WORKING TOGETHER FOR COST-EFFECTIVE MEDICINAL TREATMENT AND THE PROMOTION OF GOOD HEALTH

Report of a discussion forum arranged by the Commonwealth Medical Association, the Commonwealth Nurses' Federation and the Commonwealth Pharmaceutical Association

New Delhi, April 1990

Dr. V.R. Pandurangi
36A, Osberton Place,
Sheffield. (UK) S11 8XL

WORKING TOGETHER FOR COST-EFFECTIVE MEDICINAL TREATMENT AND THE PROMOTION OF GOOD HEALTH

Report of a discussion forum arranged by the Commonwealth Medical Association, the Commonwealth Nurses' Federation and the Commonwealth Pharmaceutical Association

New Delhi, April 1990

Organisers of the Tripartite Health Professionals Discussion Forum

Miss M Brayton: Secretary, Commonwealth Nurses Federation, 18 Northumberland Avenue, London WC1

Mr R Dickinson: Secretary, Commonwealth Pharmaceutical Association, 1 Lamberth High Street, London WC1 7JN

Dr D Pippard: Coordinator, Commonwealth Medical Association, BMA House, London, WC1H 9JP

Printed by The Chameleon Press Ltd, 5-25 Burr Road, Wandsworth, London SW18 4SG

Index

Introduction 1

A model of collaboration between the health professions for the provision of objective information to professionals on medicines 3

A model of collaboration between the health professions for the provision of objective information to the public on medicines 9

A model of collaboration between the health professions for illness prevention and health promotion 15

Conclusions from the forum 19

Appendix 1

Natural disaster relief 21

Appendix 2: Plenary session papers

Keynote address; *R Srinivasan* 23

The team approach for health promotion; *U Ko Ko* 25

Health promotion and disease prevention: A plea for a Commonwealth initiative towards health for all; *M K Rajakumar* 27

The rational use of medicines by health care professionals and patients; *J Cooke* 31

Medicines of choice: How rational in small island states? *S Bloomfield* 41

Rational prescribing and the doctor's dilemma; *G Nicholson* 47

Illness prevention and health promotion; *M Torongo* 55

Illness prevention and health promotion; *P Vidot* 63

Appendix 3

Participants 69

Appendix 4

Sponsoring organisations 71

Introduction

A tripartite discussion forum for Commonwealth nurses, pharmacists and physicians was held in New Delhi from 23 - 27th April 1990. The meeting arose from the expressed wish of the Commonwealth Foundation and the Organisation of Commonwealth Associations for inter-professional collaboration between associations operating in the same or over-lapping fields,and was the first time that healthcare professionals had ever met at the Commonwealth level.

The purpose of the meeting was to consider the rational use of medicines, health promotion and disease prevention, and to identify ways in which the three professional groups could collaborate to improve these areas of health care. Nine delegates, representing each region of the Commonwealth, and both primary and secondary health care, were selected by each of the three associations. A list of those present is set out in Appendix 3.

Addresses were given at the opening plenary session by Dr U Ko Ko, WHO Regional Director for South East Asia and Mr R Srinivasan, Permanent Secretary, Ministry of Health and Family Welfare, Government of India. Papers were then presented by the participants on:

- The Rational Use of Medicines - by Health Professionals and Patients
- Illness Prevention and Health Promotion

For discussion, the delegates split into three working groups, each of which considered the preparation of one of the following:

- A model of collaboration between the health professions for the provision of objective information to professionals on medicines
- A model of collaboration between the health professions for the provision of objective information to the public on medicines
- A model of collaboration between the health professions for illness prevention and health promotion

On the final day of the forum, the three models were discussed and adopted.

In this report, the three models are reproduced in full, followed by the conclusions of the forum together with proposals for action. The texts of the plenary session papers are given in Appendix 2.

A model of collaboration between the health professions for the provision of objective information to professionals on medicines

Introduction

The following model aims to provide an outline structure for the provision of objective information to health professionals on the prescribing of medicines, which could be adopted by all Commonwealth countries. The forum recommends that, in each country, a single information base suitable for all categories of healthcare workers (eg medical practitioners, dentists, nurses, pharmacists etc.) should be provided.

The forum recognised that resource levels vary considerably between different countries of the Commonwealth and that, particularly in smaller countries, limitations on resources may result in problems with the provision of objective information. It therefore recommends that, where necessary, neighbouring countries should collaborate to provide information. As it is a prerequisite that the information is reliable, the forum advocates the establishment of drug information centres.

In the model, initial consideration is given to the type of information which should be made available to healthcare providers. Strategies by which such information could be provided is then discussed.

Information which should be made available[1]

Information for healthcare workers should include all the following categories:

(a) International non-proprietary name (INN) - generic and local proprietary equivalents

(b) Pharmacological information

(c) Clinical information

  (i) Indications

  (ii) Dose: range (adults and children)
  dose interval
  duration of treatment
  special situations

  (iii) Contra-indications

---

[1] WHO (1988): *The Use of Essential Drugs.* WHO Technical Report Series 770. Geneva

(iv) Precautions

(v) Adverse effects

(vi) Drug interactions (including self medication and alcohol)

(vii) Overdosage complications and treatment

(d) Pharmaceutical information

(i) Dosage forms

(ii) Stability & storage conditions

(iii) Administration

(iv) Incompatibilities

(v) Unit cost

(vi) Defined Daily Dose (D.D.D.)

Methods of providing the information

Information should be provided through regular publications and through the establishment of drug information centres. Opportunities for further education should also be provided.

(a) Publications

Two forms of publication are necessary:

(i) A national formulary in each member country, providing information on medicines as outlined above.

(ii) Drug bulletins produced at regular intervals, to supplement the National Formulary by giving added information such as

- new preparations
- deletions from the National Formulary
- warnings of newly discovered adverse reactions
- detailed treatment of selected diseases
- comparative costs of different treatment regimes
- any other information which requires dissemination to Health Professions regarding medicines

The working group noted that many Commonwealth countries already had National Formularies and also published their own Essential Drug Lists. In addition, some countries produce Drug Information Bulletins. It was felt that, where necessary, existing facilities for production and updating of National

Formularies should be strengthened through closer participation of professional associations, to ensure speedy and regular publication.

It was recognised that some countries are too small to support the facilities required for regular production of such publications. In such circumstances, collaboration between neighbouring countries is urged.

(b) Continuing education

Continuing education strategies should supplement publications in giving information about drugs and should promote the rational use of medicines. The following areas were identified for consideration:

(i) Distance learning packages aimed at health professionals working in isolation far away from other sources of information.

(ii) In-service training of health professionals starting from educational centres and spreading countrywide in a "cascading" fashion.

(iii) Identifying existing sources of information and avenues of obtaining information from local and foreign sources.

(iv) Strengthening curricula of Medical, Nursing and Pharmacy courses in aspects of rational use of drugs.

(v) Promotion of rational use of drugs through existing continuing education programmes (e.g. those of professional associations).

(vi) Countering one sided information on medicines provided by manufacturers.

(vii) Highlighting problems of inappropriate, inadequate or over-enthusiastic drug prescribing.

(viii) Preparation of standard treatment models and comparative costs of different treatment regimens.

(c) Drug information centres:

Drug information centres should be established. These should either be in a national basis or, for small countries, on a regional basis to provide information to several neighbouring countries. The centres should have the following functions:

(i) Providing evaluated information on medicines and poisons.

(ii) Monitoring adverse drug reactions.

(iii) Monitoring drug usage.

(iv) Providing "Hazard Warnings" on drugs.

These centres would contribute to the information provided in the national formularies and also publish drug bulletins.

A schematic representation of the model is presented in figure 1.

Counterfeit medicines

Concern was expressed about the problems of counterfeit and of ineffective medicines circulating in some Commonwealth countries. The development of rational, effective prescribing can only succeed where quality can be assured. This highlights the need for the establishment of facilities for the quality assurance of drugs on a national or regional basis.

Recommended way forward

(1) The model should be referred to all the Commonwealth professional associations

(2) National associations of health professionals should be urged to collaborate with each other and with their Ministries of Health to provide comprehensive and up-to-date drug information along the lines detailed above.

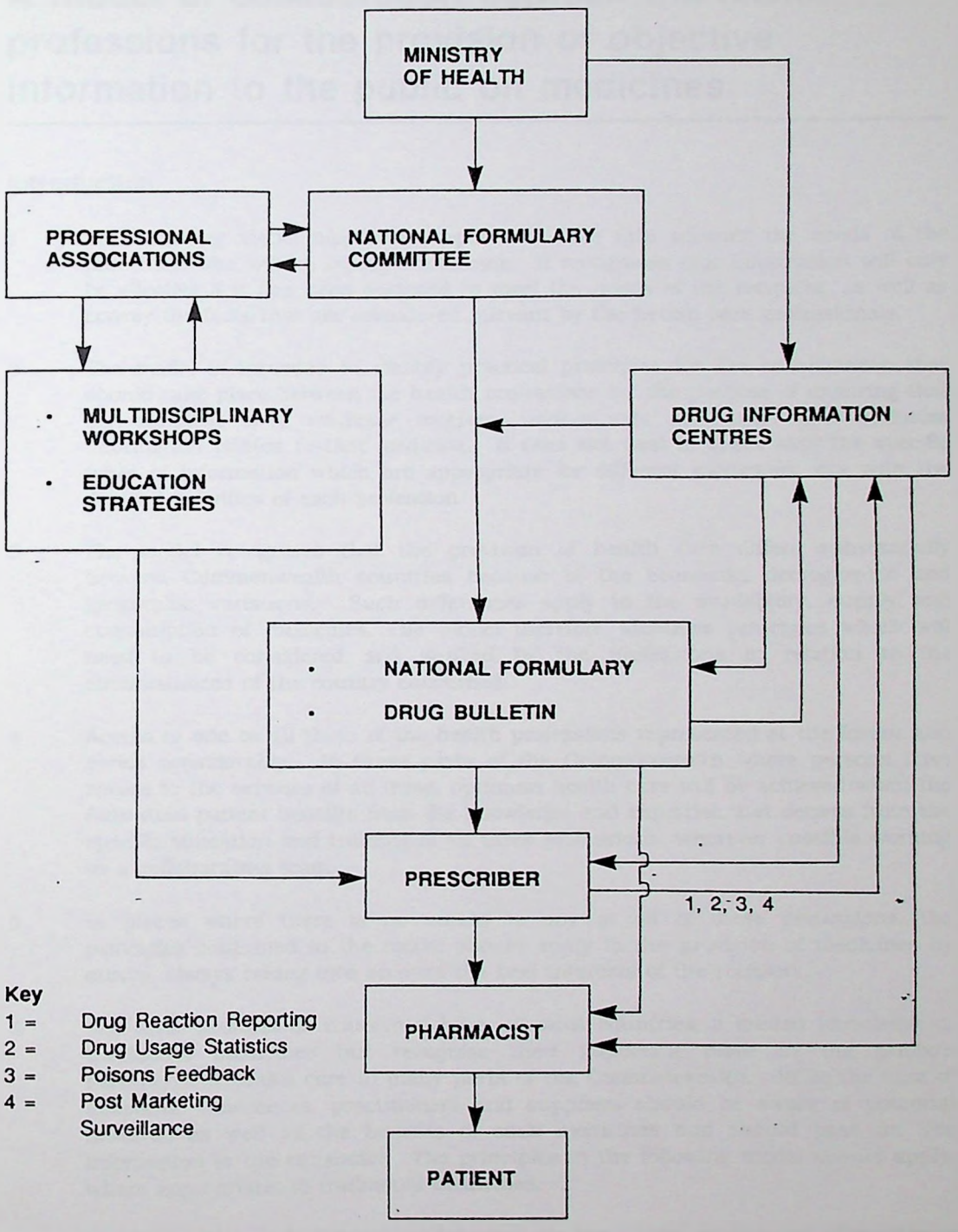

Figure 1: Schematic representation of a model for the provision of objective information to the health professions on medicines

A model of collaboration between the health professions for the provision of objective information to the public on medicines

Introduction

1 The following model has been prepared to take into account the needs of the individual who will be taking a medicine. It recognises that information will only be effective if it has been designed to meet the needs of the recipient, as well as convey the facts that are considered relevant by the health care professionals.

2 The model is intended to identify practical principles for the collaboration that should take place between the health professions for the purpose of ensuring that the recipient of a medicine receives, understands and acts upon optimum information related to that medicine. It does not deal in detail with the specific types of information which are appropriate for different medicines, nor with the detailed activities of each profession

3 The model recognises that the provision of health care differs substantially between Commonwealth countries because of the economic, demographic and geographic variations. Such differences apply to the availability, supply and consumption of medicines. The model therefore identifies principles which will need to be considered and applied by the professions in relation to the circumstances of the country concerned.

4 Access to one or all three of the health professions represented at the forum also varies considerably. In those parts of the Commonwealth where persons have access to the services of all three, optimum health care will be achieved when the individual patient benefits from the knowledge and expertise that derives from the specific education and training of all three professions, wherever possible working as a collaborating team.

5 In places where there is no access to any or all of these professions, the principles contained in the model should apply to the provision of medicines by others, always taking into account the best interests of the recipient.

6 The three professions concerned have, in most countries, a limited knowledge of traditional medicines but recognise their important place in the public's perception of health care in many parts of the Commonwealth. As in the case of allopathic treatments, practitioners and suppliers should be aware of potential hazards, as well as the benefits of such medicines and should pass on this information to the consumer. The principles in the following model should apply, where appropriate, to traditional medicines.

7 There should be educational programmes for the public on the use of medicines in health care, drawing attention to their potential harm as well as their benefits, and indicating that medicines are not always necessary. These programmes should also encourage patients to seek information about their medicines and to

inform their health carer about medicines they are taking.

Essential features of information on medicines for the public

8 The following criteria should apply to the information provided to the public with all medicines:

(a) It should be clear, unambiguous, and understandable by the recipient.

(b) It should inform the recipient of the name and purpose of the medicine; how often and for how long it should be taken; what to do if a dose is missed; how to take the medicine, and about cautions and side effects.

(c) There should be an agreed minimum amount of information given to any member of the public.

(d) The information should, if possible, be repeated in another form to increase the prospect that it will be understood and remembered - essential information being given first (eg written information to supplement verbal advice, and vice versa).

(e) It should be consistent when repeated by another health carer.

(f) It should be conveyed in a manner which is informative but not threatening, for example, information on side effects should not adversely affect compliance with dosage instruction, and essential aspects should be highlighted.

Prescribed medicines

9 The forum considered the following to be the existing situation regarding the prescribing of medicines:

(a) Medical treatment is normally initiated by one of the health professionals when the public has access to them and, in these situations, medical practitioners undertake the majority of prescribing.

(b) Even when patients have access to medical advice, there may be arrangements for nurses to prescribe specified medicines. The extent of nurse prescribing increases as access to doctors decreases.

(c) Pharmacists may initiate treatments of minor ailments when members of the public seek advice on symptoms. In appropriate cases the enquirers are referred for medical advice.

(d) Good health care involves the supply of medicines by health professionals. However, in remote areas of some countries where it has not yet been possible to achieve satisfactory access to health professionals, a restricted range of medicines (which varies) is supplied by other health workers.

