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DISTANCE EDUCATION FOR HEALTH CARE

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INTRODUCTION

The role of distance education in improving health care is potentially substantial, for initial and continuing training of health professionals, and for communicating health messages to the general public. It has been used for both purposes and is a particularly important method of training for two reasons. First, it is desirable for health professionals to remain on the job while undergoing continuing in-service training, and distance learning makes this possible. Second, recent years have seen a shift in emphasis in health care, towards greater reliance on primary health care and less stress on curative medicine. This in turn has meant that health professionals at all levels need help to develop new roles, that a new cadre of community health workers, often paraprofessionals, has developed, and that individuals are, more than ever, called upon to take care of themselves and their families; media-based education is well suited to helping all of these groups. There has been considerable expansion in the use of distance education for health-related topics over the last ten years. This paper presents some examples, and suggests directions for future development, with particular emphasis on collaboration.

COMMONWEALTH ACTIVITIES

In the general survey we conducted of distance and open education in the Commonwealth, 48 out of 306 institutions included medical sciences or health-related subjects among their offerings. These subjects ranked among the lowest of all those on offer, although several courses are new ventures and the field is growing rapidly.

The majority of these courses are for professionals, usually to help them acquire higher qualifications. Examples include courses for opticians, radiographers, pharmacists, medical educators and nurses. These courses are mainly offered by institutions in Australia, Canada and Britain, and are often approved by the relevant professional bodies.

Only a small number of courses are for non-graduate health workers; the major example of this kind of training is provided by the African Medical Research and Education Foundation and is described below. Only a few programmes are currently available for the general public: a UK Open University community health course, a joint College of Health/National Extension College correspondence course on health, a course planned by the Tanzanian National Correspondence Institute, and a course just launched by the Namibian Extension Unit (described below). Even if the survey has not unearthed all the available courses, there are very few.

There are, of course, many radio and television programmes about health. We know little about the effects of these. The experience of the Tanzanian radio health campaign in 1973 and the Stanford (USA) heart disease campaign in the 1970s have shown how broadcast campaigns with group study and integrated face-to-face support can affect the health status of communities; in Tanzania, for example, 750 000 new latrines were built as a result of the campaign and four years later usage of latrines had increased by an amount which suggested the campaign was having long-term effects. In Stanford, groups particularly vulnerable to heart disease followed the advice given in the campaign to the extent that incidence of heart disease appeared to be reduced.

A final use of distance education is for alternative medicine. In view of the increasing popularity of alternative medicine in Britain, we conducted a small study of the use of distance education in training practitioners.

We will now look in more detail at examples of each of these areas of training and education.

PROFESSIONAL IN-SERVICE TRAINING

Amongst the distance courses available for nurses, some recent British initiatives show how distance methods can be used to improve the professional standing of practising nurses. The Distance Learning Centre for Continuing Nurse Education at the South Bank Polytechnic, London, is a recent initiative. One of its first staff described the beginning as follows:

> 'It was in fact a very inauspicious gestation and birth; almost, it could be said, accidental except that the Department of Nursing & Community Health Studies "happened" to be here with its own established reputation and therefore it was reasonable that we should be invited to comment on the feasibility of using open learning facilities for nurses in higher education. So one blustery wet Thursday in March 1983 I found myself at a working lunch in Moorfoot, the Manpower Services Commission headquarters in Sheffield, to discuss possibilities and comment on proposals.

The request after the lunch for the presentation of some of the ideas I had expressed seemed so casual that it nearly got forgotten, until an urgent reminder suggested a speedy response was necessary as there was some money available for nursing. That first draft was produced after hasty and superficial discussions with colleagues in this Department who had well-established in-service education courses and a quick phone call to the English National Board where I was put in touch with Sheila Jackson who had just returned from Australia where they were using distance learning in nursing education.

Surprisingly, about six weeks later a visiting officer from the MSC appeared in my office. As the proposal was up for serious consideration, swift action became imperative as its potential became apparent!

A visit from the HMI gave us the opportunity to seek the approval of the Director of SBP, together with the possibility of a pump-priming allowance from the Academic Management Committee's initiatives fund and – we were in up to our necks!

Many nurses were plainly sceptical – it would never work in *nursing* education. The SBP had no formal guidelines so we worked in a 'vacuum'. Sheila Jackson's help was invaluable at this stage and she was able to give us the benefit of the Australian experience on the nursing element. After several months of talking, writing and tearing up and writing again, on one hot afternoon in early August I finally produced *the* proposal – actually written in my back garden! Hence the inauspicious beginning!

