

CHAPTER II

ESSAY

HOW TO IMPROVE DRUG USE IN HEALTH CENTERS, MUANG DISTRICT, KANCHANABURI PROVINCE, THAILAND

2.1 Introduction

Regarding role of drugs in health care, according to Quick et al. (1997, pp. 5 - 8), accessible health services and qualified staff are necessary components of any health care system, but drugs have special importance for at least five reasons:

2.2.1 Drugs save live and improve health

Most leading causes of discomfort, disability, and premature death can be prevented, treated, or at least alleviated with cost-effective essential drugs. The samples of Thai health problems for which essential drugs have an important role are diseases of the respiratory system, digestive system, circulatory system and injury. The burden of death and illness can be reduced if carefully selected, low-cost drugs are available and appropriately used.

2.2.1 Drugs promote trust and participation in health services

The credibility of health workers depends on their ability to save a dying elder with a course of penicillin, to restore life to a limp child with oral rehydration, or to relieve an irritating skin infection with a simple ointment. Aside from their direct health impact, however, the availability of essential drugs attracts patients, who can then also receive preventive and public health messages. It has been observed that provision of essential drugs is one element of primary health care that families everywhere take an interest in and that brings them to health facilities.

2.1.3 Drugs are costly

At the individual and household levels, drugs represent the major out-of-pocket health expenditure. In Pakistan and Cote d'Ivoire, more than 90 percent of household health expenditures was related to drugs (World Bank, 1993). Wibulpolprasert (1994) stated that the annual per capital drug consumption of Thai people is 450 Baht in wholesale price and 840 Baht in retail price, two-fold higher than that in the Philippines and three-fold higher than in Indonesia.

2.1.4 Drugs are different from other consumer products

Drugs require special attention because of many reasons:

- the consumer (patient or parent) often does not choose the drug - it is prescribed by health professional;
- even when the consumer chooses the drug, s/he is not trained to judge its appropriateness, safety, quality, or value for money;

- neither the average medical practitioner nor the average pharmacist is equipped to independently assess the quality, or efficacy of each new drug;
- fear of illness can lead patients to demand from health workers, or to buy for themselves, costly drugs when cheaper drugs - or no drugs - would achieve the same result;
- the consumer often cannot judge the likely consequences of not obtaining a needed drug. This problem is most troublesome when the decision-maker is a parent and the patient is a child.

These knowledge gaps, anxieties, and uncertainties associated with both acute and chronic illness create special concerns about the supply and use of drugs.

2.2.5 Substantive improvement are possible

Some drug management improvements require an initial investment in systems development, training, physical infrastructure, and other development initiatives. But the potential cost reductions and therapeutic improvements are dramatic. Even small improvements, when made in a number of related areas of drug management, can yield substantial overall savings.

Public health is concerned with using available resources to achieve maximum health improvements for the population. The perspective is not that of the individual patient, who may well benefit from a costly drug, but of the entire community or

population, which will benefit most if safe, effective drugs are accessible to all who need them (Quick et al., 1997, p. 8).

Regarding curative care seeking behavior of Thai people, it was found that the rate of people buying drugs for self-treatment dropped from 51.4 percent in 1970 to 28.6 percent in 1985, while care seeking at professional health facilities has been risen from 38.2 percent to 69.0 percent during the same period (ARIC Section, n.d., p.48). Regardless of who provides the advice on drug use, irrational consumption is still found at all levels particularly with the use of antibiotics, analgesics, and cold relieving drugs. This problem, in addition to affecting the drug expenditure, may theoretically cause drug toxicity, allergies and drugs resistance.

Problems associated with the incorrect administration of drugs, occur throughout the world and are especially serious in developing countries. And there is no exception for Thailand. A 1993 study on drug use conducted by the Working Group on Drug System Analysis in Thailand revealed that the whole-sale value of drug consumption was about 27,000 million Baht, or 50,000 million Baht in retail prices, which is 35 percent of overall national health expenditure. The proportion is rather high, compared with only 10 to 20 percent in the developed countries (Wibulpolprasert, 1994, p. 16). Besides, two-third of drug consumption of Thai people were based on health professionals' decision or advice while the other one-third is consumed through self-medication, advice by relatives, friends, drugstore keepers and through advertisement. (Kornkasem, Wibulpolprasert, Yamphayak, & Silkavuth, n.d., p. 90).

