

# DRUG INFORMATION ISSUES: A CARIBBEAN PERSPECTIVE<sup>1</sup>

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*Effective use of therapeutic drugs in developing countries depends on resolution of certain basic problems. This article helps define those problems and suggests ways in which some of them might be overcome.*

## Introduction

Effective use of therapeutic drugs depends on a chain of specific events. These include selection of an appropriate and limited drug list for a formulary; maintenance of efficient supply and information systems; rational prescribing by physicians, pharmacists, or primary health workers; and intelligent compliance by patients. In Third World countries where resources are very limited, emphasis must be placed on making drug use procedures both efficient and economic. Within this context, national drug policies are clearly needed; to date, however, such policies in the area of concern here, the English-speaking Caribbean, have tended to fail because of emphasis on efficacy to the neglect of cost, or vice versa.

Five years of experience in providing a clinical pharmacology service in the Caribbean suggest that most of the problems experienced in the region can be linked to a lack of information in each of the aforementioned areas of action. For example, informed drug selection requires a drug advisory committee of knowledgeable planners and advisers with adequate and up-to-date sources of information. Management

must be well-trained in both pharmacy and management skills, and must have access to sound advice and information about quality, comparative costs, national drug requirements, and so on. Doctors and pharmacists must be kept informed, not only about new knowledge (the priority in developed countries) but about rational drug use, economic considerations, and national drug policies. Finally, patients must be educated to a point where they can be expected to comply intelligently and work toward rational health goals.

## Drug Selection

As long ago as 1972, during the Fourth Meeting of the Caribbean Health Ministers Conference in Guyana, a resolution was passed recommending that each country in the region should develop a national formulary. The reasons for having such a limited list of essential drugs are well-known (1). Among them:

- 1) It reduces the number of products to be purchased, stored, and distributed; this, in turn, improves the efficiency of supply departments.
- 2) It provides a basis for improving drug prescribing practices, drug information systems, and drug monitoring.
- 3) It tends to stimulate local pharmaceutical industries.
- 4) It enables developing countries to obtain better prices through bulk purchases and pooled procurement.

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Within the English-speaking Caribbean, however, formularies have had a checkered history. Committees have been formed, have produced a drug list, and have never functioned again. One formulary grew by 30% between its drafting in 1957 and its publication in 1980, while the drugs actually available through the government services shrank by a larger percentage. In practice, therefore, the drugs actually available often bear no close relationship to the last available but outdated formulary.

Selection of formulary drugs should be one function of a national drug advisory committee, or of its formulary subcommittee. In practice, however, most such committees have been temporary, have had no mandate to advise on wider issues, and (especially in the smaller countries) have lacked both needed expertise and the necessary information.

The ideal committee would include the Government's Chief Pharmacist or Drug Service Director, a procurement officer, a drug information pharmacist or chief hospital pharmacist, a clinical pharmacologist, representatives of the medical association (preferably a primary care physician and a hospital physician), and representatives of the Pharmaceutical Association, as well as medical specialists co-opted or consulted as necessary. In practice, a single physician and pharmacist have often been the only members of such a "committee," and their task has often been incompletely or halfheartedly carried out. The prime reason for this lack of motivation is that few physicians have much interest in drugs used outside their own field of specialization, and few general practitioners have adequate training and continuing education in pharmacology or therapeutics to permit informed decision-making. These circumstances have made it very obvious that the trained clinical pharmacologist is a key member of any effective formulary or drug advisory committee (2).

In addition, adequate sources of up-to-date information are required in order for the drug advisory committee to do its work adequately. These sources include standard reference works, a medical library containing the relevant journals, a computer data base, and other sources

of information on drug side-effects, quality, and so forth.

### Supply Systems

There are many facets to the supply of pharmaceuticals (including selection, procurement, quality control, and storage), and the results are only as good as the weakest link within the system. Here again, inadequate information often causes problems. Failure to obtain or use information about drugs—especially information about instability or lack of pharmaceutical equivalence—can lead to bad purchases. Attempts to buy drugs cheaply without obtaining adequate quality assurance may be more costly in the long run. For this reason a regional drug testing laboratory has been established in Jamaica to support and supplement facilities in some of the countries.

