Papers

Twelve new doctors for Nepal

JOHN DICKINSON

What is a doctor, anyway? What does a general practitioner have in common with a forensic pathologist, or a neurosurgeon with a clinical biochemist? Increasingly little in these days of specialisation, yet their basic medical training and qualifications are likely to be similar.

Almost as different as the spheres of various specialists are the spheres of work of doctors in developed and developing countries. Arriving in Nepal in proud possession of my membership in 1969, I found that I had to relearn my profession in a most painful way in order to be the sort of doctor that Nepal needs. Not merely different diseases, but different priorities, different social structure, and different attitudes to health and disease make medicine in Nepal a specialty of its own.

As most Nepalese doctors are trained in neighbouring India, you might expect them to find it easier to cross the cultural and professional gap between training and service. Not at all. In fact, coming from medical colleges run on similar lines to the most traditional of British schools, these doctors find medicine in Nepal even more of a shock than I did, especially when, as usual, they are posted initially to a remote area. A Nepali doctor writing on this says, "They were never trained for such an alarming situation. Their role model was entirely different." So he was—the consultant head of a hospital team using advanced technology.

Clearly the challenge facing the planners was to define a Nepali doctor in terms of the competencies required of him and to proceed to train doctors in Nepal to fulfil this job description. I hope to show that the curriculum that emerged from this process is no less demanding than a traditional one; it simply has different emphases and priorities.

Overcoming the demands of those who urged a traditional medical school, the Institute of Medicine of Tribhuvan University in Kathmandu took the first steps to meet this challenge in 1977 and prepared a plan for an innovative medical education programme. By August 1978 the plan was complete and the first batch of students was admitted to the course, then named rather clumsily the "Diploma course for the degree of doctor of community and general medicine," but now renamed, by decision of Tribhuvan University, the "MB BS course."

Defining the product

The aim of the programme is to prepare community physicians who will serve in the health services for at least four years as medical officers in the rural areas with three major roles.

- A clinical role to save life, to restore health, and rehabilitate by providing medical care in a district hospital.
- A preventive role in maternal and child health, environmental

health, nutrition, health education, communicable disease control, and school health.

- An administrative role, collecting and updating appropriate demographic and epidemiological data, planning and implementing comprehensive health care in the district, functioning as leader, and ensuring the effective functioning of the health care team in the district.

The reader may care to pause and ask himself how he would like to take on this job description and how the breadth of these

In the old library.

requirements compares with the depth of knowledge required in his own particular discipline. To help him do so, let me paint a rough picture of the position in rural Nepal. It is a mountainous land in which travel by foot is the rule; almost any route means at least three hours' continuous steep ascent; socioeconomic development is low; infant mortality is among the world's highest, around 140 per thousand live births; the under 5 mortality is between 25% and 50%; the population growth rate is 2.6%, and Nepal has the lowest arable land to population ratio in the developing world. The disease pattern is just what you would expect in a land that lacks safe water supplies, sanitation, and hygiene, and where rough terrain, population pressure, and traditional practices combine to prevent adequate nutrition.

Philosophy of the course

So far eligibility for the course has been confined to those who have had at least three years' experience in delivering health care in Nepal. They have had about two and a half years of training at the Institute of Medicine and then served as health assistants, pharmacists, radiographers, laboratory technicians, nurses, or

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In a new classroom in the teaching hospital.

ayurvedic (traditional) practitioners according to their training. This requirement has ensured that candidates are familiar with the health needs of Nepal and allows the selectors to judge how they have withstood the pressures of these needs.

In contrast to the technical emphasis of most medical courses, there is a strong emphasis on community health, which occupies the students' attention for the first six months and then continues as a thread throughout the course. This underlines for the student the object of the training—the health of Nepali people, not the manipulation of calcium channels or the control of the rejection of transplanted tissues.

It was intended that the course should be "integrated" in various ways; curative medicine with preventive care, basic medical science with clinical medicine, and the four sciences of anatomy, physiology, pathology, and pharmacology with one another to give an integrated approach to the systems of the body.

