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The Shorter-Term Biological Hazards of a Fallout Field

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HEALTH & THE DEVELOPING WORLD

JOHN BRYANT, M.D.

"This is a remarkable book. With broad national and world statistics, and with intimate specific local impressions, it presents the health status of the world's poor, and particularly of the two billion or so people who live in the developing lands. It also tells how the world, its nations, and their medical establishments deal with this situation."—*Annals*

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— *Journal of Public Health*

"I strongly recommend this book to anyone interested in health care delivery and health in the developing countries—in fact, to any physician who enjoys reading a well-written case history."

—*Journal of the American Medical Association*

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Cover design by Will Bryant.
Woodcut on cover by Praphan Srisouta.

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the world are devoted men and women whose collective experience in less developed countries can only be called remarkable. To help our cause, they arranged strange and complex schedules, and drove, hiked, flew, and even rowed with us. Miss Thelma Ingles and Dr. Joe Wray were particularly helpful in contributing helpful suggestions and fresh ideas.

The illustrations by Praphan Srisouta were done on masonite panels, cut and printed by hand on the floor of a simple Thai house. The sensitive portrayal of man's problems in his world reflects the concern and insight of this gentle and perceptive Thai artist.

There were special problems involved in a study carried out on multiple continents, written in Bangkok, and published in Ithaca, but the difficulties were largely overcome by the competent secretarial help of Kathy Masters, Pitaya Morgan, and Papit Gualtieri in Bangkok, and Charlotte van Deusen, Edith King, Barbara Winkler, and many others in New York. Henry Romney provided important editorial advice, Richard Dodson guided the manuscript through critical phases, and the staff of Cornell University Press saw what needed to be done and helped to do it. My brother, Will, artist and writer in his own field, was always there with encouragement, skill, whimsy, perception, and, at the end, the design.

While I am deeply grateful for and readily acknowledge the many contributions of colleagues, advisors, and friends, it must also be said that they are not responsible for what is written here—for that, I alone am accountable.

Finally, I owe special tribute to my wife, Nancy, who never questioned, and to my children, Mayche, Peter, and Chirawan, who somehow knew it was important.

JOHN BRYANT

Bangkok
April 1969

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education, and great forward strides in understanding these diseases, the major causes of mortality and morbidity have been lightly influenced. This is not a criticism of the health profession of Colombia; far from it, it is intended to show that despite vigorous and imaginative leadership, these problems remain. Solutions to health problems do not follow automatically from establishing medical centers, producing more health personnel, and enlarging health services. There are certain critical connections between medical technology and the public, and if these connections are not firm and effective, the benefits of that technology do not reach the public.

In Cali there is strong appreciation for the complexities of fitting health resources to health problems and of the importance of thinking in terms of cost and effect. For example, concern for the critical role of nursing in health care has led to new approaches to educating auxiliaries in a university setting; to the development of a master's degree program to strengthen nursing leadership; and to an effort to develop an intermediate-level nursing category to provide closer supervision for auxiliary nurses.

More recently the institution has been working with other national groups in studying health care systems, using the techniques of operations research with the objectives of designing new systems that are more effective within the constraints of available resources.

We are confronted, however, with a sobering concept. It is the lag between the time an idea or an institution is born and the time that a substantial difference appears in the population being served. We will do well to ask what are the ways in which that lag might be reduced.

Summary

We see the passing scenes: patients come from far away and stand in long lines; auxiliaries work alone doing what would be done by a team in other places; physicians and nurses stretch resources beyond thinness to serve vast numbers of people; ministry officials make decisions on human lives unguided by analytical data or administrative assistance. And outside these scenes are others—of traditional means of dealing with sickness. And all are

entwined in the slow march of development along with education, transistor radios, roads, rains, crops, and political decisions—factors that affect health in ways we do not know.

