



STUDY GROUP ON THE TRAINING AND PREPARATION OF  
TEACHERS FOR SCHOOLS OF MEDICINE AND ALLIED  
HEALTH SCIENCES

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INDEXED



THE NEED FOR TEACHER TRAINING IN DEVELOPING COUNTRIES AND  
ITS EXPECTED IMPACT

by

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1. Introduction

Health is a most important community asset and a critical instrument of socio-economic development. It can be attained only when there is an adequate provision of basic health services as an integral and a very important part of the overall national plan for socio-economic development. The following are universally accepted as basic health services:

- (i) health education;
- (ii) maternal and child health (MCH);
- (iii) communicable disease control;
- (iv) environmental sanitation;
- (v) public health nursing/home visiting;
- (vi) epidemiological surveillance and health statistics;
- (vii) curative service (medical care).

Adequate basic health services cannot, of course, be provided in the absence of an adequate number of physicians and other health workers. One of the tragedies in the developing world is the large disparity between the demand for and supply of health services in the face of a mass of morbidity and mortality due to eminently preventable causes - eminently avoidable casualties in the furious war against disease.

Meanwhile, the peoples of the developing countries have to varying degrees undergone a tremendous amount of sophistication and are demanding more and better health services. Suggestions for producing "lower quality" or "second-class" physicians for developing countries have been rejected outright by political and medical leaders alike.

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The battle against disease in the developing world must be waged by highly trained, functionally versatile, ingenious and imaginative "soldiers" who, by implication, should have received training from highly qualified teachers in schools of medicine or allied health sciences.

## 2. Overwhelming needs - money, materials and men (health manpower)

Developing countries have to grapple with overwhelming health problems with extremely meagre resources in terms of money, materials, and men (physicians and other health workers). In many developing countries, particularly in Middle Africa, less than US\$ 2 per capita per annum is available for health services compared with US\$ 70 and over in many developed countries. The gap between developing and developed countries will become wider and wider according to present information and projections. Comparative figures of the gross national product per capita, for example, reveal alarming differences and prospects (see Table 1).

The shortage of physicians and other health workers is particularly acute in Middle Africa (see Table 2).

The projected enrolment in medical schools in Middle Africa (Table 3) clearly shows the desperate nature of the situation, while the projected enrolment of medical students in relation to population/physician ratios gives no cause for complacency, to put it mildly.

There is a scarcity of medical schools in Africa as compared with India and South America (both developing regions) where a conspicuous increase in the number of medical schools occurred between 1954 and 1965. To-day, in 1972, there are only 24 medical schools at different levels of development in the African Region of WHO (excluding medical schools in South Africa).

## 3. Need for most scrupulous strategy and tactics

It is clear from the foregoing remarks that the war against disease in developing countries calls for most scrupulous strategy and tactics as a basis for national health planning, paying special attention to:

- (i) population size and structure;
- (ii) population distribution - urban/rural;
- (iii) vulnerable population groups such as infants and children 0-1 and 1-5 years of age; expectant and nursing mothers; etc.;
- (iv) major causes of morbidity and mortality and their epidemiology;
- (v) definition of health care tasks;
- (vi) establishment of priorities;
- (vii) system or network of medical units for delivery of comprehensive health care to all segments of the community;
- (viii) ascertainment of manpower requirements at different levels in the system; etc.

Teachers (and those who teach them) in schools of medicine and allied health sciences must clearly play a leading role in working out strategy and tactics for the fight against disease, particularly in the developing areas of the world.

4. Educational programme planning and implementation

The crying needs of the developing world for greatly expanded health services and a large number of physicians and other health workers in the face of severely limited resources calls for very meticulous and efficient educational programme planning and implementation by teachers who are competent in educational science as well as, of course, the subject matter of their specialty. Large numbers of teachers must be systematically trained in educational science. A long-drawn out process of apprenticeship as a method of training medical teachers is out of the question.

Medical teachers with competence in educational science will be in the best position to provide badly needed leadership in:

- (i) defining educational objectives in terms of the health care tasks and needs of the community;
- (ii) determining the most efficient methods of deploying instructional personnel and resources;
- (iii) assessment of health manpower requirements;
- (iv) ascertaining the most efficient system for comprehensive health care delivery for the community;
- (v) elaboration of curricula and training programmes for members of a health team taking into account (i) to (iv) above;
- (vi) evaluation of student and teacher performance and of programme effectiveness;
- (vii) operational research into the efficacy of health services and the utilization of health personnel.