These workers may have little or no training for this activity.

10 Deficiencies in the nature and effectiveness of the information provided with prescription medicines vary from country to country, and may include:

(a) Verbal:

(i) Poor communication skills of the provider

(ii) Lack of provision, possibly due to other pressures on the time of the provider

(iii) The nature of a professional consultation. (It has been shown that patients forget much of what they are told, and that 50% of the information is forgotten immediately)

(b) Labels:

(i) Lack of information on labels

(ii) Illegibility

(iii) Inadequacy of the information given

(iv) Absence of information on the source of the medicine

(v) Literacy level of the recipient

(vi) Visual handicaps of certain recipients

(viii) In the case of manufacturers original packs, the information is not specific to the needs of particular patients

(c) Patient leaflets/package inserts:

(i) They are relatively uncommon

(ii) The information can be too technical and too detailed

(iii) Literacy and visual handicaps of some recipients

Purchased medicines

11 The public obtains medicines both on prescription and over the counter. Medicines are purchased in a variety of places:

(a) Pharmacies sell the full range of medicines which are not restricted to supply on prescription. In some countries there is a list of medicines which can only be bought by the public from pharmacies.

(b) In Commonwealth countries there is normally a range of medicines which can be purchased from other retail outlets.

(c) Only rarely are medical practitioners ever involved in the retail sale of medicines. -

12 Deficiencies in the nature and extent of information provided with purchased medicines:

(a) Verbal :

(i) Poor communication skills of provider

(ii) Lack of knowledge of unqualified provider

(iii) Lack of provision of any verbal information

(b) Labels:

(i) Inadequacy of information given

(ii) Literacy and visual handicaps of some recipients

(c) Package inserts:

(i) May be strongly persuasive

(ii) Can be misleading, particularly in countries that do not have effective measures to control standards

Control and effectiveness of information

13 Figure 2 represents the major factors affecting the control and effectiveness of information on medicines for the public.

Recommended way forward

14 The medical, nursing and pharmaceutical professions should collaborate actively and regularly towards achieving substantial improvements to the information provided to the public on prescribed and purchased medicines.

15 This collaboration should take place nationally and locally, and through:

(a) Discussions on general policy between national professional bodies.

(b) Discussions between individual professional practitioners on policies for the health care of shared patients.

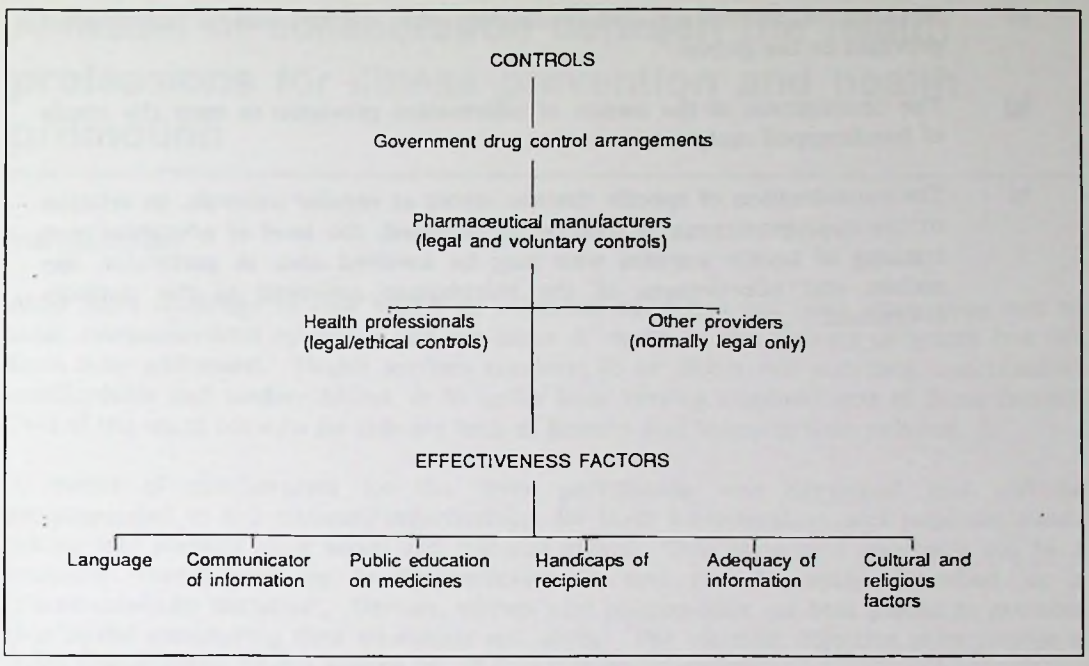

Figure 2: Factors controlling distribution and limiting effectiveness of drugs

Recommended way forward (cont.)

15 (c) Joint education and professional meetings between the health professions, normally at a local level, but occasionally nationally.

16 Examples of areas of possible collaborative activities, depending upon the circumstances in particular countries, include:

(a) The development of public education programmes on the safe and effective use of medicines.

(b) Joint approaches to manufacturers and, where necessary, to governments to achieve the effective implementation of satisfactory standards for the advertising of medicines.

(c) Joint approaches to manufacturers and, where necessary, to governments to achieve improvements to the information given on the labels and in package leaflets of original (manufacturers') packs of medicines.

(d) The joint promotion of education in communication skills for health professionals.

(e) Agreed policies on the minimum information on medicines to be provided by health professionals, and on mechanisms to achieve consistency when more than one is involved with a particular patient.

(f) Methods of monitoring and evaluating the effectiveness of information provided to the public.

(g) The development of the means of information provision to meet the needs of handicapped recipients.

h) The consideration of specific disease states at regular intervals, in relation to the appropriateness of treatments provided, the level of education and training of health workers who may be involved and, in particular, the nature and effectiveness of the information conveyed to the patients concerned.

A model of collaboration between the health professions for illness prevention and health promotion

Introduction

Alma Ata's challenge to view health as a human right has not been adequately met by most Commonwealth countries and the issue of equity in the delivery of health has not been fully addressed. Health services continue to be either sub-standard, inaccessible, unaffordable and under-utilised, or to suffer from varying combinations of these factors. Two of the main reasons for this are lack of finance and inappropriate policies.

A model of collaboration for the three professions was developed and will be recommended to our national organizations for their consideration and implementation taking into account their social and cultural milieu. This integrated approach will be a collective contribution by health professionals and can be aptly described as a "Commonwealth Initiative". Doctors, nurses and pharmacists are best placed to promote this model considering their education and skills. The ultimate objective is to provide a more cost-effective health system for all Commonwealth citizens.

Areas of collaboration

The forum identified three broad areas of collaboration: health promotion, illness prevention and natural disaster relief.

(a) Health Promotion:

Anti-poverty action was considered to be of high priority, especially that relating to income generating activities. As a means of promoting the health of mother and child, factors such as education for women to enhance their earning capacity and influence, timing of births, breast feeding and family life education for school children were considered to be very important. Environmental issues such as pollution, sanitation and safe water were emphasised, as well as accidents at home, at work and on the roads. The health professionals and the public should be educated on the rational use of drugs. Tobacco, alcohol and substance abuse pose serious threats to health and a vigorous joint effort is needed to counter this problem in the Commonwealth.

(b) Illness Prevention:

The forum applauded the Expanded Programme of Immunisation (EPI) which has proved to be an effective agent for illness prevention in all countries of the Commonwealth. Such areas as health education, vector control, anti-natal care, screening of high risk groups and measures like oral rehydration therapy are other important steps towards Health for All by the Year 2000.

We recognise the influence of alternative medicine in Commonwealth countries and it is recommended that the practices be investigated.

(c) Natural disaster relief:

In the event of natural disaster such as epidemics, hurricanes, droughts, floods volcanic eruption or earthquakes the professions should be prepared to collaborate, and provide with others, relief activities as appropriate. Such activities might include mobilisation of resources within a country as well as with neighbouring countries. The forum felt this was an important area of collaboration, and an additional paper exploring this subject more forms appendix 1 of this report.

Mode of action

The forum identified two approaches: team effort and role models.

(a) Team approach:

The health professions should liaise to study areas of action which would improve the team approach. These would include:

(i) An integrated plan for basic education with some shared learning experiences in practice areas.

(ii) Increased participation by all three health professions in community education.

(iii) Collaboration between student associations to include community projects.

(b) Role model approach:

The role model can be at individual or association level:

(i) Health professionals should adopt lifestyles consistent with good health e.g. avoidance of tobacco and alcohol, safe driving, recreation and relaxation.

(ii) Members of the health professions have a moral and ethical obligation to work in the under-served areas and participate in community projects. Their associations have an obligation to ensure that members of their professions working in the under-served areas are provided with amenities and incentives.

Recommended way forward

The forum recommends the following approaches for national professional associations to

consider at national level in their cooperative activities:

(a) Joint meetings between health professionals in the first instance, followed by meetings with other Non-Governmental Organisations to define areas of relevance to their country and determine priorities for their collaboration.

(b) Use of the media to disseminate information on health promotion and to publicize health related activities.

(c) Editing and publishing appropriate material for health education.

(d) The three associations and others should collectively adopt a partnership approach with government whilst maintaining their independent contribution.

(e) The associations should encourage the formation of regulatory bodies for different health professions as appropriate.

(f) The Commonwealth Foundation and other Foundations or Trusts should be approached to consider grants to assist collaborative activities at national level.

Conclusion

From the Discussion Forum in New Delhi it became apparent that the Commonwealth as a whole is falling behind in achieving Health For All by the Year 2000. We recommend a "Commonwealth Initiative" for Health For All by Year 2000 through a collaborative approach by members of health professions in the Commonwealth, and suggest various approaches for implementation of this initiative.

The Forum recommends that each National Association shares its experience on collaborative activities with their Commonwealth Associations. The Commonwealth Associations should convey reports of their activities to the Commonwealth Foundation, the Medical Division of Commonwealth Secretariat for Commonwealth Health Ministers, and Commonwealth Heads of Government Meetings.

Conclusions from the forum

When the Forum received and discussed the models which had been prepared by the working groups and which clearly indicated several activities in which doctors, nurses and pharmacists can work together, it was unanimously decided:

that the Commonwealth organisations of the three professions be urged to encourage their respective national member associations to promote collaboration on the matters covered by the models, between doctors, nurses and pharmacists: regionally, nationally, and locally between practitioners;

that an aspect of such collaboration should be joint approaches, sometimes with other agencies, to international health agencies, national governments and non-governmental organisations on matters of common and public health interest. This should be without prejudice to each profession's right to take independent action when necessary;

that the three Commonwealth professional organisations actively monitor, at intervals to be mutually agreed, the degree and nature of collaborative action in each member country.

Additionally, and arising from the discussion of the models:

the Forum registered its grave concern at the proliferation of counterfeit and substandard medicines in certain parts of the world, and urged governments to establish appropriate and effective controls which would eradicate this insidious trade.

As an extension of the proposed collaboration on health promotion and illness prevention, it was further decided:

that the three Commonwealth professional organisations should, as a joint initiative with other relevant health interests, determine a policy and promote its implementation, for the involvement of the health professions in health related disaster situations, such as major epidemics - this initiative to be discussed initially with the Health Development Programme of the Commonwealth Secretariat.

APPENDIX 1

Natural disaster relief

Natural disaster relief: An additional paper from the working group considering collaboration between health professionals on health promotion and illness prevention

As an extension of proposed collaboration on health promotion and illness prevention it was further decided:

1 That the three Commonwealth professional organisations should, as a joint initiative with other relevant health and community interests, determine the promote the implementation of a policy for the involvement of the health professions in health related disaster situations, such as major epidemics, hurricanes, droughts, floods, volcanic eruption or earthquakes. The professional associations should jointly, in collaboration with other interested parties, initiate and provide relief activities as appropriate, such as mobilisation of resources within a country as well as neighbouring countries. This initiative should be discussed initially with the Health Development Programme of the Commonwealth Secretariat.

2 Commonwealth professional associations should, in collaboration with each other, study their national regional plans of action for disaster to identify the factors which would be relevant to action by health professionals. A list of suggested areas for discussion is given, but is not intended to be exhaustive:

(a) Preparation of community before disaster

- community and school talks
- identification of medical centres
- means of strengthening homes
- water storage, food stores, cooking utensils and alternative energy sources
- appropriate medical supplies
- provision of two-way radio, oil lamps and candles

(b) During disaster or major epidemic:

- measures to deal with injuries or critically ill
- first aid packs and drugs as appropriate and water purification tablets/filters
- rest areas for walking wounded
- blankets, labels, record cards

(c) After disaster

- arrange transfer of seriously injured and critically ill during an epidemic to district or regional hospital
- check for water contamination, rat or other infiltration and deal as

appropriate

- arrange counselling for shocked, bereaved and homeless
- briefing of personnel from neighbouring countries
- provision of food and cooking facilities and management and rehabilitation of homeless
- collaboration with police, fire personnel, engineers and development workers
- after initial action assess success, or otherwise of management of disaster plan

In Commonwealth countries, there are numerous examples of disaster plans, for example those developed in India, Bangladesh, Pakistan and Sri Lanka during floods, earthquakes, air and rail disaster. In the Caribbean, there is a Disaster Unit based in Barbados. An example of inter-country collaboration followed Hurricane David in Dominica in 1979, when a number of Dominican nurses in Britain volunteered to return to help their country and were given leave, with pay, for this purpose. British Airways and British West Indian Airways provided air passages for these nurses. Following the Hurricane Disaster in Dominica, the Nurses Association arranged to inform and prepare the community for future disasters. Some work has been done in the Pacific for typhoons and epidemics, with the call for help from neighbouring countries being relayed by Peacesat.

The Commonwealth Heads of Government meeting in Vancouver in 1987 was concerned about the seeming increase in recent years of natural disaster and asked the Secretary-General to set up an expert group to study the problems caused to member countries by natural disasters. The Health Professions initiative in natural disaster would help to strengthen the health element of disaster relief, by preparation of the community before a disaster or major epidemic, management during and rehabilitation after the disaster.

APPENDIX 2

Plenary Session Papers

Keynote address

R Srinivasan, Permanent Secretary, Ministry of Health and Family Welfare, Government of India, New Delhi, India

Summary

Shri R Srinivasan, Permanent Secretary in the Ministry of Health and Family Welfare, inaugurating the conference pointed out the context of the forum and its choice of subject for discussion. The universal acceptance of the primary health care approach towards provision of health for everyone needing it sometimes stands confused with policies and programmes for extension of rural health infrastructure, which is a part, but not the whole, of the PHC approach. Indeed that approach looks out as much for external resources; together they can constitute a cost effective mechanism for prevention of illness and promotion of health, permitting sufficient autonomies for the exercise of professional talent in regard to health maintenance.

Shri Srinivasan underscored the need for looking at a comprehensive role for pharmaceuticals in primary health care within the context mentioned above, alluding to the Nairobi WHO policy of essential drugs and rational use of drugs. He emphasised the need to explore further dimensions for implementation of rational drug policy through a harmonious interaction between the drug industry and the professionals who used drugs to cure patients. Towards this end there seemed to be four major issues that deserve to be discussed directly or indirectly in the forum.

