Aug. 1990

"International Health in Development - Reflections on Leaving the Research Advisory Committee"

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I appreciate greatly the opportunity you have provided me to offer a critical and candid summing-up after some seven years on this Committee. And, indeed, at a point, when I myself pass yet another milestone. At the end of this month, after nearly 14 years, I leave the post of Dean of the Johns Hopkins School of Hygiene and Public Health. It is an institution which has grown now to include some 325 full-time faculty, a graduate student body of some 1,000 students and a budget of about $120 million. I cite these numbers not to impress regarding Johns Hopkins. The point to be made is that the scope of public health concerns and activities are substantial and growing both in this and other countries. Programs of special concern to the international community comprise now perhaps one-fourth of our overall activities, a substantial proportion of which are funded by the private sector and agencies of government other than AID.

I speak today as one who is detached or about to be detached from existing institutional bias, but certainly not as a dispassionate observer of the international health scene. More than this, I bring to the table a diverse experience rather than a life-long accumulation of academic baggage - in fact, the latter comprises only 14 years worth.

Before Hopkins, I had 11 years with the World Health Organization and a comparable period with the federal government - as a Public Health Service Officer with the Centers for Disease Control. For the past 35 years, international health for me has proceeded from an interest to an avocation to a theme of dedicated concern.

A decade ago, at the behest of the National Academy of Sciences, I served then Presidential Science Advisor Frank Press as a member of a group which endeavored to craft and sell an entity comparable in stature, competence and flexibility to Canada's IDRC - the U.S. version being termed ISTIC, the Institute for Science and Technology in International Cooperation. As you know, our efforts failed, but I came away from that experience greatly enriched in understanding and appreciation for the potential of international development - that enrichment being provided, in particular, by an exceptional group of specialists in agriculture and by some in political science and economics. I can honestly say I began that assignment knowing nothing about cowpeas, sorghum, dry land farming, agriforestry, aquaculture or fertilizers. I certainly am no expert today, but what I did learn was that strategies and resources for international health were, compared to agriculture, stranded somewhere between the Dark Ages and the early Renaissance. International development issues were overwhelmingly dominated by agriculture and by economics. To term international health a poor second cousin certainly would overstate its stature.

I welcomed the invitation to serve on RAC, as I hoped that through this medium, I might educate my colleagues in other fields regarding the

needs and potentials of health in development and, thereby perhaps, foster creative changes in AID policies pertaining to health. I leave RAC, having again been the beneficiary of a remarkable education. But, I have been asked by Bryant to speak critically and with candor and to grade honestly my performance and that of my colleagues in the health arena (with full assurances that this is a closed meeting). I would offer a grade of "C+" with regard to our own responsiveness to the challenges posed to us. We could have been more explicit and aggressive and in writing, in asserting our points of view and, thereby perhaps, have effected a few of the many changes in policy and direction which so desperately cry out for change. We compromised with quite explicit verbal exchanges and more tactful written reports. We accepted, in retrospect too passively, our role as advisors to the Administrator and the Director of the Office of Science and Technology when perhaps our views might have been more productively received had we deliberately sought to air these views, albeit as private citizens, to the Congress and to higher levels of government. Whatever, our impact on AID's policy and programs in international health can, at best, be graded as "D-" and I grant it the more generous grade only because some few policies have changed albeit, so far as I can tell, quite independently of any advice offered by RAC. It is only because certain advice and observations of RAC might have had a causal role that I offer the somewhat generous grade of "D-."

During recent years, I queried a number of our AID colleagues in the health field as we moved through the series of exercises we conducted as to what RAC meant to them and how they responded to its recommendations.

These individuals have now left AID employ so I feel more free in quoting them. Their responses were remarkably uniform - "The Committee and its recommendations had no meaning to us. That was Dr. Brady's Committee."

Toward the end of my tenure, one issue emerged which, more than any other, epitomized our frustrations both in terms of outcomes and interchange. That issue was AIDS, an emerging issue of the highest concern four years ago and still today showing no signs of abating. On behalf of RAC, I convened a subcommittee comprised of many of the country's best and most concerned scientists to provide advice to AID as to priorities in research best addressed by the Agency. There was unanimity that there was one program and one program only which commanded AID's attention. This was to establish and/or develop four centers in Africa which could undertake long-term epidemiological and clinical studies of the disease among cohorts of the population so as to better understand how the disease manifested itself in tropical Africa, what its natural course was among so many patients with immune systems already compromised by other diseases and what diagnostic and therapeutic procedures were most appropriate. Such centers, over time, could also be expected to serve a vital role in evaluating preventive interventions - be they vaccines or behavioral modification. None could identify any other agency - national or international - which could meet this challenge, in major part because no other industrialized country had so much disease - and experience - and none were investing in research, more than a fraction of what the U.S. was investing. The needs and opportunities seemed ideally suited to the development of a