At present, health centers are considered to be the primary health service facility, which is closest to the people. The performance of health personnel on drug use influence people's drug consumption. Bad prescribing habits lead to ineffective and unsafe treatment, exacerbation or prolongation of illness, distress and harm to the patient, and higher cost. Although changing existing prescribing habits is very difficult, it is worth the effort.

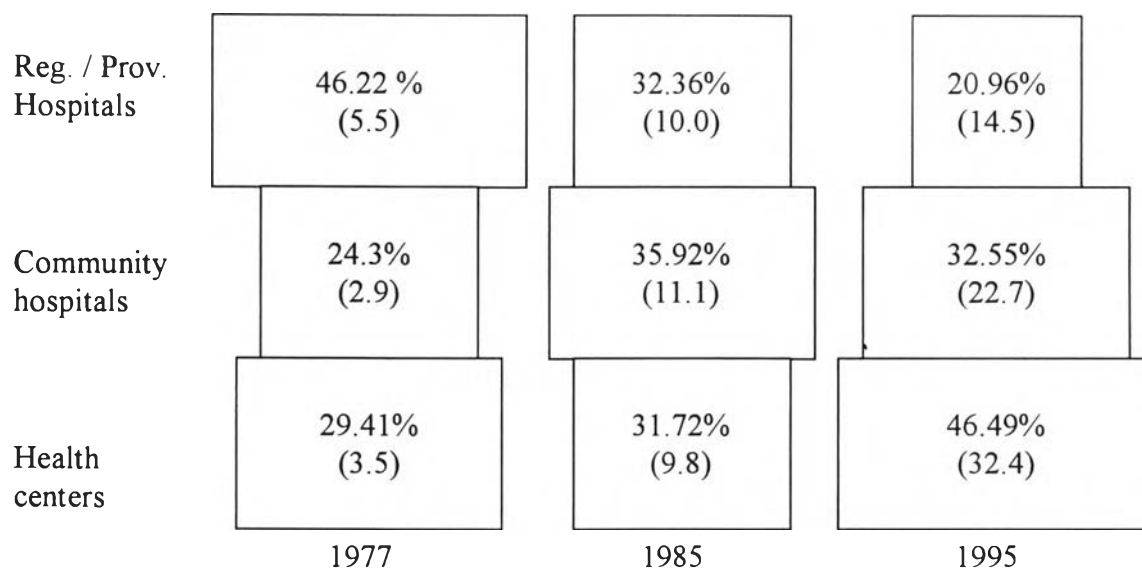
This essay is primarily intended to provide drug use situation at health centers, Muang District, Kanchanaburi Province and suggestions on how to improve the problems.

2.2 Health Center

As mentioned earlier, health centers are the primary health service facility, which is closest to the people. They are an interface between communities and health services system, charged with providing integrated health care including promotive, preventive, curative and rehabilitative services to the people. Each health center covered a population of 5,781 on the average (Wibulpolprasert & Sricharoen, 1996a, p. 9). There were 2.9 health workers per health center on the average in 1991 and increased to 3.08 in 1996 (Wibulpolprasert & Sricharoen, 1996a, p. 16).

Regarding primary or first-line health services, in general, health centers have increased their services outputs as shown below.

Figure 2.1: Outpatient Visits at Health Facilities, 1977-1995.



Note: Figures in parentheses are million cases of outpatients.

Source: Wibulpolprasert & Sricharoen, 1996a, p. 10.

Nationwide, the extent of health services provided to the people by health centers has increased. The proportion of outpatient visits at (regional, general, and community) hospitals to those at health centers has changed from an inverted triangle type to an upright triangle type (Wibulpolprasert & Sricharoen, 1996a, p. 16). Although the number of outpatient visits increased from 15.5 million in 1989 to 32.4 million in 1995, most of the services were simple basic care (Wibulpolprasert et al., 1996b, p. 12).

