CHAPTER II

LITERATURE REVIEW

In a view to explore the pattern of drug use in community and to develop a local URI management guideline with the involvement of the civil society, four related issues were reviewed.

I. Adult Upper Respiratory Infections and Antibiotics Use

II. Current Clinical Practice Guideline for URIs

III. Patterns of Antibiotic Use

IV. Civil Society and Health

I. ADULT UPPER RESPIRATORY INFECTIONS & ANTIBIOTICS USE

I.1 Upper Respiratory Tract Infections (URIs)

WHO (1992) describes ***Acute Respiratory Infection (ARI)*** as infections in area of the respiratory tract that includes nose, ears, throat, voice box, windpipe, air passages, and lung. Inappropriate management of infected cases may lead to dead, especially in young children and elderly.

The respiratory tract consists of two systems: the upper respiratory tract (URT) and the lower respiratory tract (LRT). The opening between the two systems is the glottis. The ***Upper Respiratory Infections (URIs)*** include many infection symptoms. Infections which used to cause from viruses are common cold (nasopharyngitis, rhinopharyngitis), acute pharyngotonsillitis (in case of infectious mononucleosis,

herpangina, and pharyngoconjunctival fever), laryngitis, infectious croup, and influenza syndrome. The infections mostly from bacteria are bacterial rhinitis (purulent rhinitis, peritonsillar abscess, retropharyngeal abscess, acute otitis media, acute paranasal sinusitis, and acute epiglottitis (Sayomporn Sirinawin, ed., 1996).

Majority of URIs, approximately 65-90%, are caused by viruses (Fauci, eds., 1998; Gwaltney, 1995; Mckane & Kandel, 1996; Sayomporn Sirinawin, ed., 1996; and Therapeutic guidelines limited, 1998). Even rhinosinusitis and mucopurulent rhinitis, which most of the physicians use it as criteria for antibiotic prescribing, are often caused by viral infections (Rosenstein, Phillips, Gerber, Marcy, Schwartz & Dowell, 1998).

URIs represents the most common infectious disease diagnosis for professionals visit (Bamberger & Jackson, 1995) and affects millions of people. In Thailand, acute respiratory infections pose a great threat to the health of the population due to its high morbidity (Suwit Wibulpolprasert, ed, 2000). The National Health Survey in 1996 shows that respiratory diseases were the most common acute health problem with 37.4% of all the patients (age 13-59 years) found during two weeks prior the survey, rising from 25.5% in 1991 (Prapapen Chuprapawan, ed., 2000). At the health facilities, the rate of acute URIs and other diseases of upper respiratory tract were also high compared to other diseases (MoPH, 1998). The rate of respiratory disease in outpatient who visits MoPH health settings was 424.9 per 1,000 population for the whole country population (exclude Bangkok). For in-patient, the rate of acute URIs and other disease of upper respiratory tract were 347.6 per 100,000.

In Bangkok, respiratory illness also became the cause of highest morbidity for out-patient, both in public and private hospital, with the rate of 138.47 per 1,000 population per year. Two previous community studies on Klong Toey community shown that URIs is the highest health problem in the area. The study of Ratana Somrongthong and Chitr Sitthi-amorn (2000) found that URIs is the highest problem found among adolescents (10-22 years) who had visited Klong Toey Health Center within 6 months. Another cross-sectional study of Alli (2000) found that 89.39% (118

from 132) of respondent had ailed during the past three months and most were affected by respiratory disease (34.7%).

Due to its high incidence, URIs have a big impact on both clinical and health care resources utilization. The morbidity of URIs is the dominant cause of school absenteeism (60-80%) and 30-50% loss from work, restricted activity, and bed disability (Sayomporn Sirinawin, ed., 1996). About US$8 billion is wasted every year on drugs used to treat the symptoms of URIs worldwide (Douglas, 1997). Although URIs are usually mild enough to be treated on an outpatient basis, the primary-care personnel, however, must be able to recognize their serious complications and able to identify potentially life-threatening infections of the head and neck (Fauci, eds., 1998).

I.2 Consequences of Antibiotic Misuse

As a rational for the etiology of URIs, the viral infection is unresponsive to antibiotics (Brent, Abbot, Kerr & Fergusson, 1977; Mckane & Kandel, 1996, Sayomporn Sirinawin, ed., 1996) and appropriate symptomatic treatment and self-care with non-pharmaceutical treatments are required. The unnecessary use of antibiotic may contribute to worsening of clinical outcome, accelerating the development of antibiotic-resistant bacteria, increasing of health care cost, as well as a negative effect on psychosocial aspect.

I.2.1 Clinical consequences

High use of antibiotic is costly and crates conditions favoring the proliferation of resistant organisms in that patient and throughout the community. This results in the use of more toxic and expensive alternative drugs (Dowell & Schwartz, 1997; Okeke et al., 1999; Stefani, 2000; Steinke & Davey, 2001; Therapeutic Guideline, 1998) and increasing mortality and morbidity from infectious diseases (Hart & Kariuki, 1998).

From the surveys to determine the patterns of bacterial infections in-patients admitted to hospitals in Thailand (Visanu Thamlikitkul et al, 2001), gram negative bacteria causing infections in year 2000 were more resistant to most commonly used antibiotics when compared with those in 1997. Continuous study to review the bacterial

resistance found in patients is needed since rapid progress in the development of new antimicrobial agents and their overuse have significant impact on the survival and sensitivity of the microorganisms.

In addition to the resistance issue, antimicrobial use frequently causes adverse drug reaction in the patients (Kaiser et al, 1996). From drug given to at least 100 patients, reaction from amoxicillin is the highest (51.4/1000 recipients), while sulfa drug causes 33.8, ampicillin 33.2 and erythromycin 20.4.

I.2.2 Economic consequences

The overuse of antibiotic for URIs is expensive since antibiotic can compose up to 25% of the cost of a patient encounter (Mainous III and Hueston, 1998). Compared to other drugs, value of antibiotic utilization in Thailand is the highest among others. In 1999, antibiotic consumption in Thailand was 5485.635 million baht, highest in penicillin group (1433.607 million baht) and cephalosporins (1022.657 million baht) (Drug control division, 2003). In 1995, the whole sale price of all drugs was 25,097.34 million baht and 5,769.38 million was for antibiotic or 22.6% of total drug value in Thailand. For hospital, in 1992, government hospital had 2.794 million baht for drug budget and 40% of it is antibiotic (HSRI, 1997). Millions of baht could have been saved from the system if antibiotic over prescribing and utilizing were reduced.

For the cost associated with antimicrobial resistance, it could range from $75 million to $7.5 billion per year (McCaig and Hughes, 1995). Antimicrobial resistance is really a critical health problem and an economic burden to society.