So far as possible, a self learning and problem based approach has been adopted. In the systems study, for instance, students are given clinical problems and are required to analyse them on the basis of their knowledge of the basic science involved and their own experience. Community problems, such as population control are tackled in the same way. As we have seen, doctors cannot be defined on the basis of a common body of knowledge or skills, but they do have in common the ability to solve medical problems. It seems only right that this should be a major thrust in medical education.

Classes are kept small; only 22 students in the first two batches, increasing to 30 in the third and fourth batches. Students of other courses are working on the same campus and the students are encouraged to view doctors as members of the wider health team.

The course is divided into three phases over a period of four years followed by a year of hospital internship (table).

Structure of the course

Phase	Length	Content
Ia	6 months	Community medicine including biostatistics, environmental health, epidemiology, nutrition, medical sociology, demography History taking from patients Community diagnosis; field work exercises
Ib	1 year	Integrated study of body systems, including anatomy, physiology (with biochemistry), pathology, and pharmacology Physical examination of patients. Clinical correlations Clinical and community problem solving Continued community health
II	1½ years	General medicine (including dermatology and psychiatry) General surgery (including ophthalmology, ear, nose, and throat, orthopaedics, dentistry, and anaesthetics), paediatrics, obstetrics and gynaecology, forensic medicine Continued community health, especially epidemiology
III	1 year	Management skills Field experience in a district hospital and community health programme Further hospital experience, taking increasing responsibility
Internship		3 months each in medicine and surgery, 2½ months in obstetrics and gynaecology, 1 month in paediatrics, short attachments in ophthalmology, ear, nose, and throat, family planning, and casualty work

Problems and difficulties

Administrative difficulties and the lack of a fixed university calendar led to the loss of about a year for the first batch of students who lost an additional 18 months of study time as a result of student agitation in which they were caught up, for the most part, unwillingly. They therefore took their final examinations after six and a half years.

Poor facilities put a strain on faculty and students. Classrooms were primitive, water and electricity supplies irregular, visual aids few and difficult to use, and the library inadequately stocked and limited in reading space. For clinical work, the students were sent to busy hospitals where heavy service commitments made it hard for doctors to give them adequate attention. Many of these problems are likely to disappear with the opening of the Tribhuvan University teaching hospital, the excellent classrooms of which are already in use and which is expected to admit its first inpatients in October 1984.

At the outset, there were important gaps in the faculty, especially in the basic medical sciences. As these were filled with difficulty, one by one, the teachers developed curriculums for anatomy, physiology, pathology, and pharmacology independently of one another and integration suffered accordingly. We all of us suffered from inexperience; we had received our own training in very different courses and, although ideas had been borrowed from various recent experiments in medical education, none of us had any experience in implementing them.

Subjective view and the physiology course

All the above problems were eclipsed by the sheer enthusiasm and motivation of the students and the freshness of this approach to medical education. Small classes are also attractive, though a class of 22 presents great difficulties when it comes to dividing it into small groups.

I deliberately concentrated on clinical aspects of physiology and biochemistry, using mainly measurements that are feasible in a district hospital. No oscilloscopes, no nerve muscle preparations, no complex biochemical analyses. The students' bodies provided the experimental material and I used patients to argue from disordered to normal body function. I wanted the students to have a good working knowledge of body function and control mechanisms and not to become bogged down in conflicting theories of detailed mechanisms. There was consequently little emphasis on the history of physiological discovery and experimental method. The students were encouraged to read up these aspects if they wished; it would be relatively easy for them to gain experimental ability at a later stage if necessary. I like to think that my own sense of wonder at the complexity and sensitivity of bodily mechanisms communicated itself to the students.

Outside the new teaching hospital.

In April 1984 the results of the final examination for the first batch of students were announced. Of 22 students admitted to the course, 21 took the examination having passed all previous exams at the first or subsequent attempt. Of these, 12 were successful and the remainder will repeat the examination later.

