

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

The last chapter is the conclusion of what was learnt in this community study and the recommendations for further study.

CONCLUSIONS

Two study phases were done in slum communities of Bangkok, Thailand to measure patterns of antibiotic use for treatment of adults (age ≥ 18) with URIs among community members, drug sellers and health center physicians; and to develop local URI management guidelines, by involving civil society in the guideline development process. It is hoped that the implementation of the guideline will reduce unnecessary antibiotic treatment at the community level. The following conclusions were drawn:

1. By conducting a study in three potential groups of drug users in the community, using both qualitative and quantitative methods, the study gave quite a complete picture of the patterns and predictors of antibiotic use for adult with URIs among community members, physicians and drug sellers in the slum communities. The results indicate important problems in the care of adults with URIs in all three target groups.

2. URIs constitute a significant problem in the communities. More than 80% of URI cases were of likely viral origin; 81.4% in the household survey and 91.0% in the health center survey.

3. Adult URI patients had misconceptions about URI treatment and antibiotic use in all categories measured. People were confused about the cause of URIs and

progression of the disease. They were able to select appropriate sources of care for fever, rhinitis, and symptoms that need physician care, but 62.8% would seek antibiotic treatment at drug store for symptom of sore throat. More than half of the community members had misconception about antibiotic: 51.8% thought antibiotics should be taken for less than 5 days; 73.9% believed they could stop taking antibiotics when symptoms subsided; 51.6% reported that antibiotics are safe drugs that people can buy for themselves. Many believed the following conditions required antibiotic treatment: sore throat (88.8%), green rhinitis (78.0%), cold (66.6%), and cough (51.1%).

The marginal groups, such as the elderly, the poor, persons with low education and the uninsured, tended to have less knowledge about URI treatment and antibiotic use than their colleagues in a higher socioeconomic bracket.

4. Adult URI patients preferred to be informed about health care information, but less likely to get involved in their care. They believed in other's ability to exert control over their health rather than their own ability. Younger patients, patients with higher education and patients with higher income had higher preferences for health related-information and got involved in their own care. The marginal groups (women, the elderly, low education, poor, un-insured) were more likely to believe that health professionals and luck had control over their health.

5. Physicians, drug sellers, and community members did not distinguish between patients with presumed viral or bacterial URIs in terms of the antibiotic prescription pattern.

6. Adult URI patients most frequently initiated treatment at home, and then sought treatment at drug stores or clinical settings. The patterns of health seeking behaviors were similar between patients with presumed bacterial and viral URIs. This resulted in unnecessary and more expensive antibiotic use among viral URI patients and delayed physician visits among bacterial URI patients.

7. Knowledge about URIs, appropriate source of care, antibiotic, and attitudes toward health care were associated with the initial source of care for adults with viral URIs. Adults with viral URIs who had misconceptions about URIs/ appropriate source

of care/ antibiotics, were less likely to prefer receiving health information, and believed more in the power of others in controlling their health, tending to seek advice at drug store.

8. Adult URI patients tended to conform to the advice of health care providers about antibiotic use. Patients who self-prescribed were less likely to get antibiotics than prescriptions given by drug sellers/ physicians. Regardless of the type of infection and point of care, only 3% of those that self-medicated at home and 24% of those who self-prescribed at drug stores included an antibiotic. On the other hand, 65% of patients seeking advice from drug sellers and 65% of those visiting a clinic received an antibiotic; these were consistent with results from SCM that showed 66% of simulated case requesting advice from drug sellers and 62.9% of URI patients visiting a health center reported having antibiotic treatment.

9. Physicians in the study slum communities treated viral and bacterial URI patients differently and the predictors of antibiotic prescribing differed for viral and bacterial URI treatment. Physicians prescribing antibiotics for 60% of viral and 89% of bacterial URI patients. Compliance with the National Treatment Guideline was 36.4% for treatment of viral URIs and only 1.7% for treatment of bacterial URIs. Regardless of diagnosis, amoxicillin was the most frequently prescribed antibiotics.