I.2.3 Psychosocial consequences

Unnecessary antibiotic prescribing has psychosocial effect on patients and physicians. An open randomized trial of prescribing strategies in managing sore throat (Little, Williamson, Warner, Gould, Gantley & Kinmonth, 1997) shows that legitimation of illness is an important reason for attending the doctor. Furthermore, patients prescribed antibiotics initially were more likely to think antibiotics were effective and inclined to come back in the future. Thus, practitioners should consider

exploring concerns and should avoid or should delay prescribing antibiotics with more effective doctor-patient communication to improve health outcomes.

On the physician side of psychological effect, Bradley (1992) found that antibiotic prescribing and respiratory diseases were most often associated with discomfort experienced by practitioners in regard to decisions on whether or not to prescribe the antibiotic. This suggested that doctors need education in how to avoid prescribing when it is not clinically indicated and he or she should be able to offer alternative treatments or non-drug alternatives to the patient.

In conclusion, URIs is a symptom complex of different syndromes, commonly found highly prevalent in community. In view of the fact that it is not always clinically clear that the causative organism is viral or bacterial, antibiotic was widely used for conditions that do no benefit. As a consequence, increasing of health care cost and antibiotic-resistant emerge from the excess antibiotic use. Practice guidelines or principles of appropriate antibiotic use for treatment of URIs in adults are to be established to overcome this problem.

II. CURRENT CLINICAL PRACTICE GUIDELINE FOR URIs

There exist a large number of guidelines for the treatment of URIs, especially for ***children***- as they are more often infected than adults. The main practical guidelines for outpatient care for the management of ARI in children established by the World Health Organization in 1992. They offer detailed instructions on recognition of the symptoms of respiratory infections and selection of appropriate treatment, including referral to hospital, antibiotic treatment, and care at home. Apart from this standard guideline, various guidelines or principles have been developed with the same objective to treat URIs in children as presented in the 20th Annual National Pediatric Infectious Disease Seminar held in New Orleans (Dowell, Marcy, Phillips, Gerber & Schwartz, 1998a,b; O'Brien, Dowell, Schwartz, Marcy, Phillips & Gerber, 1998; Rosenstein, Phillips, Gerber, Marcy, Schwartz & Dowell, 1998; Schwartz, Marcy, Phillips, Gerber & Dowell, 1998).

For **adults**, The Institute for Clinical Systems Integration, Minneapolis (1998) has developed **a guideline for viral URIs** to help clarify the appropriate diagnosis and treatment of colds. This guideline has its goals to: differentiate viral URI from more serious illness, minimize office visits for viral URI, decrease the number of antibiotic prescriptions for viral URI, and reduce inappropriate and potentially dangerous use of over- the counter drug. In addition, it provides educational tools and triage guidelines which will increase patient knowledge about effective home treatment and change patient expectations about antibiotic treatment. Therefore, it has the advantages of both freeing up precious office time for patients who are more critically ill and minimizing the practice of prescribing a drug traditionally just because a patient is being seen by a physician.

Another guideline produced for pharmacists giving advices on treatment of the symptoms of self-limiting upper respiratory tract ailments includes two flow charts with a set of preliminary questions to be asked—The "WWHAM" question for assessment (Porteous, Bond, Duthie, and Matheson, 1998). "WWHAM" stands for Who for?, What symptoms?, How long?, Action already?, and Other Medication?. The first flow chart is clear for the assessment of minor upper respiratory diseases and the recommendations for symptomatic treatment. Ears, throat, nose, head, face, and general symptoms are assessed with the WWHAM questions and then alternative treatments are advocated for each case. In the second chart, it starts with the same set of questions only different on steps in the decision-making level for the referral cases. This guideline would benefit pharmacists practicing in drug store and also other health providers for the assessment of URIs and finding appropriate treatment and recommendation as it is easy to follow and understand.

In the Therapeutic Guideline for Antibiotics (Therapeutic Guideline, 1998), the use of antibiotics for upper respiratory tract infection was also presented. This guideline separated generalized URIs as common cold or rhinosinusitis and specific URIs, such as acute sore throat, tonsillitis and otitis media. Paracetamol and adequate hydration were recommended to be a valuable symptomatic relief for generalized URIs as its etiology is viral. For the specific URIs, the guideline clearly stated from the accumulated evidence that benefits of antibiotics treatment are more limited and routine

use of antibiotics in these conditions should be avoided to limit potential side effects and to reduce selection of bacterial resistance both in individuals and in the community.

The Cochrane Collaboration has developed a Collaborative Review Group on Acute Respiratory Infections. This international group of over 100 scientists is sifting through medical literature for evidence of treatment efficacy and prevention of these respiratory infections. Up to 30 systematic reviews of therapeutic and preventive approaches were released from this group and launched for an update at the International Conference on Acute Respiratory Infections held at Canberra, Australia in July 1997. The launched of completed reviews has benefit on clinicians and administrators around the world (Douglas, Chair, 1997). This conference stressed on the importance of acute respiratory infection, as it is a leading cause of morbidity, especially in the developing countries. Therefore, there is an urgent need for systematic evaluation of existing knowledge about acute respiratory infections and a developing of new technology for disease prevention. In addition, this international conference also touched upon the problem of unnecessary use of antibiotics, which still are a matter of controversy both in the community and among primary medical providers to compensate uncertainties of diagnosis and prognosis. At the same time, symptomatic therapy is widely used but poorly evaluated. Finally, one conclusion from the conference is that rational guidelines for antibiotics prescribing need to be developed and steps taken to see that they are followed.

A series of 'Principles of appropriate antibiotic use for treatment of acute respiratory tract infections in adults' has been developed by a panel of physicians representing the disciplines of internal medicine, family medicine, emergency medicine, and infectious disease (Gonzales et al., 2001a). This comprehensive series of treatment principles was supported by the Centers for Disease Control and Prevention and launched in year 2001. Diseases included in the series for treatment in adults included acute pharyngitis (Snow et al., 2001a; Cooper et al., 2001); nonspecific URIs (Gonzales et al., 2001b; Snow, Mottur-Pilson and Gonzales, 2001c); rhinosinusitis (Hickner et al., 2001); acute bronchitis (Gonzales et al., 2001c; Snow, Mottur-Pilson, and Gonzales, 2001b); and acute sinusitis (Snow, Mottur-Pilson & Hickner, 2001d). The papers in these series aim to provide physicians with practical strategies for

limiting antibiotic use to the patients who are most likely to benefit from it. Background and specific aims of the principles and methods used to develop the principles were described in each paper.

For **Thailand**, the standard treatment for URIs was first addressed in **the standard treatment guideline for respiratory tract infection disease** developed by expert committee from Ministry of Public Health in 1990. Its latest version was presented in 1996. The standard treatment for URIs developed by expert committee of Thailand (Sayomporn Sirinawin, ed., 1996) includes the differential diagnosis for viral and bacterial infection, recommended drug use, and sensitivity of bacteria to each antibiotic, a suggestion for symptomatic treatment (such as re-hydration, rest, antipyretic and analgesic, decongestant, and lozenge) and counseling content for URIs patients. This guideline clearly stated that antibiotics is needed only for the case of bacterial infection, such as sinusitis, otitis media and epiglottitis.

