A STUDY ON HOUSEHOLD CATASTROPHIC HEALTH EXPENDITURE IN NAKHON SAWAN MUNICIPALITY

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ABSTRACT

The universal coverage policy in Thailand since 2001 provides health care coverage to all Thai citizens through three main government health insurance schemes: the civil servant medical benefit (CSMBS), the social security (SSS) and universal coverage schemes (UC). After the policy implementation, many studies revealed that Thai's households paid less out-of-pocket (OOP) for health care, however, indirect household OOP related to health care still causes household financial burden particularly on the poor households.

The objectives of this study were:

1. To explore equity in health through household OOP health expenditure, among urban inhabitants in different socio-economic status, health insurance scheme and residential area.

2. To identify causes of household catastrophic health expenditure (CHE) in Nakhon Sawan Municipality (NSM). and

3. To find actionable policy recommendations for improving on health care system in urban setting.

The first study employed a cross-sectional survey by using face-to-face interview technique. Health personnel from six primary care units (PCUs) in NSM were trained to be interviewer. Interviewees are the representative of sample households selected by multi-stage random sampling technique. Five poor and five

non-poor households in each community were randomly selected from the household lists of the six PCUs. Descriptive statistics was used to describe household characteristics and the relationship between factors with CHE was confirmed by using logistic regressions. Then fallowed indexed cases who facing with CHE household to explore causes of household CHE. The face to face interview was conducted by using structural interviewing form (created by main researcher). And finally, In-depth interview was used to interview with health administrators, private entrepreneurs and other health care workers to find alternative options to improve health care systems in an urban setting.

Results from the survey, there were 406 sampled households with 1,421 household members and 340 individuals who reported illness within the last month. Both the poor and the non-poor groups reported hypertension, diabetes and common cold as the most common ailments. Most samples sought care at a regional hospital, then PCUs, drug stores and private hospitals respectively. Household OOP for medical cost was most frequently paid to drug store and private clinics. The direct non-medical cost was mostly paid for transportation and food. Factors related to CHE were: using CSMBS card, using public hospital, private hospital and private clinics. Furthermore, CHE was related to non-medical cost and time loss for indirect cost. Results from qualitative study showed users' and providers' views. Barriers in access to care was a key factor that led health care cardholders sought care not covered by their insurance scheme and caused catastrophe in the users' view. In the providers' view, a key factor emerging from content analysis was "problems of health care providers in providing health care services". It reflected perceived quality on health care services in NSM under the UC policy. And the last results from in-depth interviews, there are 3 options recommended to improve health care systems in urban setting. The first option is public-private mixed system, the second is Multi-disciplinary Family Care Team (MDFCT) and the last is Comprehensive Primary Health Care (CUP Split).

CONCLUSION: Catastrophic rate of the poor was 12.5 and 30.4 percent from direct and non-medical cost respectively. The rates for the non-poor were lower than the poor. Causes of CHE was related to non-medical cost and time loss for indirect cost. Barriers in access to care was a key factor that led health care cardholders sought care not covered by their insurance scheme. To improve health

care systems in NSM to be more accessible, policy maker should considered in co-operation with private facilities that is favored and more conveniently accessible. Proactive working in communities with local government authority and other social worker network, in multi-disciplinary team under public system supporting. Lastly is an autonomous CUP provides comprehensive care were recommended in the study.

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CHAPTER I

INTRODUCTION

Introduction

Bangkok Charter for Health Promotion in a globalized world (Donnell et al., 2005) , denoted that the increasing inequalities within and between countries, new patterns of consumption and communication, commercialization, environmental degradation, and urbanization are some of the critical factors that influence health. Especially the "urbanization" is considered worldwide. United States Agency for International Development (USAID, 2004) estimated that by the year 2030, the proportion of urban dwellers is expected to be 61% of the world's population. Currently, the proportion is pushing the halfway mark. The highest urban growth rates are occurring in cities in Asia and Africa. By 2030, half of the world's urban dwellers will house in Asia. Mega-cities with 10 million plus inhabitants will expand, but most of the growth will be in smaller cities and towns of 500,000 to 1.5 million.

The poor is the fastest growing segment of urban populations, living mainly in slums and squatter settlements. Urban health shows disparities between the urban poor and the non-poor for indicators such as child mortality, disease morbidity, and child nutritional status. An analysis of Demographic and Health Survey (Fosu G., 1994) data showed urban poor children may be less healthy than rural children in terms of weight for height (USAID). Poor urban slum dwellers tend to suffer more from environmental and infectious illnesses. Death rates for diarrhea, measles and Tuberculosis (Dingwall R, Murphy E, Watson P, Greatbach D, & Parker S, 1998) among urban poor children can be up to 100 times higher than counterparts in industrialized countries. Poverty, crowded living conditions, outdoor and indoor pollution, and food insecurity are among the factors causing ill health. However, there are numerous advantages to working in urban areas. These include defined geographic zones; people grouped in workplaces, availability of urban services such as water, electricity, trained people and health centers (USAID).

Haines A, Smith R. (Haines, & Smith, 2000) stated that ill health and poverty are mutually reinforcing and can generate a vicious cycle of deterioration and suffering. Ill health contributes directly to reduced productivity and sometimes to loss of employment. When it affects the main earner in poor families it has severe implications for economically dependent family members, particularly children. By definition, poor people have few reserves and may be forced to sell what assets they have, including land and livestock, or borrow at high interest rates, to deal with the immediate crisis precipitated by illness. Each option leaves them more vulnerable, less able to recover, and in greater danger of moving down the poverty spiral. In contrast, effective and accessible health services can protect the poor from spiraling into worsening economic problems.

Health care expenditure on direct and indirect medical cost for the poor households in urban area is still a burden of household economy. It made the poor fall into spiral poverty and hard to recover. The universal health coverage (UHC) policy encourages entire households in access to health care. But the complicated urban health care system made urban dwellers faced with some barriers in access to care and made them paid out-of-pocket (OOP) for care as well.

The UHC was one of the United Nations' sustainable development goals (SDGs) for member states to extend health care to more of their citizens in a way that guards against the risk of catastrophic OOP expenditures, improves health outcomes equitably and uses available resources efficiently.

Thailand is one of member state of the UN launched universal coverage (UC) policy since 2001. After the policy has been implemented the covering of health care cardholders were increasing dramatically. As well as hospitalization and primary care visit rate were more than prior-UC period.

How the worse health of the urban poor can be solved is controversy and can the UC policy protecting the urban poor from catastrophic health expenditure are questionable.

Statement of problem

In Thailand, universal coverage was launched to ensure equitable access to health care by the entire population since 2001. National Health Insurance Information

Service Center (National Health Insurance Information Service Center, 2008) stated that The Universal Coverage composing with three major schemes i.e. Universal Coverage Scheme (UCS), Social Security Scheme (SSS) and Civil Servant Medical Benefit Scheme (CSMBS) and currently it covers 61,629,229 persons or equal to 98.75 percent of entire population.

The Universal coverage of health care is defined by World Health Organization (WHO, 2008) that everyone in the population has access to appropriate promotive, preventive, curative and rehabilitative health care when they need it and at an affordable cost. Universal coverage thus implies equity of access and financial risk protection. It is also based on the notion of equity in financing, i.e. that people contribute on the basis of ability to pay rather than according to whether they fall ill. In addition, from previous study in Thailand by International Health Policy Program (Limwattananon, Tangcharoensathien, & Prakongsai, 2005) found that after introduction of the Universal Coverage in Thailand, this policy could protect the poor from impoverishment. The incidences of catastrophic health expenditure reduced from 5.4% in 2000 to 3.3% and 2.8% in 2002 and 2004. Another study in Thailand on equity in health care payments in 1997 by Pannarunothai and Mills (Supasit Pannarunothai, & Mills, 1997) reported that the uninsured and those covered by Low Income Card Scheme faced high Out-of-pocket (OOP) payments (4.6% and 6.1% of their income), whereas SSS and CSMBS members spent only 0.6% and 1.7% of their income on health.

In the first era of the policy (2001-2007), All UC cardholder can access to care by paying 30 baht (about 0.7 $ US) per visit. Then since 31 October 2007, Thai government has abolished fee for service to all UC cardholder (Nittayarumpong S et al., 2006) after that a study of equity on household health expenditure was conducted in the north of Thailand by Weraphong and colleague to compare equity in health between an urban and rural areas (Weraphong, Pannarunothai, Khongsawat, & Yanachai, 2007) found that the poor in an urban area was more obviously encounter with household catastrophic health expenditure than those in rural area equal to 22.1% and 5.4% respectively. From this study the out-of-pocket (OOP) payment incurred catastrophic health expenditure caused by three main reasons, firstly most of the urban patients faced with inconvenient of the long-line waiting for use the public facilities.

It means that they lost time to earn their incomes and led them to use private providers instead. Secondly UC card holders by-passing from others areas/providers where they had registered without referral letter, and also has some illness that are not covered in the UC package. Such as vehicle accident, renal dialysis and some high cost treatment such as cancer chemotherapy are not fully covered. Lastly is personal value, for instant the beneficiaries don't realized about their right and also hesitate about quality of care provided by the scheme i.e. labor cases and the patients who believe that paying an under table payment could cut the queue to have an operation.

In the year 2008, Prakongsai (Prakongsai, 2008) analyzed catastrophic health expenditure by using OOP health payment over 10 percent of household income by income quintile as a threshold. The share of household facing catastrophic cost of illness decrease in all income quintiles, except the fourth quintile. The first quintile had the highest share of households in the years 2000 and 2002, while the fourth and the fifth quintiles had the lowest share in 2000 and 2002, respectively.

This study on household catastrophic health expenditure under the UC policy choosing Nakhon Sawan Municipality (NSM) to be a study area. Nakhon Sawan is a province located in the lower north of Thailand, it can represent for other provinces in Thailand because its economic growth rate is in the average rate of Thailand. Further, it was a pilot province of universal coverage policy in 2001 before expanding to nationwide. NSM likes other big cities with rapid growth. Urbanization has occurred; there are 61 slum communities in NSM where the migrated people from rural moved to earn their more daily income and opportunity.

Universal coverage policy aims to ensure accessibility to care when needed for all populations. In actually, although the great majority of eligible population received a UC card, coverage was not 100 percent. A household survey in Nakhon Sawan Municipality in 2003 showed that 6 percent of the urban population did not have any insurance card. Most of them were poor and very mobile and almost a half of them were denied their benefit for various administrative reasons (Suedee T., Yimchareon W., Tapho W., Buadung L., & Jaitiangtam S., 2004).

Further, an Information Data and Communication Division Office of Nakhon Sawan provincial office (Information Data and Communication Division Office, 2008) reported that there are 98.9% of entire population covered by any health insurance

scheme, 85.1% is UC cardholder, 5.6% is SSS beneficiary, 8.0% is CSMBS member and 0.6% is uninsured person. With large amount of health problem where health care system in area is very complex.

In addition, health care system in Nakhon Sawan Municipality composing with three public hospitals (a regional Ministry of Public Health (MOPH) hospital of 653 beds, Maternal and Child hospital of 60 beds and Military hospital with 150 beds) and five private hospitals (four general hospitals, each of 100 beds and the last one was 53 beds). There are 5 Primary Care Units (PCUs) under the regional hospital, the other one is under private hospital. In addition, there are 4 health centers under the local government. It provides health care for 90,454 municipality dwellers as well as the inhabitants of neighboring districts and provinces. In the private sector, there are 164 private clinics comprises 1 nursing clinic, 1 traditional medical clinic, 33 dental clinics, 6 technological science clinics, 33 general practitioner clinics, 47 specialist clinics, 1 physical therapeutic clinic, and 2 midwifery clinics, 3 Thai traditional drug stores and 37 modern drug stores contributed to the range of services available in the NSM. Even it has a number of health facilities and most people were covered by any health insurance scheme. In actually, access to public health provider still faces with some barriers so, the utilization of private sector is still popularity.