First, the best way to reconcile the growing dichotomy between the constituency of health and that of the drug industry, including the apportion between synthetic and organic medicine. Second, considering that large private care and public health systems set up to support the drug/patient relationship, one must examine how far the related disciplines of pharmacy and nursing can assist the doctor in more rational use of drugs. Third, there is scope for coordinated education and update on the basis of objective public information made available to users as well as providers, stressing on the possibility and limitation of modern medicine. Last, he pleaded for demystification of knowledge, especially about medicine and suggested that working models should be examined under which paraprofessionals are permitted within carefully laid down areas, a greater degree of autonomous private practice. While such a step could never be allowed to let down professional standards of medicine, it may indeed strengthen the hands of the medical profession.

He wished the deliberations meaning and purpose and thanked the organisers for having invited him.

The team approach for health promotion

U Ko Ko, World Health Organisation, Regional Director for South-East Asia

Excellencies, distinguished participants, ladies and gentlemen,

This discussion forum on "Working Together for Cost Effective Medical Treatment and the Promotion of Good Health", is of great priority and relevance for WHO and its Member States, particularly in the South-East Asia Region. The multi-disciplinary approach inherent in the title of this meeting is in consonance with WHO's concept of the integrated team approach for problem solving based on the Primary Health Care (PHC) strategy for implementation of health programmes.

Though it may be unnecessary to elaborate again the evolution of HFA strategies and PHC approach, permit me to recall that at the Word Health Assembly in 1977 the Member States of WHO took up the challenge of providing to all the people of their countries a level of health that would, by 2000 AD, enable them to lead a socially and economically productive life. This objective was further interpreted by the Executive Board of WHO in 1978 to mean "an acceptable level of health for all" which became universally known as "Health for All by the Year 2000". It is the social goal of all our Member States, many of which are represented by the distinguished participants here. Following this momentous decision of the World Health Assembly, 134 Member States of WHO, representatives of 67 United Nations Organizations, specialized agencies and non-governmental organization attended the International Conference on Primary Health Care in Alma Ata, USSR, in September 1978. Their task was to develop the key strategy for the nations of the world to make "Health For All" a tangible reality for all their people. The result was, as you all know, the historic Alma Ata Declaration which has since become synonymous with one of the great public health movements of history: the Health For All movement.

PHC is multi-dimensional. Firstly, PHC rests on five pillars - namely: Equity; Community Involvement; Inter-Sectoral Coordination; Appropriate Technology; Focus on Promotion and Prevention.

The other dimensions at different levels include the essential health service elements that are delivered through PHC and the support elements such as health information systems, information communication and education, supplies and logistics, manpower development, research and so on. I would not reiterate once again the eight essential elements of primary health care, which I believe are all well known.

Keeping within the parameters of this PHC approach, Member States have reoriented and restructured their health care delivery systems, so that while maintaining and improving on already existing standards in the better served areas, strenuous efforts were undertaken to reach the under-served and under-privileged sections of populations in all countries. Therefore, concurrently with extension of services to provide the eight essential elements of PHC by strengthening the primary level of the delivery system, the vital support required for the periphery from the secondary and tertiary referral tiers of the system was not neglected or downgraded. Doctors, nurses and pharmacists working in the supportive tiers are very much a part of, and indeed integral to the success of the PHC approach.

The very fact that you are at this forum to discuss as a team on common issues augurs well for the success of the efforts that the Member States and WHO will undertake in this final decade to the year 2000. Indeed the team approach for problem solving in medical care is as important as the team approach in the field and community setting. Hospitals represent, throughout the world, the main concentration of health resources, professional skills and medical equipment. Enlightened hospital policy makers who want to contribute to the health care revolution that is now taking place are actively looking for ways and means of making hospitals a centre for community health through the primary health care approach. At the same time those involved in organizing and promoting community health care recognize and seek the kind of support that hospitals can provide, and together function as a package deal.

The primary health care approach is as relevant to hospital activities as it is to activities that go on at community level. Besides, it is self-evident that at least five of the eight elements of primary health care: *viz.* maternal and child care including family planning, the prevention and control of locally endemic diseases, immunization against the major infectious diseases, the appropriate treatment of common diseases and injuries, and the provision of essential drugs - are directly related to medical care. Thus health workers involved in medical in medical care do have an important and pivotal role in the implementation of the Health For All strategy. Therefore, I must once again emphatically reiterate the need for an integrated approach to the preventive, promotive, curative and rehabilitative aspects of health care, with the full involvement of hospitals as apex institutions in the planning and delivery of primary health care. In fact through such an integrated approach medical care should become the basis of public health and preventive medicine.

Working together as a team of health professionals, and looking outwards beyond the four walls of the hospital, at the community you serve, doctors, nurses and pharmacists can together make an effective contribution to the community approach and thus accelerate the move towards the attainment of the social goal of health for all.

Indeed I can see from the programme before me that the concept of the "team spirit" is inherent to your discussions which stress on collaboration between the professions for achieving three objectives, namely;

1 Educating both health professionals who are policy makers, and those who prescribe, about the provision of effective information, its objective assessment and its use in establishing rational prescribing policy.

2 Educating the public about health and medicines, so as to allow them to promote healthy living and to make objective judgements on advertising campaigns and to assess their own needs;

3 Encouraging participation by the major health care professions in collaborative programmes on health promotion and disease prevention at local and national level.

WHO along with member countries has launched a programme to re-orient the health professionals by offering them a more community-based, field-oriented training. One such initiative is the programme for the Reorientation of Medical Education (ROME). Through a series of regional and national activities in the countries of the South-East

Asia Region, many medical schools have initiated efforts to realign medical education within the framework of Primary Health Care. In a similar manner, community-based nursing training is also receiving propriety attention in the countries of the Region.

One central matter in health manpower development is the development and strengthening of the managerial capabilities at all levels. This will help countries to produce health mangers more attuned to the concept of health development, and deliver the health care effectively.

Since one of the major elements of primary health care is the provision of essential drugs for treatment of common ailments, WHO is actively engaged in promoting the rational use of drugs. In addition, the World Health Assembly, through several resolutions, has urged Member Countries to formulate drug policies and management processes, adopt a list of essential drugs for primary health care and rationalize their spending on drugs. WHO is striving to assist countries in providing their people with safe and effective drugs that are required to treat common diseases at economical affordable prices. As experienced professionals in your own fields, you are no doubt fully aware that drugs by themselves cannot buy health, but they can, if used judiciously, cut down unnecessary morbidity and mortality.

Therefore both the users and the providers are concerned about the availability of drugs for day to day use. However, drugs differ in one respect from other daily necessities: they do not normally reach the consumer directly but usually through the intermediary of medical men or other health workers. This places an increased responsibility on the health profession in its task - both at the individual and the community levels - to pick and choose essential drugs that are of assured quality and at the same time most economically priced. While the professionals are, by and large, quality conscious, they have often ignored the problem of the cost of the drugs. And yet, this aspect is vitally important, because drugs should not take away a major proportion of the health budget. This is especially true in developing countries where many priority areas in the health sector are to be developed simultaneously in a balanced manner in order to derive the maximum possible benefit from a given input for health development.

Therefore it is timely that this forum will discuss and debate the urgent measures that must be taken to enlighten the medical profession, para-professionals and the public about the judicious use of drugs. The message must go out that drugs are not always magic bullets in fighting disease. On the contrary their improper or injudicious use can lead to disastrous consequences.

Finally, I would like to touch upon the team approach for promoting healthy living. As appropriately trained and qualified professionals, health workers are the leaders in the movement towards total health promotion and healthy living. Health professionals must play an active and leading role in the conceptualization, planning and implementation of programmes for the promotion of healthy lifestyles in individuals, families and communities. This can be done by assuming a proactive leadership role at the community through creation of public awareness and, more importantly, by being examples and role models of healthful living - encouraging sports and physical fitness programmes, promoting healthy eating habits and giving leadership in the fight against tobacco addiction and drug abuse. In this manner, health workers can play a catalytic role by providing leadership in promoting healthy life-styles which in turn can help to reverse the increasing trends in many self-inflicted non-communicable diseases such as

obesity, diabetes, bronchitis and chronic pulmonary diseases, cancer, hypertension and cardiac disease, which are now becoming health problems in the developing countries as well.

Dear colleagues, ladies and gentlemen, I am extremely thankful for the Commonwealth Medical Association for providing me this opportunity to place these views before you. I trust they will come in useful in your discussions.

I wish this discussion forum all success in their deliberations.

Health promotion and disease prevention: A plea for a Commonwealth initiative towards health for all

M K Rajakumar General Practitioner, Kuala Lumpur, Malaysia

On a global scale too, we are divided into rich and poor countries. A divided globe, in which the majority of the population is growing poorer, is a guarantee for a troubled entry into the 21st century. Within cities already, the better off families cower inside high security buildings. Between nations, nuclear weapons and chemical bombs are the final words in battles over limited resources. Yet national borders are no guarantee of security against disease. The richest nations have succumbed to epidemics of influenza for over a century and now AIDS threatens to spread to every nation. The release of chlorofluorocarbons (CFCs) into the atmosphere, the burning of fossils fuels or the destruction of rain forests, threaten all life on this planet, regardless of national boundaries. We must find a way as one human race to confront these problems of health and disease. We have to learn to live together or we die. But there is cause for hope.

> "The world must expect a troubled entry into the 21st century ... the number of poor will have increased. By every measure of material welfare ... the gap will widen ..."

Figure 1: Report to the President, US State Department

Certainly the existence of the World Health Organisation is a source of hope. Its survival through half a century of wars and cold war is cause for wonder. It is a bureaucratic organisation because that is what the bureaucrats of our countries feel comfortable with. Hafden Mahler injected idealism into the policies of the organisation, and as a result all our countries have pledged to achieve Health For All by the Year 2000 through Primary Health Care. Nevertheless, the fact is that if the WHO is to function it must continue as the bureaucratic creature of national bureaucrats. The spiritual part of the WHO lives its alta ego, the UNICEF. It is remarkable how much can be done by the efforts of voluntary organisations. James Grant has achieved the magic of inducing recalcitrant tribes of voluntary organisations tc pool their energies in the case of world health. Then there is the International Physicians Movement Against Nuclear Weapons (IPPNW), created by two cardiologists, Bernard Lown and Eugueni Chazov. The IPPNW has been awarded the Nobel Prize for Peace and all the professions of medicine can share pride in knowing what we can achieve when we work together.

Finally there are the rather modest endeavours of the Commonwealth Medical Association. This meeting is an inspiration. Good or bad, let us see! I am sure that, like me, you must have wondered what could come out of a meeting of pharmacists, nurses and doctors. Certainly we work closely together, but that has never meant that we talked together! My friends, perhaps we have stumbled upon a truth that if we are

to seriously contribute to the promotion of health and the prevention of disease, we not only have to work better together within institutions but also together as citizens of the world with special knowledge and experience about the problems of disease.

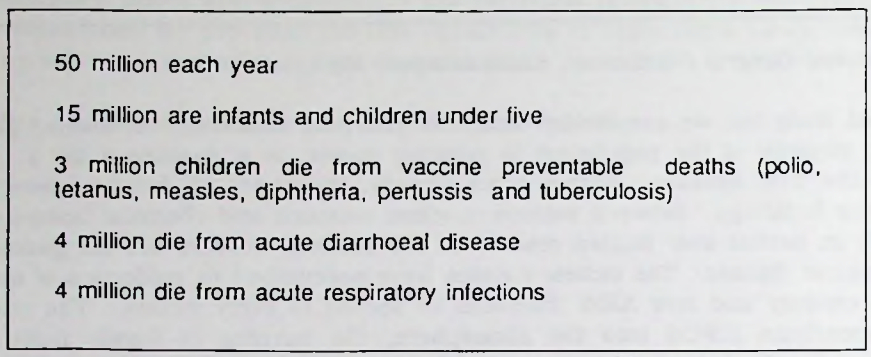

Figure 2: Global estimates of death

As I have said, the problems are huge and our resources are small. We need a goal and I suggest we look at the target of Health For All By The Year 2000, which now faces inevitable and demoralising failure. Can we single mindedly direct our intelligence and energies towards bringing Health For All as close to reality as possible. That would mean improvements in health delivery that will touch the lives of the largest numbers of our people, to alleviate suffering, to dry the tears of countless children and bring smiles to the faces of a million mothers. I suggest a Commonwealth initiative for Health for All because we have amongst us all the skills, experience and attitudes that are necessary to make a success of Health for All. I suggest that a Commonwealth effort be directed to South Africa where the fragile hope exists that an insoluble conflict will be resolved, if not with love, at least without bloodshed. A multinational Commonwealth project in South Africa in Primary Health Care can be a source of hope, a small beginning to collaboration, and a demonstration of what can be achieved when people work together. The land that produced Mahatma Gandhi has now given us Nelson Mandela. It is our privilege and obligation to help.

I must admit I am carried away. Yet when we meet we must create new dreams to give ourselves hope, and to inspire us to carry on. This meeting itself is a miracle of sorts. We are united only by the common misfortune of having been subject to the same colonial rule. Out of the common misfortune, we have acquired shared traditions and a common language. Thus it is possible for us from widely disparate backgrounds, to sit together in New Delhi and talk of common problems with a common set of values and principles. That is a precious thing to possess in this troubled world; we must make the most of it.

Let us, I say, make it the thrust behind Commonwealth collaboration to bring Health To All, and by the power of our example, seek to bring love and peace to the hearts of the fratricidal tribes that inhabit this planet.

The rational use of medicines by health care professionals and patients

*J Cooke** Director of Clinical Pharmacy, The General Infirmary, Great George Street, Leeds, West Yorks, LS1 3EX, UK.*

There is much evidence of the irrational use of medicines in our society. The clinically orientated pharmacist is in an ideal position to assist in the promotion of the rational use of medicines in conjunction with colleagues in medical practice and nursing. The multidisciplinary or team approach can ensure that medicines are selected and used in an optimal fashion and with particular reference to maximum efficacy, minimum toxicity and in a cost effective manner. This paper will be illustrated with reference to developments that are going on in the pharmaceutical profession in particular and the health service in general in the UK and in North America as well as giving some examples from our practice in Leeds.

The Department of Health (DOH) in the UK recognises the value of teamwork operating in the best interests of patient care and has issued a number of health circulars over the years to give guidance to institutions and the professions to promote this. The health circular HC88(54) - "The Way Forward for Hospital Pharmacy" has been commended to health authorities and is the first formal recognition of the value of patient orientated or clinical pharmacy. It identifies the extent to which the hospital pharmaceutical service has progressed over the years, particulary in such areas as effective procurement of medicines, formulation of pharmaceuticals, distribution of medicines and the value of drug information services. The circular builds on these core activities to identify how further service development can utilise the skills of the pharmacist in conjunction with his medical and nursing colleagues.