Therefore, clinical practice guideline provides evidence-based recommendations for appropriate evaluation and treatment. It is a tool that guides clinical decision-making, especially for differential diagnosis of viral and bacterial URIs and for selecting the drug of choice.

II.1 Diagnostic Guidelines

Many diagnostic guidelines for URIs had been developed to assist health providers in differential diagnosis of the URIs cases. In general, physical examination including assessment of symptoms by considering the age of the patient and evaluation by a provider for symptoms of a serious illness and complicating factors are needed for URIs diagnosis (ICSI, 1998).

In an attempt to improve clinical sensitivity and specificity of physician's diagnosis, clinical decision rules based on physical signs and symptoms and historical were developed and tested (Gonzales et al., 2001b) and claimed to be effective in decreasing overall antibiotics prescription by more than 80% (McIsaac et al., 2004). Clinical scores for two bacterial URIs, where antibiotics are highly prescribed for, are

GAS score for Group A β-hemolytic streptococcus (GABHS) pharyngitis and number of signs and symptoms to diagnose sinusitis.

The most reliable predictors of GABHS pharyngitis are the Centor criteria, but more recent studies have combined the presence of three or four of the criteria which give a positive predictive value of 40%-60% and negative predictive value around 80% (McIsaac et al., 2004). The sensitivity and specificity of three or four clinical criteria for GABHS pharyngitis diagnosis are 75% and 75% respectively when compared to throat culture (Snow et al., 2001a). A sample of using signs and symptoms as a clinical prediction rule for GABHS sore throat (McIsaac et al., 1998b) is in Table 1.

Table 1. Predictors of GABHS pharyngitis

Symptom or sign	Score	Total score	Positive likelihood ratio
History of temperature or measured temperature > 38 °C	1	4	6.43
No cough	1	3	2.49
Tender anterior cervical adenopathy	1	2	0.84
Tonsillar swelling or exudates	1	1	0.32
Age 3 – 14 year	1	0	0.14
Age ≥ 45 year	(-1)		

Uncomplicated URI and bacterial sinusitis may not be distinguished solely by clinical features alone. The duration of the signs and symptoms, rather than their mere presence, best distinguish these two conditions (Chapter of Physicians, Singapore, 2000). Reviewing of Williams and Simel (1993) suggested that five independent predictors of acute sinusitis, including three symptoms (maxillary toothache, poor response to nasal decongestants, and history of colored nasal discharge) and two signs (purulent nasal secretion and abnormal transillumination) were the best predictors of sinusitis (Table 2). Combination of these symptoms and signs give quite accurate diagnosis compared to other type of clinical and laboratory exams. When none of these symptoms and signs was found, sinusitis could be ruled out.

Table 2. Independent predictors of acute sinusitis

Symptom or sign	Positive likelihood ratio	No. of signs/ symptoms	Positive likelihood ratio
Maximillary toothache	2.5 (1.2 – 0.5)	4	6.4
Purulent secretion	2.1 (1.5 – 3.0)	3	2.6
Poor response to decongestant	2.1 (1.4 – 3.1)	2	1.1
Abnormal transillumination results	1.6 (1.3 – 2.0)	1	0.5
History of colored discharge	1.5 (1.2 – 1.9)	0	0.1

II.2 Treatment Guideline

The selection of treatment is followed the precise diagnosis of disease. Appropriate treatment for viral and bacterial URIs is different.

II.2.1 Treatment for viral URIs

URIs is a self-limited symptom. Most cases of uncomplicated URIs in adults resolve spontaneously and symptoms typically last one to two weeks, where most patients feel better in the first week (Gonzales, et al., 2001b; Therapeutic Guideline Limited, 1998).

Home care both non-drug treatment (such as adequate rest, extra fluids, saline nose drops) and symptomatic drug treatment (e.g. throat lozenge, acetaminophen, mucolytic and antihistamine) are effective for reducing discomfort associated with the disease. However, combination of cough-cold remedies should be avoided (ICSI, 1998; Porteous et al, 1998; Sayomporn Sirinawin, ed., 1996; Therapeutic guidelines, 1998).

Antibiotics treatment in the viral infections does not enhance illness resolution neither reduces loss of work or prevents complication. Randomized placebo-controlled trials and results from meta-analysis studies suggested that there is a favorable outcome in the majority of URIs cases even when antibiotics are withheld (Gonzales et al., 2001a). From the review of Kaiser and colleagues (1996), no study has shown any benefit of treatment with antibiotics for **uncomplicated URI**, in addition antibiotics

treatment of adults with nonspecific URIs does not enhance illness resolution or change in day of loss work (Gonzales et al., 2001b).

Antibiotics also has no effect on discolored nasal discharge in acute **rhinosinusitis** (Mainous, Hueston and Eberlein, 1997) and use of expensive broad spectrum antibiotics for treating uncomplicated acute sinusitis is not recommended (Ferranti et al., 1998). Moreover, treatment with antibiotics does not affect the resolution of **cough** or alter the course of illness (Fahey, 1998). Its use is marginal for most patients with acute cough and may be out weighted by the side effects of treatment.

The large majority of adults with acute **pharyngitis** have a self-limited illness, which need only supportive care. Mar (1992) had done a systematic review suggested that antibiotics treatment does not reduce the symptom of **sore throat** nor against acute glomerulonephritis. Antibiotics treatment for sore throat only benefits in patients with Group A β-hemolytic streptococcus (GABHS) infection, which normally accounted for 10% of adult pharyngitis cases (Cooper et al., 2001).

In conclusion, several studies give evidence that antibiotics do not help for viral infection. Antibiotics do change neither the course nor the outcome and they do not prevent infectious complication (Dowell & Schwartz, 1997).

II.2.2 Treatment for bacterial URIs

Different guideline may suggest different details of criteria for case definition of bacterial infection and when to start using antibiotics. However, all of them are on the same basis that only patients who met criteria for being benefits from antibiotic use would be prescribed with the first-line antibiotics. Table 3 summarizes some criteria for bacterial infection in URIs, which may indicate the starting of antibiotics treatment.