Table 2.1: Numbers of outpatient visit at health facilities

Health facility	Numbers of outpatient visit (Millions)						
	1977	1981	1985	1989	1993	1994	1995
Reg./Prov. Hospital	5.5	7.5	10.0	10.9	12.0	13.1	14.6
District Hospital	2.9	6.0	11.1	12.9	21.1	23.5	22.7
Health center	3.5	9.2	9.8	15.5	23.6	27.9	32.4
Total	11.9	22.7	30.9	39.9	56.7	64.7	69.7

Research by Termsirikulchai (1986) revealed that health centers that had good performance provided medical treatment service more than health promotion and prevention. And those health centers were accepted by people and supervisors. Choosing a treatment is more difficult than it seems, but rational treatment is even more difficult. To provide treatment, dealing with drug use is unavoidable. But not all health problems need treatment with drugs. Thus, rational drug use practices should be improved.

2.3 Rational use of Drug

As stated by R.R. Chuadhury & C.D. Tripathi (1997), rational use of drugs means using drugs, which are safe and effective. These drugs should be available at reasonable prices and could be stored conveniently. The drugs should be the appropriate for the disease, correctly diagnosed, should be administered at the right dose for the right length of time (p. 7).

People may have different perceptions and meanings regarding rational use of drugs, or more specifically regarding rational prescribing. However, the Conference of Experts on Rational Use of Drugs, convened by the World Health Organization in Nairobi in 1985, defined that rational use of drugs requires that patients receive medications appropriate to their clinical needs, in doses that meet their individual requirement, for an adequate period of time, at low cost to them and their community (World Health Organization, 1987).

To analyze drug use situation in health center, I decided to use the process of rational prescribing as a framework. This process consists of six steps:

Step 1: Define the patient's problem

Step 2: Specify the therapeutic objective

What do you want to achieve with the treatment?

Step 3: Verify whether personal treatment is suitable for this patient

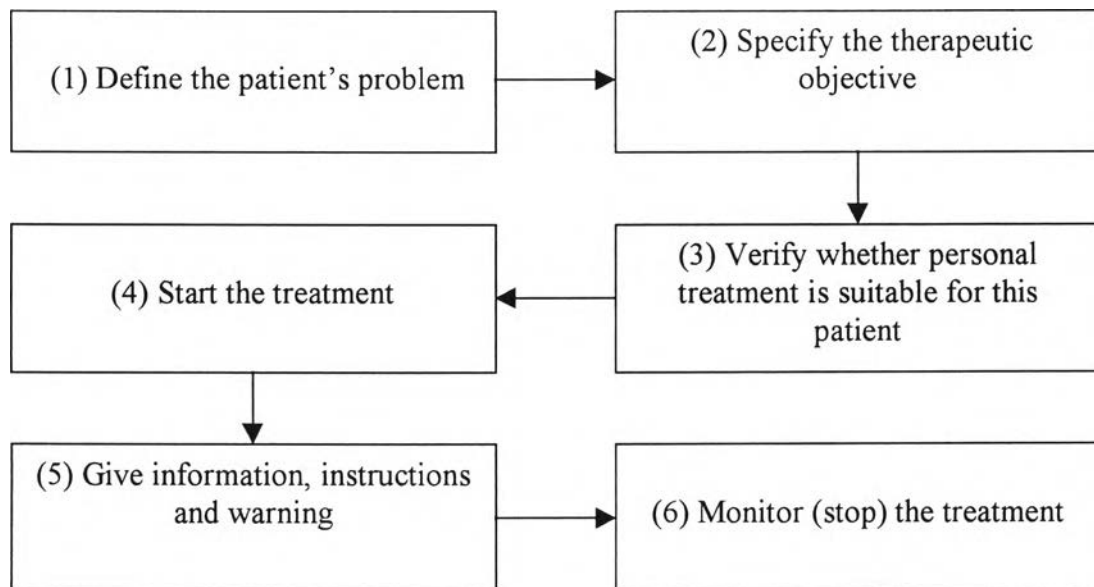
Check effectiveness and safety

Step 4: Start the treatment

Step 5: Give information, instructions and warning

Step 6: Monitor (and stop?) treatment

(De Vries. T.P.G.M., Henning, R.H., Hogerzeil, H.V., & Fresle, D.A., 1994, p. 11).