The next step

Later in the autumn of 1983 the proposal was approved – with some trepidation – within SBP and accepted by the MSC. . . The project was formally and publicly launched in March 1984 – just *one* year after those early tentative discussions. . .

The Steering Committee was set up and agreed with the MSC and is composed of representatives of a wide range of statutory, professional and educational bodies and institutions, as well as nurse teachers and service staff. It meets every two or three months, but small working parties have evolved on an ad hoc basis for specific developments. From the very start, this Steering Committee has given support and guidance to the project and has been an important feature in its progress. In addition, the MSC guidelines stressed the importance of drawing on the expertise of a well-established unit such as the Department of Nursing & Community Health Studies and a number of the nurse academics there have been involved from the start.'

(Source: Grace Owen, 'The DLC – In the Beginning', *DLC newsletter no 3* 1986.)

Three years later, the Centre is involved in several projects, all in their early stages but all promising well:

1. The Diploma in nursing[1]

'The Diploma in Nursing of the University of London was first established in 1926. Until recently when a new curriculum was introduced, about 1500 nurses registered for it each year. Now there are only about 350 approved places, with the result that the demand cannot be met. In practice, many nurses have never had access to the course because they live and work too far away from the 32 approved centres throughout the UK, whilst others have found it impossible to attend because their duty times clash with classroom timetables.

It is to increase access to a well-established course that the Distance Learning Centre is offering the *Diploma in Nursing* of the University of London by distance learning. The course, which follows the University's curriculum, will be run in conjunction with local study centres which will provide the face-to-face tuition, counselling and library facilities that will complement the distance learning component of the course. Year 1 will commence in September 1987. . .

Each of the three years of study will require a minimum of 180 hours of formal study by distance learning (i.e. 90 hours per unit) but students will also be expected to read widely round the topics presented. It is estimated, therefore, that the average student would need to set aside about 8-10 hours a week for study.

In addition, 10% of the course (i.e. 10 hours per unit) will consist of face-to-face tuition at a local study centre. This will require four days attendance per academic year and will be arranged locally.

[1]This and the following descriptions are abstracted from descriptive leaflets issued by South Bank Polytechnic.

Tuition will be provided through study centres in either:

- Schools of Nursing, which will be validated to run the course in conjunction with the Distance Learning Centre
- Colleges already teaching the conventional Diploma course jointly with Schools of Nursing. Distance learning will be an additional option for these colleges.

Face-to-face tuition will be arranged by the study centres, taking local conditions and needs into account. . .

Whilst centres will receive guidelines on tuition, there will be sufficient flexibility to allow for regional and individual needs. Group discussion will be an important component of the teaching to enable students to learn from each others' experiences.

A designated tutor will be available for counselling and advice and students will have access to library facilities. Centres will also be able to provide a clinical facilitator system. Great importance is attached to these facilitators who may establish a network of staff associated with a range of clinical areas and who are able and willing to provide guidance and supervision of students' clinical studies. . .

Study centres may be a *network* of resources rather than a single institution. For instance, Schools of Nursing in adjoining health districts may wish to pool resources, and library facilities might be available at several sites, including the local university or polytechnic.

Distance learning materials for individual study are being prepared by the Distance Learning Centre. Each unit will contain as a minimum:

- a **Reader**, which will contain material written by authors specially commissioned by the DLC, together with relevant journal reprints, book extracts and other documentation
- **a Work File** which will guide students through the readings and which will include activities, exercises, case studies and self-assessment questions to enable students to analyse and synthesise the materials studied.

Where appropriate, audiocassettes may be included. Any essential material which cannot be presented by distance learning, such as videotapes, will be available at local study centres. . .

It is assumed that all students will work in social and professional contexts where they are liable to be involved in dealing with problems arising from rapid social, professional and technological change. There is a need, therefore, for the course to develop nurses of independent judgment and flexible response to the problems they encounter. . .

The University of London provides institutions with a choice between course assessment and written examinations for Units 1-4. For the distance programme course assessment has been chosen, firstly because the preparation of course work requires students to demonstrate insights and understanding of the content as the course develops. Secondly, the extent and depth of work required to achieve the required standard is clear to students from the outset of their studies. Thirdly, students with difficulties can be identified early in the course and appropriate action taken to help them.

