CHAPTER XII

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S.B. Lall and R. Paul

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The current definition of non-medical use of drugs refers to consumption of drugs (medicinal preparations) in larger amounts and more often than prescribed (Cooper et al., 1993). Many drugs, prescribed for the treatment of pain, anxiety, insomnia and other psychiatric conditions have the potential for abuse. These include narcotics, sedatives, hypnotics, stimulants, antidepressants, anticholinergics and some Ayurvedic preparations. Several reports suggest that in Bangladesh, India and Nepal, a substantial number of drug abusers have shifted from heroin to buprenorphine (synthetic opioid) and codeine based cough syrups. These (genuine and fake) are freely available without prescription (United Nations, 1997). The increase in their abuse has been facilitated by ineffective control over their licit supply.

India is a country where the abuse of psychotropics is considered a major problem, unlike Bhutan, the Maldives and Sri Lanka (INCB,1996a). A few reports of abuse of amphetamine and "ecstasy" are available from Goa, a tourist resort. Abuse of benzodiazepines is also on the rise. However, there is a lack of data on the actual prevalence of non-medical use of prescription drugs in this region.

International reports suggest that around 62 per cent of the population abuse prescription drugs and more than 50 per cent of them depend on these for the performance of their daily activities (Bennett et al., 1983). With effective control it is, however, possible to limit their abuse. This is obvious from the report from the USA which suggests that total number of emergency room visits due to abuse of psychotropics reduced from 38 per cent (1985) to 21 per cent in 1989 (Cooper et al., 1993). Thus it is important to develop effective control on prescription drugs to minimize drug related emergencies.

AVAILABILITY, PRODUCTION AND SUPPLY

OPIOIDS

Opium and poppy straw are the main raw materials used for the extraction of natural opiates. Opium is also used to manufacture semisynthetic derivatives like morphine, codeine, etc. International trade in poppy straw has been rising since 1991 (United Nations, 1997) and India is the major producer and sole licit supplier of opium to meet the world requirement. A report from the International Narcotics Control Bureau (INCB, 1996a) suggests that annual global consumption of opiates has increased from 200 tonnes in 1990 to 236.7 tonnes in 1993. In India, during 1995-96, the total production of opiate raw material had increased and was expected to exceed its morphine equivalent by 80-90 tonnes. In 1995, the global manufacture and consumption of morphine was the highest ever recorded (INCB, 1996a).

Judging from recent trends, the annual aggregate consumption of opiates is likely to rise steadily in the next few years. Lack of adequate control on opium and poppy straw has led to diversion to the illicit market and abuse of addictive compounds derived from them. Thus it is extremely important to keep close scrutiny on demand and supply of opiates for medical and scientific needs. The 39th session of the Commission on Narcotic Drugs reviewed the situation informally and remedial measures were suggested. Control over cultivation and production of opium has been strengthened in recent times and licences of farmers have been withdrawn because of their poor compliance with these regulatory mechanisms (INCB, 1996a).

Fortunately, the amount of morphine traded internationally remains limited in comparison with poppy straw. As regards other opiates, in 1995 India was the seventh largest user and the leading one in Asia, of codeine, which represents bulk consumption of opiates. In the case of dextropropoxyphene, India is the third largest manufacturer and consumer while Pakistan is the third largest importer. Since 1984, India has been the main manufacturer, consumer and exporter of diphenoxylate while Pakistan has been the fourth largest importer. Global consumption of pethidine and fentanyl has increased since 1990, peaking in 1994-95. The introduction of an export-import authorization regime by the Indian authorities has not prevented the illicit traffic in buprenorphine and its spreading abuse in Bangladesh, Nepal and even in India. In Bangladesh it is used by 90 per cent of intravenous drug users. These are indeed worrying trends and close monitoring of manufacture, import and export of several opiates is required. The International Narcotics Control Board has estimated the requirement of certain narcotic drugs in India for the year 1997. For codeine, dextropropoxyphene, diphenoxylate, morphine, opium and pethidine the requirement is reported to be 30, 90, 9, 21,

1075 and 0.9 tonnes respectively (United Nations, 1997; INCB, 1996a).

