CHAPTER V

DISCUSSION

This chapter covers discussion of the patterns and predictors of antibiotic use among community members, health center physicians and drug sellers and the involvement of civil society in the development of local URI management guideline for adult patients. The chapter ends with the limitations of the study.

I. PATTERN OF ANTIBIOTIC USE FOR URI TREATMENT IN ADULTS

I.1. Pattern of Antibiotic Use among Community Members

I.1.1 URI incidence in community

The study results confirmed that URIs constitute a significant problem in these slum areas, and that, as elsewhere (Hamm et al., 1996; McIsaac et al., 1998a; Rutschmann & Domino 2004; Solberg et al., 2000), more than 80% of the URIs were of likely viral origin.

I.1.2 Knowledge and attitudes about URI treatment and antibiotics

The community members in this study confused about the presentation and course of URIs, just the same as in other studies of developed countries. The misunderstandings that bacteria causes common cold in the present study (83%) is higher than others studies (Bruan et al., 2000). Common beliefs that may lead to self-medication also shared in other studies including belief that cold needs medications and belief that antibiotic is a pill for all symptoms (Charupatanapong & Rascati, 1992; Okeke et al., 1999).

Despite the documented ineffectiveness of antibiotics for common cold, the results revealed misconception about effectiveness of antibiotics for symptoms like green rhinitis, cough and headache. These results are similar with a number of previous reports (Belongia et al., 2002; Bruan et al., 2000; Manious III et al., 1997). Consistent with the range of 27% - 87% reported by other studies (Eng et al., 2003; Hamm et al., 1996; Pechere, 2001), 57% of adult URIs patients in the present study believed that antibiotics speed recovery of common cold.

The results from the Formative study showed that people had their reasons and rational behind drug taking behavior. Though their behaviors or beliefs usually defined as 'inappropriate' by the academic person, it always 'appropriate' in their sense and situations. Three examples were the issue of incomplete course of antibiotic and issue of awareness on drug resistance. First, big proportion of people (76%) reported that antibiotic treatment can be stopped if symptom recovered. The possible explanation found was their belief that taking any kind of medicines too long (e.g. 5-7 days) leads to cumulating of toxic chemical in their body and cause health problems later on. Thus, they will discontinue antibiotic treatment as soon as they feel better.

The second example: Although 84% of adults with URIs correctly answered the question about drug resistance causing from the unnecessary antibiotic use, but they may not really understand about the developing of resistant strain. The results from the Formative study showed that the concept of 'drug resistance' in lay people applied to all types of medicine. For them, not only antibiotics but paracetamol or any common cold tablets can also cause drug resistance. People believed that taking unnecessary drugs or taking them for a long period may cause drug resistance and they will need a 'stronger' drug for their next illness. This belief links to the previous misconception that antibiotic treatment should be discontinued as soon as possible.

The third example: Nearly 90% of adult URIs patients believed that antibiotics cure sore throat. This belief may come from the 'generic' name of antibiotics in Thai language (*Ya-Kae-Ug-Seb = medicine to stop or cure inflammation*) that mislead people to think that it is the same as 'anti-inflammatory' drug and can be used for any symptoms with pain and swollen organs.

Based on some belief that all medicines that are available in the market were approved by the government and should be safe for people, half of surveyed adults reported that antibiotics are safe and so everyone can buy them for themselves. This misguided belief was associated with a lack of awareness of the dangers of antibiotics (Eng et al., 2003).

The results on attitude part support a previous survey of attitudes and belief of Thai consumers. The study by Nawarat Charupatanapong and colleagues (1996) found Thai consumers had less favorable attitudes toward receiving health care information /less actively involved in their health care and that education was the best predictor of the consumers' attitudes and beliefs regarding self-care and personal responsibility for health. The Thai health system may explain this situation as Thai patients usually show very high respect towards their physicians. In addition, drugs are widely accessible in community and people can get antibiotics without a prescription from the physician, thus, they may not be so concerned about taking care of their health (Nawarat Charupatanapong et al., 1996). Moreover, the lack of knowledge in health and drug use may also contribute to the higher trust of health professionals than their own ability.

I.1.3 Pattern of health seeking and antibiotic use for URIs

Health Seeking Behavior of Adult URIs

Regardless of types of URI, patients sought care in a step-wise fashion, relying on self-care at home initially and seeking care at drug stores and in clinical settings subsequently, a pattern shown previously in other studies (McIsaac et al., 1998a; Sirisinsuk et al., 2003; Vingilis et al., 1999; Yanagisawa et al., 2004). URI patients who visited a clinical setting most frequently chose a private clinic where care is usually more expensive than in other health care settings. The need to save time and to avoid losing income during a day spent waiting at a health center were the reported reason for this choice. The high use of private clinics in this slum area is unexpected as the study assumed that the poor will prefer to visit government health settings where they pay less or none.