Table 3. Differential diagnosis of bacterial URIs and recommended antibiotics treatment

URIs	Differential diagnoses	First-line antibiotics
Sore throat (Streptoccal pharyngitis)	Screen all patients for the presence of the four Centor criteria: history of fever, tonsillar exudates, no cough, and tender anterior cervical lymphadenopathy A clinical score of ≥4 (a score of 3 should be assessed in 72 hours) Antigen test (rapid strep kits) or culture positive	Penicillin V for group A strep throat Erythromycin if penicillin-allergic
Sinusitis	At least 10-14 days of rhinorrhea and persistent daytime cough without improvement, OR ≥ 4 predictive symptoms of toothache or facial pain, poor response to decongestants, history of colored nasal discharge, purulent nasal secretion and abnormal transillunimation results. (if 2 or 3 predictors present, a sinus radiograph helps to confirm or rule out acute sinusitis), OR Moderately sever symptoms meet the criteria –especially with unilateral facial pain, regardless of duration of illness	Amoxicillin/ amoxicillin-clavulanate no more than 10-14 days Trimethoprim-sulphamethoxazole if penicillin allergic
Acute Otitis media	Significant ear pain and/or bulging yellow or red tympanic membrane Otitis media with effusion (OME) that is accompanied by a new onset of local or system disease or with bilateral effusion If the diagnosis is ambiguous, do not treat with antibiotics. Reassess in 24-48 hours	Best choice and duration depends on the clinical presentation and prevalence of resistant organisms Amoxicillin for initial treatment Amoxicillin-clavulanate, cephalosporin, trimethoprim-sulphamethoxazole, or erythromycin if amoxicillin fail

II.3 Guideline Development

Standard treatment guideline (STG) is systematically developed statements to help practitioners or prescribers make decisions about appropriate treatments for specific clinical conditions. It benefits health officials, supply management staff, health care providers, and patients as well (Quick, eds., 1997). Practice guidelines were claimed to be an effective tool to help decision making of prescribers or dispensers, which finally lead to more rational of drug use for URIs treatment.

II.3.1 Effectiveness of guideline in changing behavior

Studies that implemented guideline for URIs found both pros and cons for using guideline to change behavior of practitioners. On the pros side, clinical practice guidelines offer an opportunity for introducing evidence-based health care into local practice and for influencing the commissioning of effective health care (Grimshaw & Hutchinson, 1995). In addition, the guidelines have potential for making a positive contribution to health care rationing through the better direction of resources and by limiting inappropriate variation in clinical practice. The application of guideline for deferring care of patients with respiratory infection symptoms increase more efficient resource management for ambulatory settings (Washington, Shekelle & Stevens, 2000). Moreover, antibiotic use for URIs in a health maintenance organization for the initial URIs diagnosis declined from 24% pre-guideline to 16% post-guideline (O'Connor, Amundson & Christianson, 1999).

A project run by the Inner South East Melbourne Division confirmed that physicians will change their antibiotics prescribing behavior if they find their practice departs from evidence-based national guidelines and they can reflect upon, and discuss the differences amongst themselves. The intervention in this project was mailing educational campaign and visit of project pharmacist to discuss campaign message with the physicians. The results show increasing of compliance with the recommendations of the 'Antibiotics Guideline' (De Santis, Harvey, Howard, Mashford & Moulds, 1994).

However, some studies were not succeeding in guideline implementation. Antibiotic use for during 21-day follow-up, clinic visit and cost of care to the health plan did not change after the use of URIs clinical guideline in health maintenance organization (O'Connor, Amundson & Christianson, 1999). Because of the complexity of prescribing process, a study has summarized that guideline will never be able to control behavior completely. Therefore, the value of guidelines in the process of rational antibiotics prescribing in general practice should not be overestimated. Instead, the guideline should help in choosing the best treatment, but each individual case needs to be judged as well.

II.3.2 Steps for guideline development

Illustrated with experiences from a comprehensive program on implementing evidence-based clinical guideline in primary care, five-stage framework for changing practice (Grol & Grimshaw, 1999) is composed of: i) development of a concrete proposal for change; ii) analysis of the target setting and group to identify obstacles to change; iii) linking interventions to needs, facilitators, and obstacles to change; iv) development of an implementation plan; and v) monitoring progress with implementation.

The New Zealand Guideline Group (NZGG, 2002) suggest seven steps for guideline process: i) guideline project selection; ii) looking at the internal data; iii) evaluating the medical literature; iv) defining the gap in ii) and iii); build a balance sheet; iv) putting the guideline into final form; v) guideline implementation; and vi) evaluation and measurement.

It is suggested that effective dissemination and implementation strategies of the guideline should be concentrated, rather than creating new guideline (Littlejohns et al., 1999). And as a general rule, Shekelle and colleagues (2001) suggested that guidelines should be reassessed for validity every 3 years.

II.3.3 Characteristics of a good guideline

A group of experts who have studied the problem of guideline implementation in Europe and United States suggest an effective way to gain greater acceptance of guidelines and to change the behavior of health care provider (Gross, et al., 2001).

The good guideline should be specific to target population. Different target population in different environments and cultures may need a different guideline and approach. For example, WHO ARI guideline was evaluated for its effectiveness for the presumptive treatment of streptococcal pharyngitis in Egyptian children. Results show that the guideline has a high specificity but low sensitivity that limits the unnecessary use of antibiotics, but does not treat 88% of children with a positive streptococcal throat culture who are at risk of rheumatic fever. Therefore, Steinhoff and others (1997),

suggested that prospective studies of treatment guidelines from many regions are needed to assess their use since the frequency of pharyngitis varies.

In addition, corporation of local experience in the process of guideline development is needed for a good guideline. Eventhough evidence-based medicine (EBM) has been suggested as a basis for the URI guideline development, several problems arise in the process. The most important problem is that EBM does not adequately grant the local experience, which is necessary in the management since the variability in bacteriology and susceptibility of antibiotics are different from setting to setting. (Niederman, 1996). Guideline can be more valid if it is developed using systematic reviews and explicit links between recommendations and scientific evidence (Grimshaw, Eccles and Russell, 1995). Moreover, good leadership, technical support, work of small-group processes of guideline development panels and the translation of evidence in to recommendations could also required for the successful development of valid guideline. Guidelines should be based on results derived from well-designed surveillance studies (Goossens & Sprenger, 1998).

Practice guidelines for physicians may be helpful if actively promoted and if perceived as a resource developed with their input (Schwartz, Bell & Hughes, 1997). Clinical guidelines for medical practice can be particularly effective when presented in the context of a specific educational intervention but seldom change practice when disseminated through publication in journals or on solicited mailed material (Grimshaw & Russell, 1993).

III. PATTERNS OF ANTIBIOTIC USE

Unless criteria were met, guidelines suggest not using antibiotics for treatment of URIs because antibiotics have no benefits on most cases. Nevertheless, practice of physicians, drug sellers and patients seem to be based on other rationale and their decision to use antibiotics appears to be a result of complex interactions among patients, physicians, and system factors (Butler et al., 1998; Gonzales et al., 2001b).

Studies of drug use patterns have been documented and indicate that **unnecessary use of antibiotics** is one of the most common problems of irrational drug

use (Grand, Hogerzel & Haaijer-ruskamp, 1999). Antibiotics are prescribed, dispensed and used for a variety of complex reasons. Pattern of drug use for URIs treatment and some related issue influencing the practice of patients, physicians, and drug sellers are summarized below.