Clinical pharmacy has been defined as the application of pharmaceutical knowledge and skills to the care of the individual patient. HC88(54) recognises the scope and benefit of clinical pharmacy to include: assistance in the selection of medicines; dosage definition and managing and avoiding adverse drug reactions (ADR) and interactions; amplifying the medication history which, amongst other benefits, may highlight coincidences between a patient's symptoms and possible ADR's; using clinical pharmacokinetics in monitoring of drug therapy; counselling patients about their drug therapy in order to help them use medicines more effectively; assisting in all aspects of clinical trials of medicines from design to supply; and finally providing communication between all those responsible for the supply and administration of medicines to patients in priority care groups within the community.

The problem of patient medication compliance is a particular problem which needs to be continually addressed if we are to be assured of treating patients optimally and make the best use of the medicines we use. Several studies have looked at medication compliance, ways of detection and the value of various interventions aimed at improving compliance. Education strategies by a combination of written and verbal communication by pharmacists have shown a marked improvement in compliance but the effect is only

---

***Current position: District Pharmaceutical Officer, South Manchester Health Authority, Withington Hospital, West Didsbury, Manchester, M20 8LR, UK.*

relatively short lived and therefore is in need of continual reinforcement. Patient groups who might have particular problems include: the elderly, the confused, those with multiple and complex prescriptions and those who do not perceive they are ill or have no confidence in the treatment prescribed.

Patients need certain basic information in order to take medicines correctly. Much of this can be conveyed on the label. However there is a limit to the amount of information which can be given by this route. Additionally many patients have difficulty in reading even a well-typed label. They may be visually handicapped, illiterate or have language difficulties. Well-produced leaflets conveying information in an attractive and non-alarmist fashion may be of benefit. Simple words and phrases with liberal use of colours and illustrations have been shown to be well-accepted by patients.

Training programmes allowing patients to be responsible for their own medicines prior to discharge may be useful as may self-help groups or special care groups, eg diabetic patients. Attempts to produce positive concepts regarding the safe and effective use of medicines have been employed by educating the general public in a variety of ways. Health education programmes for schoolchildren regarding the responsible use of medicines have been employed in various countries.

The health circular also advises authorities to ensure a supply of adequately trained pharmacists and recommends the establishment of academic practice units as joint ventures between schools of pharmacy and health authorities.

Emphasis is given to the promotion of cost effectiveness in the use of medicines by the implementation of Formulary Management Systems (FMS). A FMS is a multidisciplinary, dynamic, authorised strategy for the ongoing objective review and evaluation of drug usage. It must be **multidisciplinary** in order to develop a collective ownership of the strategies for drug usage and formulary control. It has to be **dynamic** so that there is constant review and updating in line with current developments in medical research, eg. changing practices for the management of hypertension based on epidemiological studies and large multi-centre clinical trials. It should have **authority**, utilising the skills and abilities of senior professionals and managers within the institution. Membership of the components of the FMS should include practising professionals who hold credibility with their peers and other hospital professionals. The information sources employed should be as **objective** as possible and ideally should be evaluated by the drug information pharmacist. Information should also include details of drug usage, potential needs, and accurate costings. Any sources obtained from the pharmaceutical industry must be clearly identified. The Industry obviously has an important role in the provision of drug information but will also possess a vested interest in demonstrating the value of their products for consideration for inclusion in a formulary. The FMS should promote its activities by discussion, consensus and education rather than by coercion or edict. The FMS should obviously be involved in setting procedures for drug selection. But this aspect is only the beginning of the drug review process. A system for the control of new medicines should be adopted with appropriate procedures for documentation and review of their value.

There should be guidelines for therapeutic standards of care, eg use of thrombolytic agents following myocardial infarction; management of drug overdose, eg paracetamol; provision of IV nutrition; management of urinary tract infections/hypertension.

There should be a system for auditing the value of the various medicines which are actually used. A drug use review (DUR) procedure should be available to ascertain the effectiveness of medicine usage in terms of clinical outcome or toxicity. Groups or individual drugs can be targeted for review according to various criteria. DUR programmes are now a requirement in the USA for accreditation of many hospitals by the Joint Commission on Accreditation of Healthcare Organisations (JCAHO).

Whichever medicines are considered for use, the outstanding requirements are that they should be the most efficacious and the least toxic available. The general public have a right to expect this from the healthcare professionals. Convenience to the patient or ease of administration will become important once the first two criteria have been fulfilled. Consideration of cost of a medicine should only be made when all other aspects are equal. Care should be taken in interpreting marginal advantages which are promoted eg:

- amoxycillin over ampicillin,
- ranitidine over cimetidine,
- branded over generics,
- netilmicin over gentamicin

By careful attention to these aspects of medicine use it should be possible to highlight considerable savings which can then be used to fund more innovative improvement in medicines eg:

- cimetidine over antacids
- beta-receptor blocking drugs
- 4 - fluoroquinolones
- erythropoietin
- human growth hormone
- Gcsf and Tcsf

The methods at our disposal for the promotion of the rational use of medicines include clinical pharmacy services, current awareness bulletins, formularies, academic detailing and expert systems. This last method is currently in its infancy. Expert systems are based on creating therapeutic decision pathways which have been previously validated by a panel of experts. There is much debate, in medical circles, of the value of such systems. On the one hand it can be argued that it can be an educational tool to optimise current knowledge of therapeutics and can be computerised in order to release valuable time for the clinician. On the other hand it has been argued that it merely encourages cookbook medicine.

Clinical pharmacy

Clinical pharmacy services can promote the rational use of medicines in a number of ways. Some have been previously described and others will be conveyed as examples from my own practice. In the area of cost effectiveness of these services, William Smith from Long Beach has described results from auditing his pharmacy serves over the last 20 years. When pharmacists had become involved with the dosing individualisation there were fewer bleeding complications in patients on anticoagulants, a lower incidence of nephrotoxicity in patients receiving aminoglycosides and lower toxicity in patients on aminophylline.

Current awareness publications

The use of concise, evaluated, objective review sources of information on medicines can be quite useful. Of importance is achieving a balance between the content of an article and its length. Further reading can be included in any bibliography. Examples of useful publications include

- The Drugs & Therapeutics Bulletin
- The Medical Letter
- The Prescribers' Journal
- WHO Drug Information

In addition, the use of local in - house current awareness bulletins can be employed to inform professionals of formulary guidelines, opinions and "best buys".

Formularies

These can have value in promoting an educational approach to the rational selection and use of medicines within an institution. Simple lists should be discouraged as they have no informative value.

At the General Infirmary at Leeds, guidelines for antibiotic usage were drawn up in 1983 with the assistance of clinical specialists and nursing staff and with the co-direction of the clinical microbiologists. The proliferation of antibiotics over a twenty year period was considerable and it was felt guidance was indicated. Objectives were set which included retarding microbial resistance; controlling cross infection; testing for sensitivities to drug which were actually kept in the pharmacy. This would then reduce the numbers of antibiotics stocked, there would be better use of the remaining agents and hopefully by the use of appropriate purchasing there could be a cost saving. Following consultation with clinical specialists a strategy was produced and a programme of education and discussion was undertaken by the clinical microbiologists and the clinical pharmacists working as a team. A list of recommended antibiotics was made with a reserve list for special situations. Selective reporting of sensitivities ensured that clinical microbiological control could be achieved over drug recommendation. A strategy for the "best bet" approach for drug selection as established based on likely portals of entry. Policies for surgical prophylaxis were established by agreement with the surgeons. Empiric use schedules were created for neutropenic patients with the haematologists. Microbial resistance levels were monitored and a close check was kept on surgical infection rates using the hospitals surgical audit results. Duration of therapy and initial blind selection of agent was kept under continual review by clinical pharmacists who visited the wards on a daily basis.

Results

Figures 1 and 2 show the results in terms of antibiotics used and the effects of standardisation policies are apparent. Figure 3 shows the increase in the use of vancomycin which is due almost entirely to the increase in peritoneal dialysis for the treatment of our renal patients.

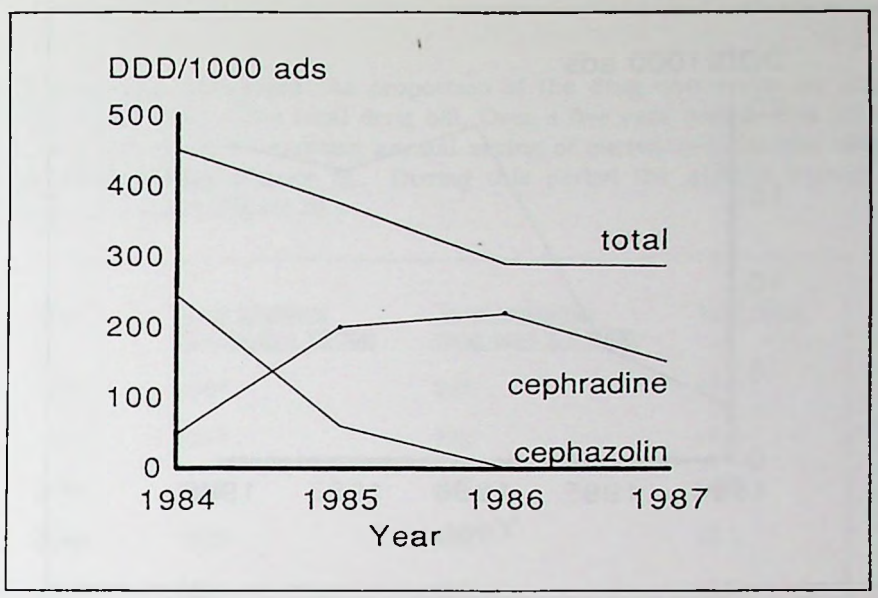

Figure 1: Changes in usage patterns of intravenous cephalosporins at the General Infirmary, Leeds. Y-axis: Defined Daily Dose per 1000 admissions

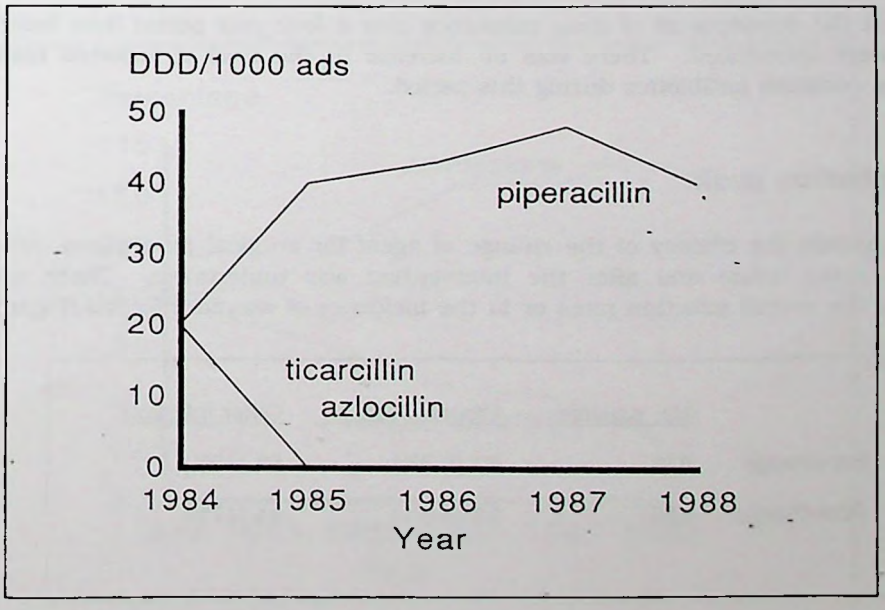

Figure 2: Changes in usage patterns of intravenous ureidopenicillins at the General Infirmary, Leeds. Y-axis: Defined Daily Dose per 1000 admissions

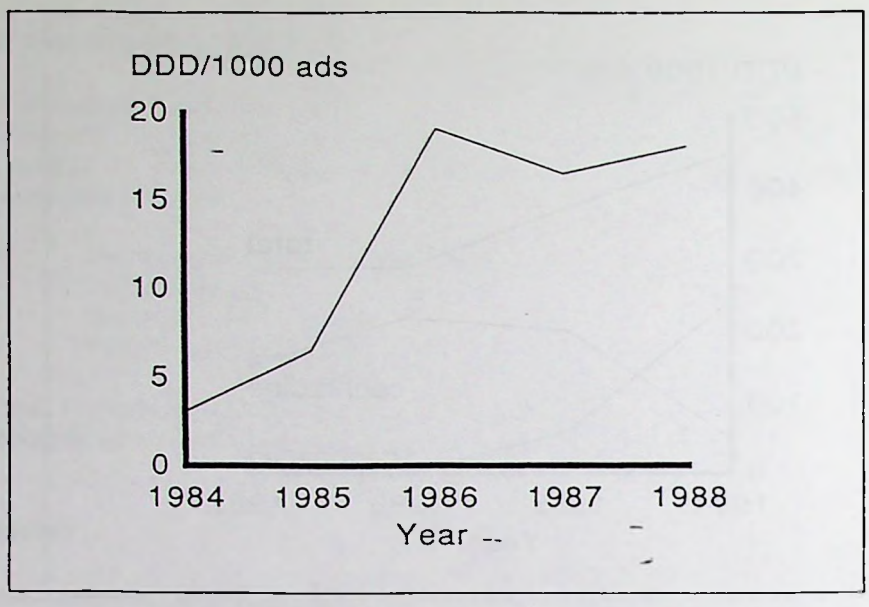

Figure 3: Changes in usage pattern of intravenous Vancomycin at the General Infirmary, Leeds. Y-axis: Defined Daily Dose per 1000 admissions

Resistance

We examined the development of drug resistance over a four year period from before the guidelines were introduced. There was no increase in the level of reported microbial resistance to common antibiotics during this period.

Surgical infection audit

In order to assess the efficacy of the change of agent for surgical prophylaxis, an audit of infection rates before and after the intervention was undertaken. There was no difference in the overall infection rates or in the incidence of wound infection (Figure 4).

	No. patients	Wound infection	Other infection
Pre-change	346	30 (8.7%)	52 (15%)
Post-change	258	23 (8.9%)	44 (17%)

Figure 4: Surgical audit of infective episodes in gastro-biliary surgery following changing prophylactic agent to Cephradine from Cephazolin.

Cost

Before the strategy was introduced the proportion of the drug cost spent on antibiotics was nearly 20% (£215,000) of the total drug bill. Over a five year period, this fell to 13% (£185,000). This represents a recurrent annual saving of currently £120,000 taking into account drug price inflation (Figure 5). During this period the general activity in the hospital has also increased (Figure 6).