Sources of Antibiotic Use

The treatment patterns did not differ by type of URI or point of care in the illness episode, but by source of care. Different from commonly held beliefs, patients self-medicated with antibiotics relatively rarely and unlikely to be a major factor of antibiotic overuse (Sturm et al., 1997). Instead, antibiotics were more frequently dispensed and prescribed by drug sellers and physicians in clinical settings, usually after patients had pursued self-care at home. These data are consistent with previous studies (Belongia et al., 2002; Calva, 1996; Eng et al., 2003; Gonzales et al., 2001b; Hamm et al., 1996; McKee et al., 1999; Puczynski et al., 1987; Rutschmann & Domino, 2004; Solberg et al., 2000; Sommet et al., 2004; Sturm et al., 1997).

With respect to care seeking and antibiotic use, neither patients, drug sellers, or clinicians in health care facilities consistently differentiated likely viral from likely bacterial URIs. Failing to differentiate the possible causes of illness has negative impacts for both viral and bacterial URI patient. Viral URI patients were more at risk of receiving unnecessary antibiotics after they decided to seek care at a drug store or health setting, leading to over-dispensing and over-prescribing of antibiotics for viral URI patients and unnecessary out-of-pocket expenditures. Bacterial URI patients delayed seeing a clinician and starting a needed course of antibiotic therapy, wasting time and effort in that way. When bacterial URI patients received care at drug stores and in clinical settings, antibiotics were under-dispensed and under-prescribed.

The observed similarities of antibiotic treatment patterns within different settings (home, drug store, clinical setting) and at different points in the course of illness (initial and subsequent treatment choice) may be due to patients' and providers' lack of ability to differentiate likely bacterial causation. It may also result from a worsening of viral illnesses later in the illness episode, justifying presumptive antibiotic treatment.

With respect to antibiotic treatment, the most appropriate care for viral URIs happens at home where antibiotics are generally not self-prescribed. Conversely, clinical settings provide the most appropriate treatment for bacterial URIs, although this is due to their tendency to dispense antibiotics indiscriminately. In BMA (government)

health centers, where no economic incentives for over-prescribing exist, half of the viral URI patients received antibiotics.

Other Medicines Used for Treatment of Adult URIs

Patients appeared to use medicines for symptom relief somewhat appropriately, with greater use of nasal preparations by viral URI patients and analgesics by bacterial URI patients. The high utilization of analgesics/antipyretics is similar to that observed in other surveys (Osaka & Nanakorn, 1995; Shankar et al., 2002; Vingilis et al., 1999). Cough remedies were used less frequently than other drug groups, although they were still frequently prescribed by health care professionals. Patients choosing therapy at drug stores without advice frequently purchased a nasal preparation that is a combination of an antihistamine/decongestant and paracetamol. This preparation is widely use among Thais since it comes in small package size (usually of 4 tablets), is cheap, and eases most of the symptoms of a common cold. However, most patients did not know that the drug is a combination preparation and frequently added other antihistamines or analgesics, which may lead to overdosing.

I.1.4 Factors associated with antibiotic use

Possible factors associated with antibiotic use found in this study are consistent with the review of Radyowijati and Haak (2003) on determinants of antibiotic use in low-income countries. Lack of appropriate knowledge, folk beliefs on antibiotic use, and use of untrained sources of advice were all associated with antibiotic use. However, in their review, little information available on characteristics of the users and their exact knowledge and ideas regarding antibiotic.

As adults were likely to believe that their health was under the control of 'powerful others' (such as physicians and drug sellers), it is likely that they will take advice on drug treatment, including antibiotics, given by their health provider rather than trying to learn for self-treatment. In addition, self-medication pattern of community members often parallel prescribing patterns of the health providers (Radyowijati & Haak, 2003). Hence, planned intervention to promote rational drug use

for adults may need to promote more self-reliance in health care for the patients as well as correcting the prescribing habits of the health providers.

I.1.5 Cost of URI treatment

For the population in the slum communities in our study (n=124,572), it could be estimated that 302,174 baht were wasted annually for unnecessary antibiotic use by viral URIs patients who self-prescribed antibiotic at home or in drug stores, and another 6,383,330 baht for unnecessary visits of viral URI patients cases to clinical settings. These figures only account for direct medical costs. Unnecessary use of antibiotics also contributes to increased prevalence of antibiotic resistance.