Three essays (or in the case of Unit 3, two essays and a detailed care plan) must be submitted for each of Units 1-4. Unit 5 has a three-hour written examination and two submitted papers must be prepared during study for Unit 6.'

A feature of this programme is that the course leads to an established degree, and is also developed in collaboration with recognised nursing bodies. For its tuition system, it looks to the rise of local study facilities, well established in Britain since the mid 1970s.

2. Managing Care: A programme for qualified nurses.

This was the first project of the DLC. It is a self-study pack, but students are encouraged to send completed workbooks to a tutor for assessment, and they may if they wish apply for a Certificate validated by the Polytechnic on completion of a suitable selection of packs. The course aims and structure are described below:

'*Managing Care* is a programme in continuing education designed for nurses who are working in practical situations with patients and clients but who have some responsibility for managing the context of patient care. It particularly aims to help recently-qualified nurses who don't yet feel fully competent to manage other staff and organise resources, and older nurses who have been in practice for some years and would like to 'brush up' their knowledge and skills. It has been designed for use by qualified nurses in all specialities.

The self-study pack format allows nurses to study at their own pace and at their own convenience. Each pack focusses on one subject only and contains all the materials needed for effective learning. The contents of each pack will vary according to the topic, but may include:

- Workbook, for self-directed study and project work
- Reader, including reprinted articles from the nursing press
- Case studies
- Audio-tape
- Game.

The programme as a whole contains *Introducing Distance Learning*, an optional pack which explores the distance learning approach, and 19 study packs. Five of these are core subjects and the remainder are divided into four options:

- Option A: Individualised Care
- Option B: Teaching
- Option C: Organisation
- Option D: Relating to Others.

Students may choose as many of these packs as they like, but in order to gain the Certificate, they must study the core subjects and one option. A fifth option, Option E, is a self-designed profile fitting the individual's specific needs which may be submitted to the Examination Board for approval.

Although each person works at an individual pace, each pack is expected to require an average of 15–20 hours of study time. Much of this time will be devoted to working through the activities that are a fundamental part of the programme and which build on the student's own experience of nursing. They are specifically designed to encourage her to analyse her own knowledge, attitudes, skills and approaches in depth and to relate them to the issues and ideas that are introduced in the study materials.

The workbooks are interactive learning materials. The student completes the book by working through the activities and examples. The workbook, containing her written answers, can then be sent to a designated tutor for assessment and the satisfactory candidate will then receive a Letter of Acknowledgement.

The Distance Learning Centre is applying for the *Managing Care* programme to be validated as a Certificate-level course by the Polytechnic of the South Bank.

To qualify for the Certificate, the student will successfully complete a designated profile of packs: the five core subjects and a choice of Options A, B, C or D – or Option E, if she wishes to design her own learning programme.'

The DLC is extending its range of courses rapidly. Another course on research awareness is under preparation. Another London-based scheme, 'Open Learning for Nurses', produces modules which concentrate on skills needed by practising nurses, such as measurement and using a calculator. Thus a core range of materials is rapidly being established. The packs have been developed with the assistance of practising nurses and their trainers. Their success will depend much on whether individual nurses or their employers are prepared to pay and give up the time to study over a lengthy period – three years for the Diploma.

A different approach has been adopted in New Zealand, where there is a National Health Sciences network. There a number of distance courses are offered, but tuition is provided from the central providing faculty. The students, however, meet in local study centres, and talk with the tutor through a teleconferencing facility. This facility is shared for all health sciences courses. Currently, the following are available:

Postgraduate Diploma in Clinical Dentistry
Master of Community Dentistry
Master of Pharmacy
Diploma in Occupational Health Practice

In addition, there are non-award continuing education courses for general practitioners, nurses and physiotherapists.

This system has been established by the University of Otago.

'A distance teaching mandate, based on a permanent teleconference network, was granted to the University by the University Grants Committee in 1984. This mandate comprises four areas of responsibility:

1. University courses for credit
2. Post-basic and continuing education for professional bodies
3. Continuing education for the community
4. Co-operative programme ventures with other tertiary institutions. . .

For particular sessions, up to four other locations can at present be added on a temporary basis by use of high quality loud-speaking telephones, linked by an NZPO conference call.

At present, the network is regional. During 1987 another permanent network extending throughout New Zealand will be established. . .

It is helpful to think of the teaching network as a collection of local groups which meet together for a common purpose.