PSYCHOTROPICS

Diversion of psychotropic substances from licit manufacture and trade is well known. The INCB recommended that the authorities in India should increase vigilance on their exports. These are sold for abuse by the local population and are also smuggled into other countries. In 1996, several million tablets containing diazepam and chlordiazepoxide manufactured in Asia were seized in Nigeria during an attempt to smuggle them in. In 1995, about 20 tonnes were seized. Substantial amounts were smuggled out of India into eastern and southern Africa. The calculated average national consumption of benzodiazepine type hypnotics and sedatives is higher in Europe than in any other region. However, overall consumption of these drugs is decreasing in most parts of the world. Despite the efforts of competent authorities, the illicit manufacture of methaqualone continues in India. (United Nations, 1995 and 1997). Though their abuse continues, the production figures provided by the Drugs Controller, India, show that manufacture of both diazepam and buprenorphine had decreased in 1996 as against 1995 (**Table 20**).

TABLE 20: Manufacture of Various Substances, India

Compounds	1995 (kg)	1996 (kg)
Diazepam	13,086	12,231
Pentazocine	27.010	-
Phenobarbitone	10,168	-
Chlordiazepoxide	2,540	2,774
Alprazolam	-	438.366
Nitrazepam	-	253.00
Lorazepam	-	7.99
Buprenorphine	25.56	7.75

Source: Drugs Controller, India, 1997

PRECURSORS

Illicit traffic in precursors used for the manufacture of narcotics and psychotropics is not uncommon. Acetic anhydride is used for the illicit conversion of morphine to heroin. It is smuggled into and through South and South West Asia. The chemicals have been smuggled from India into Pakistan or Afghanistan. Between 1991 and 1994, the quantity of acetic anhydride seized by the Indian authorities has risen steadily. In South and South East Asia, a large number of countries are affected by increasing abuse of amphetamine-type stimulants, particularly methamphetamine. The precursors used are ephedrine and pseudoephedrine.

Inspite of the efforts of regulatory and law enforcement authorities in India, methaqualone continues to be illicitly manufactured and smuggled into Africa. Four clandestine laboratories were seized in 1995, along with basic chemicals, final products and laboratory equipment. One of the main precursors required for manufacture is anthranilic acid but the seizure of N-acetylanthranilic acid in both solid and liquid form was reported. The quantity of methaqualone seized in India has fallen in recent years because of more stringent controls and successful law enforcement. While India is still understood to be a major source of illicit methaqualone available in eastern and southern Africa, reports have indicated that the drug is, or has been, manufactured illicitly in those sub-regions also. In 1995, the Indian and Kenyan authorities successfully cooperated in investigating a suspicious shipment of anthranilic acid and ortho-toluidine (a key chemical for methaqualone manufacture not scheduled in the 1988 Convention) from India to Kenya (INCB, 1996b).

ABUSE LIABILITY vs. THERAPEUTIC USEFULNESS

NARCOTICS

Narcotics include some of the most valuable as well as most abusable drugs. The drugs included are morphine, pethidine, methadone, dextropropoxyphene, buprenorphine, diphenoxylate, fentanyl, codeine and pholcodeine. They produce both physical and psychological dependence and are commonly prescribed for relief from severe pain. There are differences in trends of quantities abused of a particular narcotic based on specific control regulations and the physicians' prescribing practices in a particular country.

The availability of narcotics is restricted and they are usually available only on prescription. Morphine and codeine are under international control because of their abuse potential. Morphine is the main alkaloid of opium and the prototype of natural opiates and many opioids. Its analgesic potency is used as a reference parameter for comparison purposes. Codeine and, to a lesser extent, pholcodeine are used in cough syrups as antitussives. Methadone is also used for suppression of narcotic withdrawal. Dextropropoxyphene, a mild oral analgesic, is used in combination with paracetamol and aspirin, and has some abuse potential. While serious side effects with propoxyphene are uncommon, a subjective high is frequently seen with therapeutic doses (Schuckit and Morrissey, 1978). For medical use the oral route is most common. However, abuse liability of orally prescribed drug is low (Tennant, 1973).