I.2 Pattern of Antibiotic Prescribing among Health Center Physicians

I.2.1 Pattern of antibiotic prescribing

The vast majority (90%) of URI patients who visited health centers in these two slum areas in Bangkok in 2001 likely had viral URIs. High rates of prescribing of symptomatic drugs, such as antipyretics/analgesics and antihistamines, for these viral URI patients would be appropriate according to the National Standard Treatment Guideline (1996). However, 60.3% of patients with viral URIs received antibiotics. In bacterial URIs, antibiotics were prescribed more frequently than symptomatic drugs to 89% of patients. Antibiotic prescribing rates for bacterial URIs in these slum communities were similar to those reported from developed countries (Dosh et al., 2000; Linder and Singer, 2003). For viral URIs, however, antibiotic prescribing rates were much higher than those observed in developed countries (9% - 46%) (Dosh et al., 2000; Linder & Singer, 2003; Steinman et al., 2003a,b).

I.2.2 Appropriateness of antibiotic prescribing

Based on estimates from the National Standard Treatment Guideline (1996), about 0.5-2.0% of viral URI patients who have high fever, severe cough, and/or abscesses would need antibiotics. High-risk patients, such as those with HIV/AIDS and intravenous drug users, may also need empirical antibiotic treatment. Proportions of these high-risk patients may have been underestimated in this study due to

underreporting of these co-morbidities. Nevertheless, 60.3% of patients with likely viral URI received antibiotics, a proportion far higher than expected, implying substantial overuse of antibiotics for most URI patients treated at these health centers.

Among patients with bacterial URIs who received antibiotics, selection and duration of antibiotic treatment were problematic. Antibiotics that were not recommended by the treatment guideline (amoxicillin-clavulanic acid, cefalexin, ciprofloxacin, chloramphenicol, tetracycline) were prescribed for 85.1% of these patients. About 4% of URI patients received tetracycline or ciprofloxacin, antibiotics which should be very carefully prescribed in women of childbearing age.

The average duration of antibiotic treatment among bacterial URI patients was 6.7 days and only 18% of patients received antibiotic treatment for 7-14 days. We cannot assess the appropriateness of failing to prescribe an antibiotic for 42 (10.7%) of patients with bacterial URIs as there might be many reasons behind that. However, 5-15% of sore throat causes by GAS and untreated case may lead to severe problem of rheumatic heart disease and glomerulus nephritis (Cooper et al., 2001). Although the prevalence of developing severe postinfectious sequelae is least in adults than children of age 5-15 years (Steer et al., 2002) and some bacterial cases may need only symptomatic treatment, rheumatic heart disease remain important problems in Thailand (Pruksakorn et al., 2000) and the effect of disease lasts long for patient's life. Overuse of drug is irrational either the under use, therefore, it is important that physicians should be able to distinguish URIs case who might benefit from antibiotic treatment from those who will not benefit.

I.2.3 Predictors of antibiotic prescribing

We found different predictors of antibiotic prescribing for viral and bacterial URI patients. Younger, male patients with viral URIs were more likely to receive antibiotics than others for viral URIs. This finding agrees with results from some (Linder and Stafford, 2001) but not all (Dosh, 2000; De Sutter et al., 2001; Steinman et al., 2003) previous studies. Younger patients are more likely to be infected with Group A β-hemolytic streptococci (GABHS), and some treatment algorithms recommend antibiotic treatment for younger patients with sore throat (McIsaac et al., 1998b). It may

also be possible that physicians tend to prescribe antibiotics more frequently because of concern about effects of illness on work loss in this population (Linder and Singer, 2003). Physician age and gender did not influence prescribing patterns, but employment status possibly did. Part-time physicians at the health centers include retired physicians and young medical doctors from other health settings. Because they practice in the community for only half a day for 1-3 days per week, they may perceive different prescribing needs than full-time physicians.

Ability to pay may contribute to the decision to prescribe antibiotics for viral and bacteria URI patients. The recent health system reform in Thailand introduced capitated payment for patients in the national health plan. Physicians may tend to prescribe more drugs for patients who pay out of pocket or are insured in the fee-for-service civil servant medical benefit scheme in order to compensate for lost of health center revenue due to care for patients under the national health plan. However, the high prescribing of might be seen as physicians' habit rather than the intention to raise the prescription cost because the higher cost of prescription in patient who received amoxicillin was not statistically differ from those who did not receive amoxicillin. This may also represent greater willingness to conform to patient demand for antibiotics when cost is not an issue. Dong and colleagues (1999) also showed that patients with URI in China who paid out-of-pocket received antibiotics more frequently, although they hypothesized that this might be due to these patients presenting later at health facilities with more advanced illness.