The teleconference network is based on a high quality audio system designed and built by the University in co-operation with the Telecommunications Division of the NZ Post Office. The system is interactive; all members of the group can hear one another, ask questions, and engage in discussion.

Slide projectors and video playback equipment at each site can be interlocked and thus controlled by the lecturer, as long as they are compatible with the University of Otago's teleconference equipment.

This comprises a *Unitel* terminal (approximately 30 cms x 20 cms x 10 cms), an extension speaker, table microphones, and, later, a keypad unit for the remote control of interlocked equipment.

Setting up this equipment is easy (simply a matter of plugging in to sockets), but a room where it can remain assembled is ultimately more convenient.'

The importance of this teleconferencing system is that it is interactive, permanent, and relatively cheap to use. This makes it attractive. It is already used by Massey University, Lincoln College of Agriculture, the Ministry of Agriculture, for field officer training, and various community, voluntary and church groups.

It is intended to have three sites in each centre so there will be comprehensive accommodation of learning needs; university, community-based, vocational.

The tutorial system and its advantages are described by one of the project staff as follows.

'Participants in the tutorial or meeting or training session sit around a table as in a conference setting. Each person operates her own table microphone. *Telephones are not used.* Participants in all centres can hear and speak with one another, and so can take part as if all in one room. The convenor or lecturer can transmit from any town and can remote-control all centres' slide-projectors. . .

Initially, the national system will be similar to the regional: *interactive audio*-conferencing, supported by slide and video playback equipment. In the second phase of development, as funding permits, computer and video technology will be added to the system. In the first instance, 'electronic blackboards' will be used, enabling material written or drawn to be received 'live' on screen. A prototype unit has already been constructed.

In the quite foreseeable future, computerised graphics will be available in each centre via microprocessors. Teaching material will be stored prior to each session, and either displayed or printed for local distribution. This type of teleconferences is called a 'media mix', comprising two-way audio and remote graphics facilities.

While, initially, video tapes will be distributed in multiple copies – to be played at local terminals by manual operation – it is hoped that agreement can be reached with Television New Zealand for after-hours use of the national carriers. Thus, automatic recording at remote terminals can occur by prior broadcast for the following day's sessions. Two-way 'live' video is unlikely to be used. . .

The social effects of a national teleconference system could be, with planning, only positive and desirable. First, by virtue of its placement – from Northland to Southland, and in smaller rural centres as well as main towns – it will increase *general access to learning opportunities.* Not to have to travel (which costs time and money) removes many significant barriers for a widespread population. The cutting of personal costs – in terms of time and travel – could even be accompanied by improved programme quality as national resources and expertise can be accessed simultaneously.

Second, the system can *spread the costs of learning.* On the established regional system, this became clear at once. The bug-bear of the numbers game (enrolments versus costs) is seldom a

critical factor because of numbers-aggregation. Courses, clearly unviable at a *local* level, because they cater for minority or specialist interests, can still be offered locally: the 'one classroom' principle. For example, a recent programme on Mediaeval Monasteries was available in Gore to a single participant – because in Cromwell, Alexandra, Balclutha, Oamaru, there were sufficient others who shared her special interest. This 'one room' principle will also apply nationally, meaning common majority interests need not override all others. Thus learning needs can be met on a much more individual basis.

Third, changing employment patterns and new technology, inevitably, will change traditional work ethics. Increases in leisure-time will occur for many people as fewer paid jobs exist or are even necessary to production. The widespread availability, through teleconferencing, of voluntary work training and of leisure skills programmes should be included in our planned priorities.

A further aspect to consider in the field of work generally is the ever-growing need for 'keeping up' or for retraining. Access to opportunities to *maintain* one's expertise, or to acquire *new* skills to meet changing markets, could be a positive social benefit of the teleconference network. It is in the national interest that smaller communities remain viable and attractive as places to live and work in. If professional, vocational and leisure-time interests can be adequately served within them, it is possible that changing work patterns will threaten them less.

Experience in mounting programmes, provincial and national, has shown that virtually no subject defies teleconferencing. Librarians have found this, discussing 'weeding' guidelines: teachers have used the system to examine new curricula; spinners, weavers and embroiderers have 'teleconferenced' their thoughts about design.'

