medical or surgical measures available to us served to alter significantly the course of disease.

Then, a biomedical revolution began and has accelerated steadily since, among other developments, we soon had an array of antimicrobial agents, more sophisticated diagnostic procedures, organ transplantation, improved surgical techniques, parenteral alimentation and the like. For every illness, there were far more diagnostic and curative procedures which could be applied than ever before - and more often but not always to the benefit of the patient. A natural and understandable constituency of grateful patients grew rapidly. There was a demand for more hospital beds, more physicians to treat patients, broader and more generous insurance schemes to treat the ill. Legislators and benefactors alike responded readily in providing, for example, coronary care units and

ophthalmological services from which they themselves had personally benefited. There were few indeed who expressed comparable gratitude for no longer being at risk of poliomyelitis or smallpox, for example. Thus, the National Foundation for Infantile Paralysis, although promising other preventive miracles, quickly began its long slide into obscurity. Efforts to obtain even modest contributions to eradicate smallpox were seldom successful, however dramatic the cost-benefit ratios.

Accelerating interest in and support of diagnostic and curative procedures was accompanied by diminishing interest in public health and diminishing recruitment to the field. My own experience reflected this. I believe these experiences were not atypical of those of others. 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 were none on the faculty whose specialty was either public health or preventive medicine and I know of none in the class who 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. We recruited others to the EIS but rarely did

any apply who had a career interest in public health. When such applicants were encountered, there was, in fact, suspicion that they were in some way flawed or ingratiating themselves in order to be accepted. The demographics of those in the public health field were strangely skewed at that time. Most of the leading figures at all levels of public health were then in their late 40s or older having entered the field during the depression days of the 1930s or immediately after military service in the 1940s. Many were of excellent quality but it was difficult to identify their successors. Remuneration was low and the status of public health was even lower and apparently sinking. Both resources and glamor were to be found in the clinical specialties.

Problems of recruitment into the field of public health were accompanied by diminishing numbers of articulate voices to argue the cause, diminishing support for research in prevention and a diminishing level of relevance and quality in schools of public health.

Faculty in schools of public health, in large measure, withdrew behind their walls, forgetting that they had originally been established not as graduate training institutions but as professional schools whose role in part, no less than those in medicine, was to grapple with real world problems. As gradually became apparent, most faculty were unaccustomed and uncomfortable in dealing with untidy, real world programs and in the rough and tumble of political policy-making. 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" exemplified this. Not surprisingly, the health services research then being conducted was often characterized as "precious" and "irrelevant." And indeed much was. Elements of this legacy are still with us.

In the turmoil of the 1960s, concerns emerged about the provision of primary care, especially among the underprivileged, and suddenly a tidal wave of interest in community and social medicine swept the medical schools. In most, a curious potpourri of departments emerged consisting of faculty with interests in primary care, social medicine, epidemiology and storefront clinics. The overriding concerns were more often social equity in receiving curative services than in public health *per se* and the science relevant to it. The departments often remained aberrations in the medical school - little respected and poorly supported. Few were greatly respected and many have since been disbanded.

Where are we today? We have what is called a health care system but in the United States, at least, it is difficult to understand why it is called a system nor is it much concerned with health. Rather, it is a loose confederation of curative care facilities - hospitals and clinics which receive and care for those who appear at the door because they are ill. Let me be clear in saying this, however, that I, as much as anyone, appreciate having these facilities available. But let us label it for what it is.

What now is in limited supply are strategy, structures, funds and academic centers whose concern is the health of the community, in

addition to a system concerned for those who are sick. May I offer a simple illustration of the consequences of our present policies. Last year, there was a major epidemic of measles in Dade County, Florida - Miami, to be more explicit - a city which has no dearth of either hospitals or physicians. Reasons for the epidemic were sought. First, it was discovered that only 50% of those who were two years old had been vaccinated against measles. It is to be noted that vaccination is the simplest, safest and most cost-effective measure available to us in medicine and yet we don't have an organization which assures that it is applied. Second, it was discovered that of those with measles, more than 80% had been seen in a curative care facility within the preceding 6-12 months - but were not given vaccine! Finally, the ultimate and most devastating finding was to discover that more than half of those who developed measles had been infected while in a waiting room of a clinic.

The problem is brought into even sharper focus as we endeavor to grapple with AIDS. Our existing curative care system can diagnose and treat cases; they can assure that the supply of blood and blood products is safe; they can institute precautions to diminish the risk to their workers and to patients but all of these actions, taken together, can have only a marginal impact on the epidemic. Special expertise is needed to educate, to cope with those on drugs, to counsel those responsible for prisons, food establishments and other businesses. And if or when a vaccine does become available or a drug which can avert or slow the development of clinical disease, who is to take the leadership for developing and initiating policies for their application?

But AIDS is not the only impetus to restore a seriously skewed so-called health care system. During the past decade, revolutionary changes have begun to occur as we have perceived that we are approaching a ceiling in the quantity of resources which we can expend for sickness care. Increasingly difficult questions have begun to be posed with regard to cost, quality and access. These, in turn, have raised questions regarding resource allocation and systems. A new class of participants have sharpened the debate - the private sector, both as consumer and organizer. Environmental legislation coupled with successful litigation against offenders have given 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, with it, the discovery of measures which can avert or retard disease processes. And a burgeoning surplus of physicians has begun, happily, to translate into a growing recruitment of some of the most talented into public health. We are, however, only in the earliest stages of revolutionary change in our health care system - an unlikely time in a revolution for defining either its scope or outcome.