Other possible factors contributing to high antibiotic use for viral infections, but were not in the scope of this study, include the high-risk profile of the population, prescribing to satisfy the patients (Arroll & Goodyear, 2000), concern and overestimating on patients' expectation, afraid of superinfection, and cultural beliefs such as medicine is always needed for every patient and antibiotic is a magic pill.

I.2.4 Cost of unnecessary antibiotic use

Unnecessary prescribing of antibiotics for viral URIs is a serious and costly problem. It may increase antibiotic resistance in the community, rendering common antibiotics ineffective and causing a need for more expensive new antibiotics. For

individuals with viral URIs, the added cost of unnecessary antibiotic treatment was 43 baht per case. Based on average monthly total income and expenditures per household in the year 2001 from the National Statistical Office (2003a), this accounted for 10.8% of daily household income or 13.2% of total daily household expenditures and a total of 106,511 baht expended per year for unnecessary antibiotic treatment of viral URI patients at the two study health centers. The present study adds to existing knowledge on antibiotic use insights into prescribing patterns for adult patients with defined viral and bacterial URIs, consistency of observed prescribing patterns with National Standard Treatment Guidelines, factors contributing to these patterns, and financial costs of antibiotic prescribing.

I.3 Pattern of Antibiotic Dispensing Among Drug Sellers

The Simulated Client Method (SCM) has been used in many developing countries over 20 years to study behavior of health care provider in a first-hand way while minimizing observation bias. Information gathered through the use of SCM is accepted to be unique and valuable for policy makers (Larsson, 2003; Madden et al., 1997; Saowakon Ratanawijitrasin et al., 2000). This study used SCM to measure questioning, advice, and antibiotic dispensing of drug sellers.

Based on the GAS score, the scenario of patient with common cold used by the simulated client was clearly indicating no need of antibiotic treatment. However, the SCM in drug stores clearly showed that drug sellers usually dispensed antibiotics for URIs case without asking proper questions and without advice about disease and adequate information for drug use.

I.3.1 Questions asked before dispensing

Nearly all of the drug sellers (94%) asked questions to the simulated clients. This number was much higher than that studied in Africa where only 19% of drug sellers ask questions about the illness to their customers (Brieger et al., 2004). However, questions asked by drug sellers in the slum seldom were critical questions to distinguish cases likely to be viral URIs and bacterial URIs. Most of the questions were asked for a selling purpose only. This could reflect drug sellers' knowledge somehow

eventhough there was a limitation in assessing drug sellers' knowledge and attitude directly.

No differences were found in questions asked by non-pharmacist and pharmacist. This result was opposite to the study by Osiri and Richards (2001) that they found more questioning was undertaken on current medications and drug allergies by the pharmacist with extra training.

I.3.2 Antibiotic dispensing

Drug sellers dispensed antibiotics to 66% of the simulated common cold cases. This high rate was consistent with 36% to 97% of antibiotic dispensing in other studies done in Thai drug stores (Saowakon Ratanawijitrasin et al., 2001; Social Pharmacy Research Unit, 1996; Sunantha Osiri and Richards, 2001; Visanu Thamlikitkul, 1988).

The wide range of antibiotic dispensing for URIs might be caused from the different scenario used in each study. Antibiotic dispensing was higher for patients requesting for advice from drug sellers and lower in self-prescribed patient who already made decision of what medicine to purchase. As seen in the household survey results, 65% of adults who went to describe their URIs symptoms and asked for advice at drug stores received antibiotics, while only 24% of self-prescribed patient did receive antibiotics. The study by Brieger and group (2004) and Contopoulos-Ioannidis and colleagues (2001) also showed the same pattern of drug sellers' behavior. Therefore, it is clear that if the viral URIs patients solely depend on treatment decided by the drug sellers, they are at risk of receiving unnecessary antibiotics.

Apart from antibiotic dispensing, some dangerous or restricted drugs were found from SCM. In addition, drug usually dispensed in a form of 'Ya-chud' package, which is a mixture of different kinds of tablets in one drug envelop without proper labeling of drug name, indication, or drug administration. This dispensing behavior is dangerous, especially for the community members who seldom know about their medicines and tended to take whatever the dispenser gave them.

I.3.3 Advice given

Without proper asking of questions and high dispensing rate of antibiotics, drug sellers also failed to give advice and adequate drug information to their clients. Although drug sellers significantly gave more advice on how to take medicine when they dispensed antibiotics, specific advice for antibiotics (e.g. full course of antibiotic treatment, drug resistance) was rarely given out. Dispensing of antibiotics for viral URIs cases without advice given is really a problem for treatment at drug stores.