(Source: Claire Matthewson, 'A national teleconference network, its possibilities and approaches'. *New Zealand Journal of Adult Learning*, Vol 17, No 2 Oct 1985)

The united system described above uses purpose designed equipment which is relatively cheap. This system has been described at length, as it has interesting potential for countries with scattered populations.

CONTINUING EDUCATION FOR RURAL HEALTH WORKERS

'The African Medical Research and Education Foundation (AMREF) is probably better known as the East African Flying Doctor Service. A voluntary organisation, affiliated to the World Health Organisation, it controls a flying doctors' network serving over 60 hospitals in Kenya, Tanzania and Uganda. AMREF also has a training department which works with the relevant Ministries of Health to support primary health care workers in rural areas.

There are over 7000 such workers in Kenya, many in remote rural areas where they have little contact with other medical personnel and their knowledge can deteriorate rapidly. AMREF collaborates with the Kenya Ministry of Health to provide refresher courses. The aim is to give each health worker an opportunity for training at least every two years. Traditionally short face-to-face courses have been used, but the task of catering for everyone is enormous. In areas where the population is sparse, it is impossible to collect together a sizeable group of health workers for a course. If a worker in a remote area attends a course, a dispensary may remain closed for weeks. An alternative is needed.

In 1980 AMREF began to test a correspondence course. It is designed for enrolled and community nurses, although a few others have been accepted. It is on the subject of communicable diseases, and aims to help health workers manage patients suffering from such diseases, and prevent them spreading.

The course consists of twelve printed lessons, each culminating in a test. Lessons are posted in batches of three to the students, and each test is mailed back to the tutor in Nairobi for marking.

As the course started as an experiment, a limited number of students was accepted to start with, and most of these enrolled after attending a refresher course. The first enrolments were in February 1980. By August that year 110 has enrolled, and in December an assessment was made of their progress. Eleven had finished the course, most of them recently. Forty had not yet started, and many of these had to be classified as drop-outs. The rest were still studying.

This was, of course, only a preliminary assessment of the course, but it indicated that the system was working effectively and that over half the students were keen enough to study

seriously. The lessons themselves provided adequate teaching; one test was given to a group after a conventional refresher course and this group achieved a slightly lower average score than correspondence students doing the same test. The evaluation revealed a number of minor problems both in the administration and in the materials. Only a further 100 students were therefore accepted during 1981/2, while these difficulties were being sorted out. At the same time, further courses were being developed and in 1983 the programme expanded with several courses running simultaneously. In 1986 there were over 6000 students, and courses were also available in Uganda and Tanzania.

The experiment has proved a success in providing an alternative to face-to-face refresher courses. The correspondence lessons are highly acceptable. Problems have mainly been with communications; sometimes the post has been very slow, at others students have been transferred to new posts and temporarily lost touch.

The scheme is one which could well be copied elsewhere. It also provides a useful example of how it is possible to make a small-scale start with limited resources.'

(Adapted from J. Jenkins, *Mass Media for Health Education*, International Extension College 1983.)

The AMREF course has remained unique, surprisingly, as it meets a common need in a practical way.

HEALTH EDUCATION FOR THE GENERAL PUBLIC

Our survey of distance learning in the Commonwealth showed a very low use of radio. Perhaps that is why there is such a poor showing of health projects: radio, particularly in developing regions, is an excellent medium for health education. But it appears that radio learning groups, popular in the 1960s, are out of fashion. With a trend towards using distance methods for formal education, there is lack of interest in or lack of funds for non-formal projects.

Yet health education at a distance can be most successful. The Mauritius College of the Air, for example, runs a programme in mother and child health which uses television programmes, booklets, posters, flannelgraphs and face-to-face support in clinics to help mothers care better for their babies. There was no formal evaluation of the project, but informal indications are that it was a great success, judging by its popularity with mothers and health workers. Demand from clients led to the extension of the project, and a determination to launch further multi-media campaigns in Mauritius.

ALTERNATIVE HEALTH

In Britain, and probably in other developed countries, alternative medicine is becoming popular. (In many developing countries, of course, traditional medicine still thrives as an alternative to western styles.) A recent survey of members of the UK Consumers Association discovered that one in seven had in 1985 consulted a 'complementary practitioner' (osteopath, homeopath, acupuncturist, chiropractor or herbalist). In the light of this demand, it is hardly surprising to find that training courses for alternative practitioners abound. It is, however, surprising to find 11 advertisements for different correspondence training courses for the various kinds of medicine in a single issue of the monthly magazine 'Here's health'. We wrote to all of them to find out more, but only four replied. One college had 250 trainees on its roll, one had a hundred, one had 10 and the fourth did not give any figures. Clearly, there are plenty of clients for such courses. We know nothing of their quality; probably some providers are charlatans, but most will be genuine practitioners trying to meet a need, but out on a limb. Poor quality would largely be due to inexperience and limited resources, but could all the same lead to inferior training. There is a case for further investigation of and support for such ventures.