Year	Total inpatient drug cost x £1000	Total antibiotic drug cost x £1000	% of total
82/83	1084	215	19.8
83/84	1247	222	17.8
84/85	1238	207	16.5
85/86	1379	184	13.3
86/87	1302	185	13.3
87/88	2079	264	12.7

Figure 5: Amount spent on antimicrobial agents at Leeds General Infirmary as a proportion of total drug expenditure

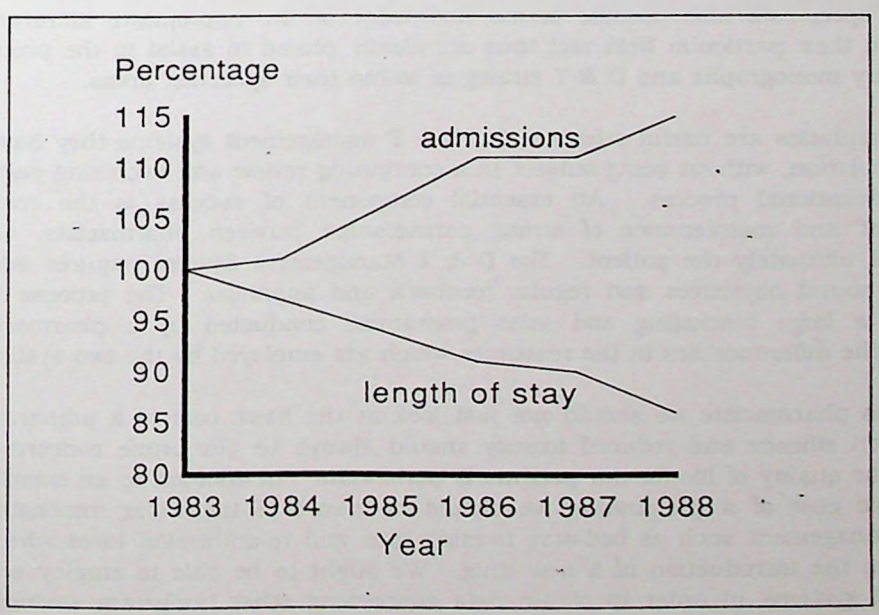

Figure 6: Percentage changes in admissions and length of hospital stay at the General Infirmary, Leeds, over a 5 year period

Other examples of control policies

- IV Glyceryl Trinitrate instead of Isosorbide Dinitrate
- Saline instead of heparinised saline
- Streptokinase following myocardial infarction
- Pharmacokinetic dose modification of aminoglycosides

Academic detailing

The PRIDE project was a controlled trial of the effectiveness of a pharmacist acting as an academic representative who visited 150 Leeds GPs with a number of objective therapeutic messages in order to "promote" rational prescribing. The methods used were very similar to a sales representative for the pharmaceutical industry and the results demonstrated the effectiveness of "one to one" detailing.

Clinical pharmacy organisation

At the General Infirmary at Leeds, there are Clinical Pharmacy specialists in areas such as General Medicine, Cardiology, Nephrology, Clinical Nutrition, Haematology, Paediatrics, Care of the Elderly, Intensive Care as well as the more traditional areas of Drug and Poisons Information and Clinical Pharmacokinetics. Many of these posts are at a senior level and some are combined with an operational managerial role within the department. All of them have considerable requirements for both education and training and for participation in practice research in order to develop the professional knowledge base which is essential for the development of a Clinical Pharmacy service. These Clinical Pharmacy specialists also possess sound knowledge of the appropriate literature and practices in their particular field and thus are ideally placed to assist in the production of Formulary monographs and D & T strategies within their specialist areas.

Whilst Formularies are useful reference for D & T management systems they have little value, in isolation, without being subject to a continuing review and becoming part of an ongoing educational process. An essential component of success is the continued development and maintenance of strong partnerships between pharmacists, doctors, nurses and ultimately the patient. The D & T Management System requires adequate resources, sound objectives and regular feedback and appraisal. The process is very similar to a large marketing and sales programme conducted by a pharmaceutical company. The difference lies in the resources which are employed by the two systems.

However, as pharmacists we should not just look at the basic cost of a preparation in use. Proven efficacy and reduced toxicity should always be our prime concern and a regard to the quality of life for our patients is paramount. In addition to an examination of the basic cost of a preparation we should be aware of the wider implications of patients management such as bed-stay nursing time and re-admission rates which may benefit from the introduction of a new drug. We ought to be able to employ sensitive information systems in order to obtain data concerning other budgetary savings as a consequence of using novel and expensive new drugs and further to be able to vire resources to pay for them.

Pharmacists are ideally placed to begin to examine the quality of drug usage within our

society. Analysis of outcome parameters in groups of patients will enable useful data to be collected for both quality assurance and clinical audit purposes which are important components of the NHS White Papers. The pharmacist possesses a wide range of effective skills, is an independent professional within the organisation and thus should be able to perform regular drug use reviews and participate in meaningful post marketing surveillance studies. I would propose that we recognise Pharmacoeconomics and Pharmacoepidemiology as important aspects of Clinical Pharmacy in the United Kingdom.

Reference

NEWTON-SYMS FAO et al (1990) *A randomised controlled study to evaluate the influence of an "Academic Representative" on prescribing by General Practitioners.* Submitted to Brit. J. Clin. Pharmacology 1990.

Medicines of choice: How rational in small island states?

S Bloomfield, President, Tonga Nurses' Association, Naku'alofa, Tonga

Introduction

It is obvious that it would be misleading to come from a Small Island State to talk to this very prestigious audience about the rational use of medicines by health professionals and patients, without giving some idea of what the reality is for most of the small Island States of the Pacific. However, because the Tongan Society is what I know best, most illustrations will be based on Tongan situations.

Medicines to most Pacific Islanders are not confined only to modern medicines. The use of traditional medicines by all levels of society is also still very much at large.

The notion that Traditional medicine is practised only by ignorant, illiterate and primitive people is no longer true in many areas of the Pacific. Likewise, the attitude that the value of Traditional Health Care in third world countries is tolerated because it is economical and available until the time comes when "real medicines" can be provided is at best debatable.

The trend in the Pacific, certainly true in Tonga, is that the type of medicine to be taken when ill is decided by the ill person and his/her relatives. This is of course an important aspect of Primary Health Care. Most Health Care systems in the Pacific Cultures are intimately interwoven with other aspects of society. To try and eradicate it completely from the health scene, is to disintegrate society's collective identify.

Some information on Tonga

Tonga comprises 670 square kilometres of land area scattered over a sea area of approximately 360,000 square kilometres in the South Pacific. There are 150 islands but only about 40 are inhabited permanently.

The population is homogenous. Over 98% of its estimated population of 96,244 in 1988 are indigenous Polynesians. A common Tongan language is spoken although there are different forms of vocabulary according to social ranks. Tonga is the only remaining Polynesian Kingdom in the world and was never under any foreign power, although it was a British Protectorate.

Education is free, compulsory and secular at the primary school level. Literacy is high. Over 80% of the population can read and write Tongan and about 50% are literate also in English.

It is predominately arable agricultural country and fortunately the soil is very fertile in most areas. Despite a low annual per capita income of about $600 the people are well fed and they enjoy a relatively simple and happy lifestyle.

Health, illness and cure in Tonga were, and still are, attributed by the majority of the people to sanctions of the supernaturals. Most people believed that breaking of *tapu* (taboo) belonging to persons or things with *mana* could generate illness or other misfortunes to those concerned.

Curers and cures are viewed as only *vaka* (boat) for the healing power of God. However, on the whole people also believe that there are Tongan diseases and European diseases which should be treated by Tongans' traditional and modern medicines respectively. There is also a wide belief that there is a set time for each one to move on and that when that day comes, it is futile to try to prolong life.

Religion is an important part of Tongan society. It permeates all aspects of life. Even modern doctors reluctantly admit to the importance of religion in peoples' lives. Frequently, the doctors joke of a need for peni-Jehovah, instead of penicillin when a patient's illness is difficult to diagnose or to heal.

Modern health care is the official form of care in Tonga as well as the most preferred. But there is no law against the practice and use of other forms of health care as in Fiji. Moreover, it is common practice for people to take two or more types of medicines when ill for good measure.

Some information on the health situation in Tonga

An idea of the health situation in Tonga is given in figure 1:

• Proportion of the population within 1 hour's reach of a modern health service (including service of a village health worker)	100%
• Proportion of the population with ready access to safe drinking water (some may be intermittently available)	100%
• Proportion of the population in use of sanitary toilet facilities	70.4%
• Crude birth rate	25.7%
• Crude death rate	3.6%

Figure 1: Some indicators of health in Tonga

There are 45 medical officers and 186 nursing staff employed by the Ministry of Health according to the latest Report of the Ministry of Health (1988). The doctor and nursing population ratio is 1 per 2138 and 1 for 317.44 of the population respectively. The average life expectancy at birth in 1984 was estimated to be 60 years.

Estimates of Health Expenditure 1988/89

About 11% - 13% of the Government's total budgetary expenditure is allocated to health services. It was T$3,790,000 in 1988/89 but the grant of extra funds for the Ministry before the end of the fiscal year is common. 42% of the annual budget is for medical services including purchasing most of the medicines for use of the population. It is estimated that about 12% of the total health budget is for drugs and another 3% for supplies such as cotton wool, gauze and so on.

The import and distribution of drugs, supplies and equipment is the responsibility of the Central Pharmacy and medical store under the supervision of the Pharmacist in charge. This section also has a manufacturing unit which assists in cutting down the number of products imported from overseas. About 12.5% of the total pharmaceutical requirement of the Ministry of Health is prepared in this section.

A tender system is used for the ordering of drugs which apparently results in reasonable prices of drugs and supplies because of competitive bidding from suppliers. Some examples of the cost of drugs in Tonga are given in figure 2.

Amoxycillin capsules	T$69.97/1000
Bactrin tablets	T$24.17/1000
Mefoxin injection	T$ 9.17/vial
Panadol tablets	T$24.97/1000

(one Tongan dollar is equivalent to one Australian dollar)

Figure 2: Drug costs in Tonga

The approximate health budget per head of population for 1988/89 was less than $40. Included in this were all expenditures concerning the Ministry of Health's activities such as health training, health administration and salaries of all staff. The expenditure for modern medicine per head of population is less than T$5. However, according to the 1988 report of the Ministry of Health, Tonga, "..the overall supply of drugs was satisfactory".

All medical treatment and services for Tongan nationals are free except for a flat rate of T$2.00 per day for patients who choose to stay in a private room when ill.

There are four hospitals with a total bed capacity of 307. The average bed occupancy is just over 42%. The ratio of hospital beds per population is 1 per 300 population.

Prescription and distribution of medicine

All modern medicines are required by law to be prescribed by qualified doctors. However, this is not strictly adhered to. In remote areas, locally trained medical officers

as well as public health nurses prescribe and dispense certain categories of drugs. Even village health workers with limited training (six weeks) and town officers with no training have been known to dispense drugs such as Panadol as well as some oral antibiotics in areas where qualified doctor or nurse can only visit monthly or less frequently. Similarly, pharmacists normally dispense drugs, but in some instances, they also prescribe drugs when a qualified doctor is not available.

Brief discussion

Research findings in 1983 indicated that the majority of Tongans preferred modern health care. Modern medicine is seen as fast acting, clean, easy to obtain and to keep. Modern curers are also preferred because they are seen as cleaner and smarter although unapproachable and lacking compassion in comparison with the traditional curers. Furthermore, skills of modern doctors were learnt in developed countries where most "good things" for development are assumed to be originated.

It costs approximately T$100,000 to train a modern doctor. Unfortunately, some of these doctors on returning home find the salaries and the lack of equipment and facilities which they have grown familiar with during their training in developed countries intolerable, and return after two or three years to the country where their training took place.

Surprisingly, more people in one of Tonga's larger villages; Nukunuku (which has a modern health clinic and is also less than 10 minutes drive to Tonga's main hospital and two other modern health clinics) prefer Tongan Traditional Health Care in contrast to the people in one of Tonga's most remote islands, Tafahi.

It was my good fortune to spend one month at Tafahi island, not as a nurse but as a researcher. I purposely did not take any type of modern medicine with me. As soon as they found out that I was a nurse, many of Tafahi's population of about 300 came to consult me about health problems and also asked for tablets.

When I explained that I did not have any tables with me, the people were disappointed. Furthermore, they began to be suspicious when I told them to try certain local herbs for their problems. Later, I found out that nearly every household had a small supply of tablets which they would take regardless of what type of illness they have. They did not know the name of the tablets or the effects either. The containers did not have labels and some of the tablets were off-colour from age.

Two people got very ill while I was at Tafahi. Apparently these two people have had the same illness several times before and the only treatment was to get them to the nearest health clinic, 6 miles away by outboard motor boat, where intravenous therapy could be administered. The harbour was, however, very rough on both occasions and it was impossible to transfer them to the health clinic. Eventually, I was consulted after the "tablets" were taken and found not to be effective. I had to utilize Tongan medicines coupled with some modern know how. Fortunately, both patients recovered. It was amazing to see how the status of Traditional Curers went up after these incidents in Tafahi. Because I was a trained nurse, I somehow legitimized the use of traditional cures by using it myself. From there on, people came to discuss with me various traditional cures and further offered many success stories relating to these cures. It provided an

excellent platform to also discuss related modern medicines and care. I felt certain that people improved their understanding of what is meant to be responsible to one's health.

The headline of the *Times of Tonga* on Thursday 29th March, 1990, reads "Tongan Medicine Revival". Apparently the Director of Health when interviewed said that more and more people are resorting to "Tongan medicine" and that the practice is a major cause for concern. Furthermore, it was alleged that there has been a marked increase in the number of "cures" being offered by the practitioners and that people trusted the Traditional Curers to treat their patients and only brought them to a hospital as a last resort. When one talks to known Traditional Curers, they readily recite the name of patients whom they have cured after being pronounced hopeless or having failed to be cured by Modern Curers.

Apart from the cost of drugs and human failures to take drugs as prescribed and so on, there is the question of whether all these drugs and treatments are necessary. According to Dudley (1979), 80% of patients stop taking tablets prior to the time on the prescription. Also 30-70% of any group of persons tested are likely to experience some relief and about 30% to experience relief from a particular disease when given a placebo. Furthermore, 20% of those with chronic diseases are likely to get well no matter what treatment is given. These suggest that perhaps the psychological value of medicines may outweigh some of their pharmaceutical values.

A pharmacist once told me that he sometimes colours sleeping draughts for people and raises the price a little to give it the notion of "stronger" and "better" medicine and that most feedback from people was positive in terms of being more effective. The two sick people in Tafahi Island I referred to earlier, certainly got better with simple treatment despite the belief that they would die without certain modern treatment. Moreover, fast acting drugs may only temporarily stop a sickness while slower and more natural types of healing may give the whole person time to heal. The priorities of people to regain health varies so that the best physical treatment may not be appropriate whereas the longer type of treatment may be necessary.

Two young doctors in their 20s who were positive about the values of traditional healing practices talked about relatives and friends who have been successfully treated for some chronic diseases after given modern treatment. The grandfather of one of the two doctors was know to be a Traditional Curer. Many doctors and nurses in Tonga allow their children to be treated by Traditional Curers particularly if they think it is a "Tongan disease". Likewise, many of them have taken traditional cures when sick.

Conclusion

Clearly there is a need to be do more research in areas of traditional health care systems in relation to the cultures concerned. It is not enough to rely entirely on past scientific findings or on books written by early missionaries and others which are ethnically biased.

I know some of the medicinal herbs in Tonga have been subjected to scientific testing and pronounced to be lacking in medicinal value, yet only last year, two young Americans who have done some research on the plants utilized for medicinal purposes by Tongans, told me excitedly that some of the plants showed promise as an "economic

market" for the making of modern medicine but that more tests are necessary. I was also excited, but for a much different reason.