From the situations mentioned above, equity in health among diversity of socio-economic status (Moses S et al., 1994), health benefit schemes, residential area and health seeking behavior among urban dwellers are still questionable. Particularly in NSM where health care systems are as complex as other urban cities, inaccessibility of the urban dwellers still occurring in big cities worldwide, it leads people paid their OOP for seeking care that may lead to CHE. According to household catastrophic health expenditure in NSM, whether it leads to inequity in health among populations or not. Factors related to CHE shall be explored. And lastly, the ultimate goal of this study is how to develop health care system in an urban city to be more accessible among urban dwellers by regardless of socio-economic status, health insurance scheme and residential area as well.

Research questions

To describe and explore the equity in health care in NSM after the policy has been implemented. This study has five questions to be explored as follows:

1. How many percentages of household in NSM paid out-of-pocket expenditure for health care in the last month?

2. Do NSM dwellers face with CHE across SES group, health benefit scheme and residential area in NSM and why?

3. Is there equity in household health expenditure among different SES?

4. Which factors related to CHE in NSM?

5. How to improve equitable in access to health care in an urban area?

Research objectives

All research questions lead to the main research objective and specific objectives of this study as follow:

General Objective

To assess household out-of-pocket expense related to catastrophic health expenditure across SES group, health benefit scheme, residential area, equality of utilization of health care services and recommend more equitable health care system in an urban area.

Specific Objectives

The main question leads to four specific research objectives for the study including:

1. To fine out health seeking behavior of an urban dwellers in NSM

2. To determine household catastrophic health expenditure (CHE) in Nakhon Sawan Municipality.

3. To know causes of household catastrophic health expenditure in Nakhon Sawan Municipality.

4. To draw up the recommendations for more equitable health care system in an urban setting of Thailand.

CHAPTER II

LITERATURE REVIEW

This chapter aims to review literatures that relate to the research topic. Firstly is to understand the meaning and concept of universal coverage and the situation of UC policy in Thailand. Then, reviews about definition of urbanization and its impact to urban health. Definition and measure of poverty would be clarified.

To understand the principle of Universal Coverage policy, there is necessary to review the international concepts and objectives of UC policy due to thrive of UC in Thailand. Then the urbanization focus on impact of health problem link to health care delivery in urban context. Review in various method to classify SES status link to measure equity in health. Equity in health will be reviewed in an international view to know about its concept and clearer understand as the outcome of Thailand's health care reform. Out–of–pocket health expenditure is the burden of household financing leads to household financial catastrophe. And finally catastrophic health expenditure in various methods has to be reviewed to use as a proxy of inequality in health care delivery in the urban context. The ultimate goal of the study is to recommend policy maker in changing for health care system in an urban setting, all knowledge that relevant to it would be reviewed for clearer understanding in this part.

The first part of literature review starting with the concept of UC in worldwide as well as Thai's researchers' perspectives. Then an experiences achieving to UC Policy of Thailand as follow.

Universal Coverage

World Health Organization (WHO, 2005a) and International Labor Organization (ILO) support the effort of achieving universal coverage in all countries. The 58th World Health Assembly adopted Resolution 58.33 urging member states to work towards universal coverage and to ensure that their populations have access to needed health interventions without the risk of financial catastrophe. Mill A. (Anne Mills, 2007) stated that achieving universal coverage requires that attention be paid

not just too financial arrangements but also to addressing non-financial barriers to accessing services. These can include geographical and cultural barriers, as well as problems of quality of care, including provider behavior and attitudes, which can discourage access by certain population groups especially the poorest and women.

In conclusion, the UC policy should be implemented in all countries to protect households from financial risk and to reduce barriers in access to care for all populations especially for vulnerable groups.

Universal Coverage: international concept

There are various meaning of Universal Coverage defined by an international and Thais' researchers as follow:

Nittayarumpong S. et al. (1998) stated in the Thai's health care reform project that the Universal Coverage means "a situation where the whole population of a country has access to a good quality services (core health services) according to needs and preference, regardless of income level, social status or residency".

Then in the year 2000 Kuszin J. (2000) defined that universal coverage is the extension of health insurance coverage to the entire population so that health care services are available for all people to access. therefore Pannarunothai S. and colleague (Supait Pannarunothai, Pattamasiriwat, & Srithamrongsawad, 2000) defined that the universal coverage means the way to ensure that all people or nearly all people have their health care security provided by the government or health insurance agency so that everybody can access to basic health services without any, especially financial barriers.

And the previous definition of the World health organization (WHO, 2008) defined UC as access to key promotive, preventive, curative and rehabilitative health interventions for all at an affordable cost, thereby achieving equity in access. The principle of financial-risk protection ensures that the cost of care does not put people at risk of financial catastrophe. A related objective of health-financing policy is equity in financing: households contribute to the health system on the basis of ability to pay. UC is consistent with WHO concepts of health for all and primary health care.

Therefore, the concept of Universal Coverage from literature has two key matters. The first is to ensure that entire population is accessible to essential health care service with regardless of SES status, residential area, racing, education level and

sex. The second is focus on financial risk protection to ensure that entire population will not be impoverished by health care cost.

According to the main objective of the UC policy of Ministry of Public Health of Thailand (Ministry of Public Health and editor, 2002) is to equally entitle Thai citizens to quality healthcare according to their needs, regardless of their socio-economic status. Further, Mill A. (Ann Mills, 2000) mentioned that the universal coverage concerns with both the depth and breadth of coverage. Regarding to the depth of coverage, it covers the range of services available to people without out-of-pocket payment. What should be the appropriate range of services is very problematic because of the lack of absolute standard. Concerning with the breadth of coverage, universal coverage covers the proportion of population having effective health care risk protection and it is an unambiguous target to 100%.

In conclusion, it has two main concepts of UC in various views of Thai and international researchers. The first concept is equally access to essential cares services with no barriers. The second concept is to protect people from financial risk from health care expenditure.

Achieving to Universal Coverage in Thailand

Health care insurance has been implemented in Thailand since 1975 with establishment of the Low-Income Card (LIC) scheme for low income households. Then government employees and their dependents were covered with the establishment of the Civil Servant Medical Benefit Scheme (CSMBS) in 1978 Tangcharoensatien V. (Tangcharoensathien, Teokul, & Chanwongpaisarn, 2005).

In 1981, a publicly subsidized Voluntary Health Card (VHC) scheme was initiated by the Ministry of Public Health (MOPH) to cover the non-poor informal sector. Later in 1990, the Social Security Scheme (SSS) was legislated to provide mandatory cover for formal sector private employees, initially for firms with more than 20 employees, and later for all firms.

Pittayarangsarit S. (2004; Tangchareonsatien V., & Jongudomsuk, 2004) Noted that the Thai Rak Thai political Party that came to power in 2001 implemented its election campaign promise of universal health care coverage (UC) in October of that year. The UC Scheme incorporated the existing schemes for low-income households (LIC) and the informal sector (VHC) and extended coverage to the 30%

previously uninsured population. All three groups were covered under a single fund financed by general tax revenue, while CSMBS and SSS still operate their own schemes.

UC Cardholders have access to free ambulatory care at registered primary-care. Towse A. and colleague (Tangcharoensathien, & Jongudomsuk, 2004; Towse, Mills, & Tangcharoensathien, 2004) stated that contractor networks, which is normally a district health system (DHS), consisting of sub-district health centers (HC) and district hospitals (DH), with a nominal payment, 30 Baht, equivalent to US$ 0.7 per visit (with exemption for previous LIC holders). UC members are entitled to free hospital admissions, with hospitals paid from global budgets based on Diagnostic-Related Groups (DRGs). Beneficiaries under CSMBS have access to free ambulatory and admission services, with free choice of providers that are paid by Fee-For-Service (FFS). SSS beneficiaries are also entitled to free ambulatory and admission services but only at registered hospitals that are paid by capitation. All three public schemes are financed from public resources.

In conclusion, since 1975 Thailand health system protected targeted populations through various public health's insurance schemes such as Civil Servant Medical Benefit Scheme, Low income card scheme, Voluntary Health Card Scheme and Social Security Scheme. These health insurance schemes could ensure nearly 70 percent of Thai population in access to care. Nevertheless, the Universal coverage policy established in 2001 enhanced the coverage of health insurance to the uninsured population. National Health Insurance Information Service Center (National Health Insurance Information Service Center, 2008) stated that The UC composing with three major schemes i.e. Universal Coverage Scheme (UC), Social Security Scheme (SSS) and Civil Servant Medical Benefit Scheme (CSMBS) and currently it covers 61,629,229 persons or equal to 98.75 percent of entire population. So, at least 1.25 percent of population was not covered by any health insurance scheme. Furthermore, out of the coverage rate of health care insurance, the urban poor still face with some barriers in access to health care. An important factor affected to urban poor health problems lead to increase of healthcare need is urbanization.

Urbanization and health

The relationship between urbanization and health would be discussed in this part. Why urbanization lead to worst health is the most interesting question. It would firstly understand about "Urbanization" and then illustrate of health problems related with urbanization over the world.

Urbanization

The US Bureau of the Census (Department of Commerce and Bureau of the Census, 2002) defined an urbanized area as follow:

An urbanized area comprises a place and the adjacent densely settled surrounding territory that together comprise a minimum population of 50,000 people. The "densely settled surrounding territory" adjacent to the place consists of territory made up of one or more contiguous blocks having a population density of at least 1,000 people per square mile.

Vladov D. and colleagues stated that Urbanization refers to change in size, density, and heterogeneity of cities. Vlahov D., & Galea S. (2002) reviewed published literature suggests that most of the important factors that affect health can be considered within three broad themes: the social environment, the physical environment, and **access to health and social services**.

De Haan A. (1997) denoted that although the natural population growth is the major contributor to urbanization in many third world cities, rural-urban migration is also an important factor. Internal migration flows are diverse, complex and constantly changing (including county to city, city to county, city to city, and county to county).

Gilbert A., & Gugler J. (1992) denoted that there is much diversity between nations and regions in the terms of age and level of education of migrants, and in the extent to which migration is considered permanent or temporary. A key determinant of migration is the income differential between rural and urban regions. UNCHS (UNCHS (HABITAT), 1996) reported that crop prices, land owning structures, changes in agricultural technology and crop mixes in surrounding areas and distant regions also affect migration. It is also influenced by other factors related to individual or household structures and survival strategies, and wider political, economic and social forces.

United Nations and Population Division (2006) estimated that most of world population growth between 2005 and 2030 is expected to take place in the less developed regions of the less developed low and middle-income countries. Furthermore UN-HABITAT (2003) denoted that the majority of this growth will occur in that region's urban areas and much of this increase will manifest itself in the form of slums. UN-HABITAT (2006) also estimated that one billion people, or one of every three urban residents, live in slums. By 2030, if trends continue, the number of slum dwellers will double, increasing the proportion of slum dwellers to two of every five urban residents.

In conclusion, the effects of environmental and economic changes made people migrated to reside in big city for more opportunity in their life. For more chance in earning more income, more education and also access to health care services.

Since the poor has migrated to urban city occurred in nearly all big city in Thailand, an urbanization is the fallowing situation in those cities where has been flown from countryside and also the neighboring countries populations. It impacts to urban health from various causes.

Health: impact of urbanization

WHO (2001a; Marmot M., 2006) denoted that urbanization leads to more inequalities in health. In urban settings reflect, to a great extent, inequities in economic, social and living conditions that have been a hallmark of most societies since urbanization began. Social systems based on democracy and strong equity policies have flourished and made great social and health achievements already during the early parts of the 20th century (e.g. the Nordic countries and New Zealand). Vagero D. (2007) stated that the attempts to develop a more equitable society via the socialist ideology in some developing countries and provinces were successful in improving health equity and public health in selected places (e.g. Cuba, Sri Lanka and Kerala, India, already in the 1960s and 1970s), but the mainstream model for social and economic development in the 21st century does not focus on social equity.