During a revolution, one hopes for gradual restoration of more stable institutions and programs, albeit of a different and hopefully more appropriate character. This requires imaginative solutions and new directions. Absent these, the outcome is chaos or perhaps anarchy. My belief is that the schools of public health are a critical resource to the debate and that they would have to be reinvented if they did not now exist. However, to play the role which I believe they must, will

require a serious reexamination of the relationship between academia and both the public and private sectors and through this a redefinition of educational mission and of the content and quality of the academic curriculum. This will occur only if those in public health education are relevantly immersed in the realities of the work setting.

It is 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 ignorant neophytes. We now appreciate that sickness care is a major industry, the largest sector of our economy; that systems for curative care delivery are evolving, and others will emerge; that future policies and plans will need to consider still vestigial 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 skilled professionals are needed whose concern extends beyond the components to the whole of the system and its rationalization.

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 nor 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.

What are the most important strategies which could catalyze a process of rational change? I would offer two, both of which will require changes both in the work-site and in the public health schools and in their relationship to each other. The first is to focus on improved measurement and its application in 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-site.

Let me briefly address the first. Measurement in the health sector has lagged far behind that of 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 has been little motivation to collect and analyze such community-based data as disease prevalence, utilization and costs of service and of environmental and behavioral risk factors. This has begun to change with the identification of health goals for the nation, with the aggregation of curative services data from hospitals and prepaid insurance schemes, with the development

of postmarketing schemes for drug surveillance, with national surveys to assess nutritional status and a variety of other schemes. These efforts, however, are all comparatively recent, the data are highly variable in quality and still grossly incomplete, and as yet, only marginally employed in health policy formulation. They 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 decisions are required in making resource allocations. However, we need to begin the time-consuming process of developing appropriate data collection systems and gaining experience in their use. Such measurements depend heavily on the central disciplines of public health - epidemiology and biostatistics, as well as the social sciences and medicine - but for them to operate effectively will require the best efforts of those at the work-site working with those in the relevant academic departments. It will require the transformation of many epidemiologists and biostatisticians from professional academics to academic professionals and it will require both understanding and forbearance of academic colleagues by those at the work site. However, if progress is to be made, this change is essential.

The second strategy, not unrelated to the first, is for the schools of public health to accept full and appropriate responsibility for their role as professional schools, as they were so conceived to be at the time of their founding. The original models bore similarities to the better schools of medicine of the time in emphasizing the need for the schools to undertake research to advance knowledge, to provide training

for men and women that would "improve the standards of public health organization and administration" and to participate in work in the field. The last of these three objectives has its analogue in the medical faculty participating in the care of patients - the process of both teaching and learning at the bedside. The bedside for us is the public health work-site. There is nothing which so tests the relevance and applicability of both teaching and research than to subject them to the crucible of diagnosing and teaching practical problems. Nor is there a better stimulus than this to cause both curriculum and research to be redirected. I would suggest, however, that we have done a lamentable job in bringing public health to the bedside - in actively participating with practicing colleagues at the work-site. Note that I refer to active participation, not the usual service as consultants or committee members which so many offer as their meaningful involvement in public health practice. In blunt analogy, I would offer the view that there is a difference between being a stud on a breeding farm and being either the witness to the process or a member of the committee selecting the mare.

Through meaningful collaboration between professionals at the work-site and those in academia, new policies, new strategies and new tactics in public health will inevitably emerge and far sooner than by any other approach. Such efforts will inevitably be strengthened by the existence of a multidisciplinary faculty encompassed within a single academic center who can rapidly and effectively communicate new observations to others. I see no academic entity other than a school of public health which could adequately subsume this responsibility.

As a group, however, our schools are not now prepared to discharge this function. An important need is for mechanisms, both financial and administrative, which will facilitate faculty and student involvement in real world practice - a need no less real than the need to provide patients for surgeons to operate upon. Many on the faculties must accept a different role for themselves than that to which they are now accustomed and due credit must be given for contributions to professional practice. Those at the work-site 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 be cognizant of the fact 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 which, to me, seems both logical and necessary, so too, must we define more rigorously what is an accreditable academic public health institution.

Given the necessary and appropriate development of schools of public health, we must ask what properly should be their relationship to schools of medicine and academic medical centers. Here we must interpose the question of what we as a society really want. Do we want a healthier population which is less dependent on a curative care system or do we want a more elaborate and sophisticated system for curative care? The answer from every point on the political spectrum is the former. And indeed, this is the primary mission and concern of a school of public health. Its ultimate goal is to diminish, indeed eliminate,

the flow of clients into the curative care system. (Having said this, however, I have not yet sensed that the Johns Hopkins Hospital feels threatened by our presence). To the extent we fail in our primary mission of preventing disease, the curative care system is called upon to cure or at least ameliorate disease. Logic thus would dictate that we begin to think in terms of schools of health which would incorporate the curative specialties as lesser departments - training professionals in the repair of conditions which have not been able to be prevented. This, I believe, would help us to see our priorities in perspective.

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