It is difficult to find a meaningful order among such disparate patterns, but there are the common elements of man and disease interacting and other men trying to help. By focusing on health needs and efforts to meet them, a framework can be built for evaluating and looking for relationships among what might otherwise seem to be scattered and unconnected events.

We might think of it in this way: between our biomedical knowledge and the people who stand to benefit from it is a long chain—of people, concepts, instrumentation, techniques, money, and miles. If critical links are missing from the chain, the people in need will not benefit.

It needs to be said that critical links are missing. Large numbers of the world's people, probably more than half, have no access to medical care at all. For those who can reach the medical care system, the contact may have no significant influence on their lives and health—the malnourished child with diarrhea cries with an infected ear; the physician prescribes penicillin and ear drops; the child returns to the same crippling setting from which he came.

Looking along the chain, some missing links are obvious—sheer lack of resources; lack of capability for effective planning; failure to use auxiliary midwives in one country and medical assistants in another; lack of cooperation between university and government. Other weaknesses in the chain may be more subtle—"curative" medicine that is not curative at all but is only treatment of symptoms; health personnel whose work has little effect on the health of persons and communities; programs that seem sensible but are not the best use of scarce resources.

To what extent are these problems the unavoidable consequences of underdevelopment? To be sure, we are dealing with the problems of slow modernization—lack of money, lack of an infrastructure, low educational levels, administrative inexperience. In addition, however, there are major faults underlying the systems of health care and education of health personnel that have nothing to do with the development process except perhaps to augment its weaknesses.

The systems for health care and education of health personnel, with few exceptions, were not designed to meet the needs of these

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 countries. They evolved in the more developed countries and were introduced into the less developed countries with only superficial adaptation to local need. They are based on the principle of individual medical care provided by professional personnel, assisted perhaps by auxiliaries. This principle did not evolve in systems designed to meet the needs of large numbers of people but nonetheless has been incorporated into newer systems that attempt to serve total populations. A network of hospitals and health centers may extend across a country, but the system is paralyzed by lack of professional personnel together with refusal to allow nonprofessionals to do part of the professionals' work. Efforts to give auxiliaries more responsibility are frequently blocked by unyielding professional opposition.

Thus, both the design of health care systems and efforts to change them are inhibited by the heavy hand of Western tradition. The irony of this story is that some of the more developed nations from which these concepts were exported are now vigorously re-assessing and modifying their own systems, which they see as inadequate to meet the needs of their own populations.

The guidelines for change can be stated simply—to ease the suffering and improve the health of all people as much as resources will allow. But we know the simplicity of the statement is deceptive. Trying to reach all the people of a population, rather than a few, places extreme pressure on every aspect of the health system—description of problems, planning, resource allocation, evaluation of results. At every turn, the same denominator is there—all the people.

Resources will vary greatly in different countries, but it is clear that they are and will continue to be desperately short considering the size of the need and the rising costs of health care. The reality of both the present and the future, stated most succinctly, is that most rural people will receive health care under conditions in which one physician and one nurse together with a team of lesser trained personnel will care for 50,000 to 100,000 people, often with much less than \$1 per person per year. Urban problems are described in different terms but present no less difficulty.

We know that we must literally develop a technology around effective use of resources and that the dual problems of serving all the people and of making use of limited resources will condition our thinking at every turn. Indeed, what emerges from these issues

is that entirely new systems for health care are called for with new approaches to educating the personnel who will implement those systems.

Different countries will find different answers to these problems. There are similar problems, to be sure, as one looks from country to country, and it is tempting to generalize not only on problems but also on solutions. But solutions will be shaped by the individual context of each nation. Priorities, for example, will differ from one country to another because of social choice and style of government and because one country has five or ten times as much to spend on health, a fact that immediately affects what can be done and the way in which it can be done.

Now, let us proceed to a further examination of the major problems in the health field and the attempts to meet them. As we do so, we will develop the basis for considering what new directions might be taken in both the provision of health services and the education of health personnel.