Fentanyl is used for inducing or supplementing anesthesia. It is almost 100 times more potent than morphine and is used in very small doses (e.g. 0.005-0.1 mg in injectable form). Other fentanyl derivatives with similar actions, namely alfentanil and sufentanil, are increasingly being used in medicine, the latter being about 10 times as potent as fentanyl. Certain fentanyl analogues are particularly potent drugs but are not used in medicine because of their adverse effects. Diphenoxylate is used for treating diarrhoea. Buprenorphine is used in place of methadone in the treatment of opiate dependent subjects as it has a better safety profile. Its analgesic property is postulated to be 25-40 times more than that of morphine. Reports from South Asia show that at present buprenorpnine is abused primarly through the intravenous route. WHO has rated the therapeutic usefulness of this drug as moderate to high and abuse liability as moderate.

Sedatives and hypnotics

Sedatives and hypnotics are frequently prescribed to induce sleep and to control epilepsy. However, barbiturates have a narrow therapeutic index and are highly addictive. In large doses they may produce a state similar to the high produced by alcohol, fluctuating mood, irritability and despondency (Nicholi, 1983). Considering their high abuse potential, most clinicians currently prefer benzodiazepines (BZDs), which are now one of the most widely used drugs in medicine and are freely available, often over the counter. Their indications include anxiety, panic attacks, insomnia and they are also prescribed for diseases with a psychosomatic component. Other less common uses include acute management of agitated psychoses in mania, schizophrenia, mood disorders, epilepsy, movement disorders, and as preanesthetic medication. Because of the mood altering effect BZDs have potential for abuse and dependence. However, the effect is relatively lower than with narcotics and therefore these are drugs lower on the choice scale for a drug abuser (Woods et al., 1988). Majority of patients experience a physical dependence after chronic use of over 4-6 months although problems may develop as early as 4-12 weeks (Cooper et al., 1993). Inspite of its low abuse potential, it is reported that over 2,50,000 people in the UK are dependent on these drugs and millions of people are addicted to it world-wide (Strang, 1995). Fixed dose combinations of sedatives/hypnotics/anxiolytic drugs with analgesics and antipyretics are banned in India (Shiva and Wishvas, 1996). Methaqualone, a potent hypnotic, was available in India in 1956. It caused excessive dreaming and hangover. It was marketed in combination with diphenhydramine and became a very popular drug of abuse. It has all the disadvantages of barbiturates, a higher abuse potential and has been banned in India and most other countries.

Psychostimulants

Psychostimulants include amphetamine, methylphenidate and ephedrine. Amphetamine produces a sense of exhilaration and a state of wakefulness. Long term use causes psychological dependence and tolerance. Presently it is indicated for the treatment of narcolepsy, attention deficient hyperactivity disorder and in selected cases of obesity (Nicholi, 1983). Cases have been reported where ephedrine has been known to cause mania after chronic use for asthma (Whitehouse and Duncan, 1987). The non-medical use of ephedrine, which is controlled as a precursor and not as a drug as such, has been reported in most regions in the world. In addition to ephedrine, the non-medical use of a great variety of ephedra based herbal preparations has been reported in different regions. Ephedrine or pseudoephedrine is the active ingredient in such preparations. All psychostimulants are liable to induce paranoid psychosis and have a high abuse potential and their use is therefore restricted.

Tricyclic antidepressants

These drugs have therapeutic benefits in endogenous depression. In terms of abuse potential these have a low risk. However, after prolonged treatment patients are known to develop tolerance and physical dependence (Bennett et al., 1983).