Wratten E. wrote in "conceptualizing urban poverty" (Dahlgren, & Whitehead, 2006) that the challenge in urban areas at any economic level is to improve the health situation for the poorest or most disadvantaged by "leveling up"

their living conditions. Health inequalities arise not only from poverty in economic terms but also from poverty of opportunity, of capability and of security (Kawachi, & Wamala, 2007a, 2007b; Racodi C, 1995; Satterthwaite, 1997; Sen, 1999; Wratten, 1995). WHO (2007a) noted that this combination of deficit in material conditions, psycho-social resources and political engagement results in a poverty of empowerment at the individual, community and national levels. Thus, poverty should not be considered only in terms of "dollars per day" of income, but also in terms of these social conditions, sometimes expressed as "relative marginality", which contributes to ill-health of oppressed people because of chronic stress, depression and feelings of bitterness, hopelessness and desperation.

In conclusion, the poor and the poor health (physical and mental illnesses) affected from daily living in urban setting that are more stress from social, economic conditions. It also affected from bad environmental surrounding in any big city with overcrowd condition. Especially, in slum area where crowding from migrated populations.

Urban poverty a cause of much of global burden of disease

The Commission on Social Determinants of Health (CSDH) Knowledge Network on Priority Public Health Conditions (WHO, 2007a) has stated that while it is not intending to set priorities among public health conditions, it might still be useful to look at "priority public health conditions" from certain perspectives, such as those that:

1. represent a large aggregate burden of disease;
2. display large disparities across and within populations;
3. affect disproportionately certain populations or groups within populations;
4. are associated with emerging/epidemic-prone conditions; or
5. are avoidable to a significant degree at reasonable cost.

Lopez and colleague (Lopez A. et al., 2006a; Lopez A. et al., 2006b) denoted that examples of different perspectives on priority public health conditions may start with those for which the global burden of disease and injury is large. Listing of the ten top causes for each of the World Bank regions yields a total of 26 different leading causes of burden of disease across the six regions, reflecting the different demographic, ecological, political, social and economic circumstances in these regions

(Table 2-1). These burden-of-disease calculations include injuries and take into account the lost years of healthy life in any age group. Diseases and injuries among children are given prominence by the greater number of years lost for each death.

Spread of HIV/AIDS pandemic

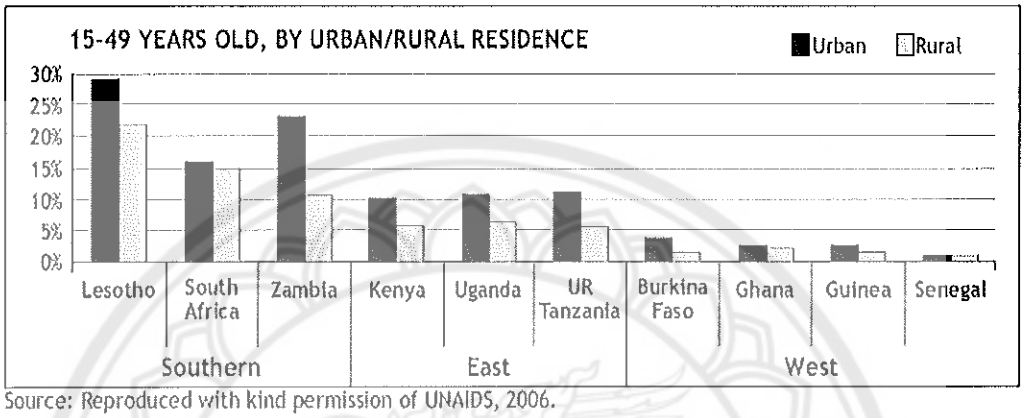
Depending on the region, the "priority public health conditions" may include cerebro-vascular diseases, ischemic heart diseases (IHD), peri-natal conditions, depression, lower respiratory infections, HIV/AIDS and malaria. In most low-income and many middle-income nations, infant and under-five mortality rates in urban areas are five to twenty times what they would be if the urban populations had adequate nutrition, good environmental health and a competent health care service.

In some low-income nations, these mortality rates increased during the 1990s Montgomery MR. et al. (2003) denoted that the urban rates are generally lower, on average, than the rural rates (Table 2-2) and there are also nations with relatively low urban infant and child mortality rates (for instance, Colombia, Jordan, Peru and Viet Nam), while there are also particular cities that have achieved very low infant and child mortality rates – Porto Alegre in Brazil, for instance.

The major disease problems of the developing world are also those that are particularly common among the socially disadvantaged. WHO (WHO, 2002a) stated that Poverty is a prominent determinant of the global burden of disease. The global burden of disease study (Murray CJL, & Lopez MR, 1996; WHO, 2002a) showed the importance of malnutrition in children, diarrheal diseases, acute respiratory diseases, HIV/AIDS, tuberculosis, malaria, and various types of injuries. Non-communicable diseases such as cardiovascular diseases, cancer, chronic respiratory diseases and diabetes are rapidly increasing problems for the socially disadvantaged (WHO, 2002a). In some instances, special studies or surveys point to a heavier burden on the urban poor. Where data have been available, there is robust and compelling evidence to take action. Very good data is available on HIV/AIDS in slum and non-slum areas, for example. As illustrated in Figure 1, the prevalence is generally higher in urban areas. Joint United Nations Program on HIV/AIDS (UNAIDS 2006) (Van Donk M, 2006) estimates that the average urban HIV prevalence is 1.7 times higher than the rural rate. The prevalence is also considerably higher among girls than among

boys. Especially in urban areas, young women are at particular risk due to different aspects of gender discrimination.

Health status of populations can be used to indicate inequity in health among different living area within country and different development levels of countries.



Source: Reproduced with kind permission of UNAIDS, 2006.

Figure 1 HIV Prevalence (%) by urban / rural residence for selected sub-Saharan African countries, 2001-2005

Ambert C. and colleague (Ambert C, Jersey K, & Thomas L, 2007) stated that a range of urban conditions influence the spread of HIV or the severity of the illness:

1. Overcrowding and high population density;
2. Inequitable spatial access and city form;
3. Competition over land and access to urban development resources;
4. Pressure on environmental resources;
5. Pressure on urban development capacity and resources.

Some of the most important social determinants relate to the position of women in society, and the physical space and authority girls have to protect themselves from unwanted sexual overtures, harassment and rape (Mabala R, 2006; Van Donk M, 2006).

Injuries and violence

Road traffic injuries: a growing urban health threat in developing countries

WHO (WHO, & World Bank, 2004) denoted that worldwide the number of people killed in road traffic accidents is around 1.2 million, while the number of injured could be as high as 50 million. Further Lopez and colleague (Lopez A et al., 2006b) stated that these numbers are forecast to increase significantly in the coming decades. Road traffic injuries, both urban and rural, rank in the top 10 causes of death. Developing countries account for more than 85% of all the fatalities and over 90% of DALYs lost due to road traffic injuries (WHO, & World Bank, 2004), and road injuries affect the poor more than the affluent in developing countries (Nantulya VM, & Reich MR, 2003).

Cambell T., & Cambell A. (2006) mentioned that the World Bank projections indicate that motorized vehicles in cities will increase by a factor of four by 2050. In addition, economic development enables rapid growth in the number of families that can afford a private car or motorcycle. Deaths in traffic are sensitive to road infrastructure, traffic regulations and enforcement, which are particularly lacking in low-income communities.

The countries with the lowest mortality rates of road traffic injuries are the Netherlands, Sweden and the United Kingdom, with rates of 5.0, 5.4 and 5.6 deaths per 100, 000 population respectively (WHO, & World Bank, 2004). The rate in the USA is 14.5. China has a high country rate at 15.6 road deaths per 100,000 considering that the number of vehicles in relation to population is low compared with the USA and European countries. Thailand and the Republic of Korea have worse rates still, at 20.9 and 22.7 deaths per 100,000 populations respectively.

At an early stage of urbanization and motorization, pedestrians and bicyclists are at much higher risk of injury than motor vehicle drivers and passengers (WHO, & World Bank, 2004). The poor are less likely to ride in cars, which creates an injury risk gradient between the rich and the poor. As the economy develops in warm climate countries, private motorcycles are acquired by the less well-offs and cars by the rich.

The injury risk for motorcycles is much higher than for cars, so again a risk gradient between the rich and the poor develops.

In summarized, road accident mortality rate also can be used to indicate inequity in health among populations living in the different living condition composing socio-economic status.

Urban violence and crime affect the poor in countries at all development levels

Krug E.G. et al. (2002) denoted that violence is having a devastating impact on people's health and livelihoods in many urban areas. It also has many other costs and can undermine a city's economic prospects. Moser C. (Moser C, 2004) stated that fear of violence isolates the poor in their homes and the rich in their segregated spaces. Moser C., Esser D. and Rodgers D. (Esser D, 2004; Moser C, 2004; Rodgers D, 2004) found that the sheer scale of violence in many low-income slums or informal settlements means that it has become "routinized" or "normalized" in daily life. Fear and insecurity pervade people's lives, with serious implications for trust and well-being among communities and individuals. What Tausig calls "terror as usual" can exhibit itself through street crime, a growing gang culture and high levels of violence in the private realm (Hume M, 2004). It should be pointed out that violence is not an issue only for low-income countries. The situation in some high-income countries is as bad as in many developing countries and the underlying social determinants are similar.

Though inadequate in many ways, homicide rates are the most immediate and practical way to measure the burden of violence. Krug E.G. and colleague (Krug EG. et al., 2002) mentioned that the WHO world report on violence and health indicates that, for the 15–29 age group, inter-personal injury ranks just below traffic fatalities, and, in cities of Latin America, population homicide rates in the late 1990s ranged between 6 and 248 per 100,000 depending on the degree of urban violence. The incidence of homicide doubled in Rio de Janeiro, Brazil between 1980 and 1990 and has held steady over the past decade as the leading cause of death among persons aged 15–40 years. In Washington DC, the rate was 69.3 and in Stockholm, Sweden, 3.0.

It is important to distinguish between *structural* causes of violence (generally related to unequal power relations) and *trigger risk* factors (situational circumstances that can exacerbate the likelihood of violence occurring). The extent to which it is poverty or inequality that contributes to crime and violence is debated, although, in

reality, they frequently overlap (Moser C, 2004). In some cities there are unsafe spaces where rape, robbery and violent crime exist – e.g. dark paths and lanes, isolated bus stops and public latrines. Urban space is increasingly being reorganized in response to crime and violence and the lack of confidence in the State's capacity to provide security. The rich retreat to "fortified enclaves" or use sophisticated transport networks and privatized security systems to isolate themselves from the poor, who are seen as the perpetrators of violence (Moser C, 2004).

Mental health and substance abuse

Stresses of poverty as a factor in poor mental health

WHO (2002a; Murray C.J.L., & Lopez M.R., 1996) denoted that mental health is a growing component of the global burden of disease and depression is responsible for the greatest burden attributed to non-fatal outcomes accounting for 12% of total years lived with disability worldwide (WHO, 2007a). There is a growing body of evidence to show urban predispositions for mental health problems. For example, community-based studies of mental health in developing countries by Blue T. (Blue T, 1999) show that 12–51% of urban adults suffer from some form of depression. The underlying causes and risk factors for poor mental health in urban areas studied by Harpham T. in 1994 (Harpham T, 1994) found that poor mental health in urban area are linked to lack of control over resources, changing marriage patterns and divorce, cultural ideology, long-term chronic stress, exposure to stressful life events and lack of social support.

In the more affluent countries the mental health issues of an ageing population have become a major issue that affects the lower income groups more than the affluent, which are better able to make arrangements for the care of the elderly. Loneliness and depression have become common concerns, in addition to the increasing prevalence of major senility diseases, such as Alzheimer disease.

Izutsu T. and colleague (Izutsu T. et al., 2006) found that among the urban poor, the lack of financial resources and high costs of living, harsh living conditions, and physical exhaustion from lack of convenient access to transport are examples of conditions that contribute to sustained and chronic stress and predispose individuals and families to mental health problems.

In Dhaka, Bangladesh, for example, a comparison of mental health status between slum and non-slum adolescents shows low self-reported quality of life and higher "conduct problems" among males living in slum areas. Gender and area-specific mental health difficulties are also reported.

