The Indian Medical Education Explosion and Its Relationship to Economic and Social Development

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Medical education is exploding in smaller or greater measure in every developing country. In India the demands made on medical manpower by the numerous projects for socioeconomic development makes such rapid expansion an absolute necessity.

This paper will focus on the necessity for a medical education explosion and its relation to the socioeconomic development of the country. Also described will be the evolution of a pattern of medical education which is flexible enough to meet the varying health needs of the people.

BACKGROUND

For over a century after the British introduced modern medicine and medical training to India in 1832, the progress of medical education was very slow. In 1835 the first medical colleges were established in Calcutta, Madras, and Bombay. In 1843 the Royal College of England recognized the medical colleges in India and their standards were accepted by the General Medical Council of Great Britain. In other words, since 1843 the pattern, curriculum content, and standards of medical education have been similar to those of Great Britain. The medical colleges, though controlled by the Indian universities, were also under the direct supervision of the General Medical Council of Great Britain until 1933, when that function was taken over by the newly established Medical Council of India, which by statutory powers was given the responsibility for establishing and maintaining standards of medical education and the authority to license for practice. In addition to the university-affiliated colleges there existed until 1938 medical schools of a lower standard operated by the then provincial governments, but the Medical Council of India did not place the certificates given by these schools in the same category as the degrees given by the universities. From the inception of the Indian Council there has been reciprocal acceptance of standards between it and the British Council.

When India attained independence in 1947, there were 18 medical colleges.

CURRENT SITUATION

The responsibility for meeting the health needs of the country lies with the central (Union) and the state governments. In every state of the Indian Union there are general hospitals, district-headquarters hospitals, taluk† hospitals, and hospitals which are under the auspices of municipalities and corporations. There are few private hospitals, and most of these are run by foreign missionary organizations. The total number of hospitals and medical personnel is extremely low in relation to the population. According to statistics obtained in 1962, the ratio of population to physician in India is 5,195;

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† A collectorate or subdivision of a revenue district, usually the smallest, but varying in different localities.

whereas it is only 760 in the United States, 910 in the United Kingdom, and 500 in the U.S.S.R.

The majority of Indian medical graduates are employed in the government and quasi-government hospitals. Those medical graduates who set up private practice do so in towns and cities; relatively few go to the rural areas. As a result the population to physician ratio in the rural areas is roughly 5 times greater than that in the urban areas. Eighty per cent of the population in India is rural. The villagers are as yet mostly unaffected by the industrial revolution taking place in the urban areas. Their income is very low, and so is their educational standard; they are tradition bound and superstition ridden. By custom, their trust has reposed in the practitioners of indigenous medicine, who are an integral part of their society. The practitioner holds the confidence of the people because his language and his explanation of the causation of diseases is understandable to them. He practices his medicine in a comprehensive manner, treating the whole patient as a member of the family and of the community. Above all, this medicine is within the means of the villagers. So the indigenous systems of medicine, though empirical, have been acceptable to the villagers. But the socioeconomic development taking place in the villages and the elevation of educational standards have created an awareness of the need for better medical care. It is imperative that high-level medical personnel be trained to fill this need both in the village communities and in urban areas.

FIVE-YEAR PLANS

India's independence brought with it the responsibility for remedying a situation in which millions of people lacked medical care. The establishment of a democratic republic with adult franchise, along with the new awareness of the nation's pressing health requirements, roused the people to demand their right to medical care. The death rate every year through malaria, smallpox, leprosy, cholera, and other communicable diseases was very high. Partial solution of some of these problems decreased the death rate but also swelled an ever-growing population. Faced with the task of preventing a population explosion while at the same time continuing to decrease the death rate, the government sought to bring the entire health situation as well as many other basic programs under control through a series of five-year plans.

The five-year plans are attempts ". . . to harness natural resources and the energies of the people to the tasks of national development. The objective of planned development is not only to increase production and to attain higher levels of living, but also to secure a socioeconomic order based on freedom and democracy." (1) The immediate problem is to combat poverty; this can be done only by social and economic advance leading to a technologically mature society and a social order offering equal opportunities for all citizens. As the health of the people is a prime requisite for the success of any plan for development, health services are given an important place in the total program.

The measures undertaken during the first (1951-1956) and second (1956-1961) five-year plans have brought about some improvement in the health conditions of the people. This can be seen in the lower incidence of communicable diseases, decrease in infant mortality, general decline in mortality rates, and increase in life expectancy. Emphasis in the third five-year plan is on preventive public health services

and on the eradication of communicable diseases.