Anticholinergics

Abuse of anticholinergics that are prescribed mainly for drug induced parkinsonism, has been reported. Drugs produce mild euphoria with increased sociability at lower doses and toxic psychosis at higher doses. Typically abuse occurs by the oral route but has been reported through smoking and intravenous route as well. Trihexyphenydyl is the most commonly abused among these drugs, but essentially all have been reported to have abuse potential including biperiden, benztropine, orphenadrine and procyclidine. Their mode of action for abuse is probably related to changes in the cholinergic nervous system that may cause euphoria. The first reported case was in 1960 and it has been followed by reports from various other countries including India. Given the large number of patients receiving these medications and the relatively few cases of abuse reported, it would seem that their abuse is infrequent, perhaps due to their side effects (Smith, 1980; Pullen et al., 1984; Schuckit, 1985; Brower, 1987).

Ayurvedic medications

Alcohol forms a common content of some of the Ayurvedic preparations. It is generated by a process of natural fermentation of the herbs, thus facilitating extraction of their active principle and serving as a preservative. According to the Central Council for Research in Ayurveda

and Siddha, the percentage of alcohol in Ayurvedic products should never exceed more than 12 per cent as it is not possible to generate more than 12 per cent alcohol by natural fermentation of herbs. However, some of the common products like *Sura* contain 24 per cent alcohol, and *Pudina Hara* 78.8 per cent (Shiva and UnniKrishnan, 1992). The drug control authorities have issued a directive that preparations which contain a high percentage of alcohol, should be consumed only in drops and are to be sold in tiny bottles which contain 30 ml only. This will help to check the misuse of these preparations in the community.

DRUG LAWS ENFORCEMENT

Prescription drugs should be available on prescription only and not freely over the counter. In India dispensing of drugs is regulated by the Drugs and Cosmetics Act, 1940, and the Narcotic Drugs and Psychotropic Substances Act, 1985. Both government policies and professional ethics are necessary to properly implement these acts. Aggressive marketing of drugs by pharmaceutical companies combined with relative laxity in internal controls has led to ready availability of these drugs to the general public. Efforts should be made to restrict supplies to amounts needed for medical and scientific purposes only. Also it should be ensured that supplies are not so tightly restricted as to compromise patients' welfare. International treaties like the Single Convention on Narcotic Drugs, 1961, and the 1971 Convention on Psychotropic Substances recognize that many drugs with abuse liability are indispensable to the public health and that their availability for legitimate medical and scientific purposes must be ensured. In 1990 the WHO Expert Committee on Pain Relief expressed concern over improved methods for controlling inappropriate use which would not affect appropriate prescribing (Cooper et al., 1993).

Rapid information exchange and cooperation between governments has proved effective in identifying suspicious shipments and preventing diversions of substances. The INCB has informed India to regularly send information on exports of some substances or make inquiries through the Board on the legitimacy of individual shipments to countries importing the opioids. In India, in order to prevent illicit trafficking in precursors for methamphetamine, a system of prior approval has been introduced for the export of ephedrine and pseudoephedrine. The excellent cooperation between Indian authorities and the INCB has led to the identification and prevention of attempts to divert large amounts of benzodiazepines, ephedrine and pseudoephedrine. There are free zones where the government is facing problems in monitoring illicit trade in narcotic drugs, psychotropic substances and precursor chemicals.

While in most countries legislation provides for the same control and monitoring measures in free zones as in the rest of the country, in practice, cooperation between competent drug control and free zone authorities is often inadequate and actual control over these activities in such zones is lacking in the country. As these zones are under customs control the INCB has contacted the Customs Cooperation Council regarding guidelines for monitoring. In the South Asian region bilateral agreements through SAARC and UNDCP have strengthened cooperation between countries on this subject. Government of India held a SAARC meeting on pharmaceutical preparations containing opioids (buprenorphine and codeine based cough syrups) in November 1996 (United Nations, 1997).