5. The teachers of teachers of medicine and allied health sciences

The teachers of medicine and allied health sciences must be taught educational science somewhere by somebody. Adequate training centres must be established for this purpose particularly in the developing countries. It is gratifying to note that plans are well underway for the establishment of WHO regional teacher training centres which will train staff who will subsequently establish national teacher training centres.

6. Decisive role of post-graduate training of physicians and allied health personnel in developing countries

Teachers for schools of medicine and allied health sciences must be competent in the subject they are to teach. This implies at least three years' post-graduate training and experience, which should as far as possible be obtained in the environment in which the trainees are destined to work. There must be a large pool of people who have undergone post-graduate training from which medical teachers and specialists for the health services will be selected.

It is most unfortunate that post-graduate training programmes in developing countries have been developed very slowly and have been hindered by considerations of the so-called "internationally recognized standards"!

This kind of obstacle had to be crushed before post-graduate specialist training in public health, internal medicine, surgery, obstetrics and gynaecology, psychiatry, pathology and ophthalmology was started at Makerere University Medical School, as recently as 1967!

It will not be possible to obtain enough candidates for training as medical teachers without greatly expanded post-graduate and post-basic training programmes for physicians and allied health personnel. The development of excellent regional centres for this purpose in developing countries is most urgent. The WHO Regional Committees could perhaps effectively take action in this respect.

#### Conclusion

The need is most acute for greatly expanded, and for a higher quality of, health services for developing countries. The size of the problem is so overwhelming in the face of meagre resources that pessimists might throw up their hands and call the situation hopeless.

It was estimated in 1965<sup>1</sup> that an additional 250 to 750 new medical schools were needed to satisfy the world needs then, allowing one medical school for every two to three million population. This implied the provision of 25 000 to 75 000 additional teachers. According to my estimation, at least 16 000 to 50 000 of these teachers could be claimed justifiably by developing countries.

It would be utterly futile to attempt meeting the acute health manpower needs of developing countries by building more and more medical schools of a conventional or traditional type - there is no money for such a "luxury". It is more realistic to develop university centres for health sciences to train members of health teams - physicians, dentists, pharmacists, nurses, midwives, sanitarians, medical technologists, etc. - sharing physical facilities, equipment and teaching staff as much as possible. The University Centre for Health Sciences in Yaoundé, Cameroon, is of great interest.<sup>2</sup>

It goes without saying that medical teachers conversant with educational science would be in the best position to devise and evaluate new methods of training physicians and allied health personnel in developing countries. The new methods will most likely be "different" from, but not "inferior" (or of lower quality) to, those employed by traditional or conventional schools for health personnel in developed countries.

It has been stressed that health is an essential community asset and a decisive instrument of socio-economic development. It can be attained only by the provision of adequate basic health services (in quantity and quality), which implies a large number of medical schools and of medical teachers. The training and preparation of teachers for schools of medicine and allied health sciences would, therefore, be expected to have a big and readily measurable impact in developing countries.

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<sup>1</sup> Wld Hlth Org. techn. Rep. Ser., 1966, No. 337, pp. 12-13.

<sup>2</sup> Monekosso, G. L. (1970) Looking to the future in Africa; the beginnings of the University Centre for Health Sciences, Yaoundé, Cameroon, Chron. Wld Hlth Org., 24, 462-466.

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- WHO Expert Committee on National Health Planning in Developing Countries (1967) Report (Wld Hlth Org. techn. Rep. Ser., No. 350)