III.1 Patient-related Issues

III.1.1 Self-medication for URIs treatment

Despite the existing of many treatment guideline, **self-medication** is a widespread behavior among Thais. About two-thirds to three-fourths of drug use in Thailand occurs at the household and the community level and drug use for respiratory tract disease was one of the three major groups for self-medication (Komatra Chuengsatiansup et al., 2000). Since the onset of the economic crisis in 1997, this group of people who spend resources on self-medication tended to increase and expense became less on institutional care, particularly at private facilities. Compared with other provinces, the people in Bangkok purchased drugs from pharmacies more frequently than rural people (Suwit Wibulpolpresert, ed., 2000). In addition, a study of health care seeking behavior of slum dwellers in Klong Toey (Alli, 2000) showed that 16.1% of them go to drug store when they have health problem.

Self-medication is the most common practices for 60-80% of health problems and often results in inappropriate drug use (Grand, Hogerzel & Haaijer-ruskamp, 1999). In community settings, 20 to 50 percent of antibiotic use is deemed inappropriate (Harrison and Lederberg, eds., 1998) In Thailand, with a big proportion of people taking medicine on their own, many studies show inappropriate behavior in drug use by customers. For example, purchasing drugs by compare shapes and colors, using leftover drugs, using drugs from other people who suffered from similar symptoms, and obtaining drugs without adequate medical information (Komatra Chuengsatiansup et al., 2000).

From the review of drug use in Thai community by Komatra Chuengsatiansup and others (2000), drug use for respiratory tract disease was one of the three major groups for self-medication and inappropriate drug use by customers. A study by

Population and Social Research Institution reveals that one-forth of the sample took antibiotics without proper indications and nine-tenths of the samples did not know the names of the antibiotics they took last time. Moreover, the study of drug intake in ARI patients before seeking care from health provider showed that 38.6% of them took antibiotics (ARIC section, 1997). At the same time, unconcerning of consumers about composition and indication of cough and cold remedies also leads to problem of taking same medicine with different brand name.

In the study of self-medication practices in Thailand (Charupatanapong and Rascati, 1992), 52.3% (157) of sample reported they had taken at least one medication in the past week, which 54.8% of it was self-medication. Cough and cold remedies (14.6%) and antibiotics (12.7%) were in the top five medications mentioned. When asking for symptoms for which they were most likely to use self-medication, symptoms related to URIs were highly reported with 79.7% for headaches, 49.0% for cold, 28.7% for cough, 22.7% for fever and 11.3% for sore throat.

Most of respondents know which medication to take for colds by their previous experience and previous doctor visits (27.7%), by asking a pharmacist (22.3%), and 5.3% knows by drug advertisement. This related to the source of advice that they would ask before they treat themselves for a cold. Most of them would ask pharmacist (45.6%) and drug seller (25.6%).

In the telephone survey of Pechere (2001) done in ten countries including Thailand, 53% of Thai patients claimed to finish the course of antibiotics. This number is lowest among other surveyed countries (maximum in UK. 90%). In addition to the use of antibiotics, 20% of Thai consumer would save part of the antibiotics course for their further use. Okeke and colleagues (1999) said that a patient may stock the desired drug, forgoing the expertise of a doctor in order to save time and keep drug-hunting to a minimum. This happened because unofficial sources are generally more accessible than official sources. The motives for self-medication and antibiotic overuse by laypersons are similar to those for clinical abuse by health professionals: to cut costs and act expeditiously to treat confirmed or suspected bacterial.

Among patients consulted physicians for URIs, 91% consulted for medicine, 36% went specifically for antibiotics, and 20% for injection. More than half of patients would accept non-medication treatment if their doctor advised (Chang, 1996). In the study by Butler and colleague (1998), a third of patients had a clear expectation of receiving antibiotics when they visited a physician. These patients would go and ask for antibiotics directly from health provider. The other two-thirds of patients would consult physicians for reassurance about their need for antibiotics treatment, but less of them really expressed their expectation to the doctor. They just waited and totally depended on whatever the doctor decided for them. These patients thought it was the doctor's responsibility to make a decision for the treatment.

In the study of Hamm, Hicks and Bamben (1996), 65% of patients indicate expectation for antibiotics. Those patients who were judged by a physician to have a viral URIs, 56% expected antibiotics. This percentage is not significant lower than the proportion of patients with sinusitis (66.7%) or bronchitis (70.8%) who expected antibiotics. For other medicines expected by viral URIs patients are decongestant 51.9%, cough medicine 37%, pain relief medicine 11.1%, others 11.1%, and do not expected any medicine 3.7% (Hamm et al., 1996). No association was found between a prescription for antibiotics and patient satisfaction. However, patient satisfaction did correlate with the patients' report that they understood the illness and that the physician spent enough time with them.

III.1.2 Factor underlying the use of antibiotics

Specific characteristic of patients

Chan (1996) found that Hong Kong patients who worked and knew the viral cause were less likely to worry and to demand antibiotics and injection.

Rely on what doctor prescribe

Butler and colleagues (1998) found that patients did not express their expectation to the physicians because they thought it was the doctor responsibility to make decision. Even though sometimes they did not expect the medicine, they would take the prescription. Similar study in Thailand also stated the same issue. From the

study of attitudes and beliefs about self-care and personal responsibility for health held by consumers in Thailand (Nawarat Charupatanapong, Kraisorn Chairojkanjana & Amnat Tanapaisalkit, 1996), it was found that, compared to Thai pharmacists, consumers preferred less of an active role in their health care. In addition, consumers believed that their health was under the control of 'powerful others' such as health care providers. Therefore, it is likely that Thai consumer will take advice of health provider in to account and rely on drug treatment than taking good care of themselves.

Knowledge about URIs and drug

Nearly 80% of adult patients believe antibiotics are effective for an URIs when discolored nasal discharge (Mainous III et al., 1997). Patients are concerned about the overuse of antibiotics, but often request antibiotics when their physicians believe they are unnecessary. Patients often administer antibiotics without physician knowledge and many patients have misunderstanding about which illnesses warrant antibiotic therapy (Palmer & Bauchner, 1997).

Belief that URIs would not resolve on its own

The reason why Thai patients would use self-medication to treat cold symptoms is that it gives fast symptom relief (82.7%), it is convenient, and because they believe that a cold needs medications (Charupatanapong & Rascati, 1992). In Hong Kong, the majority of patients who consulted for URIs at private clinic though that URIs would not resolve on its own (Chan, 1996).

Belief that antibiotics speed recovery

Through 5,379 interviewees on telephone interview and questionnaire in 10 countries, Pechere (2001) found different concern on antibiotic use. Among the positive features of antibiotics, most respondents believed antibiotics speed recovery (87%). In another study, half of URIs patients visited private clinic in Hong Kong thought that antibiotic injection would speed recovery (Chan, 1996), but 78% disagreed with the statement that 'taking multiple medications means faster recovery'. In a study by Hamm and colleagues (1996), 59% of patients believed that antibiotics would shorten the illness. Patients are eager to recover from illness as rapidly as possible so they can return to their daily routines.