Other studies done in drug stores also reported that inappropriate recommendations regarding use of antibiotics and other drugs were very common in the studied drug stores (Brieger et al., 2004; Contopoulos-Ioannidis et al., 2001; Saowakon Ratanawijitrasin et al., 2001)

I.3.4 Factors associated with antibiotic dispensing

The high number of questions, either general questions or critical questions, asked were associated with higher rate of antibiotic prescribing by drug sellers. This seemed to be a rational behavior if the simulated case was not just a common cold like in this study. Therefore, more questioning of drug sellers may only be their attempts to legitimize their dispensing of antibiotics to the patients, not for the stage of case differentiation or for the decision making for appropriate care. The problem may also come from the lack of appropriate knowledge, economic incentives, fear of super infection and clinical failure, modeling practice of local physicians, and their limited communication skills (Radyowijati and Haak, 2003).

When accounting for the questions of cough, drug allergy, runny nose, phlegm, and fever, only the question of 'sore throat' was significantly associated with antibiotic dispensing by drug sellers. If 87% of the drug sellers really believed that antibiotics were needed for mild sore throat, as they dispensed it for the simulated patients, there was no difference between drug sellers and consumers as 89% of consumers believed that antibiotics cured sore throat. The overdispensing of antibiotics by drug sellers may implant a wrong information to their customers, whether they intend it or not, that antibiotics are needed for symptoms of common cold. Therefore, while physicians need

to perform well as a role model for drug sellers and patients, the drug sellers also need to behave appropriately as a role model for their clients.

By overall, as summarized in the paper of Brieger and colleagues (2004), drug sellers had two different roles depending on patients' behavior. One role is a commercial drug outlet or a business man to customers who have a clear idea of their own health care needs. On the other hand, drug sellers perform a role of health providers to patients who seek advice for their URIs symptoms.

II. INVOLEMENT OF CIVIL SOCIETY IN GUIDELINE DEVELOPMENT

The study intended to encourage an establishment of a civil society that includes all three potential groups in drug use cycle and assist them in developing a consensus on general recommendations for URI treatment. It was hoped that their participation in guideline development could help identify gap and reduce redundancy and fragmentation of treatment practice for URIs among them. However, this intention was not presently achieved. The barriers or problems found can be analyzed as the lack of three essential components of a strong civil society: civic consciousness, civil organization, and civil network (Bratton, 1994; Komatra Chuengsatiansup, 2001).

II.1 Barriers in Forming of Civil Society of the Three Target Groups

Overall, the community members and the health providers had no sharing of "**civic consciousness**", especially trust. **Trust, reciprocity, inclusion**, and **tolerance** between groups may not be enough for the forming of civil society, as reflected from some of the respondents during the interview in Formative study. Some physicians and drug sellers had negative attitude towards each other and their patients. The physicians viewed drug store as not being trustworthy for health information and care. Some complained about self-medication behavior of the patient at drug store and said that patients who went for treatment at drug store usually came to seek care at the health centers later with more severe symptoms and more difficulties to treat. On the other hand, some drug sellers expressed that the patients usually purchase medicines based on their friends' advice and their experiences rather than the advice from the drug sellers.

Therefore, there was quite a big gap between these three groups which leads to difficulty in inviting them to work together and form a civic organization.

In addition, there was no **"public sphere"** where these three groups can communicate and share their ideas together. Although some of them may have interaction at drug stores or at the health centers, it was not a public sphere that every participant can have **open and equal discussion**. By nature of the current health system, there is an **information asymmetry** between patients and providers and hence the providers act as patient's agent for treatment selection. And thus, it creates a situation of suppliers (health providers) induce demand of the consumers (patients).

Knowledge is power. With less information and less understanding in health and drugs issues, the patients always had no power to negotiate with the providers. The relationship between patient and health provider is now a **vertical relationship**, which does not promote dialogue and trust. Thus, the civil society of the three groups could not establish at the present study period. Regarding the situation and limitations, it may be more appropriate to set this as the ideological goal for further development.

II.2 Forming of Civil Society in Each Target Group

Though the civil society of all stakeholder was not presently established, the gap of current services and the best practice for URI treatment, redundancy of antibiotic treatment by drug sellers and physician, and fragmentation of URI treatment among three groups were identified in Chapter IV Results. In addition, the Klong Toey Health and Drug Use Network has been established in the community by the community members and a working team of health personnel at the Health Center has been formed for URI guideline development. No organization of drug sellers was constituted during the study period. Table 35 summarized the component of civil society in the community member group, health personnel at the Health Center, and drug sellers.