Desjarais R. et al. (1995) stated that the nature of modern urbanization may have deleterious consequences for mental health through the influence of increased stressors and adverse life events, such as overcrowded and polluted environments, poverty and dependence on a cash economy, high levels of violence, and reduced social support.

In summary, poverty not only means living under the poverty line. It also means disadvantaged in society. Moreover, it led people living in urban city facing with more mental illnesses causing by cost of living, inconveniently access to public services and lack of social support etc.

Substance abuse and illicit drug use linked to social conditions

WHO (2007b) reported that chronic stress and easy access to harmful products in the urban setting create additional risks for substance abuse and dependency. Data from 2003–2004, show that daily tobacco smoking is most prevalent in lowest-income households in developing countries. Though rural-urban disaggregation of data is not available, by inference, populations that live in poverty in the urban setting would be likely to exhibit higher prevalence rates of tobacco use and have less access to health care, thus perpetuating the vicious cycle of illness–poverty (WHO, 2007b).

Allison K.W. et al. (1999) stated that according to estimates by the United Nations Office on Drugs and Crime (UNODC), the annual prevalence of illicit drug use is 3% of the global population or 185 million people. Samson R.J. and Raudenbush S.W. (Sampson RJ & Raudenbush SW, 1999) found that physically deteriorated urban areas with concentrations of young, unemployed males are expected to be more prone to substance abuse. Such abuse is more common in areas where there is physical violence, where social disorder is abundant, collective life is unregulated and residents are not investing in their property, while local authorities are not investing in or maintaining public areas. The indicators of social disorder in such areas are: the presence of adults loitering, drinking alcohol in public, public

intoxication, presence of gangs, adults fighting or arguing in public, selling drugs, or presence of prostitutes.

Alaniz M.L. (2000) found that substance abuse is also more likely in areas where there are a large number of bars, suggesting licensing restrictions are less obeyed, and where there is more alcohol advertising and greater access to alcohol by youth.

Sticky A. et al. (2007) stated that excessive alcohol consumption is both a symptom and a cause of poor mental health. It causes several types of physical ill-health (e.g. damage to the liver and nervous system and increased risk of injuries), which, combined with the mental health problems, undermine the personal and family economy and create poverty. In some countries, such as Russia, the results of high alcohol consumption have been dramatic, significantly reducing the average life expectancy in recent years. It can be a major factor in health inequalities between different population groups. In some countries, the negative health impact of alcohol consumption is as large as that of tobacco smoking, and legal regulations or health promotion activities that reduce tobacco and alcohol consumption would reduce urban health inequalities.

It can be summarized that increasing of mental health problems in urban setting led to be more tobacco, alcohol and illicit drug consumptions. Especially it has more prevalence in the young and unemployed group.

Non-communicable diseases and nutritional disorders

Emerging non-communicable diseases in urban settings

As poverty-related diseases are attended to and incremental health improvements occur, particularly among children and young people, populations are ageing in many urban settings, even in low-income countries. The changing age structure of the population in itself changes the health panorama more towards non-communicable diseases and away from communicable diseases. Thus, prevention of heart diseases, chronic lung diseases, cancer, diabetes and other non-communicable diseases should be part of a comprehensive program to reduce health inequalities in urban settings. A number of environmental and behavioral determinants of health are of particular importance in urban settings and are associated with social determinants. Effective prevention of NCDs depends on actions to improve the living environment,

facilitate physical activity, reduce tobacco use and alcohol abuse, regulate access to hazardous products, provide information and education services for healthier lifestyles and make available sufficient and healthier dietary choices.

In conclusion, emerging of illnesses that related to living conditions in urban areas such as road traffic injury, crime and violence, mental health and substance abuse also the huge occurring of non-communicable diseases in low-income and developing counties. It made financing burden to those country governments in providing health care for its patients.

Then, now we knew the incidences of illness related to urbanization. It occurring more burden of diseases and health financial burden now and the future. A significant factor in this study is poverty. What is poverty and how to measure it? And how can be used to indicate an equity in access to care among different group of populations.

Poverty

One objective in this study is to assess household out-of-pocket health expenditure across socio-economic groups (households are classified into the poor and the non-poor). How do we know who is poor and who is not? Most people have little difficulty answering this question. This question will be addressed in this part. Yet these simple ideas turn out to be hard to extend to countries, and harder still to the world as a whole.

Local and national poverty

A Participatory Rural Assessment, usually known by its acronym PRA, is a procedure often used by researchers and by non-governmental organizations (NGOs) working in villages in poor countries. The researchers sit with the villagers at the local gathering place and find out about the village, mapping its houses, the school, the water supply, its agricultural activities, and who lives where. It is common to ask the villagers to say who is well-off, who is not so well-off, and who is poor and, in most cases, villagers have no difficulty in making the identification. No doubt there are some mistakes, and some people conceal some assets from their neighbors, but the results usually make sense. The poor are often people who cannot work because they are ill or suffer from a long term disability, or are elderly. There are also poor and

vulnerable groups in specific locations, such as those Indian widows who are unfortunate enough not to have sons to support them. Such information can sometimes be used as part of poverty relief efforts. In India, one scheme, the *Antyodaya* (last man first) food program, relies on local councils to identify the very poorest few percent of rural households, who receive subsidized food rations. There is a similar scheme in Indonesia. But it is not possible to push this local poverty identification too far. If the sums to be distributed are large enough, they become worth misappropriating, and there is an incentive for people to identify their friends and relatives (or themselves) as poor. Similarly, some NGOs have discovered that, if they use the poverty identification to enroll people into employment or training schemes, then after a few visits *everyone* is reported to be poor.

National poverty counts are also used for allocating funds. In the United States and many other countries, some government benefits are confined to poor or near-poor people. In India, the central government subsidizes food provision to state governments according to the fraction of their population that is poor. The South African government transfers funds to municipalities according to estimates of the fraction of their population that is poor. So we can't always rely on a poverty measurement system in which people self-identify their poverty. Even so, there is much to be learned for asking people what constitutes poverty. For example, the Gallup Poll in the US has regularly asked people to report what is the smallest amount of money a family of four, two adults and two children would need "to get along in this community". Although some people give fanciful answers, the central tendency of these reports provides a sensible measure of the "poverty line," the amount of income that is the borderline between poverty and non-poverty. Yet if the national poverty line were to be set based on the results of such a poll, it is easy to imagine interest groups asking people to inflate their answers in the expectation of higher benefits.

Measuring poverty in the world

Measuring poverty at the local level is straightforward, at the national level it is hard but manageable, but at the level of the world as a whole it is extremely difficult, so much so that some people argue that it is not worth the effort. In particular, because there is no world political authority that can set a poverty line, and use it in anti-poverty policies, we lack the opportunities that exist at the national

level to come to some sort of political agreement on what is a useful definition of poverty. Instead, we have a measure that is useful mainly for the international organizations, and for first-world NGOs who are arguing for greater resource flows to poor countries. Yet the recent debate on the costs and benefits of globalization has drawn new interest to the world poverty counts and has thrown up wildly differing claims and counterclaims. Those in favor of globalization point to recent high rates of growth among some of the world's poorest countries, and argue that growth almost always means poverty reduction.

Those who are against it argue that globalization has benefitted mainly the rich countries, deepening poverty for most people and countries of the world. Are our poverty measures capable of providing an answer one way or the other and if so, who is right?

The obvious way to make a world poverty count is simply to add up the counts from each country. But such estimates would be of little interest. In the count for 2001, the US Census Bureau estimated that there were 32.9 million poor people in the United States, while the Planning Commission of the Government of India estimated that there were 260.25 million poor people in India in 1999-2000. I think there are few people who take a strong enough relative view of poverty so as to argue that these poverty counts are commensurate and simply add them up. The World Bank, in constructing the world poverty data, makes no attempt to do so; indeed it excludes the rich countries altogether. For the low and middle income countries, instead of using the national poverty lines, which are higher the richer is the country, it uses a common international poverty line designed to be appropriate for extreme poverty, defined as poverty in the poorest countries. A good way to think about this is that the counts use a poverty line close to that of India, so that the basic idea is to count everyone in the world whose level of consumption is low enough for them to count as poor in India.

To put this idea into practice, we need to convert the Indian poverty line into the currency of other countries, Indonesian rupiahs, Thai baht, Mexican pesos, Kenyan shillings, and so on. For nearly all of the countries, there are market exchange rates, although it is often convenient (especially for audiences in rich countries) to convert the Indian poverty line into US dollars first, and then to convert from US dollars into

all the other currencies of the world. But it turns out that market exchange rates are not useful here. In particular, market exchange rates make the poor countries appear too poor relative to the rich ones, compared with the real differences in their living standards. (For the same reason, it is a serious mistake to calculate measures of world inequality using official exchange rates.)

The problem is that (to simplify matters a little) market exchange rates are determined by supply and demand of imports and exports; importers into India needs dollars and Euros which are supplied by exporters selling Indian goods in the world market. The market exchange rate then ensures that goods that are traded into and out of India have prices in rupees that, when converted at the market exchange rate, are comparable to the world prices of those goods in dollars. But many goods that are important to poor people, including much of their food, all of their housing, and the services that they buy, are neither imported nor exported.

Land, housing, and services that use cheap Indian labor (remember that India is poor) would be a great bargain in New York, but that does nothing to raise their prices, because they are in India, not New York, and it is impossible to ship them. The result is that an American dollar, converted into rupees at the market exchange rate, will buy a great deal more than a dollar's worth of goods in India.

Equivalently, the Indian poverty line in 1999-2000, which for urban people was 454 rupees per person per month, is worth several multiples of the $9 per person per month that 454 rupees would have brought at the market exchange rate of 50 rupees to the dollar. Instead, it is necessary to use a different set of exchange rates, called *purchasing power parity* (PPP) exchange rates which are designed to convert currencies in a way that preserves purchasing power, and which, for the comparison between India and the US, coverts 454 rupees to around $50 per person per month. The Indian rural poverty line is 328 rupees, which converts to $38, a little more than one (purchasing power parity) dollar per person per day.

All of this is fine in theory, but the construction of PPP exchange rates is controversial and subject to substantial margins of error. Perhaps the most serious of the criticisms is that the PPP exchange rates that are used were not constructed for the purpose of measuring poverty, so that there is no guarantee that they will accurately convert the living standards of poor people from one country to another.

Another problem is the low priority that many statistical offices give to providing numbers that have no domestic use. Perhaps in consequence, when the PPP numbers are revised or updated, there are wild swings in the poverty counts, even for broad regions of the world. PPP exchange rates are not calculated for every country or for every year in any country, so there is a good deal of reliance on interpolations and predictions are some of which almost certainly quite inaccurate. So there are critics who doubt whether the PPP numbers have any value for measuring global poverty.

Even when the $1-a-day has been converted to local currency, we have not come to the end of our difficulties. The poverty count in each country is the number of people living in households whose consumption per capita is less than the local version of the international poverty line. The information for that calculation comes from *household surveys*, in which a random sample of households in each country is visited and asked questions about their incomes and expenditures.

There is a good deal of variability in the quality of these surveys. In some countries, like India, where modern survey methodology was first developed, the statistical authorities are experienced and expert. But that is not always the case.

And even when the surveys are well conducted, details of how the questions are asked—which are far from uniform across countries—can have large effects on the results. For example, some countries, such as most of Latin America and China, collect data on incomes, while others, such as India, Pakistan, and Indonesia, collect data on expenditures and there is no straightforward way of converting poverty counts based on one into poverty counts based on the other. Another important, although seemingly trivial, issue is the length of what is known as the "reporting period." When respondents are asked how much they spent, for example on rice, the question must refer to a specific period, for example, the last seven days, the last fourteen days, or the last month. In India, the statistical office has traditionally used a 30-day reporting period for food, a choice that was based on experimental evaluations of different reporting periods carried out in the 1950s.

Even so, the 30-day period is unusually long by international standards, and an experimental survey was set up in which a randomly selected half of the households got a 30-day reporting period, while the others got a 7-day reporting period. On average, households reported about 30 percent more food purchases on the 7-day

questionnaire, only about 18 percent more on all expenditures including food, not such a large difference in itself, but enough to cut the measured number of poor in India by a half! It seems that statistical poverty reduction is a good deal easier than substantive poverty reduction.