The total financial outlay on health programs was increased from Rs.1,400 million (approximately $280 million) in the first plan to Rs.3,418 million (approximately $684 million) in the third. Health programs in the third plan fall into 6 categories: (*a*) improvement of environmental hygiene, especially urban and rural water supply; (*b*) control of communicable diseases; (*c*) provision of adequate institutional facilities to serve as a base for organizing health services; (*d*) provision of facilities for the training of medical and health personnel; (*e*) family planning; and (*f*) public health services, including maternal and child welfare, health education, and nutrition.

These programs are closely interrelated. For example, improvement of water supply has a direct bearing on eradication of communicable diseases. High priority is given to the provision of safe drinking water in the villages, towns, and cities.

The program for the control of communicable diseases includes plans for fighting malaria, filariasis, tuberculosis, leprosy, smallpox, and venereal diseases. Eradication of malaria is of great importance because it previously accounted for a large proportion of the sickness and mortality in several parts of the country. Mass smallpox vaccination had led to a decline in the morbidity and mortality rates of this disease. Agriculture and food production are not yet keeping pace with the growing population; therefore, malnutrition continues to be a major problem.

The shortage of hospital beds is a great problem in urban areas. The overall target for the third plan is the establishment of 2,000 more hospitals and dispensaries, which would mean an increase of 54,500 beds.

India has a population of over 450 million, the second largest in the world; and it is growing every year by about 10 million. Since the five-year plans will be rendered futile if efforts are not made to control this population explosion, family planning and population control has been one of the key programs in all 3 plans. The emphasis now is on widespread education to create the necessary social background for an intensive family planning program and on the development of related training programs in medical colleges and other training institutions.

In an effort to effect a general rise in living standards, especially for the rural population, a Community Development Project has been included in the five-year plans. All government departments, including education, health, irrigation, agriculture and food production, animal husbandry, water supply, communication, and industry, are involved in this Project. One of the Project programs involves the establishment of primary health centers to meet the nation's total health requirements, both preventive and curative. Each primary health center, with a varying number of secondary health centers, ministers to the health needs of 60,000 to 120,000 people. The primary centers, which are supervised by one medical officer and several paramedical personnel, will not be able, by themselves, to meet the health needs of the people unless their number is significantly increased. Unfortunately, however, there is not sufficient medical personnel to man even 40 per cent of the existing centers, which are located throughout the nation. Therefore, it is essential that work in rural areas be made attractive to the medical graduates. This might be accomplished through provision of better emoluments, including nonpracticing allowances, residential

accommodations, and assistance for further studies.

Since the primary health centers are not equipped to deal with more complicated medical problems, these should be referred to the nearest larger hospital. Therefore, more hospitals with facilities for tackling major problems will also have to be built.

MANPOWER

The establishment of more hospitals, eradication of communicable diseases, population control, development of primary health centers—in fact the entire health program—rests on the availability of adequate medical manpower. Every facet of national development demands more and more medical personnel. The industrial revolution has created the requirement for industrial medicine, which calls for the service of more doctors; defense of the country is of prime importance and necessitates the recruitment of medical personnel for the armed forces medical corps; and health personnel are needed for insurance programs such as the Contributory Health Plan and the Employees' State Insurance Plan. The implementation of many of these projects is being impeded by an inadequate supply of medical personnel.

Thus, the purpose of the rapid expansion of Indian medical education is the training of sufficient numbers of doctors, specialists, researchers, and paramedical personnel to meet the demands made by the country's comprehensive health programs.

MEDICAL COLLEGES

The Union and state governments are forging ahead with plans for increasing the number of medical colleges. The central government is giving substantial financial aid to the states to establish medical colleges and in certain areas it is taking complete responsibility for such development. Within a period of eighteen years 67 medical colleges, in addition to the existing 18, have been established.

All the medical colleges in India are affiliated with 37 out of 61 universities. The pattern of universities in India is in many respects similar to that in Great Britain. The universities are statutory bodies established to organize and control education. They act as administrative organizations, controlling the curricula, standards, equipment, and facilities of all their affiliated schools, including professional colleges. The universities also conduct examinations and award degrees and diplomas. Though they are financed largely by state governments, they are autonomous bodies. Each university has colleges of various disciplines and faculties and many also have multiple colleges in one professional area. For example, there are 9 medical colleges affiliated with the University of Madras; one is operated by the central government, one by a missionary organization, and the other 7 by the Madras state government. As has been noted, the admission requirements, curricula, period of training, examinations, and degrees of all these colleges are controlled by the university, which also makes a periodic inspection of the schools. Such a system has the advantage of maintaining uniformity of standards.

It is essential that the urgency to increase the number of medical colleges does not lead to a lowering of standards. At present too much emphasis is laid on quantity rather than quality. The responsibility for maintaining satisfactory standards rests with the universities and the Medical Council of India, which by statutory power sets minimum acceptable standards and ensures compliance with its regulations through its inspection committees.