COLLABORATIVE INITIATIVES

In the health sector, particularly at higher levels, there is considerable unity of subject matter internationally. Moreover, when a breakthrough occurs in treatment, skills and techniques need to be passed from country to country as fast as possible. It is hardly surprising, then, that several international initiatives in health training are already being developed.

1. The Wellcome Tropical Institute: training for rural medical officers in Africa.

This new initiative aims to help rural medical officers in Africa to maintain and improve the standard of medical care they provide. It will provide them with further in-service training, through distance-learning modules. Initially, the modules will cover certain specific areas which senior medical personnel and rural medical officers themselves have identified as needing special attention, such as treatment of burns and acute respiratory infections. It is hoped that in the long run doctors will be able to accumulate credits, through studying a range of modules, towards post-graduate diplomas, ideally accredited by local universities.

Initially, modules will be available in 3 or 4 African countries, including at least one Commonwealth member. These countries will operate the course on a pilot basis, before expansion to many countries.

The main component of each module is a pack of printed materials: a printed course unit and a set of extracts and readings. In each country there will be a resource centre, which will also serve as a branch of the WTI museum, and this will hold relevant supplementary materials, including audio and perhaps video elements.

The modules will be designed and produced in Britain, and piloted in each country of use. It will be possible to adapt elements such as case study material to suit each country, as the texts will be stored on discs, and case study material can easily be duplicated at need for the small numbers of students in each country.

Although the production of the modules will be coordinated in London, it is intended that participating countries will contribute to the writing. This will be done initially through bringing study fellows to London, and one has already been for three months to work on module planning and drafting.

Each country will establish its own student support services, with the initial assistance of the WTI. The local university or Ministry of Health will undertake to nominate a coordinator, who will appoint tutors, arrange recruitment of students, manage the distribution of materials, keep records, and look after the resource centre.

To operate effectively, therefore, the scheme requires the collaboration of three organisations:

WTI: to provide materials and advise on establishment of 'schemes'
Ministry of Health: to provide political backing, logistical support, and finance (see below)
University: to provide professional/academic services, and validation of courses (see below)

The Wellcome Institute finances the development of materials and establishment of the scheme. Thereafter, the scheme should be able to operate with minimal or no external assistance. This will require financial commitment from the Ministry of Health and the trainees. Money will be needed to cover:

coordinator's salary and office	correspondence tuition
continued supply of materials	examination fees

Most countries will probably share these modest costs between fees requested from students and funds from government. While no long-term costing has yet been done, the costs of taking a doctor through a diploma course by this route will be low, and of course particularly advantageous when opportunity costs are considered.

While this scheme is still to take off, the initial legwork has both served to shape it and to indicate that there is wide support for it. It will be a step forward to provide such training without removing medical officers from their patients; and, even better, to provide them with job-related information while they are working.

2. Project SHARE (Satellites for Health and Rural Education)

In 1985 Intelsat, the international telecommunications satellite system, and the International Institute of Communications launched a scheme to increase public awareness of the usefulness of satellites for educational and health purposes. It provides free satellite access for rural health and educational programmes using new satellite technologies. Originally a 16-month project, it was extended till the end of 1987, and 37 countries have participated. Most projects are affiliated with hospitals, universities or professional bodies, and sponsors design the content, raise the

money and take responsibility for terrestrial links. Examples from Commonwealth countries include international videoconferences linked with the 1985 UN Decade for Women Conference at Nairobi, teleconferences between Nigeria and New York, to show and discuss cultural performances for teaching theatre arts in both locations, and telemedicine links between Memorial University of Newfoundland and East Africa. The extract below describes this last at some length.

'Following a planning visit to Kenya and Uganda by the Director of Memorial's Telemedicine Centre, Memorial's application for participation in the SHARE Project was accepted. In Africa the program was sponsored by CHAMP with support from the Canadian International Development Agency.