Believe that antibiotics provide effective cure

Common cultural beliefs about antibiotics include the notions that there is a pill for every symptom; antibiotics can heal many illnesses (Okeke et al, 1999). Eighty percent of patients on telephone survey (Pechere, 2001) believed that antibiotics provide effective cure for their infection and 74% believed antibiotic is a strong drug.

Inadequate physician-patient interaction

Other cause of antibiotic abuse and selection for resistant bacteria is poor patient compliance from physician-patient interactions that are often inadequate (Okeke et al, 1999). Physicians have time pressure by their workload, at the same time, patients do not express their expectation to the physicians, and thus there is less conversation between them. On the other hand, those who would not use self-medication for URIs treatment would have different perception about disease and potential of drug. In Thailand, patients who do not practice self-medication for cold symptoms believe that cold is self-limited and needs no medication (34.0%), they do not like to take any medications (22.3%) and they are afraid of side effects (Charupatanapong and Rascati, 1992). The negative impression on antibiotics such as belief that antibiotic undermines natural immunity (59%), cause side effect during their last course (27%), and the effect is unpredictable (18%) and may lead to non-antibiotic treatment (Pechere, 2001).

III.2 Physician-related Issues

III.2.1 High prescribing of antibiotics for URIs

Although the relationship between antibiotic resistance and antibiotic use needs further clarification, one fact seems certain: physicians prescribe too many antibiotics (Wellbery, 1997). The International Conference on ARI (1997) estimated that 75% of antibiotics were prescribed for acute respiratory infections and many of these prescriptions were unnecessary due to most of infection is from virus, which did not need antibiotic treatment.

Data from the National Center for Health Statistics of US indicate that in recent years, approximately three fourths of all outpatients antibiotics have been prescribed for

otitis media, sinusitis, bronchitis, pharyngitis or non-specific URIs (McCaig & Hughes, 1995). Respiratory infections account for more than three quarters of the antimicrobial drug prescriptions written annually in physicians' offices. From 1980-1992 increasing prescribing measured by the annual drug prescription rate per 1,000 population was found for the more expensive, broad spectrum antimicrobial drug. Decreasing rates were observed for less expensive in narrow spectrum (McCaig & Hughes, 1995).

The study in nine hospitals of Bangkok in 1995 showed that 62.9% of inpatients in government hospital received antibiotics while 74.1% in private hospitals had (HSRI, 1997). Some district hospitals in Thailand, 38% of antibiotics for OPD patients were for URIs (Sayomporn Sirinawin, ed., 1996).

Variation in practice: Symptoms vs. antibiotics prescribing

Courses of unnecessary antibiotics are provided to millions of outpatients each year for the treatment of upper respiratory tract infections. According to unpublished data from the National Center for Health Statistics, antibiotics were prescribed in 1992 to over 70 percent of patients with pharyngitis not specified as streptococcal, over 50 percent with rhinitis, and over 30 percent with a nonspecific upper respiratory tract infection, cough or cold. Most of these conditions were of viral etiology; consequently, antibiotics had no benefits (Dowell & Schwartz, 1997).

Hamm and colleagues (1996) showed that antibiotics were prescribed to over 18% of patients with only viral infection and 75% of total patients received antibiotics for sinusitis and bronchitis. The rates are similar to those reported in some earlier studies by Kuyverhoven and others (1993) and Mainous, Hueston & Clark (1996).

In the study of Hueston and group (1998), antibiotics were prescribed for 98% of patients with sinusitis and 15% of patients with URIs. While the study in Dutch physicians (de Melker and Kuyvenhoven, 1991), 80% of sinusitis patients were prescribed with antibiotics, 29% in acute otitis media, 52% for acute tonsillitis and 59% for its recurrent. Furthermore, Ober (1998) showed similar results of 78% for sinusitis, 49% for tonsillitis, 64% for bronchitis, 43% for pharyngitis, and 31% for influenza.

In the study of Hueston and others (1998), erythromycin was the only antibiotic used significantly more often in URIs while sulfamethoxazole/trimethoprim was prescribed more often for sinusitis. The study in Dutch physicians (de Melker & Kuyvenhoven, 1991), showed that penicillin was mostly prescribed for tonsillitis, amoxycillin for acute otitis media, and doxycycline for sinusitis. The average day for prescribing was 7 days. Nearly all of Dutch physicians those prescribe symptomatic treatment would give nose drops for acute otitis media and sinusitis.

Advice given by physicians

The majority (95.2%) of family doctors in Hong Kong agreed that patients should be advised on self-management and 69.7% considered patients should be advised on self-medication for URIs (Lam & Lam, 2001a).

III.2.2 Factors underlying the prescribing of antibiotics

Many factors related to the high prescribing pattern of physicians. This includes the decision of physicians themselves, influencing from patients or even the environment, such as the available of drugs at health facility or the institute policy.

Difficulty in diagnosis

The first consideration of physicians when treating respiratory infections in adults is to assess its etiology whether it is bacterial or viral infection (Ober, 1998). Despite the existing of treatment guidelines, there were many problems related to the differential diagnosis between viral and bacterial infections and whether antibiotics should be used or not. In the study of Hamm and others (1996), physician diagnosis is one of three factors which influence physicians to prescribe antibiotics for URIs. Distinction between common cold and sinusitis is often difficult for physicians (Williams et al, 1992). Even the most astute clinician can not distinguish a "cold" due to infection with H influenzae, M catarrhalis, or S pneumoniae from a cold with no bacterial involvement (Kaiser et al., 1996).

Purulent discharge and diagnostic uncertainty were the most important factors leading to increase antibiotics prescribing (APUA, 1998). External regulatory factors such as formularies and peer review were said to exert little influence on prescribing

behaviors. Findings suggest that improved diagnostic methods and targeted educational campaigns aimed at improving diagnostic skills and increasing awareness of the antibiotic resistance problem will foster more appropriate antibiotic use. However, in the article of judicious antimicrobial use for common cold, Rosenstein and colleagues (1998) attempted to state that mucopurulent rhinitis (thick, opaque, or discolored nasal discharge) frequently accompanies the common cold. It is not an indication for antimicrobial treatment unless it persists without improvement for more than 10 to 14 days. Most episodes of viral rhinosinusitis follow a predictable course. Unnecessary antimicrobial therapy can be avoided by recognizing the signs and symptoms that are part of the usual course of this disease and thus are not suggestive of a secondary bacterial infection.

The problem in differential diagnosis leads to overestimation of bacterial infection in URIs, then the over prescribing of antibiotics. In the study of Roy (1985), the physicians overestimated the probability of a positive culture of group A. streptococci for patients with sore throat for 81% of patients and treatment decision were strongly associated to the diagnosis.

For sinusitis, physicians tend to rely on four factors to differentiate sinusitis from URIs. Only one of these has been shown to be a reliable predictor of acute sinusitis. This use of unreliable criteria may lead to misdiagnoses and inappropriate prescriptions for antibiotics because the diagnosis of sinusitis is strongly associated with the use of antibiotics (Hueston et al, 1998).