To ensure rational drug use in Bangladesh a national policy was formulated in 1982, which came into full operation in 1984 (Shiva and Wishvas, 1996). The objective of the National Drug Policy was to rationalize procurement, production, quality control, distribution and drug pricing and bring it under a single legislative and administrative control body. In India due to loopholes between jurisdiction and accountability of policy matters between the central government, State governments and several concerned ministries, a rational drug policy has not evolved. The issue of banning the use of codeine in any combination or form has repeatedly been raised by voluntary health organizations. Similarly, restrictions on the amount of alcohol used in Ayurvedic preparations has been stressed to the authorities. However, certain drugs, in spite of known serious side effects and possibility of misuse, have favourable risk-benefit ratios and may be allowed to be produced in limited quantities for restricted use and by specialists. Dr. Nurul Islam has elaborated on the Bangladesh national policy in **Box Item-38.**

PHYSICIAN EDUCATION

Use of sedatives and tranquilizers is often initiated by physicians as part of legitimate medical practice. For a physician, before prescribing it is important to know whether the drug contains substances known to cause dependence in humans and to consider the potential for abuse of the drug by the patient. Drugs should be prescribed according to calculated need. It is necessary to sort out "malingerers", "hypochondriacs" and "hysterics" from people with painful or emotional disorders, since the latter are more prone to drug abuse. Drugs prescribed for chronic painful conditions should undergo periodical review of their status and total drug consumption from all sources. To reduce iatrogenically provoked addiction, it is useful to organize continuing medical education programmes to provide up-to-date information about these medications.

OTHER ISSUES

The Drug Controller or an equivalent officer of a country viz. Drugs Controller of India (DCI), has an important role to play in regulating the implementation of the drug and cosmetics act. However, information and training should be given to the pharmacists dispensing these medications. Patients prescribed these drugs should also be warned about their correct use and abuse potential. Social problems like unemployment, unstable families and addict relatives contribute to drug abuse and should be considered before prescribing such drugs. Improving the social structure of society will also help reduce this problem.

The following issues are important:

- More data on the actual incidence of non-medical use of prescription drugs.
- Identification of pilferage sites—manufacturers, distributors, chemists, hospitals and patients.
- Formulation of a national drug policy for procurement, production, quality control, distribution and pricing of these drugs.
- Educational programmes for physicians on the use of these drugs.
- Restriction of availability of drugs with abuse liability over the counter.

To conclude, the responsible authorities should examine these and initiate effective control measures to reduce abuse of prescription drugs without impairing health care.

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BOX ITEM - 38

BANGLADESH NATIONAL DRUG POLICY

Nurul Islam

The Bangladesh National Drug Policy (BNDP) is a policy formulation that aims to lead to the rational use of drugs in keeping with the essential drug concept of the WHO. The policy (BNDP) was promulgated in June, 1982 with defined objectives, some of which are:

- to provide administrative and logistic support
- to reduce prices
- to eliminate useless, non-essential and harmful drugs
- to promote local production of finished and basic pharmaceuticals
- scientific development of alternative medicine
- education and training of professional pharmacists
- to ensure Good Manufacturing Practice (GMP) (Islam, 1984).

A committee was formed to draw up the policy. It classified the available drugs in the country into three categories. There were 305 drugs in category one; these were considered harmful and recommended for withdrawal from the market. In the second category there were 500 drugs requiring reformulation to eliminate unnecessary or harmful ingredients. The third category with over 500 miscellaneous products consisted of drugs with injudicious combinations, those that had been unnecessarily imported despite their local availability and those drugs manufactured under licence from foreign companies (Islam, 1989).

Prohibition was also imposed on multinationals for the manufacture of vitamins and antacids with a view to helping development of local companies. They were, however, allowed to produce injectable vitamins. There were 167 local companies producing 25 per cent of all products in the country whereas eight multinationals produced 75 per cent.