A link between Uganda, Kenya and various Canadian medical centres seemed particularly appropriate in view of the medical cooperation between these countries during the past fifteen years dating back to the CIDA-sponsored McGill involvement with the development of medical faculty at the University of Nairobi during the late 1960s and early 1970s. Under that program many of the faculty at the University of Nairobi received training at McGill in Paediatrics and Medicine and a number of Canadian physicians served as visiting faculty in Kenya. More recently, a series of Canadian paediatricians have served in Kampala under the Memorial University of Newfoundland CHAMP program, aimed at restoration of the paediatric program in Makerere University to its former stature. Because of these programs, there are numerous close personal contacts between Ugandan, Kenyan and Canadian academic physicians and this has facilitated the organization and execution of telemedicine programs of an educational or consultative nature.

During the period 1984-1985 support for the project was obtained from several organizations including CIDA, the Hospital for Sick Children Foundation, the Kenyan Post and Telecommunications Corporation, the Uganda Post and Telecommunications Corporation, the University of Nairobi, Makerere University, the Newfoundland Telephone Company, and Teleglobe Canada. The satellite circuits between Canada and Kenya were provided free by the SHARE project. Microwave circuits were utilized between St. John's, Newfoundland, and the international gateway terminal in Montreal and between Nairobi and Kampala. The teleconference system was in place by December 1985 and the official opening took place in January 1986 between Kenya and Canada. A month later the link was extended to Uganda.

Initial Experience

Since the inauguration of the system on January 15th, 1986 there have been formal weekly conferences as well as informal teaching sessions. The formal didactic sessions have covered such topics as nutritional status and immune response, the management and treatment of idiopathic thrombocytopenic purpura, hepatitis in pregnancy and the newborn, and the epidemiology of HTLV III in East Africa. The Hospital for Sick Children in Toronto and the Montreal Children's Hospital have also contributed to the programs. Topics presented from these centres include emergency paediatric medicine, failure to thrive, and rickets.

An electroencephalogram transmitter was initially used in Nairobi for several weeks before being moved to Kampala where there is no functioning EEG laboratory. Electroencephalograms are transmitted from Mulago Hospital in Kampala to the EEG Department of the General Hospital in the Health Sciences Centre at St. John's twice weekly. The tracings are of excellent quality and can be interpreted with confidence.

The system is also able to provide a cost effective means of maintaining communication between North American medical research workers based in East Africa and their home laboratories. Teleconferencing facilitates group discussion of research objectives, protocol development, and data analysis and this may be done at reasonable cost. The present cost of conventional telephone links between East Africa and Canada is a considerable deterrent to the maintenance of communication.

It is hoped that the teleconference system may also provide supplementary support to the hard pressed libraries at the University of Nairobi and Makerere. These libraries have found it difficult to maintain up-to-date journal files and their facilities for literature searching are also limited. An attempt will be made through the teleconference system to develop on-line literature searching capacity with transmission of search requests at off-peak hours to minimize costs.

One of the main objectives of the Memorial/SHARE project is the transfer of expertise and technology to the University of Nairobi and Makerere University so that these two organizations can have a functioning teleconference system after the SHARE project is

finished late in 1986. It is also anticipated that other East African countries may participate in such a permanent system.

It is too early to assess fully the impact of the current teleconference link programs at these two Universities; however, it promises to become an important adjunct to teaching in the Departments of Paediatrics and probably in related medical departments as well. For example, the teleconference link has been used on a number of occasions to initiate contact and discussion between the Faculty of Pharmacy at the University of Nairobi and the Pharmacy Faculty at the University of Toronto. Such contact may eventually lead to international cooperation in the establishment of a drug information service in Nairobi. The postgraduate trainees in paediatrics at both Universities have shown considerable enthusiasm for this project. Most formal sessions are attended by the majority of trainees and the level of audience participation has steadily increased as the residents become more familiar with the system.

Of potentially greater importance is the link between the Departments of Paediatrics in Nairobi and Kampala. The department at Makerere University has seen its efficiency reduced by several years of civil strife and uncertain support. The present ratio of faculty to postgraduate paediatric trainees is unsatisfactory and the availability of the teleconference system represents a major opportunity to redress this imbalance. With the system currently installed it will be possible to establish regular teleconference communication between the University of Nairobi and Makerere University so that these two neighbouring departments of paediatrics will be able to share in each other's academic activities including grand rounds, seminar discussions, case presentations, and formal teaching sessions. The link between Nairobi and Kampala can be used independently of the Canada-Africa satellite link, therefore additional conferencing can take place during the morning hours in Africa. It is anticipated that, following this year's project, a commercially available system between Nairobi and Kampala will be financially feasible.'