Diagram 2.1: The process of rational treatment

The prescriber should follow the standard process, which starts with a diagnosis to define the problem that requires intervention. Next, the therapeutic goal should be defined. The prescriber must decide which treatment is required, based on up-to-date drug and therapeutic information, to achieve the desired goal for an individual patient. When the decision to treat the patient with a drug is made, the best drug for the patient is selected based on efficacy, safety, suitability, and cost. Then dose, route of administration, and duration of treatment are determined, taking into account the condition of patient. When prescribing a drug, the prescriber should provide proper information to the patient about both the drug and the patient's condition. Finally, the prescriber should decide how to monitor the treatment, after considering the probable therapeutic or adverse effects of treatment. The drug should then be dispensed to the patient in safe and hygienic manner, making sure that the patient understands the dosage and course of therapy; then the patient takes the drug. Adherence occurs if the

patient (and the community) understands and appreciates the value of taking specific drugs for specific indications (Quick et al., 1997, pp. 422-423).

2.4 Irrational drug use

The problems of irrational drug use occur in all countries. And Thailand is no exception. From my observation, the irrational use of drug in health centers include:

- No drug needed

Use of drugs when none is needed includes many non-therapeutic uses of pharmaceuticals. For example, treat minor upper respiratory infections with antibiotics; unnecessary and ineffective antimicrobial or antidiarrhea, instead of oral rehydration solution (ORS).

- Wrong drugs

There are the cases that use wrong drugs with right diagnosis. In some cases, wrong diagnosis lead to provision of wrong drugs to the patient.

- Ineffective drugs and drugs with doubtful efficacy

Excessive and unnecessary use of multivitamin preparation or tonics use for malnutrition is an example.

- Unsafe drugs

The example of this prescribing pattern is the use of anabolic steroids for growth and appetite stimulation.

- Underuse of available effective drugs

Available drugs such as ORS to treat acute diarrhea were usually underused at most of health facilities included health centers.

- Incorrect use of drugs

A common example is overuse of injections. Another example is giving a patient only one or two day's supply of antibiotics rather than the full course of therapy.

- Unnecessary expensive drugs

In some cases, the third generation drugs are used when a first choice is available and effective.

- Multiple drugs prescribing

Unnecessary numbers of drugs are used when fewer drugs can produce an equivalent beneficial effect. An example is prescribing Paracetamol, Chlorpheniramine, Tetracycline and Dextrometorphan to treat the common- cold.

- Over use of drugs

A drug may be given in excessive dose or for an unnecessarily long period.

2.5 Factors underlying irrational use of drugs

There are many interrelated factors, which influence drug use, and all can contribute to irrational use of drug in many ways. The factors comprise the drug supply process, the provider and consumer behavior and illness pattern.

The factors that should be considered as possible causes of a problem in drug use are as followed (Framework for changing drug use practices, 1999, pp. 4-5).

2.5.1 Characteristics of providers of care

- lack of knowledge about diagnosis, therapeutics, the efficacy and risks of particular drugs, etc;
- acquired habits in diagnosis and treatment which may not reflect what providers actually know, but the patterns of behavior they come to adopt;
- beliefs about illness and drugs, such as the increased power of injections over oral drugs, which also do not always reflect their level of scientific knowledge;
- personal economic motivations for prescribing particular drugs.

2.5.2 Interactions between patients and providers

- sociocultural attitudes and beliefs including social distance and cultural barriers between patient and provider, beliefs about illness, or provider beliefs about patient expectations;
- quality of communication which may be influenced by setting, by underlying beliefs and attitudes, by language barriers, or by a number of other factors;
- patient demand for specific drugs or forms of treatment (like injections).

2.5.3 Social structure in which providers practice

- authority and power relationships such as relationships with supervisors, criteria for performance evaluation, practices of opinion leaders and so forth;
- peer interaction and consultation by which uncertainties about treatment can be discussed or new knowledge disseminated;
- peer practice norms also are powerful determinants, since most providers like to feel that their practices reflect the accepted norms of their peer group.