II.2.1 Klong Toey Health and Drug Use Network

Changes in society are usually fuzzy logic rather than a linear change. The logic of civil society forming is also fuzzy. It is difficult to identify which component starts first. Civil consciousness may come first and initiate the forming of other components.

Vice versa, civil consciousness may be a result after the forming of a loose organization and the members had gone through the learning process together (Komatra Chuensatiansup, 2001). In the forming of Klong Toey Health and Drug Use Network, raising civic consciousness was done prior, during, and after the forming of organization. When members of the Network had engaged in the meeting(s) and found the activities of the Network useful to their community, they helped distribute the information about the Network and call for participation from other community members. Therefore, all three components of the civil society (civil consciousness, civil organization, and civil network) were fulfilled.

Table 35. Evaluation of the forming of civil society in the study community

Components of civil society	Community members	Health Center physicians and health personnel	Drug sellers
1. Civil consciousness	✓ social capital + trust, inclusion, reciprocity, tolerance ✗ conflict, struggling, timing	✓ trust, inclusion, tolerance ✓ clear role + reciprocity ✗ passive role	- - ✗ trust, inclusion, reciprocity, tolerance
2. Civil organization	✓ voluntary association ✓ collective events in communal calendar ✓ everyday form of public life + prime mover ✗ managerial skill, group size	✓ everyday form of public life ✓ prime mover ✓ manageable group size - -	✗ none - -
3. Civil network of communication (public sphere)	✓ informal & formal networking ✓ chatting among neighborhood, at home, at community organizations ✓ community radio broadcast, newsletter	✓ formal networking ✓ background of health and equal discussion ✗ time and workload	✗ none

(✓) = exist/ available in a positive manner, (+) = exist/ available; (✗) = not exist

The **enabling factors** for the forming of the Klong Toey Health and Drug Use Network included some social capital, the existing of the voluntary members and the formal and information networking. The *social capital* of the community, such as existing of many voluntary groups and close relationship of people in community,

enhance the forming of the *civil norm* and *informal* (e.g. chatting among neighbors) and *formal networking* (e.g. Community Meetings). Although the issue of drug use was introduced by the research team, many of community members were enthusiasm in participating the activities and actively involved in distributing the Guideline and information to their neighborhoods and friends through different channels of communication that they had.

Apart from public places (e.g. market, community office, library), the collective events in community, such as Thai New Year and religious days, brought people together and open another type of public sphere for informal communication of people in community. Moreover, community radio broadcast and news broadcast in each community also helped in strengthening the network of communication and the dissemination of the intervention ideas throughout the community. With more open discussion between community members, they gained more ideas and understand each other more. This lead to their adjustment, cooperation, promoting trust, and tolerance of different ideas.

However, there are still some difficulties during the forming and working of this civil society. Some identified **barriers** were as follows.

- **Civic consciousness**: There was some dropout of the participants which might be caused from feeling discomfort because of *conflicts* between different participatory groups. Political conflict and conflict in concept as well as working style due to the fact that participants came from various groups in the community were found. These conflicts reduced trust and tolerance among participants. Moreover, with the nature of slum community, *struggling* with everyday life was already difficult for the people and kept them busy with their own problems like housing, firing, and jobs.

Therefore, a *right time* to approach the community is needed to promote the concept of 'health as a public problem' or 'all for health' to raise their concern. Their basic problems need to be rectified first before the starting of call for community participation from them. It may be difficult to deal directly with the conflicts between groups, but we may instead promote moral and civic education to cultivate the norms

(i.e. trust, reciprocity, tolerance, inclusion) and instill a sense of active citizen to the community members (Komatra Chuensatiansup, 2001).

- **Civil organization:** The *prime movers* or the key persons of the Network usually have other positions and responsibilities due to the loads of government's and NGOs' projects in the community, especially the Anti-drug project launched by the government during the study period. Thus, they could not put much of their time and effort to the Network as it should be. In addition, people lacked group working *skill* and managerial skill (NZGG, 2002) as they used to participate passively in the NGOs' or government's activities and had less experience in managing or coordinating things by themselves. It can be observed from the guideline development process that community members had difficulty and were unfamiliar with the way to conduct a meeting by themselves, how to conduct a meeting, taking note and summarize the meeting, as well as how to work as a group with other individuals. A very big group of people from 22 communities also made it more difficult for the Network to manage.