While it might be argued that the choice of reporting period doesn't matter much for India itself, where everyone would adapt to the new measurement system and its associated poverty levels, the fact that reporting periods and other "details" are different in different countries undermines our ability to make comparable counts that can be added up across countries.

In spite of all the faults in the data, a fairly clear picture is now emerging of what has been happening to poverty around the world around the end of the millennium. The overall count of income-poor in the world is dominated by what has been happening in India and in China, where there has been a great deal of economic growth. Although the growth rates of income and consumption around the poverty line have been slower than growth at the mean—there has been a widening of income inequality—there has still been sufficient growth among the poor in both countries for there to be reductions, not only in the fraction of people who are poor, but in the actual *number* of the very poorest people, those living on less than $1 a day (Although the number of those who live on less than $2 a day is rising according to the most recent estimates.)

In spite of *increased* income poverty in much of Africa, in the transition countries of Eastern Europe and the former Soviet Union, and most recently in some countries in Latin America, the huge weight of population in India and China dominates in the world counts. While it would be true to say that, apart from two countries, poverty in the world is getting worse, it is also true that nearly half the world's population lives in places where poverty is falling. On the negative side, there is no progress or even negative progress in Africa, with increasing income poverty accompanied by falling life-expectancy associated with HIV/AIDS.

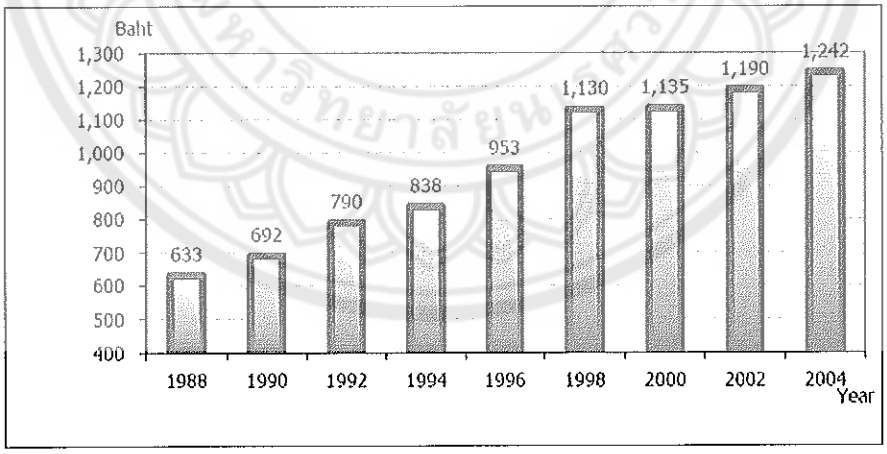
While few people would attribute the AIDS catastrophe to the effects of economic globalization, we must likewise be careful not to automatically attribute to it the success of reductions in income poverty. Indeed, the role of globalization in poverty reduction remains a hotly debated topic.

In summary, it is still controversy on measuring of poverty in the world level. And how about poverty in Thailand?

Poverty in Thailand

Defining and Measuring "Poverty"

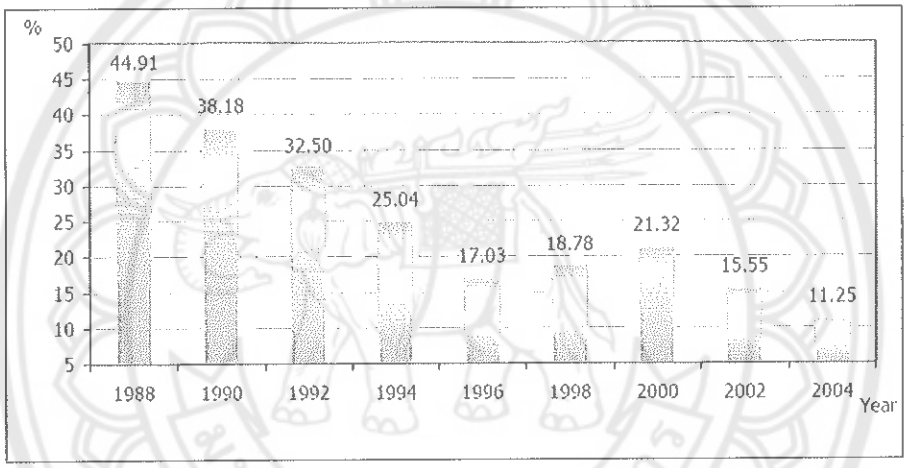
Poverty incidence can be measured either in absolute or in relative terms. Thailand measures poverty incidence at household level by comparing per capita household income against poverty line—which is the income level that is sufficient for an individual to enjoy the society's minimum standards of living. If such individual has income less than respected poverty line, he or she is classified as poor. The official poverty line uses an absolute concept, based on cost of basic needs—the sum of food and non-food consumption. The food poverty line is given by calculating the cost of obtaining calorie requirements of food baskets. The non-food poverty line is calculated by using the estimated food to total expenditure ratio, adjusted for regional price differences. Hence, it allows comparison across regions and areas. It has been widely used to analyze the poverty profiles in Thailand. Meanwhile, the country also measures well-being at village level by using basic minimum need and selected development indicators. Thai's poverty line is shown in Figure 2



Source: Socio Economic Survey, National Statistical Office (NSO), Compiled by NESDB

Figure 2 Thailand's Poverty Line 1988 - 2004

As shown in Figure 3, poverty incidence in Thailand had gradually declined from 44.9% of total population or 23.5 million people, in 1988, to 17% or 9.8 million people, in 1996. However, economic crisis in 1997 resulted in an increasing of poverty incidence to 18.8% in 1998 with additional 1.2 million of new poor. Then, it deepened further to 21.3% in 2000. As poverty reduction has always been of high priority to government. Various interventions has been undertaken to strengthen grass root economy as well as reduce poverty incidence. As a result, poverty incidence declined to 11.25% in 2004, a level that is already achieved the MDG 1: Eradicate extreme poverty and hunger.



Source: Socio Economic Survey, National Statistical Office (NSO), Compiled by NESDB

Figure 3 Incidence of Thailand's Poverty rate (1988-2004)

Poverty in urban and rural of Thailand

The literature rerated with this study have to distinguish between urban and rural poverty. The studied in Thailand that can measure the poverty ratio and number of the poor between urban and rural is from National Statistical Office (NSO) of Thailand in 2004. When comparing with Relative poverty, by using 50 percentage of the median income, the incidence of the poor in urban area is almost one-fifth or 19.89% of the total population, while in the rural area is around 14.48% of the population. This might reflex the differences of poverty between rural and urban areas. (As shown in the Table 1 and Figure 4)

Table 1 Poverty Ratio and Number by Relative Poverty Measurement (Median Income)

Area	Poverty Ratio (%)		Number of poor (million)	
	2002	2004	2002	2004
Urban	20.04	19.89	3.918	3.99
Rural	15.79	14.48	6.573	6.194
Total	19.73	18.72	12.069	11.774

Source: Socio Economic Survey NSO, Compiled by NESDB

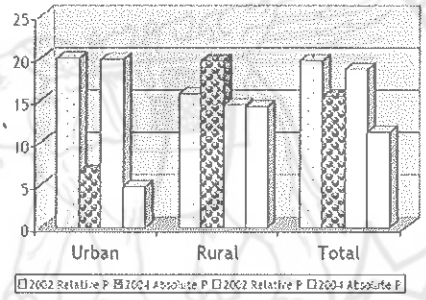


Figure 4 Comparison of Relative and Absolute Poverty by Area

In this study will use poverty line in the urban area of Thailand modified for using in the year 2008. The 2008 poverty line will be calculated by use average inflation rate exponent (number of year from available poverty line) multiply with the current poverty line that available in the website of National Statistics Office of Thailand (NSO). It will be used for classify sampled households into two SES. The first group is the poor household, if the monthly average income per capita in households is below the poverty line. In contrast, if the monthly average income per capita is above the poverty line, these households will be classified into the non-poor group.

Then, it necessary to know more about Thai health care system that directly relate to health care seeking behavior of Thai population. It will show, rationale of health care system have been established, structure of health care system, and health care system in urban city of Thailand.

Health Care Systems

According to the Thai's former constitution (1997) section 82 and the current constitution (2007) section 80 provides that "The State shall thoroughly provide and promote standard and efficient public health service" led to new vision of Thai health system that is "Aiming for sufficiency health system in creating good health, good services, good society, happy/sufficient livelihood in a sustainable manner" also The Thai health development plan set objectives to achieving this vision. One of these objectives is "To create a **good healthcare** system, based on the human-being principle, with quality and friendly care, paying attention to the suffering of patients and the delicacy of human-being".

Starting with the 1997 constitution, the eighth of Thai health care system plan (1997 - 2001) also established focused on the development of human resources for health and the expansion of universal health insurance coverage to cover the whole population. The Universal coverage policy was implemented in 2001 with strong support of new government.

Structure of the system

Wibulpolprasert (2007) stated that within the Thai health care system, in both side of public and private facilities all over Thailand are categorized into five levels compost with self-care (household level), primary health care (Community level), Primary medical care (sub-district, district level), secondary medical care (District level), and Tertiary medical care (provincial, national level). In each categorizes has details as summarized below.

1. Self-care means individual or households are enhanced their capacity to provide care themselves and make their own decision to be better health in various means such as public health education via radio and television broadcasting, health exhibition, health care campaigns, and health education from health care personnel when people seek their service. There are also many drug stores that provide

traditional medicine, Chinese medicine, and modern western medicine. Some of medicines can be bought without drug prescription. However these drug stores are regulated by government.

2. Primary health care means health care provided by the communities, aim to providing basic health care compost with common diseases curative, preventive, promotive, and rehabilitative at the community level. Relevant to community's health need provided by village health volunteer (VHV), staff from private non-for-profit or non-government organization (Nyamongo I.K.), representative of local government and other organizations normally linking with government service programs in each communities. In the government sector, there are 311 community health posts, 66,223 rural community primary health care centers, and 3,108 urban community primary health care centers.

3. Primary medical care means medical care provided by health personnel and general practitioner at district and sub-district level. In public sector, there are health centers and community hospitals located in this level. In the other hand, in private sector, private clinics and drugstores, all providing primary medical care for people in each areas. Since 2001 the UC policy has been established, the primary care unit (PCU) improved from health centers and extended outpatient department (OPD) also under technical supervision and support of community hospitals. These units are usually established in remote areas covering 500 to 1000 people, and are staffed at least five health personnel (Practitioner, professional nurse, midwife or health worker, dental auxiliary, and health professional). Service provided at this level includes health promotion, disease prevention, and simple curative care. There are 9,762 health centers, covering all sub-districts; several sub-districts have more than one health center.

4. Secondary medical care means medical care provided for complicated conditions with higher medical knowledge and health technologies by medical doctors with various degrees of specialization and other health personnel such as dentists, pharmacists, nurses and the like. The medical care provision involved government community hospitals and private clinics/hospitals in district and provincial level. There are 730 community hospitals, covering 91.7% of all districts, one extended OPD or branch hospital, and 214 municipal health centers.

5. Tertiary medical care means health services provided by specialist doctors and other health professionals in tertiary facilities at provincial, regional hospitals, general hospital and other specialized hospitals, medical school or university hospitals, and some private hospitals. Most public facilities in this level are under supervision of Ministry of Public Health (MoPH). And some under other public agencies, there are Ministry of Defense, medical schools, or state enterprises etc. These hospitals are located in large cities and Bangkok Metropolis. In Bangkok Metropolis, there are five medical school hospitals, 26 general hospitals, 14 specialized hospitals/institutions, and 68 public health centers (with 77 branches) in all Bangkok Metropolitan Administration (BMA) districts. Region level. There are six medical school hospitals, 25 regional hospitals, and 47 specialized hospitals. Provincial level. There are 70 general hospitals covering all provincial areas (previously there were 67 general hospitals; and now Hua Hin Community Hospital has been upgraded as a general hospital, two other hospitals have been transferred to MoPH. i.e. Chonprathan Hospital of the Agriculture Ministry and the Northeastern Region Infectious Disease Hospital of the MoPH Disease Control Department) and 59 hospitals under various military bases and combat units of the Ministry of Defense.