2.5.4 Aspects of the work environment

- influence of drug availability, either due to purchase restrictions, irregular supply, overstocked products, etc.;

- limitations of the physical environment, such as lack of privacy for consultation during examination or dispensing;
- workload, which may limit the ability of providers to spend an adequate amount of time with patient, as the health personal have to do a numbers of records and reports, and other community works, as well.
- Institutional economic motivations such as the need to sell drugs to generate income.

2.5.5 Drug information and marketing

- lack of drug information
- influence of drug advertising

2.5.6 Patient and community

Although the knowledge and experience of the health personnel are important aspects, the patient's adherence to treatment is also important. Cultural beliefs, communication skills and attitudes, time for consulting, shortage of information, and community beliefs about efficacy of certain drugs or routes of administration are influencing factors involve in decision making process. For example, people believe that injections are more powerful than tablets, or IV fluid plus glucose can replace their energy. Some of them believe that injections and IV fluid can be used for all symptoms. Many people feel that one should take drugs only as long as symptoms are present. And one should stop taking medicines as soon as symptoms decrease.

2.5.7 Health system

- There is no effective drug information system for three target groups: controller, prescriber and consumer. And there is no data base on drug use, adverse drug reaction etc.
- There is no study on defined diary dose (DDD) at health center.
- There are many laws and regulations on drug but they are not used. There is no regulation to report drug use in health facilities. There is no monitoring and auditing system.
- There is no appropriate training on drug use for health personnel both in pre-service training (teaching in medical school, nursing school and public health collage) and in-service training.
- There is a serious ethical issue of prescriber and supplier.
- The decentralization allows provincial health authorities to consume more drugs from drug industry, which is rapidly growing.
- At health centers, there are standard treatment guidelines only for ARIC and diarrhea and not for other diseases.

2.6 Consequences of problem situation

- Increased morbidity and mortality due to avoidable treatment failures, diminishing the quality of drug therapy.
- Increased risk of unwanted effects such as adverse drug reaction.

- The emergence of drug resistance such as chloroquine resistant, plasmodium falciparum and penicillin resistance gonococci, multi drug resistant tuberculosis.
- Waste of resources leading to increased costs and reduced availability of other vital drugs.
- Psychosocial effects such as increased demand for drugs and to believe that there is “ a pill for every ill”.

2.7 Improving the problem situation

There are a number of different strategies to improve drug use. These strategies can be grouped into three categories:

- Educational approaches, which seek to inform or persuade prescriber or patients to use drug in a rational way;
- Managerial approaches, structure or guide decisions through the use of specific process, forms, packages, or monetary incentives;
- Regulatory approaches, which restrict allowable decisions by placing absolute limits on availability of drugs.

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Printed materials can be:

- mailed to prescribers;
- posted on health center walls;
- handed in person to prescribers and patients.

Using printed materials alone as the way to improve prescribing assumes

- (1) that the main reason for irrational use of drug is lack of information, and
- (2) if prescribers had the 'correct' information, their prescribing would automatically improve.

However there are many times that these materials are not even read by prescribers or patients.

On the other hand, printing materials, particularly ones that are well constructed with easy-to-read messages, are an essential part of total program that also includes more intensive and individualized education.

◆ Face to face education persuasion

One common intervention strategy is talking directly to prescribers. In many cases, face-to-face education is more effective than printed materials. This strategy could be effective in changing prescribing behavior and should be better when fit with existing supervisory system.

There are a number of reasons why face-to-face education is more effective than less personal approaches:

- Health workers remember and learn more when they participate in an active discussion rather than passive reading information.
- During face-to-face encounters, educators can assess specific motivations of prescribers for their practices, and adapt messages to relate to these motivations.
- Verbal agreement with an educator or a peer group about correct behavior can create psychological incentives for prescribers to conform to recommended practices.

2.7.2 Managerial strategies

◆ Selection and procurement

In general, larger drug lists are considered appropriate in settings with better-trained health workers (e.g., physicians), while health workers may only be able to prescribe smaller drug lists. Although not a solution in themselves, limited drug lists may be an important starting point in developing a more comprehensive program that also addresses appropriate use of drugs supplied.