The Islam Committee (1982) prepared a list of 150 essential drugs in line with that of the WHO. After the fall of the government the new regime during 1991-95 made a few changes. The Drug Control Committee (DCC) had included representatives of BPMA (Bangladesh Pharmaceutical Association) and Chemists and Druggists Association, who had vested interests. As a result many products like multi-vitamins and vitamins with minerals, laxatives and cough mixtures had been included in the list. The number of essential drugs rose to 200 from 150 (Director, Drug Administration, Bangladesh, 1996).

In this article it is intended to reflect on the present status of BNDP vis á vis the drug situation in the country.

PRICES OF DRUGS AND RAW MATERIALS

After the BNDP there has been universal and significant reduction of prices of many raw materials (**Table A**).

Doxycycline, gilbenclamide and propanolol are extreme examples where prices per kg came down from US $ 1500, 2350 and 490 in 1981 to US $ 78, 160 and 18 respectively in 1995. Prices of almost all other raw materials showed a downward trend over the years. This price reduction is reflected in the price level of various finished products available in the country. During 1981-91 there had been a rise of the consumer price index for general items by 178

TABLE A: Comparative Prices of Some Imported Raw Materials

Raw materials	Average prices (US $ per kg)				
	1981	1986	1987	1990	1995
Amoxycillin T/H	130	84	82	75	93
Ampicillin T/H	120	75	67	62	85
Doxycycline	1500	175	140	85	78
Glibenclamide	2350	282	160	-	160
Propanolol	490	23	23	-	18
Rifampicin	473	230	205	-	121
Tetracycline HCL	64	26	26	25	23

TABLE B: Bulk Raw Material Production, 1995

Raw Materials	Quantity in kg	Value in Million Tk. (Million US $* in bracket)
Ampicillin T/H	39079	139.90 (3.33)
Amoxycillin T/H	132144	521.97 (12.43)
Cephalexin M/H	364	02.85 (0.07)
Paracetamol	527388	164.57 (3.92)
EH. Gelatin Cap. Shell	64,20,97,000 pcs.	41.60 local consumption (0.99) + 96.85 (export) (2.31)

* US $ 1 = Tk. 42 or Tk. 1 = 2.38 cents (US $)

per cent. The rise of drug prices on the other hand was around 25 per cent and this rise was partly due to the prevailing rate of hard currency. Despite this the prices remained very low. For example, a capsule of 250 mg Tetracycline and 100 mg Doxycycline would cost Tk. 2.47 and Tk. 2.50 respectively (Hye Humayun, 1995).

DEVELOPMENT OF PHARMACEUTICAL INDUSTRY

Subsequent to the restriction imposed on multinational companies and the opportunities opened up for national ones, there has been steady growth of the pharmaceutical industry in the country. In 1981 there were only 167 medium and small sized national companies which manufactured 25 per cent of the locally available drugs whereas the remaining 75 per cent were contributed by eight multinational companies. In 1995 the number of pharmaceutical companies increased to 207 and the share of the local companies reversed. About 86 per cent of local products were contributed by the national companies. Total production in 1981 was worth Tk. 1100 million (US $ 27.5 million). This rose to Tk. 15,000 million (US $ 375 million) in 1995 (Director, Drug Administration, Bangladesh, 1996).

Production of Pharmaceutical Raw Materials

The production of pharmaceutical raw materials was limited to chloroquine phosphate before the drug ordinance. This has increased considerably over the years.

Table B shows bulk raw material production during 1995. These include ampicillin and amoxycillin trihydrate, cephalexin monohydrate and paracetamol. EH. Gelatin cap. shells are exported from Bangladesh.

Essential Drug Company Limited (EDCL)

EDCL is a public limited company with 100 per cent share owned by the government. The company produces drugs worth over Tk. 400 million (US $ 10 million) annually and meets 75 per cent of the government's health sector needs. **Table C** shows that the price of EDCL products is less than the average market price.