10. At the health center, among viral URI patients, those who were young (OR 3.62, 95% CI, 2.92-4.50; OR 2.17, 95%CI, 1.76-2.68 for age group 18-40 year, 41-60 year respectively), male (OR 1.47, 95%CI, 1.26-1.72), and self-paying (OR 1.19, 95%CI, 1.00-1.40) were more likely to receive antibiotics; part-time physicians were more likely to prescribe antibiotics for these patients. Among patients with bacterial URIs, those who paid for drugs by themselves were more likely to receive an antibiotic compared to patients covered by the national health insurance plan (OR 2.17, 95% CI, 1.15-4.09).

11. At the drug stores, without asking proper questions and giving adequate information on drugs use, antibiotics were dispensed for simulated common cold cases for 66%. A question of 'Sore throat?' asked by drug sellers significantly predicts their dispensing of antibiotics (OR 10.2, 95% CI, 1.3-81.8), after adjusted for questions of

cough, drug allergy, runny nose, phlegm, and fever. Most drug dispensed came in 'Ya-chud' form (75.5%) included dipyron (7.5%) or steroids (9.1%) in the package.

12. On average, bacterial URI patients spent more on treatment cost than viral URI patients and antibiotic added to the cost of the treatment. However, symptomatic treatment accounted for 47%-100% of the treatment cost. Treatment at clinical settings, especially at the private clinics, was the most expensive. Unnecessary use of antibiotics for viral URIs is a serious and costly problem. It costs 23-43 baht per case per episode.

13. The attempt to develop a local URI management recommendation with a consensus of community members, physicians and drug sellers was not presently achieved. The main barriers were the lack of civil society components, especially lack of trust among them and no public sphere for communication because of the asymmetry of knowledge/information between patients and providers.

14. A separate local URI management guideline/recommendation for community members and Health Center physicians were developed with an involvement of the 'civil society' at each setting. The Guidelines focused on the differential diagnosis of viral and bacterial URIs and promoted more on appropriate self-treatment at home for viral URIs. No civil society organization of drug sellers has been established. The main problem was their lack of civic consciousness within a group.

15. To establish a strong civil society to address health and drug issues in community, a strategy to promote the concept of health as a public problem is needed, and it needs to be introduced at the right time. This will guide the development of civic consciousness, identification of prime movers/ organization, and network of communication to address the problem. In addition, adequate resources, including knowledge, need to be allocated to the civil society for their activities and interaction with other sectors in community. Regular internal and external review processes will ensure effectiveness.

RECOMMENDATIONS

There was substantial inappropriate use of antibiotics for adults with viral and bacterial URIs in the congested urban study communities in Thailand. From the perspective of patients, this means wasting money for unnecessary and potentially harmful medicines and from the perspective of society this means risking loss of potent antibiotics through misuse. Therefore, a multi-faceted intervention targeting patients, drug sellers, and clinicians to reduce unnecessary antibiotic use in the management of URIs has high priority for the studied community.

The interventions should include strategies to empower the community members to be able to differentiate the likely origin of URIs, promoting appropriate patient self-management, and developing and implementing diagnostic and treatment guidelines by drug sellers and clinicians for their use. They should also take into account the economic incentives for each participant in the health care system. The recommendations for possible intervention to each target group are as follows.

I. Interventions for the Community Members

The target group for intervention in community members would be ‘marginalized’ peoples who tended to have misconception about antibiotic use and URI treatment and tended to depend on others rather than themselves, and thus, were at higher risk of taking antibiotics. The purposed intervention should focus on the strengthening of the community members to become self-reliant and able to make an appropriate decision in selecting a source of care for their URI symptoms.

In addition, it is recommended that the intervention include promotion of civic education and encourage peoples’ participation in community activities. Participation can empower people to act on their own behalf, helps people to articulate their problems, and to be active and responsible for their health. This does not mean that patients should be expected to solve their own health problems, but to recognizes that they are not simply passive recipients of health services, and entirely dependent on the knowledge of alleged experts (Whyte et al., 2000). Table 36 shows the possible type of intervention for community members and its entry points.