health model comparable to a cooperative research support program. These recommendations, by the way, were explicitly spelled out and in the strongest terms. Four years later and after countless meetings, no center such as I have described exists today and none is planned. I have no idea as to why none materialized. Meanwhile, HIV infection rates are passing the 25% mark in many urban African settings. Efforts are being made to assess the potential economic and demographic impacts of AIDS but existing data are so fragmentary that the best models have had to be constructed on a swamp of casual observations. Reports of progress in prevention of disease are little better than anecdotal and not encouraging. The only hopeful note is that over the past six months, several lines of research have begun to offer promise of a vaccine and I now suspect that NIH will at last proceed to establish needed centers, at least as vaccine test sites. There is concern about timing, however, and the hour is late. It was discouraging to all who participated, including RAC members, to respond with concrete advice only to have it rejected by inaction and without explanation.

Perhaps those of you now serving on RAC will be able to beneficially contribute more than we in the field of international health. Never in history has there been such a wealth of opportunities to benefit mankind nor a greater need to act in our own self interest. Curiously, we are ill-structured and ill-prepared to do so.

It is important that I endeavor, at least briefly, to take stock of where we are in health, to identify the reasons for the present state of affairs and finally, to offer some directions.

The U.S. today is unquestionably preeminent in biomedical research - with a substantial pool of experienced scientists and a lavishly equipped multi-million dollar research engine - oriented, however, toward solutions for problems of our own country - primarily cancer, heart disease, genetic defects and the like. Some of our academic health centers have a handful of ill-funded scientists working on problems most germane to the third world; a few have professionals who are concerned with the practicalities of health care delivery; one - arguably two or three - have a staff of sufficient depth and breadth to be identified as having a program in international health. A career structure is all but nonexistent and experienced professionals are scarce. There is exactly one third world center, internationally funded, which is any way comparable to those of the CG system and that one has been repeatedly on the brink of collapse.

The Department of Health and Human Services has an all but invisible Office of International Health of about ten persons, so I am told, few of whom are professionals and none of whom are known nationally, let alone internationally. The NIH, with a budget of nearly $8 billion spends about $100 million on what it terms international activities - but, by its own assessment, only 15 countries receive more than $1 x 10^6 and 13 of the 15 include Australia, Canada and the European community. Our most substantial enterprise outside of AID which deals with third world problems is the Army and its agenda is obviously a focussed one. AID's Office of Health is small; its professionals number only a handful; there are few based in the field; and recruitment has proved to be a problem of formidable proportions. Most AID health activities are

conducted through the medium of private sector contractors with ever-revolving doors for staff.

In the health sector, there is no CG system; there are no Title XII funds; there are no cooperative research support programs and, indeed, few funds which support and draw on the academic community. I have been advised that we in health should emulate the land-grant colleges and generate policy change through a consortium approach. But how does one create a consortium from the scattered islands of interest which now exist, a problem complicated by the fact that the base of our biomedical research enterprise rests primarily upon the foundation of the private research universities rather than in the land-grant institutions?

So much for the sorry inventory of today's state of affairs. A necessarily simplified history helps to understand how we arrived at this sorry juncture and, at the same time, makes the case for significant policy change.

1. Our health enterprise, for the past generation, has been focussed on curative and rehabilitative care - not on prevention. Our so-called health care systems have become, in fact, sickness care systems to which ill and disabled persons present themselves for treatment and rehabilitation. Surprisingly, however, the major advances in longevity, health and well-being in the U.S. and other industrialized countries occurred <u>not</u> during the past 30 years but during the first part of the century when our focus was prevention - chlorination of water, immunization, better

nutrition, assured food and drug safety, etc. So many of those making policy know only the sickness-care era and this we exported to the third world - constructing, for example, the great hospitals in Monrovia and Addis to which less than 5% of the country has access but which consume upwards of 75% of the government health budget. Sickness-care systems are what third world leaders were instructed in and this is what they wanted. Not surprisingly, curative care facilities have proved, at best, to be a vast disappointment - and, no less in our own country, as we struggle with the major problems of drug addiction, AIDS and teen-age pregnancy. Sickness-care systems are now seen to be irrelevant to these problems as well as a not inconsequential number of others. Recently, we have witnessed first glimmerings of an understanding that we need strategies which deal primarily with the health of communities rather than with the sickness of individuals who can gain access to the system. Nowhere is this more true than in the developing world.