There are two supply-oriented strategies, which is often used: the morbidity-based qualification and procurement review. Feeding back this information

to persons responsible for drug procurement is useful for correcting problems in procurement, although its impact on drug prescribing is uncertain.

- ◆ Prescribing and dispensing

It may be possible to create simple drug prescribing forms to correct common prescribing errors. This form could be combines both educational and managerial elements to improve prescribing, which could result in saving by reducing unnecessary drug expenditures.

Diagnostic and treatment guidelines can be used as a strategy to encourage prescribers to follow a rational decision-making process when deciding which drugs to use. The guidelines often work well for training less-skilled personnel to manage problems where differential diagnosis can be based on specific rules.

- ◆ Utilization audits and feedback to prescribers / supervision

A utilization audit involves collecting and analyzing data on past or current prescribing by health facilities, or individual prescribers.

The feedback of audit results can report the practices of individuals or of groups.

- ◆ Financing

Different drug pricing does not cause patients to stop taking drugs. A lower price for essential, effective drugs does not prevent both prescribers and patients from using a higher price non-essential ones.

2.7.3 Regulatory strategies

These strategies rely on rules or regulations to change behavior. They are intended to restrict decisions rather than to simply guide them, and are therefore usually designed to be inflexible. They are implemented on a system-wide basis, and their impact is often difficult to measure.

Regulatory approaches are designed to restrict decision making - - to remove choices about drug use behavior from the hands of prescribers, dispensers, or consumers and put them in the hands of policymakers or managers.

There are many areas of regulatory activities, including: -

- market control - - banning drugs that are unsafe or of doubtful efficacy, refusing to register products that are not cost-effective, etc.;
- licensing restriction - - enforcing regulations about prescribing by non-physician health workers, or pharmacy dispensing of prescription-only drugs, etc.;
- prescribing controls - - limiting certain drugs to particular types of prescribers, changing products from prescription-only to over-the-counter, etc.;
- dispensing controls - - requiring adequate product labeling, mandated patient counseling by dispensers, limiting the number of drugs dispensed per patient, limiting the number of days supply per drug, etc.

In general, each of the, above mentioned, three categories of intervention has its own strengths and weaknesses. The particular interventions in each category may be more or less effective depending on the circumstances. Some of the overall strengths and weaknesses of the interventions are summarized as followed.

Intervention	Strengths	Weaknesses
Educational strategies	<ul style="list-style-type: none"> ▪ works best if knowledge deficits are an underlying problem ▪ best results if message is clearly focused on specific issues ▪ more effective with single individuals or small groups ▪ repetition and reinforcement of messages strengthens results 	<ul style="list-style-type: none"> □ knowledge often cannot overcome system barriers □ disappointing results with broad messages and large groups □ can be labor intensive if there is a large target group □ transfer to staff or counter promotion by drug companies can dissipate results
Managerial strategies	<ul style="list-style-type: none"> ▪ work best when systems can be set up to make it easier to follow recommended behaviors ▪ can be used to support and sustain educational programs ▪ very effective if target group assesses own practices ▪ improved supervision can have positive spin-off effects 	<ul style="list-style-type: none"> □ open to abuse if administrative changes are not accepted by target group □ formularies, guidelines, protocols need periodic revision □ information systems may be hard to establish and maintain
Regulatory strategies	<ul style="list-style-type: none"> ▪ work best if safety is an issue, and problem behaviors are easy to isolate and eliminate ▪ frequently easy to implement ▪ can give powerful and rapid results for certain problems ▪ best if combined with other approaches 	<ul style="list-style-type: none"> □ frequently produces unexpected negative results □ may be open to abuse □ often difficult to enforce □ impact difficult to measure

(Arhinful, 1996, p.8-3)

2.8 conclusion

In this essay, I described some situation on irrational use of drug and suggested three categories of intervention to improve the situations that are educational strategies, managerial strategies, and regulatory strategies. An effective intervention combines elements from all three types of strategies.

In general, no intervention is final. There is always a need for sustained effort, further supportive measures, and additional refinements (Arhinful, 1996, p. 8-5). But I do hope that my essay, which is based on my experiences and observations, and lessons learnt, would lead to better drug use and better health.

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