Thai's health care level infra-structure and type of health facilities in health care system mentioned above can be shown in Figure 5

Type of health facilities

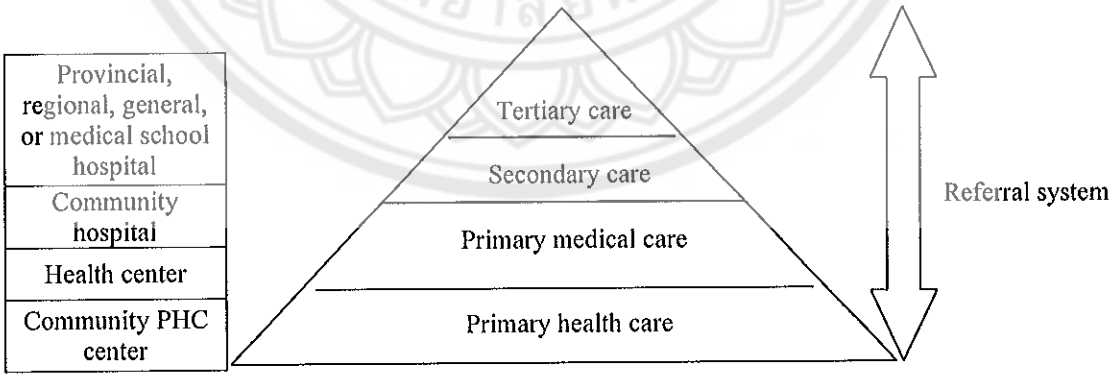


Figure 5 Level of health care and type of health facilities in Thailand health system

Source: Modified from Prakongsai, 2008

Thailand's health care systems was designed based on geographic, administrative district and affiliated organization. High level health facilities are normally located in urban setting of big city that always insufficient of primary care services. Then we should understand in health care systems in urban setting of Thailand.

Health care system in urban city of Thailand

The diversity of organizations provides health care in both public and private sector for urban city dwellers in Thailand. As in Nakhon Swan Municipality, the complexities of health care system as mention in the chapter I. In public sector, it composes with tertiary, secondary, and primary care providers under the Ministry of Public health, Ministry of Defense and Municipality itself. In private sector, it composes with tertiary, secondary and primary care, private clinics, private drug stores.

In conclusion, complexity of the health care system leads to some barrier in access to health care. Such as patients registered from other facilities have to pay for health services. Compulsory registered at nearby home health facility, Ill with out of service package of NHSO made people have to pay their out-of-pocket payment for health care. It is necessary to review on health seeking behavior to understand the behavior of urban dweller in access to health care. Moreover, the reasons behind decision making by the samples in the study.

Health seeking behaviors

Understanding health seeking behavior

Researchers have long been interested in what facilitates the use of health services, and what influences people to behave differently in relation to their health. There has been a plethora of studies addressing particular aspects of this debate, carried out in many different countries. For the sake of this paper they can simplistically be divided into two types, which roughly correspond with a division identified by Tipping, & Segall M. (1995). Firstly there are studies which emphasize the 'end point' (utilization of the formal system, or *health care seeking behavior*); secondly, there are those which emphasize the 'process' (illness response, or *health seeking behavior*).

Health care seeking behaviors: utilization of the system

There is often a tendency for studies to focus specifically on the act of seeking 'health care' as defined officially in a particular context. Although data are also gathered on self-care, visits to more traditional healers and unofficial medical channels, these are often seen largely as something which should be prevented, with the emphasis on encouraging people to opt first for the official channels (Ahmed et al., 2001)

These studies demonstrate that the decision to engage with a particular medical channel is influenced by a variety of socio-economic variables, sex, age, the social status of women, the type of illness, access to services and perceived quality of the service (Tipping, & Segall, 1995). In mapping out the factors behind such patterns, there are two broad trends. Firstly there are studies which categories the types of *barriers* or *determinants* which lie between patients and services. In this approach, there are as many categorizations and variations in terminology as there are studies, but they tend to fall under the divisions of geographical, social, economic, cultural and organizational factors (see **Table 2**)

Table 2 An illustration of categorization of health care seeking factors across studies

Author	Geographical	Social	Economic	Cultural	Organizational
Kloos (1990)	Geographical	Socio-economic		Cultural	
Yesudian (1988)		Demographic	Economic	Cultural	Organizational
Leslie (1989)		User factors			Service factors
Anderson (1995)	Environmental	Predisposing and enabling factors			Health system

These categorizations can be further broken down to illustrate the types of measures frequently used. These are grouped under reoccurring determinants in Table 3, and placed into key spheres of influence: informal, infrastructure and formal.

Table 3 Breaking down determinants of health care seeking behavior

Category	Determinant	Details	Sphere
Cultural	Status of women	Elements of patriarchy	'Cultural propriety'
Social	Age and sex		
Socioeconomic	Household resources	Education level	
		Maternal occupation	
		Marital status	
		Economic status	*informal*
Economic	Costs of care	Treatment	Physical
		Travel	
		Time	
	Type and severity of illness		
Geographical	Distance and physical access		
Organizational	Perceived quality	Standard of drugs	Technical
		Standard of equipment	
		Competence of staff	Staffing
		Attitudes if staff	
		Interpersonal process	Interpersonal
			formal

Secondly, there are studies that attempt to categorize the type of *processes* or *pathways* at work. Bedri (2001) develops a pathway to care model in her exploration of abnormal vaginal discharge in Sudan. She identifies five stages where decisions are made, and delay may be introduced, towards adoption of 'modern care'. There are four 'sub pathways' that women may follow, from seeking modern medical care immediately, to complete denial and ignoring of symptoms. This approach offers an opportunity to identify key junctions where there may be a delay in seeking competent care, and is therefore of potential practical relevance for policy development. For example, in order to optimize the pathways taken by women, Bedri suggests husbands should be involved in health education programs about vaginal discharge, and women should be enabled to conduct home vaginal swabs. Bedri's study is particularly interesting as it compares health care seeking behavior around vaginal discharge and malaria, revealing, perhaps not surprisingly, that women follow quite different

pathways for different conditions, relating predominantly to the role of the husband, social networks and cultural customs. This clearly has implications for health systems development.

The view is often that the desired health care seeking behavior is for an individual to respond to an illness episode by seeking first and foremost help from a trained allopathic doctor, in a formally recognized health care setting. Yet a consistent finding in many studies is that, for some illnesses, people will chose traditional healers, village homeopaths, or untrained allopathic doctors above formally trained practitioners or government health facilities (Ahmed S et al., 2001). There are variations witnessed, and apart from differences according to type of illness, gender is a recurring theme. For example, Yamasaki-Nakagawa et al. (2001) found women in Nepal were more likely than men to seek help from traditional healers first. The scale of this may be reflected in findings from a recent study by Rahman (Rahman SA, 2000) in rural Bangladesh, where 86% of women received health care from non-qualified health care providers. This has implications for diagnosis, and women have been found to have significantly longer delays to diagnosis than men (Needham et al., 2001; Yamasaki-Nakagawa et al., 2001).

Despite the ongoing evidence that people do choose traditional and folk medicine or providers in a variety of contexts which have potentially profound impacts on health, few studies recommend ways to build bridges to enable individual preferences to be incorporated into a more responsive health care system. For example, Ahmed et al (Ahmed S et al., 2001) conclude: "efforts should be made to raise community awareness regarding...the importance of seeking care from trained personnel and the availability of services". Nonetheless there is now growing recognition of the need to be more sensitive to the realities of health care seeking behavior. For example, in Bangladesh there is a large and growing sector of non-qualified allopathic providers engaged in the traffic of modern pharmaceuticals. They provide an accessible means of reaching Western medicines to a wider range of the population, yet lack formal medical training. There is therefore the accompanying problem of bad, unregulated prescriptive practices. Incorporating these unqualified providers into more formal training may therefore be beneficial (Ahmed S, Adams A, Chowdhury M, & Bhuiya A, 2000). Uzma et al. (1991) also suggest incorporating

unqualified TBAs into training programs for maternal health in order to improve the health status of women. Thus increasingly health care seeking behavior studies are coming to the conclusion that traditional and unqualified practitioners need to be recognized as 'the main providers of care' (Rahman SA, 2000) in relation to some health problems in developing countries.

In acknowledgement of the fact that untrained non-Western practitioners remain a strong favorite, Outwater A et al. (2001) interviewed traditional healers about their knowledge and relationship with 'modern' medicine, and explored in far more depth the preferences of women who attended traditional healers and unofficial sources of health care. Through this they recognized, as have others (Moses S et al., 1994) that some groups appear to 'wander' between practitioners rather than seek care through one avenue or provider. Similarly, Rahman (2000) found that different facilities will be frequented for different needs, according to a complex interplay of factors, sometimes regardless of the intended purpose of those facilities.

Thus there is growing acknowledgement that health care seeking behaviors and local knowledge's need to be taken seriously in programs and interventions to promote health in a variety of contexts (Price N, 2001; Runganga AO, Sundby J, & Aggleton P, 2001).

With this broader appreciation of behavior, some have suggested the need to improve integration of private sector providers with public care (Needham et al., 2001). Calls have been made for explicit recognition of the potential to combine the two worlds by involving unofficial providers in official training and service revision (Green, 1994; Outwater et al., 2001). However, Ahmed S et al., 2000 concede that whilst extending training to such providers may enhance their services, training in itself will not change practice. For this, managerial and regulatory intervention is needed. Thus the provision of medical services alone in efforts to reduce health inequalities is inadequate (Ahmed S et al., 2000). Clearly any research interest in health care seeking behavior, focusing on end point utilization, needs to address the complex nature of the process involved, cognizant of the fact that the particular 'end point' uncovered may be multi-faceted and not correspond to the preferred end points of service providers.

Health seeking behaviors: the process of illness response

The second body of work, rooted especially in psychology, looks at health seeking behaviors more generally; drawing out the factors which enable or prevent people from making 'healthy choices', in either their lifestyle behaviors or their use of medical care and treatment. Thus whilst in the former literature health care seeking behavior is conceptualized as a 'sequence of remedial actions' taken to rectify 'perceived ill-health' (Ahmed S et al., 2000), in the second approach the latter part of the definition, responding specifically to *perceived ill-health*, may be dropped, as a wider perspective on affirmative, health promoting behaviors is adopted. A number of 'social cognition models' (Conner M, & Norman P, 1996a) have been developed in this tradition, to predict possible behavior patterns. These are based on a mixture of demographic, social, emotional and cognitive factors, perceived symptoms, access to care and personality (Conner M, & Norman P, 1996b). The underlying assumption is that behavior is best understood in terms of an individual's perception of their social environment.

A number of genres of model exist, and variations have been developed around them. One of the most widely applied is the 'health belief model'. Sheeran and Abraham (Sheeran P, & Abraham C, 1996) categories the range of behaviors that have been examined using health belief models into three broad areas: preventive health behaviors, sick role behaviors and clinic use. In this type of model, individual beliefs offer the link between socialization and behavior. One of the earliest examples was Hochbaum's (1958) study of the uptake of screening for TB, where he discovered that a belief that sufferers could be asymptomatic was linked to screening uptake. Health belief models focus on two elements: 'threat perception' and 'behavioral evaluation' (Sheeran, & Abraham, 1996). Threat perception depends upon perceived susceptibility to illness and anticipated severity; behavioral evaluation consists of beliefs concerning the benefits of a particular behavior and the barriers to it. 'Cues to action' and general 'health motivation' have also been included (Becker M, Haefner D, & Maiman L, 1977). The health belief model has been criticized for portraying individuals as a socio-economic decision makers, and its application to major contemporary health issues, such as sexual behavior, have failed to offer any insights (Sheeran, & Abraham, 1996).