Lack of update knowledge

Knowledge is the basic for physician's practice. Physicians understanding clinical efficacy of drug are linked to their prescribing behavior (Ober, 1998). However, as seen in the study that doctor knew the evidence for marginal effectiveness of antibiotics for URIs, yet often prescribed for good relationship with patients. Therefore, more cultural reasons go beyond doctors simply not knowing of evidence from clinical trials (Butler et al., 1998).

Characteristics of patients and physicians

In the study to determine antibiotics prescribing for cold (acute nasopharyngitis), URIs (multiple or unspecified site) and bronchitis, it was found that female and rural practice location are independently associated with more frequent antibiotics prescribing. Black race was associated with lower antibiotics prescription rate. Meanwhile, patient's age, Hispanic, ethnicity, geographic, region, physician specialty and payment source were not associated with antibiotics prescribing (Gonzales, Steiner & Sande, 1997).

Lam and Lam (2001b) found that, in Hong Kong family doctors, physicians who were older, more senior, or in private practice were more likely to think antibiotics were useful for URIs and think their patients expect antibiotics from them. Therefore, these doctors may be targeted for continued medical education.

However, as the study found only type of practice (practitioner in single-handed practices) would prescribe antibiotics more often than their colleagues in health center, de Melker and Kuyvenhoven (1991) said the influence of the characteristic of physicians on their prescribing was small.

Clinical reasons

Many general physicians stated some individuals might benefit from antibiotics, thus they prescribed it (Butler et al., 1996; Hamm et al, 1996). Some said they diagnosed bacterial infection and considered the risk of bacterial infection sufficient to warrant an antibiotic. However, many physicians prescribed antibiotics because they felt that narrow spectrum antibiotics caused few problems on individual patient (Butler et al., 1998).

Unrealistic patients' expectation

Antibiotics are over prescribed for several reasons. Many physicians believe that patients expect antibiotics for their illnesses (Hamm et al., 1996; Schwartz et al., 1997; Hueston et al., 1998). Patients in the majority (60%) of ambulatory care encounters for the common cold were treated with antibiotics. This number may be lower than it should be as a consequent of underestimation of the number of common cold treated with antibiotics. Because existing evidences indicate that physicians may

code a condition that is likely to be of viral origin with an alternative diagnosis that would suggest a bacterial origin to satisfy patient expectations for antibiotics. Prescription for symptomatic relief medications with an antibiotics were filled only slightly more often than were prescription for antibiotics alone (Mainous et al., 1996).

There is a large degree of inaccuracy in the physicians' perceptions of the patients' desire for antibiotics. For 25% of the patients, the physician perception was inaccurate and for an additional 26%, the physicians were unsure about whether they expected antibiotics (Hamm et al., 1996). Physicians' medication advice and prescriptions were related to what the physicians thought the patients wanted. If they believe patients want antibiotics, 77% of physicians will prescribe, likely the physicians who are not sure, 72% of them will prescribe. On the other hand, 9% will prescribe eventhough they thought patients do not expected (Hamm et al., 1996).

Prescribing for good relationship with patients

Physicians may prescribe antibiotics in order to do something active and being as signal sympathy for patients (Butler et al., 1998). Another hidden agenda might be from their fear to lose patients to other doctors.

Time pressure

In one focus groups study, physicians said the major reason for over prescribing antimicrobial drugs is unrealistic patient expectations coupled with insufficient time to discuss with patients why an antibiotic is not needed (Schwartz et al., 1997). Time pressure can effect patient-physician interaction and led to overprescribing of antibiotics. Butler and others. (1998) stated that explanations of the distinction between virus and bacterium often led to perceived confusion. Thus, to save time, physicians might prescribe antibiotics instead of having conversation with their patients.

Financial incentive

Concern for financial implications of not prescribing antibiotics are more acute in a fee-for-service setting (Butler et al., 1998) or in the single handed practitioner (de Melker and Kuyvenhoven, 1991).

III.3 Pharmacy-related Issues

Drug store is an essential gateway for most of the Thai people who seek self-medication (Charupatanapong & Pascati, 1992; Komatra Chuengsatiansup et al., 2000; Suwit Wibulpolprasert, ed., 2000). Therefore, practice of dispensers at these drug stores should be considered as well.

Legitimacy for selling antibiotics

In most of developing countries, antibiotics can be purchased without prescription, even when the practice is not legal. Drug vendors usually have little or no knowledge of the required dosage regimen, indications, or contraindications (Okeke et al, 1999). In Thailand, antibiotics are non-prescription drugs, thus consumers can easily access to it without prior consulting with physicians. By law, antibiotics should be dispensed by pharmacist, but in practice antibiotics are also dispensed by non-pharmacist personnel. In addition, antibiotics can be found in Type II drug store (non-dangerous drugstore) or even a grocery, which are not allowed to have antibiotics for sell. Therefore, it is very easy for consumers to find an antibiotic in their community and quality of service from unqualified personnel is questioned.

Question-Advice-Treatment (QAT) by drug dispensers

The study of primary care treatment for URIs in Northeast Thailand (Osiri and Richards, 2001) compared questions asked, medicines dispensed and advice time by three groups of health provider- hospital physicians, pharmacists, and pharmacists with additional practice relevant clinical training. Satisfactions of the patients were asked for the service provided as well. Results indicate that pharmacists with additional training provided the most satisfaction in every aspect of satisfaction evaluated. More questioning was undertaken on current medications and drug allergies by the pharmacists with extra training. Antibiotics was highly dispensed over 60% by all providers. For advice, pharmacists with extra training gave advice to all of the patients with longer duration of advice time, significantly different from the other groups.

Another study done in drug store in Bangkok (Visanu Thamlikitkul, 1988), found that simulated adult client presented with fever and sore throat or rhinorrhea will receive antibiotics 36% of drug stores. Amoxicillin or ampicillin was commonly dispensed with incomplete course of treatment.

Another study done in Thailand found that when simulated clients requested 2 capsules of ampicillin in drug stores, 96.7% of providers sold antibiotics as requested (Social Pharmacy Research Unit, 1996). Moreover, incomplete course of antibiotics and over dispensing of combined preparations to relieve common cold is usually found at drug store.

The study of Pinyupa Plianbangchang (2000) explained that drug sellers mainly used their personal factors, which are their belief and attitudes as main determinants of intention whether or not to dispense antibiotics for general patients. In the specific case of common cold, attitudes alone could explain 78% of the total variations in intention. The more they have positive belief or attitudes towards antibiotics, the more likely they intend to dispense antibiotics. In addition, drug sellers who believe that there is a high competition among drug stores and said that patients do not influence their decision is more likely to dispense antibiotics. If we want to change dispensing behavior of drug sellers, we may need to start by giving a specific education for changing their attitudes rather than using law enforcement.