I was present as an observer at the clinical and oral examinations in medicine of some of the students. The standard of history taking, physical examination, and diagnosis was extremely high. X-ray examinations were interpreted well and there was no difficulty in describing the use of various implements. Questions were in English and the answers were generally accurate in content, though the use of the language was often clumsy.

External examiners, two from India and two from Canada, were impressed. One Indian asked to take some of the graduates back to his hospital in India and was politely but firmly refused. A Canadian said that the candidates compared favourably with their counterparts in his country.

As the successful 12 begin their internships, I and my colleagues at the hospital already think that they are better prepared for the work than graduates of Indian medical colleges who have completed their internship programmes. Needless to say, they should be much superior in rural and community work.

The future

If initial enthusiasm has, as I believe, overcome the extreme practical and logistic difficulties, the prospects are bright. It will be important to maintain the vision, to resist the pull to conform, to shun inappropriate technology, and to train new, young teachers into the programme. Facilities are improving, experience has been gained, and the "product," the first batch of graduates, exists as a creditable example.

The possibility of postgraduate studies has been discussed from the beginning. If the present standard is maintained or improved there is no reason why teaching centres abroad should not be persuaded to accept Nepalese graduates after a short period of reorientation.

Students often ask me, "Will we be as good as doctors in the West?" This takes me back to my original question: what is a doctor? Moreover, what is a good doctor? The graduate of a London teaching hospital is doubtless superior in ordering and analysing a wide range of tests, but how would he manage a rural hospital in Nepal? I have no hesitation in telling my students that, for Nepal, they will become not only as good as Western doctors, but immensely better.

Falls from trees and tree associated injuries in rural Melanesians

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Abstract

Falls from trees and other tree related injuries are the most common cause of trauma in some parts of rural Melanesia. A four year review of all admissions for trauma to the Provincial Hospital at Alotau, Milne Bay Province, Papua New Guinea, showed that 27% were due to falls from trees, and a further 10% were due to related injuries, such as being struck by a falling branch or a coconut. A questionnaire distributed to rural health centres showed that during the study period at least 28 villagers died from falls from trees before reaching hospital. Head and chest trauma were common causes of death. Many injured patients were boys. Forearm fractures were the most common injuries, but more serious injuries were also frequently encountered. Trees responsible for most deaths and injuries included the coconut palm, betel palm, mango, and breadfruit.

There are many strategies for preventing such injuries; perhaps the most important is to stop small boys climbing tall trees. Such falls are a serious occupational hazard for many subsistence farmers.

Introduction

Climbing trees is an important part of rural life in many tropical countries. Children often climb while playing. Adults and children commonly climb to collect the harvest from various trees, and people occasionally climb trees in pursuit of animals, such as the *cus-cus* or fruit bat. Some trees are very high, and falls can result in severe injury. Falling coconuts, falling branches, and poorly felled trees are also hazards. We noted that many of our admissions for trauma in Milne Bay Province, Papua New Guinea, were due to falls from trees and other tree associated injuries. We report here a four year review of patients with such injuries. This review includes all patients who survived to reach hospital. To determine roughly how many other villagers died before reaching hospital, we circulated a questionnaire to the 30 rural health centres who refer patients to us. The findings reported here may dispel some misconceptions about an easy idyllic rural life in the Pacific Islands.

Patients and methods

The provincial hospital, Alotau, is a 100 bed hospital with three doctors and is the only hospital for 130 000 Melanesians living mainly in scattered hamlets on tropical islands. Most seriously injured patients, including those with displaced fractures, are referred from the 30 rural health centres in the province. Numerous minor fractures are dealt with at rural health centres and are not included in our statistics.

All admissions for trauma, excluding lacerations, from October 1978 to 30 September 1982 were reviewed by studying hospital admission and discharge books and operating theatre records. Patient charts were then checked for details. Patients with uncomplicated soft tissue injuries and minor head injuries who were conscious on arrival were excluded from the study. About 5% of patients' charts could not be found; if insufficient detail was

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