TABLE 1. GROSS NATIONAL PRODUCT PER CAPITA, MEDIUM ESTIMATES, 19 COUNTRIES (1965 US DOLLARS)<sup>1</sup>

| Country                                 | GNP per capita |       |       |       |
|-----------------------------------------|----------------|-------|-------|-------|
|                                         | 1965           | 1975  | 1985  | 2000  |
| Nigeria                                 | 83             | 94    | 107   | 125   |
| Pakistan                                | 91             | 109   | 134   | 200   |
| Indonesia                               | 99             | 107   | 112   | 123   |
| Thailand                                | 126            | 170   | 239   | 402   |
| United Arab Republic                    | 166            | 221   | 295   | 480   |
| Taiwan                                  | 221            | 314   | 456   | 837   |
| Colombia                                | 277            | 298   | 322   | 359   |
| Brazil                                  | 280            | 319   | 372   | 506   |
| Mexico                                  | 455            | 503   | 558   | 680   |
| Argentina                               | 492            | 629   | 831   | 1 300 |
| South Africa and<br>South-West Africa   | 503            | 598   | 699   | 906   |
| Romania                                 | 757            | 1 143 | 1 717 | 3 224 |
| Poland                                  | 962            | 1 396 | 2 054 | 3 680 |
| Israel                                  | 1 334          | 1 949 | 2 978 | 5 839 |
| Czechoslovakia                          | 1 554          | 2 357 | 3 638 | 7 046 |
| East Germany (including<br>East Berlin) | 1 574          | 2 529 | 4 065 | 8 355 |
| New Zealand                             | 1 932          | 2 250 | 2 544 | 3 195 |
| Australia                               | 2 009          | 2 568 | 3 218 | 4 612 |
| Sweden                                  | 2 497          | 3 535 | 5 078 | 8 679 |

<sup>1</sup> Bryant J. (1969) Health and the developing world, Ithaca, Cornell University Press, 26.

TABLE 2. DISTRIBUTION OF COUNTRIES ACCORDING TO THE NUMBER OF INHABITANTS PER PHYSICIAN/MEDICAL ASSISTANT<sup>1</sup>

Number of staff: composition of the health team

| Population per professional health worker (physician or medical assistant) | No. of countries | Population  |       | No. of staff |                    |          |        |             |          | Proportion of other members of the health team in relation to each professional medical worker |             |  |
|----------------------------------------------------------------------------|------------------|-------------|-------|--------------|--------------------|----------|--------|-------------|----------|------------------------------------------------------------------------------------------------|-------------|--|
|                                                                            |                  | Size        | %     | Physicians   | Medical assistants | Midwives | Nurses | Sanitarians | Midwives | Nurses                                                                                         | Sanitarians |  |
| 10 000                                                                     | 9                | 31 210 000  | 25.9  | 2 368        | 2 825              | 5 277    | 10 033 | 1 429       | 1.0      | 2.0                                                                                            | 0.3         |  |
| 10 000<br>20 000                                                           | 5                | 16 542 000  | 13.7  | 746          | 543                | 1 653    | 5 337  | 539         | 1.3      | 4.1                                                                                            | 0.5         |  |
| 20 000<br>50 000                                                           | 8                | 51 073 000  | 42.4  | 1 684        | 394                | 2 034    | 10 137 | 497         | 1.0      | 5.0                                                                                            | 0.2         |  |
| 50 000<br>100 000                                                          | 5                | 21 650 000  | 18.0  | 340          | -                  | 644      | 5 339  | 115         | 2.0      | 15.7                                                                                           | 0.3         |  |
|                                                                            | 27               | 120 475 000 | 100.0 | 5 138        | 3 762              | 10 608   | 41 454 | 2 580       | 1.1      | 4.7                                                                                            | 0.3         |  |

<sup>1</sup> Long-term planning: programme for the development of human resources, education and training (Unpublished WHO document AFR/RC21/8, Table 9).

TABLE 3. PROJECTED ENROLMENT IN MEDICAL SCHOOLS OF MIDDLE AFRICA<sup>1</sup>

| Years     | Students | Full-time staff | Ratio, students to staff |
|-----------|----------|-----------------|--------------------------|
| 1961-1962 | 1 019    | 195             | 4.1                      |
| 1966-1967 | 2 175    | 465             | 4.7                      |
| 1971-1972 | 5 150    | 615             | 8.4                      |
| 1980-1981 | 8 350    | 825             | 10.1                     |

<sup>1</sup> Bryant, J. (1969) Health and the developing world, Ithaca, Cornell University Press, p. 258.

TABLE 4. PROJECTED ENROLMENT OF MEDICAL STUDENTS IN MIDDLE AFRICA AND ITS RELATIONSHIP TO POPULATION-PHYSICIAN RATIOS<sup>1</sup>

| Year      | Population (in millions) | Students enrolled | Physicians | Population per physician |
|-----------|--------------------------|-------------------|------------|--------------------------|
| 1961-1962 | 170                      | 1 019             | 8 500      | 20 000                   |
| 1965-1966 | 188                      | 2 175             | 9 400      |                          |
| 1971-1972 | 209                      | 5 150             | 12 100     |                          |
| 1980-1981 | 264                      | 8 350             | 17 100     | 15 000                   |

<sup>1</sup> Bryant, J. (1969) Health and the developing world, Ithaca, Cornell University Press, p. 259.