A second genre of model is linked to the general assumption that those who believe they have control over their health are more likely to engage in health promoting behaviors (Norman P, & Bennett P, 1996). The 'health locus of control' construct is therefore utilized to assess the relationship between an individual's actions and experience from previous outcomes. The most popular of these is 'the multidimensional health locus of control measure' (Wallston K, 1992). However, this approach to social cognition models has been criticized for taking too narrow an approach to health and because the amount of variance explained is low (Norman and Bennett, 1996). Other approaches, including 'protection motivation theory' and 'theory of planned behavior' have equally met with mixed reception (Boer and Seydel, 1996; Conner and Sparks, 1996). **Figure 6** represents a visual summary of the approach of social cognition models.

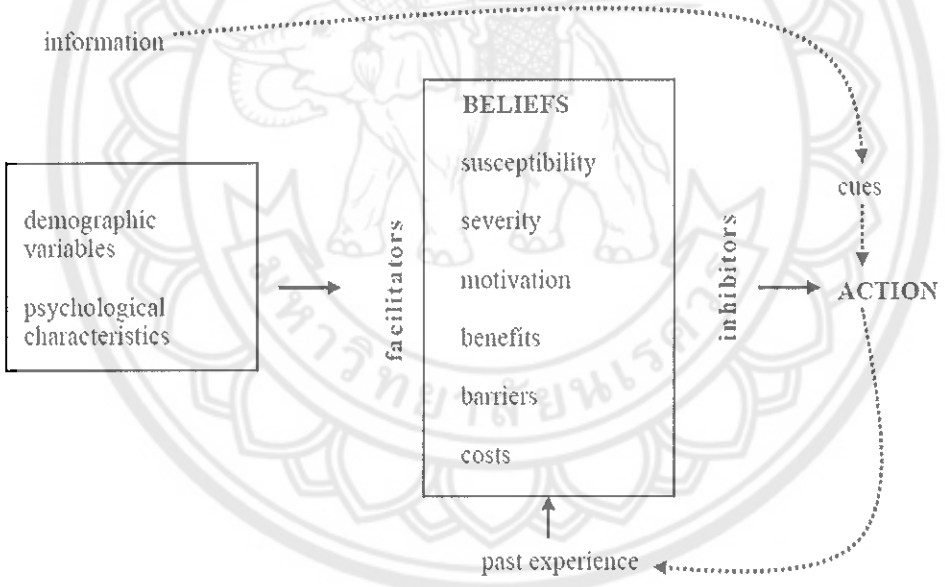


Figure 6 Predicting health behavior with social cognition models

Source: adapted from Sheeran and Abraham, 1996

These models, attempting to predict health behavior through a variety of means, are predicated on two assumptions central to classic health promotion: health is influenced by behavior; behavior is modifiable (Conner M, & Norman P, 1996b). The downfall of these models is that most view the individual as a *rational decision maker, systematically reviewing* available information and forming *behavior intentions* from this. They do not allow any understanding of *how* people make decisions, or a description of the *way* in which people make decisions. Fazio (Fazio RH, 1990) proposes an alternative to this 'deliberative processing model' in the form of a 'spontaneous processing model' which takes greater account of the unpredictable nature of the actual process of decision making. However, the central problem remains that these models focus *on the individual* and the centrality of *cognitive processes* ('I know, therefore I act'). This loses the sense that we are all rooted in social contexts that affect, in a far more complex manner, the way we process and act on information.

Reflexive communities

MacPhail C, & Campbell C (2001) begin to explore the neglected societal, normative and cultural contexts in which individual-level phenomena such as knowledge, attitudes and behavior are negotiated or constructed. In their work on risk taking behavior and sexuality amongst young South Africans, they criticize much previous work which focuses on the individual level, utilizing a KABP model approach (knowledge attitude-belief-practice) that assumes individual behavior is built upon rational decision making based on knowledge. MacPhail and Campbell believe developed country research has a better track record of exploring this broader contextual picture, whilst work in developing countries tends not to acknowledge the poor relationship between knowledge and health seeking behavior. This suggests we need to develop a more critical approach to our conceptualization of health seeking behavior in developing countries.

When an individual makes a decision in relation to their health, they weigh up the potential risks or benefits of a particular behavior. But they do so in a way that is mediated by their immediate practical environment, their social rootedness and their whole outlook on life more generally. Not all of this is immediately apparently relevant to an act of health seeking behavior, but it is all nonetheless inherent to that act, and must therefore be acknowledged. Lash (Lash S, 2000) suggests that in order to

understand the complexities of how people explore their relationship to particular decisions or actions, how and why they weigh up options as they do, we might think of '*reflexive communities*'. Reflexive communities reflect the particular ways of behaving, thinking and reaching decisions of individuals or groups that in turn reflect the social construction of their position in wider society at a particular place and time.

Acts within these reflexive communities do not rely solely on the processing of information and knowledge. They reflect something far more complex, emotional, social and practical. Whilst 'information' is a central part of the process of reflexivity which we are at pains to understand, the notion of 'information' is 'too one-sidedly cognitive' (Lash S, & Urry J, 1994). Lash and Urry suggest an individual's relationship with information must be seen also as possessing 'moral, affective, aesthetic, narrative and meaning dimensions'. Hence the availability of 'information' for individuals to make health seeking behavior choices around is only a small part of the equation. There is a wider 'aesthetic reflexivity' which "means making choices about and/or innovating background assumptions and shared practices upon whose bases cognitive and normative reflection is founded" (Lash, & Urry 1994). In order to understand how people reach the decisions they do around their health seeking behavior, we need to understand not only the information sources and how they are interpreted, but also the underlying, unspoken, unconscious feelings and assumptions which support that cognitive process and the journey taken during it. This reflects findings of previous studies on health seeking behaviors that confirm decisions around health seeking behavior are underpinned by both rational cognitive processes and less easily identifiable affective-emotional processes (see for example Campbell's (1997) work on male identities and HIV). As Harvey (1996) stresses, the way people *perceive* risks and *experience* risk should be a matter for public policy.

If we adopted this sort of approach to health seeking behavior, it would move beyond the traditional confines of social cognition models and health promotion assumptions, and may therefore be a more fruitful conceptual framework to use when exploring the decisions people make around health seeking behavior. Lash, & Urry (1994) claim all human existence is 'a movement towards death', but that individuals recognize there are ways of prolonging or hastening that movement. A whole host of

factors come into play in this reflexive process, which we are only just beginning to understand in relation to health seeking behaviors.

Norman P, & Bennett P (1996) propose that social cognition models may in future be developed to incorporate other variables such as self-identity ('I am a healthy eater'). I see this as a potentially promising development, as it would open up the field to including the role of 'reflexive communities' in decision making. Although work around risk cultures and health has to date concentrated predominantly on contemporary Western society and large-scale environmental risks, a framework developed from such work could bring the idea and relevance of health seeking behavior into a useful area for health service development in the context of the developing world, and is an idea worth exploring further.

If we aim to investigate the way in which people in particular places make decisions regarding their patterns of health seeking behavior, we could fruitfully adopt a framework that highlights the way in which people identify 'risks' attached to particular behaviors. For some it may simply be a matter of cost, for others a particular lifestyle aesthetic or cultural code may underpin any decision they make in a seemingly less 'rational' or scientific manner. Thus we need to expose not just people's perceptions, definitions and legitimating of risks in not seeking health care, but also the mutual constitution of implicit assumptions about behaviors and their translation into risks (Adam B, Beck U, & van Loon J, 2000), or Lash's 'reflexive communities'.

It seems therefore that neither of the literatures outlined above adequately address either the *nature of how people reach the decisions they do* in the context of their daily, socially and culturally embedded lives, or the *complexity of health care systems*. Both approaches see health seeking behavior as a one-off event, following a linear direction, filtered in different ways along its course. If we explore Lash's reflexive communities we would begin to conceptualize health seeking behavior much more as a state of being which ebbs and flows around daily life and is brought into sharp focus at particular points of crisis in time and space.

Thus it is my belief that we need to move the debate forwards into the messier terrain which remains unmapped around the dynamics of engaging in a complex and ongoing process that cannot adequately be conceptualized by measuring dislocated

actions aimed at a specific end point. As we are particularly interested in *health systems*, implications must be drawn out for service utilization and system development, and this necessitates our lens encompass something far broader than the majority of health seeking behavior studies. Broader both in terms of the channels which the individual may engage with (i.e. not purely official medical ones), and in terms of how we look at the influences on people's behavior in particular places. MacPhail, & Campbell (2001) begin to explore this broader context of system and policy implications, as they suggest sexual health policy and practice for young South Africans is influenced by simplistic generalized views held by adults, thereby excluding the very groups they wish to target. It is these sorts of ideas that need to be teased out of work on health seeking behavior more explicitly.

In order to do this there are two strands that need to be addressed: the hitherto neglected *collective, social* element of health seeking behavior, and the interaction *of individuals and societies with health systems*. These two issues are explored in more detail below. Firstly, in order to provide a setting around this, I want to expand a little more on the conceptual framework that I am suggesting will bring into sharp focus these two elements.

Health seeking behaviors model

Knowledge, attitudes and practices (KAP)

KAP are possibly the most frequently used studies in health-seeking behavior research. **Knowledge** is usually assessed in order to see how far community knowledge corresponds to biomedical concepts. Typical questions include knowledge about causes and symptoms of the illness under study. People reported knowledge which deviates from biomedical concepts is usually termed 'beliefs' (for a well elaborated critique see Good, 1994) (Good B., 1994). This distinction between 'knowledge' and 'beliefs' markedly deviates from the use of terms in psycho-social theory where 'beliefs' have a much broader meaning and include also beliefs concerning perceptions about individual. Downie and colleagues (Downie RS, Tannahill C, & Tannahill A, 1998) mention the illustrative example where the belief that 'I'm not good at sports' may restrict a person's readiness to engage in health exercise. Also beliefs about illness severity and susceptibility are seldom enquired.

Enquiry about other types of knowledge tends to be highly neglected in KAP studies. Very little information is sought on knowledge about the health system (access, referrals, opening hours, cost-sharing schemes etc.).

Attitudes form a more complicated issue, and in fact, despite their explicit inclusion in the study type, they are scarcely accounted for in KAP surveys. Attitude has been defined by Ribeaux and Poppleton (Ribeaux S, & Poppleton SE, 1978) as "a learned predisposition to think, feel and act in a particular way towards a given object or class of objects". As such, attitudes result from a complex interaction of beliefs, feelings, and values. They are important in designing health promotion campaigns which aim to change attitudes, e.g. attitudes towards condom use for prevention of AIDS. Attitudes may be inferred from a variety of statements and answers, but direct asking is usually problematic since people often respond in terms of what they think is the 'correct' answer. In particular attitudes towards traditional medicine might be hidden. In a survey, attitudes are therefore not easy to obtain. However, attitudes are central to understand behavior, an element which is better acknowledged in cognitive models.

Questions related to **Practices** in KAP surveys usually enquire about the use of preventive measures or different health care options. Normally, hypothetical questions are asked (what do you do if your child is ill?). They therefore hardly permit statements about actual practices. Rather, they yield information on people's normative behaviors or on what they know should be done (or they expect the interviewer wants to hear). In this sense, they check well on people's knowledge about practices, as heard in educational campaigns for example. However, special caution must be given to deductions from KAP survey data about explaining health-seeking behavior (Yoder PS, 1997).

Above all, KAP surveys yield highly descriptive data, without providing an explanation for why people do what they do. Unfortunately, many investigators who use KAP studies do use them, implicitly or explicitly, to explain health seeking behavior. Their studies are based on the underlying assumption that there is a direct relationship between knowledge and action. They assume that by changing knowledge, behavior is automatically changed as well. To give an example, one might expect that if people recognize the signs and symptoms of let's say tuberculosis and

if they know that TB can be treated by antibiotic drug regimens, they will act accordingly and attend a health facility. That this is overtly over-simplistic becomes clear if one considers that there are many other factors which influence health-seeking behavior. Although knowledge about an illness may be high, illness recognition during an actual episode is much less clear. In the example of TB, the typical symptom of incessant coughing leaves open a variety of other, less serious illness interpretations. Also not considered are motivational factors and stigma which may influence health-seeking behavior. Neglected are other factors like treatment expectations, satisfaction with health care services, decision-making for health care and external barriers (e.g. financial constraints, accessibility of health services). All this makes clear that knowledge is just one element in a broad array of factors which determine health-seeking behavior (for a critique of KAP studies, see also (Nichter M., 1993)).

