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"Point/Counterpoint:

The Medical vs. the Public Health Model of Prevention"

Donald A. Henderson, M.D., M.P.H.

Dean

The Johns Hopkins University

School of Hygiene and Public Health

In accepting your gracious invitation to engage in a discussion of the medical and public health models of prevention, I had envisaged Dr. Scutchfield and myself engaging in informal discourse with perhaps a dozen or so others who had inadvertently wandered into the wrong room during one of the concurrent sessions. I really hadn't expected this to be the subject of a plenary meeting. Having received the program, however, I knew I was sentenced to preparing something in advance and even to developing a few slides. You will be subjected to them in due course. Some of them even contain data. The next problem to be faced was whether I would be Point or Counterpoint. Dr. Tilson asked for a coin which he could toss and it came up heads, signifying that I had the privilege of opening this session. Hugh, of course, pocketed the coin. So I stand before you as traditional public health folk must - poor of pocket but rich in spirit.

It is now apparent that health promotion and disease prevention are again becoming respectable terms and while there are light years to traverse, progress is beginning to be made. As provided in the clinical setting, preventive interventions offer hope of making some contributions to better health. As I shall describe, however, I would expect them to be modest at best, even when guided by the multidisciplinary, community-based orientation of public health. Significant changes in the health status of our population will require public health measures.

We must face the reality that we are the inheritors of a so-called health care system which, in fact, is an infrastructure designed primarily to provide curative care and which has largely been built over the past four decades. To serve this system, we have churned out physicians in unprecedented numbers to the point where, as Bruce Vladek expressed it: "What we are facing in the hospital industry, in health care in general, is a very serious shortage of patients."(1) Medical schools, however, continue to graduate large numbers of additional physicians, trained as they have always been trained, to treat those who seek care; the Hill-Burton program has helped us build an excess hospital bed capacity; Medicare and Medicaid have served to assure greater access to the system, as well as the financial health of our medical profession; but public health and preventive services have languished.

Can we alter or adjust the Brobdingnagian and costly engine which we have to permit it to provide significant preventive services? Or do we

build prevention programs primarily on the foundation of an admittedly demoralized and underfunded public health structure? Or do we do both?

History can be instructive. In the United States, none can deny but that the period extending from about 1900 through perhaps 1940-1950 was an extraordinary period in the improvement of the health of Americans. In more concrete terms, life expectancy increased, on average, about 15 minutes every hour. What accounted for this? As time has passed, we have largely forgotten that it was primarily community-based programs which, at the time, we called public health - provision and chlorination of water, the implementation of food and drug legislation, improved nutrition with vitamin fortification of milk and wheat, the addition of iodine to salt, the pasteurization of milk, immunization against diphtheria, tetanus and smallpox, provision of sewerage and the like. Today, we take most of these changes for granted but at the time, each change was debated for various reasons - including cost - and was accomplished only with difficulty. Economic and other factors undoubtedly contributed also to the improvement of health conditions but little is said, or can be said, about the contributions of traditional curative medicine - not that practitioners weren't needed or that people didn't seek medical care, only that they contributed little to better health or to longevity. I don't believe there are many who would seriously debate this.

Then, a biomedical revolution began and this has since accelerated steadily. Among other developments, we soon had an array of antibiotics, more sophisticated diagnostic procedures, organ

transplantation, improved surgical techniques, parenteral feeding and the like. For every illness, there were far more diagnostic and curative procedures which could be applied than ever before - and more often, although not always, to the benefit of the patient. There was a demand for more hospital beds, more physicians to treat patients, broader and more generous insurance schemes to treat the ill. Legislators, benefactors and consumers alike responded by providing a cornucopia of coronary care units, ever more sophisticated machines for diagnostic radiology and who knows how many fat farms, as well as plastic surgery centers which could build a nose or drop a chin.

We built a magnificent curative care structure which we called a health care system - which, of course, it wasn't. Medical care costs rapidly escalated and have continued to do so. Yet, we have the uneasy feeling that, for all that has been and is being spent, the health of the population simply isn't that much better. Public health, meanwhile, has been neglected.

Many data can be offered in illustration of our present malaise. Let me offer only one of the more simple and straightforward measures - trends in age-standardized mortality rates (figure 1). On a log scale, the changes would, of course, be even more dramatic. Between 1900 and 1954, the year I graduated from medical school (vertical line), the mortality rate had diminished from 17.8 per 100,000 to 7.6 per 100,000. Expenditures on health care as a percentage of our gross national product amounted to only 4.6% in 1954, a modest increase from 3.5% in 1929, the first year for which I have data. I would not like to suggest

that my graduation from medical school was responsible for the subsequent scenario, only that 1954 serves as a convenient reference point, after which our curative care structure expanded greatly. Over the next 30 years, 1954 to 1984, mortality rates declined from 7.6 to 5.5 per 100,000 (28%) while expenditures for health care increased from 4.6% of gross national product to 11.0% (139%) and the figure continues to climb. That we have by no means begun to approach our limits in dealing with preventable mortality is illustrated most simply by the fact that age-adjusted mortality rates for blacks are today 50% greater than they are for whites.