When we talk about cost-effective Medical Treatment and Promotion of Health, it is well to remember that there is more than one medical system and that a medical system includes "all of the clinical and non-clinical activities, the formal and informal institutions, and any other activities that, however tangentially, bear on the health of the group and promote optimum functioning of society" (Foster and Anderson 1978:36) Likewise at the meeting of an international group of experts convened by WHO on the Promotion and Development of Traditional Medicine in 1977 it was held that:

> "..... all medicine is modern in as far as it is satisfactorily directed towards the common goal of providing health care, despite the setting in time and culture .... that the essential differences among the various systems of medicine arises not from the differences in the goal of effects, but rather from the cultures of the people who practise the different systems" (WHO 1978:9).

References

BLOOMFIELD, S. (1986) *It is health we want: A conceptual view of Traditional and Non Traditional Health practices in Tonga with special emphasis on maternal and child health and Family Planning.* Unpublished thesis for partial fulfilment of the requirement for M.A. degree in Sociology, University at the South Pacific, Suva, Fiji.

DUDLEY, D. (1979) *Why Patients Don't Take Pills.* Supplement, Harborview Medical Centre, Seattle, USA.

KINGDOM OF TONGA. *Fifth Five Year (1986-1990) Development Plans.* Government Printing Office, Nuku'alofa, Tonga.

MINISTRY OF HEALTH (1988) *Annual Report.* Government Printing Office, Nuku'alofa' Tonga.

TIMES OF TONGA, 29th March 1990, TONGA.

WORLD HEALTH ORGANISATION (1978) *The Promotion and Development of Traditional Medicine.* Report Series 622, Geneva.

Rational prescribing and the doctor's dilemma

G D Nicholson, Reader in Medicine and Nephrology, University of the West Indies, Barbados

Although members of the Commonwealth Medical Association come from countries that vary widely in their geographical location, ethnic composition, gross national product (GNP) and patterns of disease, there are many similarities among those countries. For example, in most of our countries health professionals are waging an on-going battle to ensure the continued expenditure of the fraction of GNP which was expended on Health Care in 1989. Particularly in the developing countries, disease patterns are changing and the chronic, non-communicable diseases are assuming a greater prominence in the spectrum of diseases encountered. The implications of such pattern changes include the need for prolonged use of medication to control diseases for which there are no contemporary cures. One such disease is hypertension, and in a graphic example of the dilemma which now faces physicians all over the world, a Nigerian physician has drawn attention to the disparity between drug costs and the incomes of most Nigerians. It has been remarked that nifedipine, which has proved useful in treating hypertension in Nigerians, would, when prescribed at its lowest effective dose, cost the lowest paid Government worker 20% of his income. If the highest dose were necessary for blood pressure control, then 40% of income would be spent in keeping that patient alive and well.

Similarly, a Barbadian physician recently examined the annual cost of providing 15,000 Barbadian patients with various drug regimens. The regimens included a combination of bendrofluazide with reserpine, a combination of bendrofluazide with the beta-blocking agent nadolol, the ACE inhibitor enalapril at a dose of 10 mg daily, the vasodilator prazosin at a total dose of 6 mg daily and the calcium channel blocking agent nifedipine at 30 mg daily. The cost in Barbadian dollars varied from $110,000 for the least expensive regimen to 12.1 million dollars for the most expensive (Figure 1, US$1.00 = BD$2.00)

Fortunately, not all patients require nifedipine and similarly expensive drugs for blood pressure control. Indeed, the majority of hypertensive patients have "mild" hypertension which often responds to a thiazide diuretic or to other relatively inexpensive monotherapy.

Epidemiology of hypertension

Knowledge of the epidemiology of hypertension can be of assistance in framing a broad approach to the management of hypertension. In an acculturated population in which blood pressure rises progressively with increasing age, it is impossible to say where normality ends and abnormality begins and the diagnosis of "Hypertension" is determined by the arbitrary drawing of lines to limit the bounds of normality.

Regime	BDS $
Bezide 5 mg + reserpine 0.25 mg daily:	110,000
Bezide 5 mg + nadolol 80 mg daily:	2.6 million
Enalapril 10 mg daily:	4.8 million
Prazosin 2 mg three times daily:	9.2 million
Nifedipine 10 mg three times daily:	612.1 million

(After Fraser, 1989)

Figure 1: Annual cost of five comparable regimens for 15,000 patients - 1988 prices--

One means of justifying such limits of normality is to demonstrate that morbidity and mortality increase beyond those limits. Unfortunately, the available evidence does not show a neat boundary with normal life span on one side and increased mortality on the other. Instead, Life Insurance actuarial data show an increased mortality for every 5 mmHg increment in either diastolic or systolic pressure regardless of the level of pressure being examined. The critical question to be answered, therefore, is "At what level of blood pressure does therapeutic intervention ensure a reduction in morbidity and mortality?" Answering the question is made more difficult by the realisation that the blood pressure level is not the sole determinant of morbidity/mortality in patients with abnormal elevations of blood pressure. It has become apparent that, in addition to the increasing risk inherent in progressively higher blood pressures, the additional "risk factors" of age, race, gender, target organ damage, over-nutrition, alcohol and tobacco use, and certain metabolic abnormalities play an important role in compounding the dangers of hypertension (figure 2). The presence of any risk factor increases the chances of the occurrence of a morbid event.

So that, although the overall risk increases with each increment in blood pressure, individuals with the same elevation in blood pressure do not necessarily have identical risks. For example, in a 40 year old man with a systolic pressure of 195 mmHg, the likelihood of a major cardiovascular event occurring within 8 years is 4.6% in the absence of the four major risk factors (serum cholesterol of 335 mg/dl or greater, cigarette smoking, glucose intolerance and ECG evidence of left ventricular hypertrophy). This risk increases to 70.8% in their presence (figure 3).

It is necessary, then, before approaching the question of rational prescribing for hypertension, to establish which patients would benefit from therapeutic intervention. In an attempt to address this issue, data derived from the Framingham Study were used to predict the ratio of 35-year-old patients who would fail to benefit to those who would benefit from having their blood pressures lowered for 15-, 25- and 35-year periods. The patients were categorised as either "low-risk" (without major risk factors) or "high-risk" (with the additional major risk factors previously described). Nearly 50 women with the

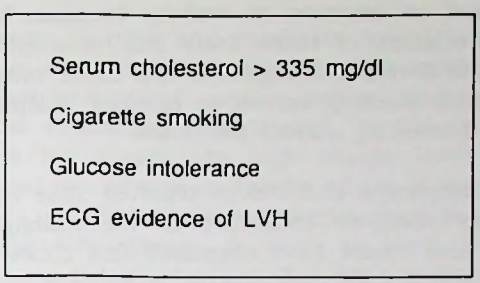

Figure 2: Major risk factors in hypertension

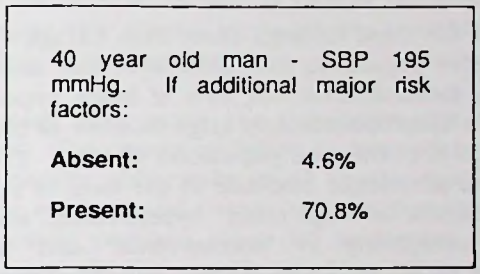

Figure 3: Risk of a major cardiovascular event

low-risk profile must have their systolic pressures reduced from 165 to 135 mmHg for 15 years so that one of their number can derive benefit from the exercise. On the other hand only three 35 year old high-risk men with systolic pressures of 195 mmHg have to be treated for 15 years in order to reveal one who will derive benefit.

What these data suggest is that, regardless of gender, level of blood pressure, degree of its reduction and length of follow-up, the majority of patients with hypertension will be treated without hope of significant benefit. In addition, particularly at milder levels of blood pressure elevation, treatment will benefit only a small percentage of patients.

We must be circumspect, however, in applying these predictions to all social and ethnic groups particularly where there is absence of epidemiological data similar to that collected in Framingham. The Hypertension Detection and Follow-up Program, though somewhat flawed in its conception, did show significant benefits for black men and women and for all patients over the age of 50 years when mild hypertension was treated.

Pathophysiology of hypertension

The pathophysiology of Primary or Essential hypertension can also be related to a rational approach to management. First, blood pressure is proportional to the product of cardiac output and total peripheral resistance; second, of all the factors contributing to the genesis of established hypertension, an increase in the total peripheral resistance is the most important and the most frequently encountered. Finally, total peripheral

resistance is dependent on extrinsic as well as intrinsic factors which contribute to vascular tone. Appreciation of these facts has directed the development of anti-hypertensive agents and therapeutic regimens and these range from diuretic therapy, to old and new sympathetic blocking agents, to calcium channel blockers and to the very latest in angiotension-converting enzyme inhibitors.

As early as 1968, Humphreys and Delvin reported that the beta-adrenergic blocking agent propranolol was relatively ineffective in the management of black Jamaican hypertensives. Grell and others have examined this concept and have compared the hypotensive effect of the beta-blocker atenolol with that of a relatively small dose of hygroton given to black Jamaican hypertensives. Atenolol at a dose of 100 mg daily failed to produce significant alteration in blood pressure whereas 25 mg of hygroton was highly effective in reducing both systolic and diastolic blood pressure. A combination of the two drugs was equally effective.

A possible explanation for these findings came from Laragh's group in New York. They divided their hypertensive population into those with low, normal and high plasma renin activity (PRA). It was demonstrated that 89% of black hypertensives had either low or normal PRA and that a disproportionately large number of black patients (42%) had low PRAs as compared to 27% of the total population studied. These investigators proceeded to show that while beta-adrenergic blockade in the form of popranolol therapy produced salutary hypotensive effects in "high-renin" hypertension, such response occurred less frequently and less completely in "normal-renin" and not at all in "low-renin" hypertension. It must be noted, however, that only a minority of hypertensive patients have high-renin hypertension - 16% in the series just quoted. Since there are obviously large numbers of hypertensive patients whose condition cannot be attributed to high PRA, the concept of "sodium-dependent volume-expanded hypertension" arose to explain low-renin essential hypertension and was supported by the demonstration that patients with low-renin hypertension responded to diuretic therapy with a greater reduction of blood pressure than did patients with normal or high plasma renin activities. The relatively high prevalence of low-renin hypertension among blacks in New York was subsequently confirmed among the Xhosa people in South Africa and among black West Indians in London.

It would be desirable, but inaccurate, to state that the choice of diuretics as the mainstay of anti-hypertensive therapy in the Caribbean has been arrived at by rational judgement. Diuretics are inexpensive, long-acting, permitting once-a-day dosage and are, above all, effective. The Medical Research Council (UK) published the results of its study of more than 17,000 patients in 1985. The study compared the blood pressure lowering effects of bendrofluazide, popranolol and a placebo. One of the most interesting findings was that, in this predominantly white population, the diuretic was more effective than propranolol in lowering blood pressure. One suspects that too much has been made of the differences between broad groups of hypertensives, for example in terms of their ethnic origin and differences in plasma renin levels.

Laragh has resolved some of the apparent conflict by conceptualising hypertension as a "bipolar spectrum ranging from a predominant excess of arterial vasoconstriction to a predominant excess of effective volume." The empiricism which is the basis of medical practice suggests that, regardless of race or plasma renin status, diuretics are probably the drugs of first choice in the management of most cases of hypertension. We are all aware of the contemporary debate surrounding the use of ACE inhibitors as first-line

therapy in the management of mild and moderate hypertension. For most of our countries such a debate is meaningless despite the well-appreciated usefulness of the ACE inhibitors in the management of cardiac failure, angina and their efficacy in producing regression of left ventricular hypertrophy. In the developing world we must persist with the thiazides but clearly the high dosage levels of the past must be abandoned in order to avoid the adverse metabolic effects of such therapy. Needless to say, there will be occasions on which thiazide diuretics must be discontinued because of the development of adverse side effects. In such an event the choice of alternative hypotensive agents lies among those drugs usually added to diuretics as the next option in a stepped-care approach to therapy. These alternatives will include methyldopa, prazosin, the various beta-blockers, the ACE inhibitors and calcium channel blocking agents.

Restriction of the dose of the diuretic as well as that of the second drug, in an attempt to reduce the risk of adverse side effects, increases the possibility that there may arise the need to add a third drug to the regimen.

It is important at this stage to examine the possibility that one or other cause for inadequate response exists. The causes of failure to respond to antihypertensive agents include inadequate drug dosage, abnormally rapid hepatic inactivation, the presence of renal insufficiency, volume overload and, rarely, volume depletion and consequent renin hypersecretion. An extremely common cause of inadequate blood pressure control, patient non-compliance, must also be considered. More often than not, the prescriber has contributed in great measure by designing impractical dosage regimens requiring multiple dosing during the course of a day. Rational prescribing for hypertension requires knowledge and employment of those drugs which can be given in a "once-a-day" regimen.

Severe hypertension

And what of the severer grades of hypertension and those patients who cannot tolerate the adverse side effects of thiazide diuretics? How do we select their anti-hypertensive agents? It is these patients who will require the addition of third and even fourth drugs to the regimen and considerable skill in the design of regimens in which individual drug actions are complementary. The dilemma with which many of us struggle is how to make rational, scientifically informed judgements concerning drug selection when the cost of one choice of therapy is 40 to 100 times greater than an alternative which has major, possibly adverse, side effects.

In Barbados, where decisions on formulary content and drug purchasing are under the direction of a statutory body - the Barbados Drug Service - the decision has been taken to limit the prescription of certain "Specially Authorised Drugs" including the ACE inhibitors and calcium channel blockers. In effect this requires the prescriber to justify his use of a Specially Authorised Drug on a special application form. He may do so by indicating the severity of the hypertension, failure to respond to alternative therapy or the development of unacceptable side effects. The authorising agency is not compelled to accede to the physician's request, but if the request is granted he is so informed and he is advised of the monthly cost of the prescription.

In Barbados, all anti-hypertensive therapy is provided free of cost and the procedure

Patient name/address .....

.....

Pharmacy .....

Drug (generic/brand) .....

Therapeutic classn. ..... Drug code .....

Product profile ..... Quantity .....

Dosage schedule ..... Unit price .....

Quantity/packaging .....

Expiry of S.A.D. status .....
(subject to re-application)

Comments .....

.....

.....

.....

Date Director, Barbados Drug Service

Figure 4: Major risk factors in hypertension

described above has been designed to place a brake on the prescribing practices of physicians. There is little doubt that it has been effective in this regard. It is hoped that this success is not due to the tediousness of the requirement to fill out yet another form and that physicians are being challenged to think very carefully of the available options before prescribing these very expensive drugs.

This discussion has been confined to a single disease entity to emphasise its importance as a world-wide problem which imposes a considerable socioeconomic burden. An attempt has been made to show how prescribing practices may evolve based on rational analysis of the epidemiology and pathophysiology of the disease, only to have that analysis overturned by the experience of empirical practice on the one hand and by considerations of cost on the other. Finally, the need for risk factor identification and modification must also be emphasised in any rational approach to management.

References

FRASER HS (1989) *Cost of antihypertensive drug therapy.* In the Fourth Caribbean Cardiology Conference (November 16-17, Bridgetown, Barbados).