The picture in the third world is more grim and at the same time more hopeful than in the U.S. Over the past 10^{+} years, we have at last begun to administer vaccines to children, to provide oral rehydration therapy, family planning devices and Vitamin A. Almost without exception, successful programs have bypassed the sickness care structures, however elaborate they may be, in favor of community-based delivery programs.

The first cause of our misdirection, therefore, has clearly been a global misdirection of policy from community health to individual illness. I now have the sense that this is beginning to be appreciated.

A second cause was the declaration by prominent health officials during the 1960s that we had conquered the communicable diseases, at least in the industrialized countries, and it was time to turn our full attention to chronic illness. And we did. Since then, we have experienced the AIDS epidemic, new or at least previously unrecognized diseases such as legionellosis, Lyme disease, dengue hemorrhagic fever and a recognition that some such as hepatitis virus, the EB virus and others may, in fact, cause cancer. We also now recognize that viruses, in particular, are constantly changing. Joshua Lederberg, recently President of Rockefeller University and a Nobel Laureate, expresses our growing concern about this. To paraphrase him, "Man's only competitor for dominion of the planet are viruses and survival of the human species is, by no means, a preordained outcome." Today, we are still rebuilding the base of expertise and support so short-sightedly put aside a quarter of a century ago - and it is the infectious disease problems which are the major scourge of the third world and the major threat to man's existence on earth. An interesting example of what I mean is illustrated in the introduction of myxomatosis virus into Australia to control the rabbit population. 99% died until, gradually, genetic selection through reproduction changed the susceptibility. Suppose that we had an HIV with the capacity to spread like influenza. This is not an impossible scenario - and yet, today, we have no strategy in place to address this problem.

The third cause for the malaise in international health relates to AID's own policies in contracting for projects in health, i.e., a deliberate and all but total reliance on nonacademic entities to carry these out. This mitigates against U.S. institutional capacity-building; it all but precludes the development of a career structure in international health; it isolates programs from on-going research and educational activities and precludes, for professional schools, the necessary and on-going contact between the academic institution and the real world of practice. Why and how this policy came about is obscure to me. I know it dates back at least to the early 1970s. I am told that the academic centers were not responsive to AID's service type programs but, at the same time, I am told that AID contracts seemed often to have been drawn-up with private entrepreneurial firms in mind and, once granted, these firms seemed often to be staffed by those who had drawn up the contracts. Surely, the policies need review.

Finally, let me turn to what I believe needs to be done and done as a matter of urgency.

1. We need to recognize that the quality and efficacy of programs ultimately depends on capable people and to have capable people, one has to have strong institutions where they can be trained, where research can be done, and where careers can develop. In health, these are all but non-existent both in the third world and in the U.S. This should be at the forefront of all considerations when program funds are expended. Grants and contracts need to be developed which encourage academic involvement, core funding

support would be an enormous help and such as cooperative research support programs need to be explored. Investments need to be looked upon as long-term - in terms of a decade or more. Most programs and projects are today cast in three to five year time frames, often with evaluation for continued funding coming just as the program has begun to emerge.

2. Research must be given far greater emphasis. In smallpox eradication, for example, I was told we didn't need research funds. I was told that the vaccine was available - that it was purely a management problem. We fostered research throughout the program. We learned that much which was accepted as medical truth was anything but. In consequence, we altered strategy and tactics many times. Quite simply, eradication would not have been achieved without that research effort. Yet today, for example, the same cry is heard with respect to the global immunization program - that research is not required. And, this in the face of clear evidence that none of the six antigens in use are fully satisfactory and none have been improved in more than 20 years. Research in preventive measures, in fact, deserves special funding for several reasons. If successful, the intervention should be inexpensive, at costs usually far below the prices required by manufacturers to recoup development costs. Accordingly, the private sector is reluctant to embark on prevention research initiatives. Second, much of what is needed falls in the category of applied research which seldom is funded by such as NIH or NSF, the large research support agencies. Third, neither UNICEF nor

other bilateral agencies, the major providers of commodities, customarily fund research. They feel they are not staffed to manage research projects - which most are not and, in the case of UNICEF's board, as well as many parliamentary bodies, they have been repeatedly told that the tools which are required are available, the only need is for them to be provided and applied. I would submit that the U.S. has the special advantage and responsibility because of its ability to build upon a multi-billion dollar basic biomedical research enterprise to take a lead role in an appropriate research ~~institute~~ Tom Malone. To fail to take advantage of this enterprise is criminal and parochial.

3. Finally, I believe AID must find a way to draw upon the best of our international health talent in developing policies and programs. Too many concepts and programs are drawn up, predicated upon the existence of an infrastructure similar to that which exists in agriculture. In health, as I hope I have been able to convey, the picture is far different - perhaps more like agricultural research and development in the late 1940s.

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