Therefore, in order to support the forming of civil organization, active and available prime movers have to be identified and there should be a strategy to increase managerial skill of the members (Komatra Chuensatiansup, 2001). In addition, it may be more appropriate to start a group with a small number of people (e.g. 1-2 community) first for a better management.

- **Civic network:** Although there were many public spheres for public communication, it has not been used much to promote mutual understanding of people in community about health and drug use problem. Hence, the Network may need to make the most use of existing public spheres that they have, e.g. community library, community square, temple or find an alternate network of communication that will foster a sense of community (Komatra Chuensatiansup, 2001).

- **Adequate resources needed:** Some members refused to continue participate in the Network when it was unclear about identified facilities and commodities (e.g. meeting place, campaign brochures), the working team, and supportive budget. Thus, in order to let the Network interact with the social process and policy process appropriately, adequate resources are needed for the team. Here,

resources include knowledge, man power, facility and commodity, not only financial resource.

II.2.2 Working Group at the Health Center

The working group for guideline development at the health center was established with the **enabling factors** as listed in Table 35. With their *clear role* as a health profession, physicians, nurses, pharmacist at the health center perform a certain level of civic consciousness. Their structure was easy to identify and manage as it consisted of a small number of health personnel and they worked on an everyday form of public life. The Health Center Director played an active role as the *prime mover* and helped identify his team to help develop the practice guideline. Formal meetings of the working team were the public sphere that physicians, nurses, and pharmacist communicated the progress on guideline development and discussed about their practices. Based on their similar status and information held, open discussion among the group members were easy to achieve.

Although this working group at the health center may not be explicitly seen as a civil society yet as they were performing more in the role of government health provider giving care to public (Figure 8), their existence is crucial for the further establishing a civil society organization of all three groups.

Limited time and *work load* were **barriers** for the physicians to participate in guideline development process (NZGG, 2002). In addition, problems of irrational antibiotic use for URIs were not highly prioritized as HIV/AIDS or tuberculosis problems by the physicians yet. Moreover, their role in developing the guideline and planning intervention were quite *passive* as they were not familiar with research process.

II.2.3 Drug stores: Private-for-private sector

The drug sellers were the least active group in this study. Their civic consciousness was low and no organization or network of communication existed for this group. The high *competitiveness* among drug stores and limitation on time were mentioned by them as barriers to participate in community activities. They posted

themselves clearly as a business man or a market sector that was run by private sector and the objective was to make profit for private sector (Figure 8).

Some drug sellers resisted the invitation of the author and guarded themselves explicitly during the visits at their drug stores. However, using knowledge as a tool to approach them was possible because these business men felt that they were not up to date so they appreciated the academic detailing provided.

Sector		Goal / Objective	
		For Private	For Public
Organization	Private	Market / Business	**Civil society/ The Third Sector**
	Public	Corruption!	State/ Government

(Modified from Fernandes, 1994: 342 cited in Komatra Chuensatiansup, 2001: 19)

Figure 8. Relationship between private and public sectors

As the concept of civil society is still new for Thai society and it has not been tested widely in the real setting, Komatra Chuensatiansup (2001) suggested that *research* could enhance participation of all stakeholders to learn together on this concept. On the issue of civil society and health, we could use research as i) a knowledge generating tool; ii) an educational tool; and iii) an empowering tool.

Phase I study of this research was used to generate knowledge about attitude, knowledge, and antibiotic use patterns in the community. The study encouraged all stakeholders in drug use system of the community to engage in Phase II study where we tried to learn together how to achieve the goal of promoting rational drug use by involving civil society in health research. At the same time, by involving the community members in the Klong Toey Health and Drug Use Network and in the development of local URIs management guideline, it was aimed that this may empower the individual to become meaningful citizen and could increase their social effectiveness. It was hoped that the community members, especially the marginal group in community, would be able to negotiate and ask for their rights in receiving appropriate URI treatment from drug stores and physicians.

III. LIMITATIONS

When interpreting the results of this study, following limitations should be acknowledged.

1. Misidentified of URIs cases

It is possible that the study misidentified URI cases during the household survey and prescription review at the health center. During the household survey, interviewers identified URIs case based on the presence of listed symptoms reported by the community members. As the patient may not remember or recognize some listed symptoms and may report it in both direction of having or not having that symptom. This can lead to either under- or overestimation of URI incidence in the community.

At the health center, identification of URIs case was dependent on the diagnosis or symptoms written in the registration book by physicians or nurses. Regarding the fact that URIs normally viewed as a common and mild disease, URIs case visited with chronic diseases or other severe diseases may not be documented with the diagnosis of URIs. Thus, it is possible that there is an underestimation of URI incidence at the health centers.