GORDON T, et al. (1971) *Framingham Study: An epidemiological investigation of cardiovascular disease* In: Kannell WB, Gordon T (eds.) Section 27, U. S. Dept. of Health,

Bethesda, Md

Hypertension Detection and Follow-up Program Cooperative Group (1979) *Five-year findings of the Hypertension Detection and Follow up Program: I. Reduction in mortality of persons with high blood pressure, including mild hypertension.* JAMA 242 2562-2571

HUMPHREYS GS, Delvin DG (1968) *Ineffectiveness of popranolol in hypertensive Jamaicans.* Brit. Med. J 2 601-603

BRUNNER HR, et al. (1972) *Essential hypertension: renin and aldosterone, heart attack and stroke.* New Engl. J. Med. 286: 441-119

VAUGHAN ED, et al. (1974) In; Laragh JH (ed.) *Hypertension Manual,* Yorke Medical Group, New York.

SEVER PS, et al. (1980) *Racial differences in blood pressure. 1: A working population.* Clin. Exp. Hypertension 1 733-744

SEVER PS, et al. (1980) *Blood pressure and its correlates in urban and tribal Africa.* Lancet ii: 60-64

Illness prevention and health promotion

M Torongo, Managing Director, Mabelreign Pharmacy, Harare, Zimbabwe

The availability, at reasonable cost, of sophisticated and modern medicines is desirable in any society. But we all know that such medicine is rather expensive. Is there any justification in procuring such medicines when the disease being cured can be prevented? This health professions discussion forum involves only the key personnel involved in the deliverance of health care. Traditionally, the profession of pharmacy is involved in the supply of drugs and knowledge for the treatment of disease whilst the doctor is involved in the diagnosis and prescribing treatment for a condition. Traditionally the nurse is the aide to the doctor, but in a rural setting the nurse has assumed the role of the doctor.

The prevention of a controllable disease involves the collaboration of all health professionals, the government and non-governmental organisations to a degree which I feel has not been fully explored. In 1978 WHO - UNICEF held a conference in Alma Ata, Soviet Union. This was attended by 134 governments and representatives of 67 related agencies. Participants reviewed the state of the World Health and discussed and agreed to the Alma Ata declaration. This declared the Health for All by the Year 2000 through Primary Health Care (PHC). Illness prevention and health promotion is well covered with the concepts of PHC which can best be defined as in figure 1.

> Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods of technology made universally accessible to individuals and families in the community through their full participation, and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination.
>
> It forms an integral part both of the country's health systems, of which it is the central function and main focus, and of the overall social and economic development of the community.
>
> It is the first level of contact of individuals, the family and community with the national health system, bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.

Figure 1: Definition of primary health care

The most important aspect of PHC is that the community (i.e. people outside the health field) must understand the concepts.

Zimbabwe, soon after independence in 1980, adopted the PHC approach in order to improve the health of the whole country. There has been a marked improvement in health during the past ten years and I would like to use Zimbabwe as a model to illustrate illness prevention and health promotion.

The main components of PHC are show in figure 2

- Adequate supply of safe water and basic sanitation.
- Education about existing health problems and how to prevent and control them.
- Promotion of food supply and proper nutrition
- Maternal and child health care/family planning.
- Immunisation against the major infectious diseases.
- Prevention and control of locally endemic diseases.
- Provision of essential drugs.

Figure 2: Some components of primary health care

Adequate supply of safe water and basic sanitation

For most developed countries this might seem an irrelevant point. But for a developing country, adequate water supply is the most basic necessity to ensure healthy living. The main objective is to ensure the provision of safe drinking water. This involves the sinking of boreholes and protecting existing wells and springs. Excreta disposal is just as important. In Zimbabwe, the Blair Toilet (figure 3), is simple and inexpensive to build. In 1984, 9,000 new Blair toilets had been constructed and by 1987 the number had risen to 64,000. Whilst the provision of safe water and sanitation improves health, note that the above activities involve other government ministries and not the Ministry of Health.

Education about existing health problems and how to prevent and control them

This should start at grass-root level. The community should be educated on healthy habits and life style for example

- body cleanliness
- prevention of bilharzia by not bathing in rivers or pools
- recognition of comparatively minor diseases that can accelerate and became fatal, for example diarrhoea. In Zimbabwe, the salt, sugar solution (SSS) has been extensively promoted in the rural areas.
- effects of alcohol abuse - social and pharmacological
- abuse of tobacco and other drugs

The health education officers themselves must be of a calibre that can communicate and disseminate information on health matters and must be versed with the social, economic and political factors within the community.

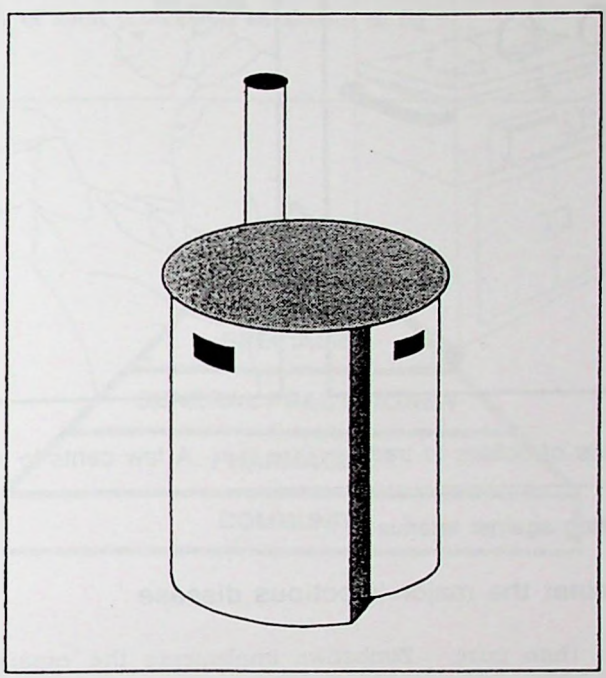

Figure 3: The Blair toilet

Promotion of Food Supply and Proper Nutrition

The overall objective should be to protect and promote health in general by improving the nutritional status of the people. In Zimbabwe, breast-feeding is encouraged to the extent that breast-feeding mothers are allowed time during working hours to feed babies. Child supplementary feeding is also encouraged and so is small scale food production.

Maternal and Child Health Care (MCH)/Family Planning

The main objective is to provide a comprehensive and effective health care to mothers and children on a continuous basis throughout the entire period of pregnancy, growth and development. The rationale for child spacing and family planning can be best explained at this stage. It goes with saying that development of a nation can only occur if the population growth is controlled and can be monitored. In Zimbabwe, pregnant mothers are immunised against tetanus. This costs 5 cents whereas treating neonatal tetanus can cost thousands of dollars with a high mortality rate.

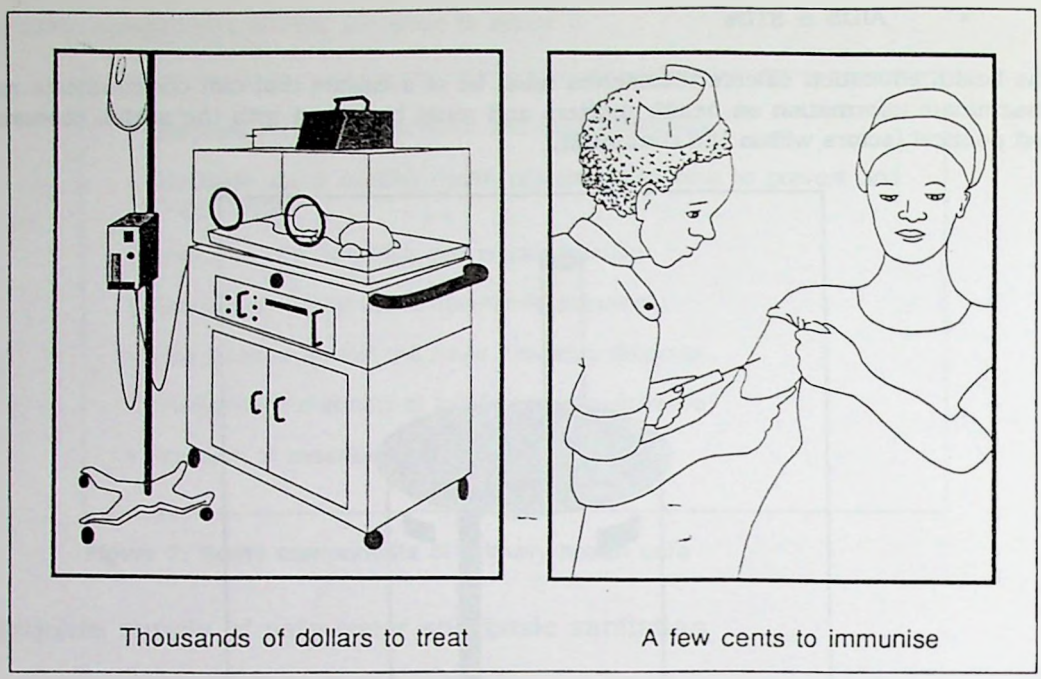

Figure 4: Vaccinating against tetanus

Immunisation against the major infectious disease

Prevention is better than cure. Zimbabwe implements the expanded programme of immunisation (EPI). This policy provides for the protection of all children under the age of 5 years against the six vaccine preventable childhood diseases. Namely tetanus, tuberculosis, polio, measles, pertussis and diphtheria.

Prevention and control of locally endemic diseases

This includes the control of diseases such as malaria, bilharzia, typhoid etc. In Zimbabwe DDT is used for spraying in dwellings of people in affected areas. All belongings are removed outside when the spraying team arrives. This programme calls for cooperation from the community. About 60 spraying teams are deployed throughout the country. People travelling to malaria areas are advised to take antimalarials. It is important to have an antimalarial policy to prevent resistance building up. Specific treatment for endemic diseases, for example Cholera, T. B. etc. should be outlined so that the disease does not spread.

Provision of essential drugs

Although hospitals are expensive reminders of the failure of prevention or promotion, when people fall ill they still need to be treated. Hence the necessity to ensure adequate supplies of essential drugs. The essential drug list of Zimbabwe (EDLIZ) comprises a

rational selection of drugs with recommendations for rational patient treatment. Management of drug supplies and efficient stock control is an inherent feature of EDLIZ to ensure cost effectiveness.

To be able to achieve all these goals of PHC I hope I have highlighted that all health professionals must work together in a well co-ordinated manner. I can best illustrate the degree of activity of each profession as shown in fig 5.

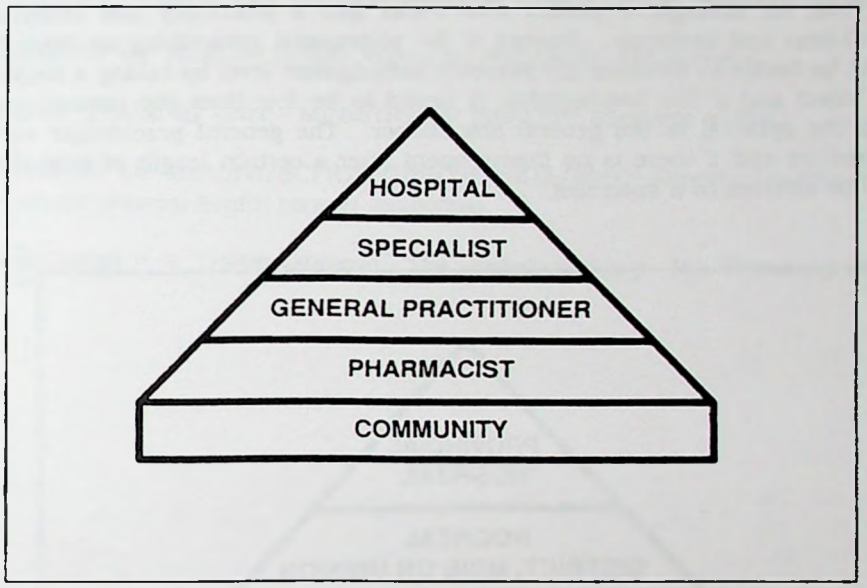

Figure 5: Pyramid of activity of qualified health workers

In a rural community, the village health worker should be elected from within the community. The individual should be well respected and be able to read and write and liaise with agricultural, and veterinary personnel etc. The village health worker should be able to identify potentially serious diseases for referral to a district clinic which in turn can refer upwards as shown on the pyramid. I feel the level of activity should decrease as one ascends the pyramid because each level then becomes more specialised.

A similar level of activity should be seen in an urban setting (figure 6). Serious health education should be continuous at the community level. Schools, church groups, women's clubs, etc should be utilised. The use of the media (TV, newspapers, magazines, etc) should be extensive including public lectures, demonstrations, plays, quizzes etc.

In urban areas, a lot of people visit the pharmacy either to get a prescription filled or to ask advice. Some perfectly healthy people visit the pharmacy to ensure continued good health. The pharmacist or other members of staff are in a position to identify when things start to go wrong and I feel should be recognised officially as a referral centre. The pharmacist is of a high intellectual calibre and can easily be trained to do minor tests, the results of which should indicate whether a person needs referral to a clinic or

general practitioner. I would like to quote a statement which was a subject of discussion at the congress of the Federation of International Pharmacists in 1988. "The pharmacy of the future will change from being a link of a drug distribution system to being a health care centre where the medicament is only one among many offers to the consumer. The activities will comprise: measuring blood pressure, combined computerised exercise and cost planning, conversation rooms, information concerning insurance and social services, handicap department, various laboratory tests such as measuring of blood sugar and cholesterol, general health campaign". The time has come for pharmacists themselves to accept such responsibilities and undertake adequate training. Take for example a patient who walks into a pharmacy and complains of general weakness and tiredness. Instead of the pharmacist prescribing an "Iron Tonic", would it not be better to measure the person's haemoglobin level by taking a finger-prick sample of blood and if the haemoglobin is found to be low then the person could be referred up the pyramid to the general practitioner. The general practitioner can then initiate treatment and if there is no improvement after a certain length of time then the person can be referred to a specialist.