Table 36. Possible intervention to promote rational antibiotic use for URI treatment in community members

| Target groups | Possible entry points | Interventions | | |
|--|---|--|--|--------------------------|
| | | Educational | Managerial | Regulations/ Enforcement |
| Community members Target: 'Marginal group' · the poor · the elderly · women · low education · un-insured Other community members | | Focus: empower self-reliance, differential diagnosis of symptoms likely to be viral and bacterial URIs, decision making for appropriate care seeking, self-treatment with symptomatic drugs, dangerous of antibiotics, the necessary of full-course antibiotic treatment, civic consciousness | | |
| | Individual | Public relation with simple messages URI management recommendation | Availability of symptomatic drugs with proper labeling & Recommendations at home Promote moral leaders Reimbursement policy | - |
| | NGOs / community organizations / schools/ BMA District office | Educational campaign Curriculum | Availability of symptomatic drug & Recommendations at office/ in community Community outreach activities Mobilize social capital Create public forum Increase managerial skill | - |
| | Health centers | Clinic based patient education Drug counseling Home visit | Materials & information to facilitate provider-patient communication | - |
| Drug stores | Patient education Drug counseling | - | | |

The educational intervention will fill the knowledge and attitude gaps for those who lack knowledge or have misconceptions. Managerial intervention will encourage/ catalyze/ help the community members to perform the preferred behavior easier and have more active interaction with their health care providers. Patients usually viewed the educational materials given by physicians as a legitimate and felt they should adhere to it.

Policy makers may need to consider how to include the uninsured into the existing national health insurance scheme or modify the reimbursement policy that will facilitate access to appropriate source of care and symptomatic treatment for the uninsured.

The promotion of moral leadership in the community, the mobilization of social capital, and the encouragement of participation in community activities will fortify the civic consciousness of the civil society. Creating more alternative public forums (public sphere) and the facilitating of provider-patient communications will support the civic network (public communications) and lead to more open and equal discussion. Increasing the level of management skill of community members is needed for more effective management of civil society organizations.

II. Interventions at the Health Centers

All physicians in all clinical settings, especially the part-time physicians at BMA health centers, private clinics, and hospitals will be the target group for intervention to reduce antibiotic prescribing (Table 37). The focus is the involvement of local input in the development of evidence based recommendations for diagnosis and treatment (clinical practice guideline) backed by professional societies; materials and information to facilitate physician-patient and, where possible, physician-pharmacy communication. More dialogue and trust between physicians and drug sellers needs to be promoted in order to have a peaceful society and a strong civil society.

Overcoming barriers to more rational prescribing for physicians will need development and implementation of effective materials to support change and development of supportive structures in the health settings (Belongia and Schwartz, 1998). Implementation of a clinical practice guideline along with other types of interventions has been proven for its effectiveness. It is important that the developed guideline and the systems include the local input from the end users and that they accept the measures as important, relevant to their own practices, and fair enough. The clinical practice guideline does not have to be complex. Even a one-page academic sheet summarizing the principles of antibiotic use for the physicians can reduce unnecessary antibiotic prescribing (Visanu Thamlikitkul & Wisit Apisitwittaya, 2004). The use of a rubber stamp with a set of clinical scores (e.g GAS score, sign and symptoms of sinusitis) will help reduce diagnostic uncertainty for the physicians, especially at the BMA health center where laboratory facilities are not always available to confirm the cause of infection.

A routine prescription review and feed back to physicians regarding their own antibiotic prescribing habits has been a successful technique for achieving prescribing behavior change. Physicians whose practices deviate from the best practice as indicated in the clinical practice guideline should have the opportunity to voice their own concerns and provide feedback. They should not be blamed in person, but rather the health team needs to review the guideline and the care system to determine if there is any condition that does not support the best practice of the providers.