From the literatures reviewed, most of the studies about pattern of URIs treatment and pattern of antibiotic use were done in developed countries and many were focused in URIs treatment for children. Lack of understanding of pattern of drug use in the developing countries calls for more studies in this area, especially in the group of adult patients who are the first and foremost important persons to make decision for their own care. Within Thai context that patients usually practice self-medication, antibiotics are easily accessed and services were given by unqualified personnel, promoting rational drug use in community becomes a challenge problem for researchers and policy makers.

IV. CIVIL SOCIETY AND HEALTH

The concept of "Civil Society" was originated in western political ideas and it was introduced to Thai society in the past few years. Concept of civil society can be used as a conceptual tool to understand the emerging 'private, nonprofit organizations' and used as one strategy to reform health care system.

IV.1 Concept of Civil Society

Civil society can be defined as "an autonomous sphere of social interactions in which active citizen and groups from voluntary associations and informal networks engage in activities with public consequences" (Civic Practices Network, 2003).

Civil society has been defined differently among various scholars but there are common notions on the characteristics of civil society among various schools of political thoughts (Komatra, 2000).Civil society has often been defined in relation to other two dominant social institutions: State and the Market. It is the third sector or a private organizations that aimed at using their know-how to produce any benefits to public community. Their common characteristics are autonomous, voluntary, democratic, and private-for-public.

Components of a strong civil society comprises of three constitutive elements: civic consciousness, civic organization or bodies and civic network or public sphere (Bratton, 1994; Komatra Chuensatiansup, 2001). The **civic consciousness** is norms and values that encourage individuals to work together with trust, reciprocity, tolerance, and inclusion. The **bodies of civil society** is a voluntary association that comes in various forms with a collective event. Civil society can be a self-help group, local informal charity organization, or even a national legally registered group. Examples of civil society working in health system of Thailand are professional organizations, network of NGOs for AIDS, Drug Study Group, and groups of Community Health Volunteers. The **civic network or the alternative public sphere** provides opportunity for individuals to discuss and exchange their ideas in concerned issue. Through horizontal and vertical relationship of members, it is easy for civil society to achieve their goal effectively.

Civil society in Thai context means people who has common objective (civic consciousness) that becomes a partnership in any activity, with love, reciprocity and trust, under the management system that support interactive learning through action. It creates a "third power" beyond the state power and market power. Small groups of people distribute in community with networking can be a civil society, not necessary to have many people from the same area. Members of civil society strongly work together with both horizontal and vertical relationship (Suwit Wibulpolprasert, et al., 1997). Synergy of member's potential leads to efficiency of community development. This is the key to sustain any activities implemented in the community.

IV.2 Involvement of Civil Society in Research and Practice

In 1978, 134 health ministers from around the world signed the Alma Ata declaration that set a deadline for the year 2000 for achieving a level of health enable all of the world's people to lead a socially and economically productive life. Although this declaration is not succeed in 2000, the strategy to achieve the goal would be the implementation of primary health care, with its emphasis on **community participation** and tackling the underlying causes of diseases, such as poverty, illiteracy and poor sanitation. (Chowdhury & Rowson, 2000).

Community participation in Essential National Health Research is basically about the role of people in research, as direct or indirect beneficiaries, users, and subjects (Whyte et al., 2000). Professional societies and health care delivery organizations can provide materials to assist this process. Achieving it is consistent with good patient care and need not conflict with efficient patient flow, patient satisfaction, and cost-effectiveness. By forming effective partnership involving clinicians, public health officials and patients, we can prolong the effectiveness of currently available antimicrobial drugs and reduce the threat of antimicrobial resistance for patients today and in future generations (Schwartz et al., 1997).

There are several civil society organizations in Thailand that are working in the health area, such as HIV/AIDS, tobacco consumption control, consumer protection, anti-drugs, exercise, health care reform, and drug use. However, none of it has been involved in URIs or guideline development process.

In the guideline development, the **benefits** that can be obtained by involving civil society are as below (NZGG, 2002; Chitr Sitthi-amorn, 2005).

Reduce gap, redundancy, and fragmentation in practice: The involvement of civil society in guideline development brings the stakeholders and the end users in drug utilization process to share expectations and clarify views on each other's role in treatment practice. This will help in identifying gap of practice where no one provided, redundancy of work where different stakeholders perform the same role or task, and incomplete piece of work due to the fragmentation or lack of coordination among actors. Involvement of civil society, in turn, may contribute to a general consensus that clearly defines role of each actor for the best practice of health care practice.

Partnership and collaboration: As guideline will acknowledge and reflect cultural values of each partner.

Democratic participation: Guideline will facilitate increased community access to information about health and enhancing their understanding about health and increase grater sense of community ownership. A range of viewpoints will be taken into account in the guideline and this is an effective way to balance an over utilization of medical technology.

Equity and fairness: It is more likely to reach a shared understanding of the purpose and application of the guideline. Community member can make sure the impact of decision are taken into account, as well as content and terms used in a guideline will be widely understood not just only for the health providers.

Accountability: Guideline will be credible, usable, understandable and publicly available.

Acceptability: Participant's focus will be accounted, so that the guideline is more likely to be acceptable to all of them, their organization, and the community.

Ensure the rights of community members are upheld: Guideline has a role in making sure that community members have sufficient information to make informed decision and improve access to the appropriate health services. Guideline will be used as an evidence-based information for layman to argue for increased availability to services.

Holistic approach: The guideline will take into consideration the whole person, their beliefs, social, physical, emotional, spiritual and psychological needs.

IV.3 Barrier to Change

A participatory action research done in Klong Toey slum with an aim to prevent childhood diarrhea (Jongpiputvanich, Veeravongs, Wonsekiarttirat, 1998) points at some difficulty and challenging issues when conducting participatory research action. While purposed intervention sound theoretical, it faced with many factors affected community participation.

Heterogeneity of the participants: Slum dwellers came from all over Thailand and were from different cultures. This makes it difficult to bring them together into action groups as well as to build a social bond among them.

Social and economic problems lead to lack of interest in health: Problems of housing (avoiding eviction from the public land controlled by the government), poverty, low income, and limited employment opportunities were seen as important problem for participants than health problem.

No incentive for participation: About 30% of slum dwellers without family difficulties did not participate in the intervention program after they knew that they would not receive money or gifts, which they usually expected to get from every program carried out in the slum area. The findings from Formative study of this research also supported this idea. When asking the respondent of how to achieve more people into a campaign activity, most of them would state about different kinds of

incentive such as money, foods (lunch or snack), a gift – no matter what it is, but needs to be free of charge.

It is suggested that community culture, organization, family and occupational problems, the physical environment, and population migration needed to be assessed before implementing a study in slum community. Communities are not static, but interact dynamically with researchers and policy makers. They should be seen as part of reciprocal relationships and processes, rather that a restricted group with set characteristics (Whyte et al., 2000).