When I graduated from medical school, there was precious little interest in prevention or public health. I graduated from a respectable medical school which, at that time, did not teach epidemiology or biostatistics or health management. The course in public health was considered to be dull, of no interest 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 knew of none in the class who considered public health as a possible career. At the time, there were few leaders in the public health field who were under 50 years of age. Most had entered the field during the 1930s or early 1940s. Many were of excellent quality but it was difficult to identify their successors. Pay 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 and in treating patients.

Problems of recruitment into the field of public health were accompanied by diminishing numbers of articulate professionals to argue its cause and diminishing support for research in prevention.

There are now a flickering few rays of light to suggest that change may be before us - and this conference represents one of those rays. But one has to wonder whether health may not be too important an issue in principle to entrust primarily or even substantially to those who have been trained and grown up as curative care providers and to the institutions which have instructed them.

Three recent observations made by others illustrate the cause for my concern. The first is provided by a European educator who stated recently "It is easier to move a cemetery than to change a (medical school) curriculum."(2) The second, from a paper by Johns and her colleagues at San Diego, echoes this observation: "Most medical school curricula have changed very little in the past 50 years."(3) And what should appear <u>this</u> year but a mission statement from a well-known medical school with which I am well-acquainted and which prides itself on being at the forefront of medicine. "The mission of the School of Medicine is to provide international leadership in the education of physicians and medical scientists, in biomedical research, and in the application of medical knowledge to patient care."

One can hope for change and indeed there are a few lonely pioneers laboring in the vineyards but will these efforts make a difference? Alwyn Smith, recent President of the Faculty of Community Medicine of

the Royal College of Physicians, doesn't think so. Last year, he wrote: "The care of those who are sick will always take precedence over the preservation of health of those who are well."[4]

Rubbish, you say. Not so. Let me provide a simple illustration using observations made during an epidemic of measles in Dade County, Florida, in 1986.[5] I think that there are few who would disagree with the assertion that of all the medical procedures in our armamentarium, one of the simplest and most cost-effective is immunization. Yet, that year, in a county with an excess of physicians, an excess of hospital beds and an excess of all matter of curative care services, 257 cases of measles occurred, 13 of whom required hospitalization. None should have occurred. Surveys showed that vaccination coverage among two-year olds was only 49-65%. Shame on the County Health Department, you say. But, just a moment. Of 95 with a known place of exposure, 63 were infected in the waiting room of a large, county hospital. Well, how were they to know? Ah, another moment. As the authors point out: "Almost half of the measles cases in unvaccinated patients eligible for measles vaccination potentially could have been prevented if health care providers had vaccinated them at the time when they either received other antigens or when they had a minor illness that was not a contraindication to vaccination."

Alwyn Smith's observation could be amply illustrated with many other examples. But let me not belabor the point. It is clear that <u>some</u> preventive measures <u>can</u> be introduced/applied by our colleagues whose primary concern is curative medicine. It is far from certain that they

will - even if compensation systems provide for this. But even if they do so, will it make a substantial difference?

Here, our current quandary with AIDS illustrates the problems we face in coping with all manner of problems, be it vaccine-preventable disease, substance abuse, hand guns, injury control, teenage pregnancy or environmental hazards.

What role in AIDS do we project for clinicians practicing preventive medicine? Those whom they see, by and large, are those presenting themselves because they are ill with the disease. Our clinician colleagues may offer counsel about safe sex and substance abuse to prevent their patients from infecting others, but it is already late in the game and most of those whom they are treating have already transmitted the disease to their closest associates. And this, of course, assumes that our curative care colleagues have acquired skills in behavior modification - not a course of instruction which most medical schools are particularly interested in or adept in offering. I say this with feeling having just reviewed a grant proposal involving three medical schools and their clinics in a major U.S. city, itself one of today's hotbeds for AIDS. Their plea was for help in designing some sort of educational scheme for a counseling and preventive services program, beginning from ground zero.

If one is to diminish the spread or occurrence of disease, one has to understand the epidemiology of the disease and this involves identification of patients throughout a population. There are few

hospitals or curative care services which now accept responsibility for any geographically defined population. For such as AIDS and most other problems of significance, the organization of education programs, distribution of such as condoms and needles and behavioral modification are required. "Social marketing" and "merchandising" are terms now coming into acceptable use in our public health lexicon - hardly subjects to be addressed in a medical school curricula. How skilled we are in social marketing may be illustrated by Maryland's "three for free" plan to distribute condoms. The program offers condoms (packages of 3) at a number of sites which can be picked up at no cost and with no questions asked. The program proudly announced in January 1987[6] that over a three-month period in Howard County, 1065 condoms had been picked up at six sites and in Talbot County 147 at two sites. You may suggest that this may have met community needs given the behavior of a bunch of up-tight Marylanders. And you may be right - although Baltimore is still #1 in teenage pregnancies.