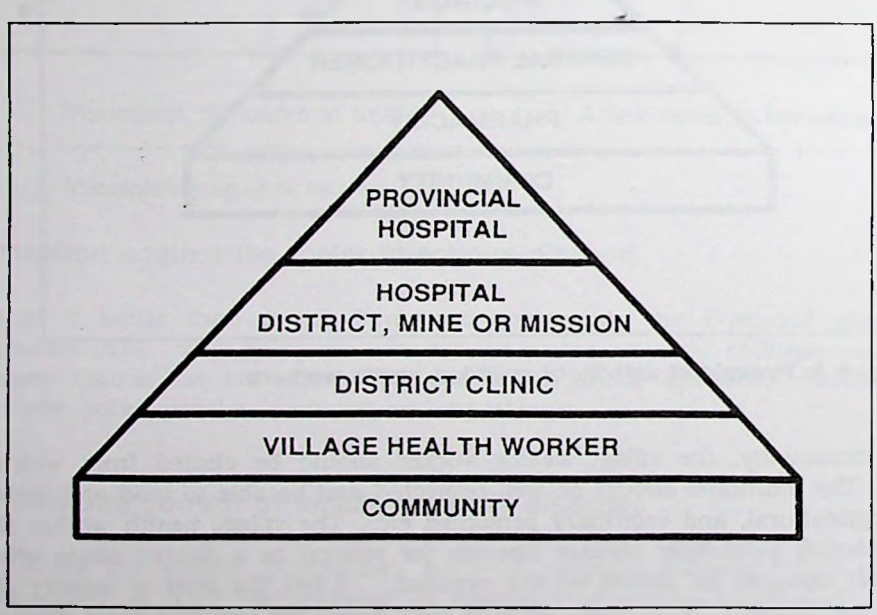

Figure 6: Pyramid of activity in an urban setting

Whilst I state that the level of activity should decrease going up the pyramid, the planning and strategies to be adopted should be from the top. For it is here that problems are identified. I would like to conclude by quoting an example of a community programme that nearly went wrong because of lack of coordination between the health professionals. The Pharmaceutical Society of Zimbabwe launched the Pharmacists Against Drug Abuse (PADA) programme. Sponsored by a local company, the idea was to educate the community on the effects and dangers of drug abuse. Volunteer pharmacists were addressing schools, clubs etc, however provision had not been made for those individuals coming forward and admitting to having a drug problem. Since there had been no coordination between the health professionals prior to starting the

programme, there was no formal channel for referral or rehabilitation, and when people with severe drug problems approached the pharmacists, local doctors had to be approached quickly. It would have been better to coordinate activities from the start.

References

1. McGUINNESS B. W. *Pharmacy's link with other professions in the primary health care team.* Weaver Vale Practice, Hallwood Health Centre, Runcorn, Cheshire

2. MINISTRY OF HEALTH (1988) *Report on PHC/MCH/ARI Surveys*

3. ZEDAP TRAINING UNIT - MINISTRY OF HEALTH: *Elements of PHC*

4. MINISTRY OF HEALTH/SCF(UK)/UNICEF/SIDA/WHO: *Report of a joint mission to evaluate primary health care in Zimbabwe.*

5. ROLLASON P. V. (1988) *Malaria - The Zimbabwe Story.* Int. Pharmacy J. 2

Illness prevention and health promotion

P Vidot, Director of Nursing (Hospital Services), Victoria, Seychelles

Health Care can be considered to have four major components:-

- Preventive
- Promotive
- Curative
- Rehabilitative

In spite of our often quoted saying that prevention is better than cure our commitment to prevention is small in terms of budgetary allocation. In most countries the health budgets are tilted in favour of curative care to the neglect of the Preventive and Promotive aspects of health care.

The preventive philosophy means actively looking for trouble before patients present with a problem. This approach has been proven effective. Control of infectious diseases in many parts of the world has been achieved by applying effective preventive programmes within both health and other statutory services such as housing and sanitation and much of prevention is still directed towards that end. Health promotion is generalized and geared to improving peoples' functioning level in general rather than to warding off or treat any specific disease or condition. There are many definitions for health promotion.

A simple definition by Green reads "any combination of health education and related organisational economic and environmental supports for individual, groups and community behaviour conducive to health".

An expanded definition from the European Regional Office of the World Health Organisation:

"Health promotion is defined as the process of enabling individuals and communities to increase control over the determinants of health and thereby improve their health."

It has come to represent a unifying concept for those who recognise the basic need for change in both the ways and conditions of living in order to promote health. Health promotion represents a mediating strategy between people and their environment, combining personal choice with social responsibility for health to create a healthier future.

Health promotion as a principle involves the whole population in the context of their everyday life; central to this is effective public participation in the definition of problems, decision making, and action. For this reason health promotion involves close cooperation between all sectors of society, including government to ensure that the "total environment" is conducive to health.

More specifically, health promotion represents a new strategy within the health and social fields which can be seen on the one hand as a political strategy, directed towards policy, and on the other hand as enabling an approach to health directed at lifestyles. Thus health promotion is not only concerned with enabling the development of lifeskills and individual competence to influence factors determining health, but it is also concerned with environmental intervention to reinforce factors supporting healthy lifestyles and to change those factors preventing or prohibiting healthy lifestyles. This strategy has been summarised by the phrase "to make health choices the easy choices".

In this presentation I will attempt to review the areas where preventive and promotive health care efforts have proved to be a major success and then try to define other areas where we should direct our future efforts of prevention and promotion of health care.

Since 1900 effects of primary prevention can be seen in the dramatic reduction in mortality from infectious disease resulting largely from environmental manipulation and immunization programmes. It is well known that many of the most severe and disabling infectious diseases are completely preventable by immunization and yet unnecessary cases still occur. The feasibility of eradication has been demonstrated worldwide with smallpox. The same can be true of other infectious diseases through successful immunization programmes.

In Seychelles our Expanded Programme on Immunization is considered successful with a coverage rate of 98%. Our figures on morbidity for diseases for which immunization is available demonstrate this (figure 1):

	Year								
Disease	1980	1981	1982	1983	1984	1985	1986	1987	1988
Measles	3	4	247	267	19	10	4	1	0
Rubella	7	2	8	9	0	2	1	3	0
Tetanus	2	5	2	3	1	0	0	0	0
Tuberculosis	16	0	16	16	10	10	24	14	10
Whooping cough	0	0	39	2	1	0	0	0	0
Polio	0	0	0	0	0	0	0	0	0
Diptheria	0	0	0	0	0	0	0	0	0

Figure 1: Diseases for which immunisation is available in the Republic of Seychelles for the years 1980-1988: Number of notified cases

The prevention of such illnesses in children has led to the promotion of better health for the population. The success of this programme is due to the concerted efforts of different people both within and outside the health sector. The nurses have played a major role in mobilising the population and sensitising them to the need of immunization. The response of the community through its participation in providing community centres for this activity is encouraging. The support of the doctors to the programme, the cooperation of the media and employers who readily release employers to take their children to the immunization centres demonstrates the inter-sectoral collaboration which added to the programme's success. The role of a better educated

population and improved sanitation in the country are also two important contributing factors which have led to high coverage rate in our immunization programme.

Amongst the many other preventive programmes in which nurses contribute for improving the health of the population are the family planning programme, the nutrition and child health programmes to name but a few. All these have had beneficial output in both morbidity and mortality rates. To ensure the successes of such preventive programmes the same approach of inter-sectoral collaboration is required.

In considering the infectious diseases we need to mention HIV infection. The latest infectious disease can presently be tackled only by the preventive and promotive measures as no cure exists.

In this era when degenerative diseases are of increasing importance we should seriously consider the current contribution made by the preventive approach, examine its relevance and see how it can be made more effective.

In a recent study on cardiovascular disorders carried out in Seychelles it was found that prevalence of cardiovascular disease was much higher than it was previously known. The challenge we now face is that of developing, implementing and evaluating primary preventive measures for the non-infectious diseases and conditions such as neoplasms, malnutrition and cardiovascular diseases.

The need for primary prevention of these conditions has to be stressed because as advanced as our technology and pharmacology are, we still can neither cure most of them nor rehabilitate their victims adequately. Much of the health care resources are expended on the treatment of non-infectious diseases with little change in overall disability and mortality rates. It is therefore becoming increasingly evident that primary prevention measures for the non-infectious diseases and conditions must be given far greater emphasis than is currently the case.

The greatest challenge presented to health professionals in the prevention of the non-infectious diseases is to learn how to motivate the public to apply what is already known about lifestyle changes and their relationship to the development of non-infectious diseases to their own lives. Because prevention applies usually to people who feel well, individual freedom of choice is a more overt issue than in ill patients and, even if objective evidence of benefit exists, it may be outweighed by other values within the society.

Closer collaboration is needed amongst the different sectors and within the health care team in order to mobilise the community to adopt healthier lifestyles. Prevention is everybody's concern, preventive approaches must be taken by everyone involved in health care for there is no single preventive service.

Good health implies the achievement of dynamic balance between individuals or groups and their environment. To the individual, good health means improved quality of life, less sickness and disability, a happier personal, family and social existence and the opportunity to make choices in work and recreation. To the community, good health means a higher standard of living, greater participation in making and implementing community health polices and reduces health care costs.

It is generally agreed that because of their general nature, health promotional activities are very hard to justify on the basis of cost-benefit relationships. Although we know that beneficial changes in health behaviour can accrue slowly, in response to gradual changes in community, knowledge and attitudes, we will never know if formal health promotion programmes-work within an accelerated time frame until enough money is spent on expensive short studies.

Leading the list under health promotion is health education. This is one of the most, if not the most, important contributions nurses and other health professionals can make to clients' optimal level of functioning. Through many nursing activities nurses have the opportunity of teaching clients how to care for themselves and how to use available facilities and resources appropriately.

Nurses have an important role in health promotion, whatever the setting in which they work. In the past, hospital based nursing training has stressed the nurses' supportive role in illness and tended to gloss over the opportunities for providing health education. During the recovery period from severe illness or operation, patients in hospitals are particularly receptive to health messages and health education. Nurses should take part in health education and engage in health promotion.

Nurses working in the community setting are engaged in many programmes directed towards illness prevention and promotion activities, such as accident prevention, early detection of disabilities among children, immunization, case finding and contact investigation, family planning to name but a few. Nurses act as clients' advocate by assisting clients towards assertive behaviours in personal health practices. The community health nurse can provide input into planning for health promotion activities by identifying and asserting the needs of the client population. This will help in the development of more innovative approaches to health promotion activities.

In Seychelles nurses are very well placed to do this as beside being employed as nurses they are very active in their community. They are very involved in the political party at district level and are therefore always in contact with the community whom they can mobilize.

In conclusion it is obvious that nurses together with other health professionals should be obvious agents for change in health promotion and illness prevention. It is important that preventive medicine should be regarded as a fundamental element of medical, nursing and pharmaceutical practice, as there exist many opportunities to engage in health promotion and disease prevention, beginning in the community with "well" people and continuing through to all aspects of client consultation.

I would like to highlight the following areas which the forum could address in the discussion -

- The education programmes of health professionals - are the relevant topics integrated in the courses to enable them to motivate others to join in the efforts?

- Are doctors, nurses, pharmacists aware of and do they have the correct attitude vis-a-vis their responsibility in maintaining and improving the health of society as a whole?

- Are doctors, nurses, pharmacists ready to make the necessary procedural changes to facilitate the involvement of others within the health care delivery system?

Health care should no longer considered as the responsibility of solely the Ministry of Health. Every section of the society has a role to play in Illness Prevention and Health Promotion, most of all the individual concerned.

Unless we can convince the members of our society including some members of our own health teams of the need to promote healthy lifestyles and to take the proven preventive measures against both communicable and non-communicable diseases then our task would be in vain and the WHO goal of Health for All by the Year 2000 will remain a distant dream.

APPENDIX III

Participants

Doctors

Professor O Adekunle:	Chief Medical Director and Professor of Surgery, Lagos University Teaching Hospital, and Secretary General, Confederation of African Medical Associations and Societies (CAMAS), LAGOS, NIGERIA
Dr J C Anderson:	Paediatric Practitioner, and Vice-President of the Medical Association of ST VINCENT and THE GRENADINES
Professor C F George:	Professor of Clinical Pharmacology, University of Southampton, UNITED KINGDOM
Dr Harish Grover:	Dean, Indian Medical Association College of Medical Practitioners, New Delhi, INDIA
Dr G D Nicholson:	Reader in Medicine and Nephrology, University of the West Indies; Consultant Physician and Nephrologist, Queen Elizabeth Hospital, BARBADOS
Dr D Lisk:	Consultant Neurologist, Freetown, and President of the Sierra Leone Medical and Dental Council, SIERRA LEONE
Dr M K Rajakumar:	General Practitioner, Kuala Lumpur, MALAYSIA
Dr M Ramatlapeng:	Medical Officer, Maseru, and Treasurer, Lesotho Medical Association, LESOTHO
Dr W A S de Silva:	Senior Consultant Physician, General Hospital, Colombo, and President of the Sri Lankan Medical Association, SRI LANKA

Nurses

Mrs S Bloomfield:	Principal, Queen Salote School of Nursing, Nuku'alofa, KINGDOM OF TONGA
Mrs M Hawker:	Nurse, Georgetown, GUYANA
Mrs M Kamang:	MCH Supervisor, Yomba, Madang, PAPUA NEW GUINEA
Miss D Mehta:	President, The Trained Nurses Association of India, Bombay, INDIA
Mrs N Nagpal:	Secretary, The Trained Nurses Association of India, New Delhi, INDIA

Mr F Sarr:	Principal Lecturer/Head, School of Nursing and Midwifery College, THE GAMBIA
Ms A Tapakoude:	Nurse Teacher, Nicosia, CYPRUS
Mrs P Vidot:	Director of Nursing (Hospital Services), Victoria, SEYCHELLES

Pharmacists

Mrs Joyce Addo-Attuah:	Senior Pharmacist, Police Hospital, Accra, GHANA
Mr J Cooke:	Director of Clinical Pharmacy, Clinical Services, The General Infirmary at Leeds, Leeds, UNITED KINGDOM (Current position: District Pharmaceutical Officer, South Manchester Health Authority, Manchester, UNITED KINGDOM)
Mr G Forbes:	Chief Pharmacist, University Hospital of the West Indies, Kingston, JAMAICA
Dr K L Hemnami:	Chief Pharmacist/Head, Head of Department of Pharmacy Services, Christian Medical College and Hospital, Vellore, INDIA
Dr P R Pabrai:	Ranbaxy Laboratories Ltd, New Delhi, INDIA
Mr A B Patel:	Relief Chemist, Ahmedabad, INDIA
Mr A C Scales:	Manager, Big V Pharmacies Ltd, Ontario, CANADA
Mr B Tidswell:	Community Pharmacist, Managing Director Tidswell's Pharmacy Ltd, Auckland, NEW ZEALAND
Mrs M Torongo:	Managing Director, Mabelreign Pharmacy, Harare, ZIMBABWE

Observers

Dr S P Akpabio:	Commonwealth Oral Health Initiative, London, UNITED KINGDOM
Dr B D Miglani:	Editor, Indian Journal of Hospital Pharmacy, New Delhi, INDIA

Representatives of Commonwealth Professional Associations

Miss M Brayton:	Secretary, Commonwealth Nurses' Federation, 18 Northumberland Avenue, London, WC2
Mr R Dickinson:	Secretary, Commonwealth Pharmaceutical Association, 1 Lambeth High Street, London WC1 7JN
Dr D Pippard:	Coordinator, Commonwealth Medical Association, BMA House, Tavistock Square, London, WC1H 9JP
Dr A Riddell:	Hon. Treasurer, Commonwealth Medical Association, BMA House, Tavistock Square, London, WC1H 9JP

APPENDIX IV

Sponsoring organisations

The contribution of the following organisations to the success of the forum is gratefully acknowledged:

Barbados Medical Association

British Medical Association

Commonwealth Foundation

Commonwealth Secretariat Health Programme (supported by the Canadian Public Health Association)

Indian Medical Association

Indian Pharmaceutical Association

International Federation of Pharmaceutical Manufacturers Associations

Royal Pharmaceutical Society of Great Britian

Paam Pharmaceuticals (Pvt) Ltd, New Delhi

Trained Nurses Association of India