Table 37. Possible intervention to promote rational antibiotic use for URI treatment in physicians

| Target groups | Possible entry points | Interventions | | |
|--|--|---|---|---|
| | | Educational | Managerial | Regulations |
| Physicians Target: · part-time physicians · all MD · private clinic & hospital | | Focus: differential diagnosis between case likely to benefit and not benefit from antibiotic treatment, prescribing of first line antibiotic, more communication with patients and participation in community activities | | |
| | Directors of Health Centers BMA Health Office | Lunch symposium Differential & treatment practice guideline with local input & evidence-based backup Academic detailing | Prescription review & Feedback on practice & Peer review Development of differential & treatment guideline Implementation & Monitoring Diagnostic rubber stamp Incentives & Rewards Materials & information to facilitate provider-patient communication | Review policy for unintentional overuse of antibiotic |
| | Professional organizations | Continuing education Educational materials for MD/ patients | Support the development and dissemination of clinical practice guideline Peer review | - |
| | MOPH | Continuing education Educational materials for MD/ patients | National guidelines database Reimbursement policy | - |

To further assist the process of developing a useful guideline, New Zealand Guidelines Group (2002) suggests the establishment of a national guideline register to keep a record of all guidelines, and a national guideline database that includes a mailing list of people or groups wishing to be involved with the guidelines. In addition, a

national guideline clearinghouse can be created so health facilities or people with shared interests are able to contact each other.

Materials and information to facilitate physician and patient communication can reduce incorrect assessment of patients expectation of antibiotics, and increase patient satisfaction and trust between providers and patients. The materials could be in pamphlet form for patient education, a prescription pad or physician's order form including recommendations for symptomatic treatment for patient with viral URIs and suggestion for complete course of antibiotic treatment for patient with bacterial URIs prescribed with antibiotics. The medical providers should also actively seek opportunities for community partnerships to disseminate similar messages for their patients widely to other community members, e.g. disseminate through community organizations, schools, and drug stores.

As self-payment patients are usually prescribed antibiotics, policy makers at the MoPH should think about a reimbursement policy that will facilitate the access to appropriate drug treatment for the patients while reducing incentives for antibiotic prescribing in the physicians.

III. Interventions at the Drug Stores

Regarding the fact that most URIs patients in the community seek health care at drug stores, there is an urgent need to reform this sector. All personnel in drug stores, especially the untrained, are a target for intervention. The focus of intervention is the development and implementation of materials and systems designed to ensure that critical questions for case differential diagnosis will be asked by the drug sellers, and appropriate symptomatic treatment will be dispensed along with complete information of drug and self-care for the patient (Table 38).

A management guideline or a poster of recommended 'Question-Advice-Treatment (QAT)' for URI treatment will increase the potential of drug sellers to identify the bacterial URIs cases that need to be referred to the physicians, and treat the viral URIs cases who seek for their advice appropriately. Drug sellers should also be

able to give necessary information for symptomatic drug treatment and stop the purchasing of antibiotic in self-prescribed patients.

Table 38. Possible intervention to promote rational antibiotic use for URI treatment in drug sellers

| Target groups | Possible entry points | Interventions | | |
|--|--|--|--|--|
| | | Educational | Managerial | Regulations/ Enforcement |
| Drug sellers Target: · all drug seller · untrained drug personnel | | Focus: differential diagnosis between case likely to be viral or bacterial URIs by using appropriate questioning, symptomatic drug dispensing with advice for drug use, referral of the patient to clinicians | | |
| | FDA/ MOPH | Training 'QAT' for URI treatment Up-to-date practice recommendations | Reimbursement mechanism Support resources for guideline development | Routine SCM Inspection of pharmacist on duty and dispensing of dangerous/ prescription drug |
| | Professional organizations e.g. Pharmacy council, Community Pharmacy Association | Training 'QAT' for URI treatment Up-to-date practice recommendations Continuing education Face-to-face education / academic detailing | Support resources for guideline development | Regulation about pharmacist's morals Requiring of continuing education & licensing |
| | Physicians | Role model | Materials & information to facilitate physician and drug seller communication Referral system | - |
| | Community members NGOs/ Community organization | - | Quality assurance by the individual patient and community | - |