TABLE C: Product Price, 1996 (including VAT)

Name of Product	EDCL	Others
Ampicillin Cap. 250 mg	Tk. 2.00	Tk. 2.47
Amoxycillin Cap. 250 mg	Tk. 2.10	Tk. 3.40
Cloxacillin Cap. 500 mg	Tk. 3.40	Tk. 5.88
Doxycycline Cap. 100 mg	Tk. 0.97	Tk. 2.50
Indomethacin Cap. 25 mg	Tk. 0.40	Tk. 0.58
Rifampicin 300 mg + Isoniazid 150 mg	Tk. 5.05	Tk. 6.90

* US $ 1 = Tk. 42 or Tk. 1 = 2.38 cent (US $)

ALTERNATIVE MEDICINE

One of the objectives of the BNDP was to promote the scientific development and application of Unani, Ayurvedic and Homeopathic medicines and to ensure their standardization and quality by bringing these under the scope of drug legislations. DCC also has a representative of alternative medicines (Islam, 1989).

TEACHING CURRICULUM

Teaching on essential drugs has been included in the medical curriculum. This offers the students an opportunity to learn

more about a limited number of essential drugs rather than learning too little about too many unnecessary medicines.

AN EXAMPLE FOR THE THIRD WORLD?

Safety, efficacy, usefulness, availability and affordability are basic ingredients of the WHO concept of essential drugs. Bangladesh has proved that if unnecessary and harmful medicines are withdrawn from the market through legislation and if essential drugs are available to the third world poor, the industry can be viable with essential drugs alone (Islam, 1983). Using a limited number of essential drugs creates no problem or threat to public health. Elimination of non-essential 'Luxury Drugs' facilitates the demand and production of essential ones (Tiranti, 1986). The growth of the national pharmaceutical industry (167 to 207 units) since the inception of BNDP undoubtedly proves this. The reduction of prices of drugs and medicines with procurement of raw materials at competitive prices stimulates market sale and consumption of drugs. Production of basic raw pharmaceuticals is stimulated by increasing market demand with the growth of national pharmaceuticals.

Bangladesh is one of the most populous and developing countries of the world with 120 million people. The number of doctors is around 20,000 — a ratio of one doctor per 6000 population. In the rural areas this gap becomes wider as few doctors want to work in these areas. In the absence of qualified doctors in the rural set up, as in other third world countries, people take recourse to self medication. Before BNDP, the pharmaceutical companies exploited this situation and flourished with the sale of useless and unnecessary fashionable medicines like multivitamins, various tonics, cough mixtures, etc. When these drugs are prohibited for marketing and sale, people are protected from these useless, unnecessary and at times harmful medicines. In a developing country like Bangladesh any drug can be purchased by anybody over the counter. The only way to make appropriate medicines available to the people in third world countries is to take away the inappropriate medicine from them and the only way of taking away inappropriate medicines is to eliminate them (Islam, 1983).

BNDP has fulfilled its main objectives in supplying quality drugs at an affordable price, helping development of the local pharmaceutical industry, maintaining reasonably good supply and distribution, and helping the rational use of drugs.

The success it has achieved has earned world-wide appreciation. But there is no reason for complacency. The greed for profit by the pharmaceutical companies often outweighs their ethical considerations. The entry of multivitamins with or without minerals, cough mixtures, laxatives and similar products in the market are not very healthy signs. It further proves why the selection of drugs should be made and periodically reviewed by experts in public health, medicine, pharmacology, pharmacy and drug management who should take into account changing priorities for public health action and epidemiological conditions, as well as progress in pharmacological and pharmaceutical knowledge (WHO, 1995). Development of industry, like EDCL, by the government to supply essential drugs at a cheaper price acts as a healthy competitor in the pharmaceutical field and helps keep prices down.

It is also essential for developing countries to utilize village level health workers. They must be motivated and sufficiently educated to use the right drug for the right problem (with right dosage). Our experience indicates that if properly guided by the experts their role becomes positive.

The Bangladesh National Drug Policy has proved that with well defined objectives and criteria it is possible to implement a policy provided there is strong political will. A national drug policy based on the essential drug concept is therefore vital for developing countries. Should BNDP be an example?

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