Also, lack of knowledge about local requirements can lead to underpurchase and unavailability of drugs, or else to overpurchase and wastage. Underpurchase can have costly and sometimes disastrous effects, as an "out-of-stock" crisis may take several months to resolve. Specifically, it may involve substitution of a more costly drug, substitution of an inappropriate drug, use of no drug at all when one is needed, or referral to the hospital and treatment at far greater expense than the cost of treatment at the primary level. Clearly, therefore, drug utilization studies are essential.

Some of the practical problems of storage and distribution have been overcome in Barbados by utilizing long-existing local drug distribution agencies or wholesalers. When a contract is issued under tender, the wholesaler imports, stores, and distributes for an agreed percentage. The government then operates a benefit service for certain categories of people (geriatric patients, pediatric patients under six, diabetics, hypertensives, and cancer patients), and many private pharmacies cooperate with this service. These activities by private and public sectors supporting the work of the Barbados Drug Ser-

vice offer a good example of what economists call a "mixed" economy.

### Drug Prescription

Effective therapy requires selection by the prescriber, whether physician or primary health worker, of the most appropriate drug; it also requires prescription in the most rational way with respect to dose, dosage interval, dosage relative to mealtimes, and so forth; and it requires intelligent compliance by the patient. Inappropriate prescription can have severe and costly consequences.

Unfortunately, a great deal of inappropriate prescribing occurs, and while drug policies in the Caribbean have concentrated on drug lists and procurement of less expensive drugs, they have not addressed the problem of drug utilization. This is especially regrettable because the social and economic costs of inappropriate drug use may well outweigh the considerable savings achieved by making cheaper purchases. For example, a recent study of antibiotic drug prescription at the Queen Elizabeth Hospital in Barbados has shown that half of it was inappropriate (3).

Similarly, introduction of intravenous metronidazole at this hospital resulted in a lot of very costly inappropriate prescribing. However, by supplying metronidazole suppositories, when they became available, together with intensive doctor education, it became possible to produce a dramatic drop in this excessive prescription of the intravenous preparation.

Other studies of drug utilization in the English-speaking Caribbean are urgently needed. It must be emphasized that improved use of the drugs we have is of far greater importance in the Caribbean than immediate access to the latest drugs.

It is also clear that most physicians have not received adequate training in therapeutics. Hence, rational prescribing can only be promoted by two activities requiring the skills of clinical pharmacologists: concerted, continuing

education of those physicians already in practice, and provision of improved and relevant therapeutics instruction in the area's medical schools. The latter instruction is obviously a responsibility of the medical schools, while the former continuing education should be an activity of immediate interest to the governments involved. Such continuing education can therefore be viewed as a function of the national drug advisory committee, if such exists.

Rational prescribing is now being emphasized in Barbados by several means, particularly through the prescriber's formulary. In 1982 the National Formulary Committee appointed an editorial subcommittee to upgrade the previous document into a full-fledged formulary with prescribing notes. This upgraded formulary includes guidelines on indications, side-effects, dose regimes, drug costs, prescribing for children and the elderly, prescribing for cases involving renal failure, and other matters. Perhaps the greatest physical attribute of this document is the fact that it is pocket-sized, and so can always be at hand as a source of information and guidance.

Other means used in the Caribbean for informing prescribers include drug service information bulletins, hospital pharmacy bulletins, medical association bulletins, special circulars, personal communications, and therapeutics update symposia for medical practitioners. In addition, the CARICOM Secretariat has proposed publishing a regional formulary and drug information journal to serve this purpose.

If relevant information is provided through such channels, and if it is effectively used, the results are not hard to see. For example, five years ago there was skepticism among local practitioners in the Caribbean about the efficacy of locally manufactured thiazide diuretic. This was allayed by the results of a trial of the local product against the popular, costly, imported thiazide and a placebo (4). The hypertensive participants in this trial who received the local product experienced a blood-pressure reduction that was greater, on the average, than that of those taking the placebo and comparable to that of those taking the imported product. This infor-

mation was communicated widely, and since then the prescribing pattern has been reversed completely, resulting in a considerable voluntary annual savings.