(Source: Memorial University of Newfoundland, Bulletin 16)

The Newfoundland-East Africa link is being used for both medical education and related diagnosis. If the link is sustainable over the long term, it would be interesting to extend it to other areas of education, on the lines of the work of the University of Otago, New Zealand, described earlier.

3. Health Learning Materials Network

A third initiative is concerned not only with using distance methods for training for specific groups of health workers; it is concerned with providing full and appropriate health education and training at all levels. This is the Health Learning Materials project of the World Health Organisation and United Nations Development Programme. The coordinating group, based in Geneva, encourages the formation of groups in various countries which will develop health education materials for their countries. Started only two or three years ago, the network now has groups in twenty countries. The coordinators provide technical expertise, funding training and equipment to help country projects start. The programme is effective, and national groups are running seminars and printing their own health-worker training manuals; Kenya, for example, has produced six manuals at a unit located at the Ministry of Health.

The network coordinators are interested in distance learning as a method for training health workers, and are planning an international workshop on the subject in 1987. With national groups already providing something of a local infrastructure, it looks as though at last there is a possibility that AMREF's successful training model may be adopted elsewhere.

CONCLUSIONS

Distance education is undoubtedly a powerful tool for medical and health education, but present activity is very patchy. There is a need for coherent policy and action to improve and coordinate provision at all levels, possibly by means of a small permanent unit. A first step would be the establishment of a working group to consider needs and possibilities more closely and propose terms of reference for a permanent coordinating unit, if this seems desirable.

One task of such a unit would be to coordinate and promote the development of specialist postgraduate courses in medical subjects. These should ideally be modular, so that courses on discrete topics could be used as a sort of international currency. One selection of modules could thus

form a diploma for one profession at one university, and a different set could be chosen by another university in another country. The examples quoted in this paper of courses for professionals suggest that such a system would not be too difficult to develop. The scheme planned by the Wellcome Tropical Institute is already planned as an international scheme.

For small numbers of students it is possible to consider adapting materials for each country, for example by introducing local case studies. With word-processing technology and desk-top publishing, it has become possible for a small organisation with modest resources to manage such adaptations with little difficulty.

The examples of teleconferencing show how useful the technique can be for teaching medical workers, whether as a supplement to a distance course or on its own. With its relatively small, scattered specialist groups, in-service training for health professionals is a suitable candidate for teleconferencing, and it is desirable that it should be used more widely in combination with other forms of training.

At the upper professional level, much training could be offered internationally. At the middle level of health workers in rural communities internationally available courses are less likely to be suitable, but the constituency for training is much larger. There is a great need for systematic in-service training for health workers, and it is desirable to use distance teaching techniques for such training. In many countries there are barriers between ministries of health, who know the educational needs of their employers, and ministries of education, who know how to teach them. One task of an international unit might be to act as a broker, suggesting from its experience ways of forming partnerships between ministries to provide distance education.

Finally, distance education is barely used at basic levels. Techniques of running multi-media educational campaigns have been developed, and many such campaigns (not all in the health field) are notable for their success. It is a matter for grave concern that such a powerful technique is neglected. Unicef has identified three simple priorities for action, to save the lives of hundreds of thousands of babies; all mothers need to learn simple rules of hygiene, to know how to administer oral rehydration therapy to babies with diarrhoea, and to take their babies to the clinic to be immunised. Hope for vulnerable babies rests on education for their mothers. Why are we making so little use of the mass media and distance education to save lives? We could also use these techniques to teach people about AIDS: one advantage of distance education, especially when broadcasting is used, is the speed with which messages can reach the audience, and speed of communication is of the essence to slow the spread of disease.

There is a case for a small task force to concern itself with mass media campaigns for health education. It would need to publicise its services, visiting ministries of health and convincing them of the worth of campaigns. It would then need to help ministries to set up campaigns, with advice on research, on presenting the messages, on setting up group study and other support services, and on organising the infrastructure. It seems unlikely that campaigns will become a popular method for health education without such a task force of experts to push the idea and to give backing to those who decide to try the method.

While in some other areas distance education is well established and needs opportunities to expand and develop, in the health and medical sectors it is sadly underused.