2. Misclassification of viral and bacterial cases

It is possible that the study misclassified URIs during the household survey and prescription review at the health centers.

In the household survey, a validated symptom scoring system (McIsaac et al. 1998b; William and Simel, 1993) has been used to classify URIs as viral or bacterial, limited the period of interest to 2 weeks prior to the interview to reduce recall bias, and, where available, used patient-reported physicians' diagnoses. However, the study did not have access to the clinical signs that would be used to differentiate bacterial illness in health care settings (tender anterior cervical adenopathy, tonsillar exudates, and abnormal transillumination findings). Because bacterial URIs may not always manifest with high fever, it was more likely to misclassify bacterial URIs as viral than vice-versa, which would have led to over-estimatation of antibiotic misuse for viral URIs.

However, the proportion of viral URIs classified based on patient-reported symptoms in the household survey was very similar to the finding identified based on record review at health centers.

In the prescription review at the health centers, physicians note only broad diagnoses in health center registration books, and detailed information such as clinical signs, duration of symptoms, and other clinical information, such as HIV infection and pregnancy, is limited. Overestimation of the prevalence of viral URIs may possible and thus of inappropriate antibiotic use. Nevertheless, viral URIs are estimated to account for 65-90% of URIs in adults (Dolin, 1998; Heikkinen and Jarvinen, 2003; MoPH, 1996; Therapeutic Guidelines, 1998), which is consistent with the 91% estimation of viral cases presenting for treatment in our setting.

3. Misclassification of medicine used

The study could not identify the generic names of most drugs from the household survey and thus could not assess appropriateness of the individual antibiotics taken. However, because tablets/capsules in the different therapeutic categories tend to differ in appearance, and because we either had samples of patients' drugs or patients' identification based on the pictures the interviewers presented, most medicines used should have been correctly identified.

4. Limitation to assess knowledge and attitude of health providers

Due to the time constrain of the physicians, willingness to answer of the drug sellers, and may be self-prestige of both of the physicians and drug sellers to express level of own knowledge, the knowledge and attitudes of health center physicians and drug sellers were not formally assessed. The study captured their actual behavior on drug dispensing and prescribing, which directly affect their patients than their attitudes and knowledge. Further studies may need to find a strategy to enhance more compliance in answering the knowledge and attitude test of both groups of providers. Using mailing questionnaires directly to the provider and acknowledge their reply with continuing education (CE) credit from professional organizations may overcome this problem.

5. Difficulty in inviting the private health providers to join the research

The study was not able to encourage the involvement of the private clinic physicians and drug sellers to the guideline development process, although the preliminary survey suggested that practices of the private health providers should be focused for behavioral change. The private clinic usually owned by a full-time hospital physician and it opens only in the evening, thus, it was difficult to invite the private physicians to join the meeting with the health center physicians and to join community activities.

It was also difficult to encourage the drug sellers, who usually viewed themselves as a business man, to come and join the research project that aimed at public problem. The high competition between drug stores and the high concern on their own business made the problem more difficult. Thus, the approaching strategy had changed to be a face-to-face education at the drug store instead of a meeting of drug sellers. Further study should focus more on incentive and strategy to involve the private health providers.

6. Concern about URIs and antibiotic use problem

The issue of rational drug use for URI treatment was not a self-identified problem from the community, but it was introduced to the community by the research team. Therefore, it may limit community involvement in guideline development and community activities in some group of the people. Despite that, many people still participated in the research project.

7. Generalization of the results

The study took place in low income congested communities in Bangkok. Our ability to generalize the present findings of patterns of antibiotic use among consumers and health providers in slum areas to other settings in Thailand or elsewhere may be limited and thus may be generalizable only to similar socioeconomic settings where antibiotics are widely available without prescription

The patterns of prescribing and the factors that influence prescribing in private health care settings or public hospitals may be quite different from the BMA Health Centers, due to institutional policies, pharmaceutical company marketing, and access to laboratory facilities. In addition, the high-risk nature of our population may influence the propensity to prescribe antibiotics as preventive therapies.

For the survey of drug seller's practice, only simulated case of drug purchasing with advice for common cold was used in this study. In order to get a complete practice of drug sellers, further study may need to add a simulated case of bacterial URIs and a case of self-prescribing patient.

The purposive sampling of study community for Phase II may limit the ability to take a lesson learnt in Klong Toey slum to implement in other communities. But because the main objective of Phase II study was to develop a network of people in community, the selection of previously known community with some social capitals was necessary. Although the generalization of data may be limited, this study had generated useful baseline information for future study in these studied areas.