Interuniversity boards and councils have been instituted to develop better relationships among universities.

EDUCATIONAL STRUCTURE

Student performance in medical school is dependent on the quality of premedical education received at the secondary and undergraduate levels. Therefore, educational standards in these areas become a matter of concern for medical colleges. The University Grants Commission has been established by the Government of India to promote university education. But as health education and care is the primary responsibility of the central and state ministries of health, the University Grants Commission plays a limited role in medical education.

Most medical colleges have a premedical course of one year, which follows twelve years of higher secondary and preuniversity education. The duration of the medical course itself is four and a half years, which includes a year and a half of preclinical studies. In addition, another year of compulsory apprenticeship is required by most universities before candidates are awarded the degree of Bachelor of Medicine (M.B.) or Bachelor of Surgery (B.S.).

As community health is of great importance in a developing and largely rural country such as India, the medical school clinical curriculum must include a course of study in community health or social and preventive medicine. In addition, during the compulsory apprenticeship each graduate must spend a minimum period of three months working in a primary health center. This training acquaints the graduate with problems and work in rural areas.

POSTGRADUATE EDUCATION

The rapid growth of new colleges has created the need for more teaching personnel. Many of the teachers in the newly established colleges have not had enough time to gain experience and maturity. In a large number of medical colleges there are only part-time teachers who devote most of their time to private practice, although the trend now is toward the establishment of full-time teaching posts so as to achieve better standards of medical education and to promote research. Those few private institutions with full-time teachers have an unusual opportunity to experiment with and demonstrate new methods of teaching.

The universities in India have insisted that teachers in medical colleges should have postgraduate qualifications; yet in 1947 only a very few medical colleges had postgraduate training programs. So at that time medical graduates who desired postgraduate qualifications acceptable to the Medical Council of India had to go to the United Kingdom to appear for examinations conducted by the Royal Colleges. However, because of the demand for teachers in medical colleges and for specialists in the hospitals, postgraduate medical education is now being introduced in almost all universities. Special institutions for postgraduate medical education, training of medical teachers, and research, such as the All-India Institute of Medical Sciences, are being developed. Both at the undergraduate and postgraduate levels emphasis is placed on actual practice, called inservice training or directed practice. The compulsory one-year's apprenticeship in a recognized specialty prior to receipt of the M.B. or B.S. degree was instituted by the universities in order to insure that graduates possessed professional competency along with theoretical knowledge.

Although the new postgraduate centers provide opportunities for medical

graduates to acquire specialty qualifications, a large number of them still go abroad, particularly to the United Kingdom and the United States. If these graduates would return to India with their added experience and qualifications, the problem of securing a sufficient number of highly trained medical personnel would be minimal or nonexistent. However, due to better living conditions, both professional and personal, many choose to remain in these highly developed countries, with consequent loss of medical manpower to India.

RECENTLY ESTABLISHED ORGANIZATIONS

For many years the need for intensive medical research was keenly felt, but due to the magnitude of health problems and the paucity of funds and facilities, work in this area could not be seriously undertaken. However, in 1950 the Indian Council of Medical Research was established to meet this need.

Since the health picture of the country is constantly changing, there is need for periodical revision of the medical curriculum in order that the new demands made on the medical profession may be better met. This need for revision has been felt by the Indian Medical Council, the government, and the universities. The Council has convened many conferences of medical educators and on their advice has made changes in course content, duration of study, and admission requirements. A nongovernmental organization of medical teachers, the Indian Association for the Advancement of Medical Education, was established recently. The Association's primary interest is the methodology of teaching and related aspects of medical education.

In the development and operation of all the health programs, India has been fortunate in having the co-operation and assistance of international agencies which through their men and money have helped in the training of health personnel, in the control of many communicable diseases, and in the establishment of research centers.

CONCLUSION

Eighteen years after independence, what has been accomplished in India? The number of medical colleges has been increased from 18 to 85. In five years' time India plans to have 120 medical colleges which will admit 15,000 students annually. This explosion in medical education is India's answer to the health needs of a growing population influenced by socioeconomic revolutions. However, although priority is given to increasing the number of medical colleges, the government and the Medical Council of India have constantly sought to achieve and maintain high standards by appointment of full-time teachers and establishment of postgraduate institutes and research centers.

Much has been done during these years, but much more needs to be done. Medical education must keep pace with the socioeconomic developments of the country. Medical educators are responsible for demonstrating to their students simple but scientific methods applicable to prevailing conditions, and for teaching them to view their patients in the context of the family, the community, and the nation. The expansion of medical education has just begun; there must be further gains before its objectives can be achieved.

REFERENCE

1. Third Five-Year Plan: A Draft Outline. Government of India Planning Commission, New Delhi, 1960.