Another key point to remember is that pharmacists provide a great deal of primary health care, supplying advice and over-the-counter drugs, and in some parts of the English-speaking Caribbean significant numbers of nurse practitioners and other health workers are being trained to provide primary care. All of these groups need to receive adequate information about the drugs they prescribe now or may soon come to prescribe.

### **Intelligent Compliance and Patient Education**

Doctors usually assume, often wrongly, that patients take their medication as prescribed—partly because patients rarely confess to non-compliance. Much confusion surrounds this matter, largely as a result of missing or inappropriate information.

A few of the problems that commonly arise are as follows:

- Hypertensive patients often stop taking medication when they are feeling well, because they are not adequately informed that they must take it prophylactically.

- Patients with epileptic seizures may stop taking medication when drowsiness or other side-effects are noticed, because they do not understand the importance of continuous treatment. They then have a seizure; their doctors, not realizing they have stopped treatment, may prescribe bigger doses causing worse side-effects, and so the cycle may be repeated (5). The provision of package inserts (which provide guidelines for the patient, warnings, and information about important side-effects) is under discussion; but the questions involved are difficult, and it is quite possible that use of such package inserts in our society would induce fear and create more problems than it would solve.

- A recent noncompliance problem in Barbados resulted when less expensive generic hypertensive drugs were substituted for familiar drugs. The difference in the new drugs' appearance disconcerted patients, many of whom took none until they next saw

their doctor one to three months later, thereby permitting their blood-pressure to go out of control.

Patients may also demand medication based on popular myths. For example:

- Influenza victims tend to demand antibiotics and insomniacs tend to demand sedatives. Many doctors prescribe these drugs freely, perpetuating the vicious cycle of misinformation. Afterwards, the patient may take only a few, keeping the rest for "next time," or for a friend or relative.

- Patients demand (or buy) vitamins in large, expensive doses for such purposes as maintaining health, curing depression, counteracting male baldness, combating asthma, curing impotence, and shrinking varicose veins. The message of the great vitamin hoax is "The more you take the healthier you will be." Even worse, there is aggressive marketing of a wide range of curealls or virility nostrums containing everything from vitamin E and oyster extract to egg shells.

- Traditionally in the Caribbean, injections are considered much more potent than pills. Our less informed patients therefore demand them, and some unthinking or uncaring physicians give them—iron for tiredness and depression, B<sub>12</sub> for "nerves," etc. These are but some of our patient problems requiring effective patient education strategies.

### **Conclusions**

Effective drug use in Third World countries requires appropriate selection of drugs for a restricted national formulary, trained managers, appropriate information systems, education of prescribers about rational prescribing, and patient education.

Recently, the need for upgrading and rationalizing pharmacist training programs in our region has been recognized. But pharmacists alone cannot bridge the information gap between modern drug developments and physician awareness, or between the knowledge of physicians and their patients. Moreover, despite the WHO recommendations of 1970 (6) for the training of clinical pharmacologists, this type of specialist is still a rarity in developing countries (7), and it is difficult to envisage effective solutions to these problems without such specialists.

## SUMMARY

Effective use of medicaments depends on a chain of specific events: selection of a limited drug list for a national formulary; maintenance of efficient drug supply and drug information systems; rational prescribing by physicians, pharmacists, or primary health workers; and intelligent compliance by patients. In poor developing countries, most pharmaceutical drug use problems result from a lack of information at one or another of the places in this chain.

In each country, a national drug advisory committee should be responsible for selecting essential drugs and for coordinating activities that would improve the available information about relevant drug products. Those in charge of drug supply systems should have adequate knowledge about national drug utilization patterns and about quality assurance—sufficient for them to purchase the right quantities of low-cost,

good-quality products. Prescribers—whether physicians, pharmacists, or primary health workers—should receive sound basic and ongoing training about rational drug use, and should possess a pocket prescriber's formulary. And patients should receive appropriate drug information and advice so as to ensure their intelligent compliance with the prescribed drug treatment, and so as to instill in them a responsible attitude toward use of therapeutic products.

In addition, if national drug policies are to be effective, the assistance of drug advisory committees composed of well-informed and representative pharmacists and physicians is required. There is also an urgent need for clinical pharmacologists, who have an important role to play in advising on and coordinating all of these activities, but whose presence in developing countries is still the exception rather than the rule.

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