The conclusion to all of this is that an array of specific basic skills is needed if one is to engage meaningfully in prevention and that these must be applied throughout the community. These skills are poorly taught, if taught at all, in conventional medical schools and, even if they are taught and mastered, the contribution of clinical preventive medicine inevitably has to be marginal as it requires that the patient seek the provider. Few of the seekers, as we know, are significant to the broader health problems we face. And I turn to Alwyn Smith who states it most eloquently "Public health doctors differ strikingly from

their clinical colleagues in initiating consultations rather than waiting to be consulted."(4)

The need is to diagnose the problems of a community, to employ the diverse range of skills and approaches to intervention which are embraced in public health, and to seek to promote the health of the entire community. Practitioners of clinical preventive medicine obviously are of help to this process but it is hard to envisage their role as being more than marginal until mechanisms are found whereby they can become physicians to defined communities rather than individual free-lance entrepreneurs and their training institutions, the medical schools, recognize that the health of communities rather than the sickness of individuals is their reason for existence.

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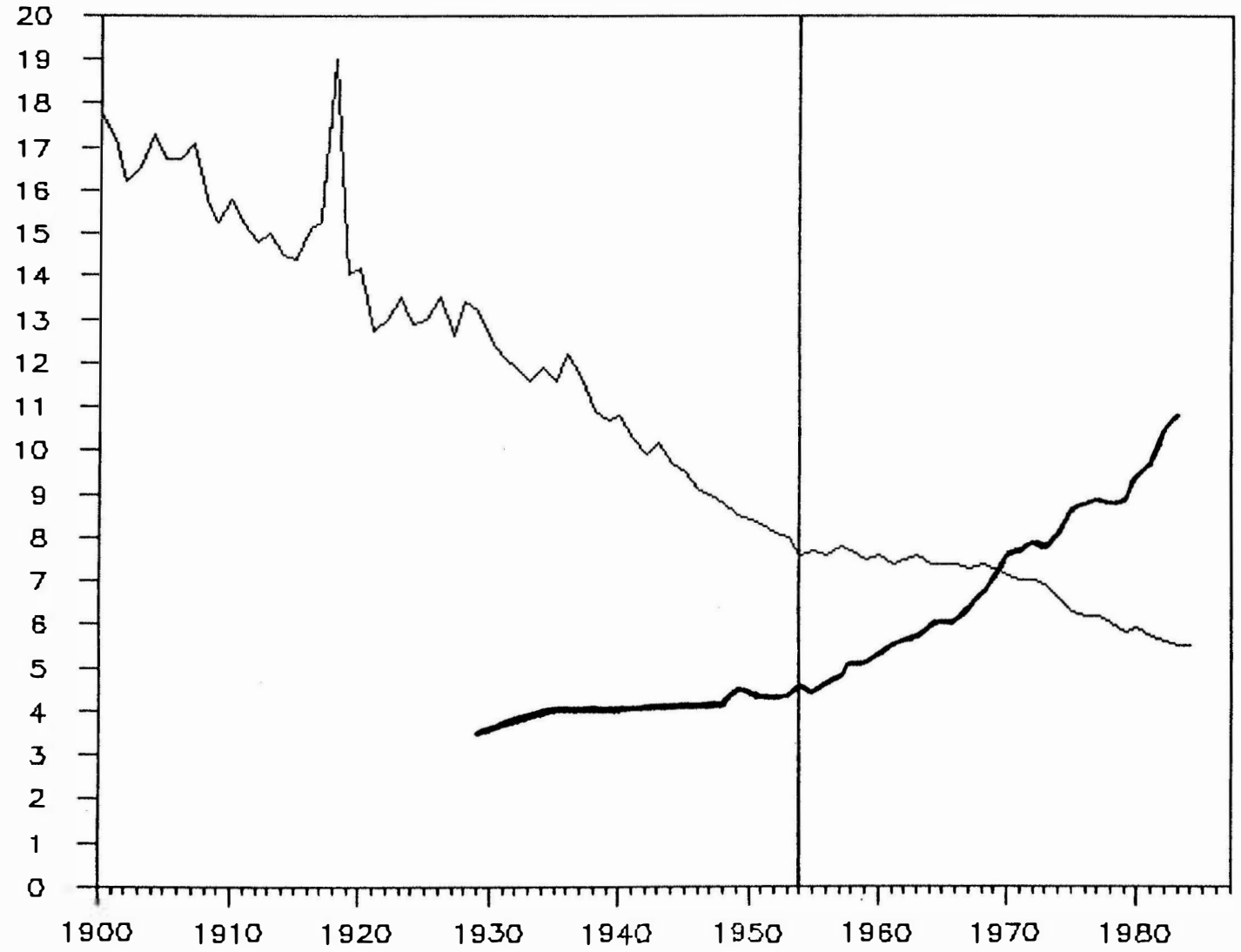
MORTALITY RATES, 1900–84 (AGE–ADJUSTED)

AND HEALTH CARE EXPENDITURES – % OF GNP



Deaths per 100,000

Percent of GNP