Many forms of education for drug sellers could be used to update their knowledge of diseases and medicines. The issue of linking continuing education and the practice of a pharmacist with the licensing process may need to be discussed more among responsible organization and the affected institutes/ individual. However, the goal of licensing should focus on the quality assurance of pharmacy practice and safety of drug use for the society.

As the adherence to law and regulation of drug stores is quite low, interventions for this target group may need to stress the enforcement side as well. An adaptation of the SCM technique for routine use is recommended to ensure the quality of drug sellers' practice (Madden et al., 1997). The inspection of steroids and dipyron dispensing without prescription, dispensing of Ya-chud, and the lack of pharmacist being on duty is suggested though it may have a short effect and not sustainable.

The physicians can promote more rational dispensing of drugs by drug sellers by being aware of their own prescribing behavior, as drug sellers usually view the physicians as their role model for drug use. At the same time, as the person who is directly affected by the quality of care presented by drug sellers, patients should actively ask for drug information and advice if it has not given by drug sellers and they should refuse to purchase antibiotics, Ya-chud, and other dangerous drugs dispensed by drug sellers.

IV. Intervention for the Civil Society

Although the civil society of all stakeholders could not be established presently in the study, it is recommended that this concept should continue to be supported as a 'mean or process' to reach a consensus on general management of URI treatment among community members, physicians, and drug sellers.

The concept of civil society or involvement of community with other sectors is being used and encouraged by many organizations. Several terms like 'Public-Private Partnership' (Nishtar, 2004; Reich, ed., 2002), 'community participation' (Whyte et al., 2000) or 'ACANGO (Academic NGO)' (Tugwell, 2004) were initiated and being used by different institute, but with some common concept of partnership of stakeholders. The 9th National Economy and Social Development Plan (2002–2006) of Thailand also included this concept as one of the strategies for health development and encourage the private sector to get directly involved or become partners in various forms of health care delivery with emphasis on quality and appropriate price.

Strategies for the development of civil society would be the promotion of the three components of civil society to the community at the right time. To engage the

civil society in health development, reorientation of health system is needed by expanding definition of health to a more bio-psycho-social and by pluralization of policy processes that will bridge the gap between the intended health system and the existing situation (Komatra Cheunsatiansup, 2000). In addition, the policy makers may need to consider the approaches needed to strengthen the civil society by considering a clear policy and plan, legal facilitation to legitimize the roles of civil society organizations, coordinating mechanism or networking to facilitate the collaboration, financial support, encouragement of philanthropy and voluntarism, and the creation of information systems to facilitate cooperation with civil society (Komatra Cheunsatiansup, 2000). When these strategies succeed in a model testing at the local setting, policy makers should consider scaling up the local initiatives to larger national agenda and create greater policy impact.

In the system where the community members have sufficient knowledge and are able to do self-treatment, most of the URI cases would seek symptomatic treatment at a drug store and only a small number would visit a physician for confirmation of a diagnosis and antibiotic treatment. This will help reduce patient load at the clinical setting and enable the physicians to pay more attention to severe patients. At the same time, drug stores will gain benefit from increasing numbers of patients who come to seek symptomatic treatment at drug store.

When it is a win-win situation for all stakeholders, trust and reciprocity will occur among them. It will contribute to the civic consciousness and establishment of civil society in the targeted community. Here, a short term benefit for the patient is from the reduction in unnecessary visits and antibiotic treatment. In the long term, it is possible that the rate of resistance will decrease and it will improve the health and cost outcomes of the patients (Belongia & Schwartz, 1998). In addition, a civil society for health and rational drug use could be established and lead to a loving and peaceful community.