Having mentioned the limitations of KAP surveys, it must be acknowledged that there are important advantages. On the whole, KAP surveys are very useful for assessing distribution of community knowledge in large-scale projects, e.g. national surveys, and for evaluating changes in knowledge after education and media campaigns. They permit rapid assessments, yielding quantitative data, and are therefore a cheap way to gain quick insights into main knowledge data. Moreover, they are relatively easy to carry out, and with some basic training in interview techniques, any public health specialist can design a questionnaire and undertake a KAP survey. However, the superficial and very knowledge oriented data they provide can clearly make them useful only as a part of an overall research strategy for studying health-seeking behavior (Lane SD, 1997).

Focused ethnographic studies (FES) and rapid assessments

As a response to the limitations of KAP studies and their misuse for explaining health behavior, anthropologists plead for the use of ethnographic studies. Traditional ethnographies carried out by anthropologists had, however, one big limitation: time. To describe culture, anthropologists usually spent years in the field, learning the language of the study communities, and living with them for long periods of time. Furthermore, their sophisticated language and their aim to contribute to advances in anthropological theory hardly matched with the expectations of public health specialists and epidemiologists. Already in the 1980s, Foster (Foster GM, 1987)

noted that one of the problems in behavioral research was the failure "to keep research simple" and criticized the tendency of many social science researchers to be so "keen on conveying an impression of research sophistication that they overlook entirely the need to address the question of the ends for which the research is carried out".

A compromise was sought to bridge the different disciplines in order to produce a more meaningful comprehension of community perspectives which helps understanding of health behavior. In a collaborative work of applied anthropologists and public health specialists, study guidelines were designed which combined anthropological theory and techniques with rapid, focused data collection aimed at yielding clear and comprehensive recommendations apt for implementation.

The classical examples of such study guidelines are the focused ethnographic studies (FES) developed for ARI programs (Gove S, & Pelto GH, 1994) and the rapid assessment manual for malaria (Agyepong IA, Aryee B, Dzikunu H, & Manderson L, 1995).

The primary aim of all the manuals which were developed and used is to identify local illness concepts and categories. The 'Emic' concept became increasingly central in anthropology as applied to public health investigations. In its simplified use, following Harris (Harris M, 1979), 'Emic' in public health works became synonymous with 'the native view' of illnesses as opposed to the 'Etic' concepts of biomedicine or 'health professionals' view'. The use of 'Emic' and 'Etic' in this sense is not unproblematic, as it fails to take into account that biomedical-trained health professionals do not have the state-of-the-art biomedical knowledge, and their own 'Emic views' of illnesses, and transmission of this knowledge to the population, are not considered. In public health studies, 'Emic' studies come very close to investigate 'lay beliefs', as opposed to biomedical 'knowledge'.

In contrast to KAP surveys, FES and rapid assessment studies are set to use a variety of techniques, with a particular emphasis on qualitative methods. As an important advancement, interviewees are not only confronted with biomedical and local illness terms, but they are presented pictures or videos in order to "validate the relationship of illness terminology to observable signs" (Gove S, & Pelto GH, 1994). In hypothetical scenarios (also called 'vignettes'), normative behavior is enquired with regard to the illness under study and related illnesses. The collection of narratives

about recent illness episodes and care-seeking also puts more emphasis on actual behavior, thereby giving more freedom to interviewees to explain their constraints and decisions related to care-seeking.

The iterative research process is acknowledged. Rather than working with pre-established questionnaires and random samples, the flexibility of research is high and a continuous evaluation of findings and new orientations depending on results become central.

FES and rapid assessment studies are strongly influenced by Kleinman's concept of 'explanatory models' (Bloor M, Goldberg A, & Emslie J). "EMs contains explanations of any or all of five issues: etiology, onset of symptoms, pathophysiology, course of sickness (severity and type of sick role) and treatment. EMs are tied to specific systems of knowledge and values centered in the different social sectors and sub-sectors of the health care system" (Kleinman A, 1986).

With the systematization of local illness categories, the overlapping between local and biomedical knowledge is explored. In particular, the ethnographer seeks to identify 'folk illnesses', i.e. locally recognized illnesses with their own cause, symptoms and treatment which do not correspond to biomedical nosology (Helman C. G., 1990; Rubel A.J. et al., 1984). Possibly the most famous example of a 'folk illness' is susto in Latin America (Rubel A.J. et al., 1984), an illness characterized by anxiety which does not correspond to a biomedical illness category. 'Folk illnesses' also became well-known in studies of malaria: from all over Africa, investigators reported that in the local understanding, convulsions were not recognized as a possible severe manifestations of malaria, but rather attributed to 'supernatural' agents, requiring treatment by a traditional healer (see for example Bonnet, 1986; Mwenesi, 1993; Makemba et al., 1996). Furthermore, health care system features (e.g. poor performance of health services, lack of drugs etc.), economic factors, and decision-making power for health care within households have been identified through FES and rapid assessment studies as obstacles for adequate health-seeking behaviors explaining treatment delays.

On the whole, FES and rapid assessments manuals are potentially very valuable tools, and the central idea to relatively rapidly collect ethnographic data in order to guide health implementers and policy-makers is certainly a great step forward

for better collaboration between anthropologists and public health specialists/epidemiologists. The different workshops held on qualitative methods have certainly fostered the mutual understanding of concepts, methods and contributions by different research disciplines.

The strength of FES and rapid assessment studies lies in the identification of illness categories, and impressively complex local illness classifications have received attention in project interventions. The findings were especially used in designing locally tailored IEC messages which took into consideration local illness terms (see Nichter M., 1993).

Unfortunately, with the main emphasis on identifying knowledge gaps in local illness understanding, these studies go barely beyond cognitive aspects, and the importance of contextualizing the findings in people's real life situations is greatly undervalued.

Health and treatment seeking behavior models from social psychology, medical sociology and medical anthropology allow for considerable extension of the determinant factors for behavior of KAP and FES studies.

In public health, probably the most utilized models from social psychology are the Health Belief Model, the Theory of Reasoned Action and its later development to the Theory of Planned Behavior. Most known from medical sociology and medical anthropology are, respectively, the Health Care Utilization or Socio-Behavioral Model by Andersen and its diverse posterior variations, and the Decision Making Model. All models contain associations of variables which are considered relevant for explaining or predicting health-seeking behaviors.

On the whole, health-seeking behavior models as applied to public health mostly serve as catalogues of relevant variables that need to be considered in research design, rather than as behavioral models themselves. The mainly statistical data obtained using these models permit the evaluation of the relative weight of different factors in health behavior (use of preventive or therapeutic measures, choice between different health resources, and non-compliance with treatment, or the consequences of behavior for delayed care seeking). The principal objective is to identify problematic areas in order to intervene with specific health system strategies.

Very frequently, investigators adapt the models to the peculiarities of their research field or study area, or fuse various models, with the main aim to increase the repertoire of possible key factors rather than to achieve theoretical advancements.

The Health Belief Model (HBM)

This is possibly the most known model in public health, and also the oldest one from social psychology, developed in the 1950s.

Figure 7 shows the HBM as presented by Sheeran and Abraham (1995). According to this version, action in the HBM is guided by:

1. Beliefs about the impact of illness and its consequences (threat perception) which depend on:

1.1 Perceived susceptibility, or the beliefs about how vulnerable a person considers him- or herself in relation to a certain illness or health problem.

1.2 Perceived severity of illness or health problems and its consequences;

2. Health motivation or readiness to be concerned about health matters. (This factor has been included later in the HBM, in the 1970s).

3. Beliefs about the consequences of health practices and about the possibilities and the effort to put them into practice. The behavioral evaluation depends on:

3.1 Perceived benefits of preventive or therapeutic health practices;

3.2 Perceived barriers, both material and psychological (for example 'will-power'), with regard to a certain health practice.

4. Cues to action, which includes different, internal and external factors, which influence action. For example, the nature and intensity (organic and symbolic) of illness symptoms, mass media campaigns, advice from relevant other (family, friends, health staff, etc.)

5. Beliefs and health motivation are conditioned by socio-demographic variables (class, age, gender, religion, etc.) and by the psychological characteristics of the interviewed person (personality, peer group pressure etc.).

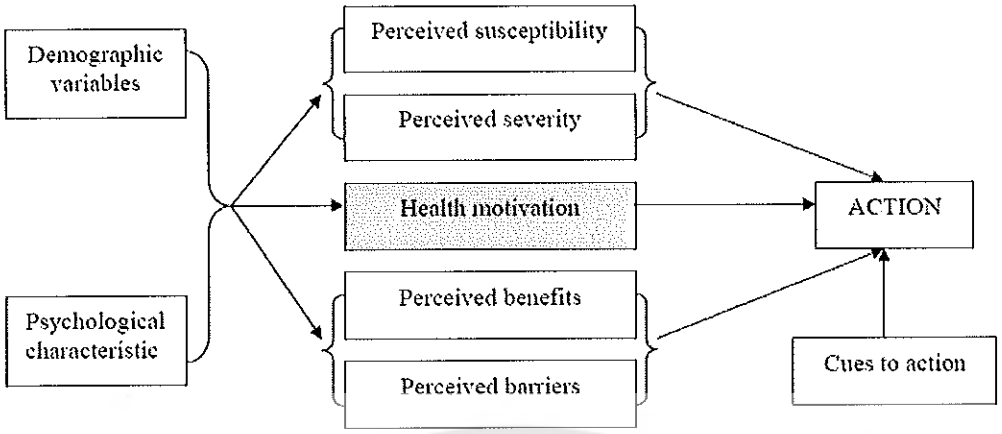


Figure 7 the Health Belief Model

Source: Sheeran, & Abraham, 1995

The socio-demographic variables, like in all other models, target groups to be established to which interventions can be directed. These interventions are mainly health promotion and center on beliefs about disease threat and behavioral evaluation. These are the factors which are considered to be transformable through health education, in contrast to structural or cultural factors like poverty, religious norms etc.

While there is evidence that perceived susceptibility, severity, benefits and barriers of the HBM are relevant factors in health behavior (Sheeran P, & Abraham C, 1996), the HBM neglects further determinants which are present in other models, like previous experiences, advantages of mal-adaptive behavior, behavioral intention, perceived control etc. (see following models).

Through the HBM interesting and highly relevant findings for health promotion can be determined. For example, for a disease like tuberculosis or AIDS which is associated with a specific group (the poor, homosexuals), persons who do not include themselves into these groups will hardly consider themselves vulnerable to the disease. This had particular implications for health messages about AIDS, which in later campaigns needed to be explicitly targeted to heterosexuals in order to create risk awareness. Studies which found that in endemic areas, malaria was not considered a severe disease (Mwenesi, 1993), or that mosquito-nets were not felt effective against malaria because 'mosquitoes bite day and night', are other examples which show the

implications of perceived threat for health behavior. The same applies to diarrhea which was locally understood as a way of 'cleansing' the body, and vomiting, perceived to be a sign of relief, rather than of aggravation of disease (Hausmann-Muela S., Muela Ribera J., Mushi A.K., & Tanner M., 2002; Nyamongo I.K., 2000).

The Theory of Reasoned Action and the Theory of Planned Behavior

The Theory of Planned Behavior (TPB, Ajzen) is an extension of the earlier Theory of Reasoned Action (TRA, Fishbein, & Ajzen). Both have been developed and amply used in HIV/AIDS research.

They center on factors which lead to a specific intention to act, or Behavioral Intention, which the TPB situates between the attitudes and behavior (see Figure 8). The centrality of Behavioral Intention questions the classical model of Belief, Attitude, Behavior (Conner, & Sparks, 1995).

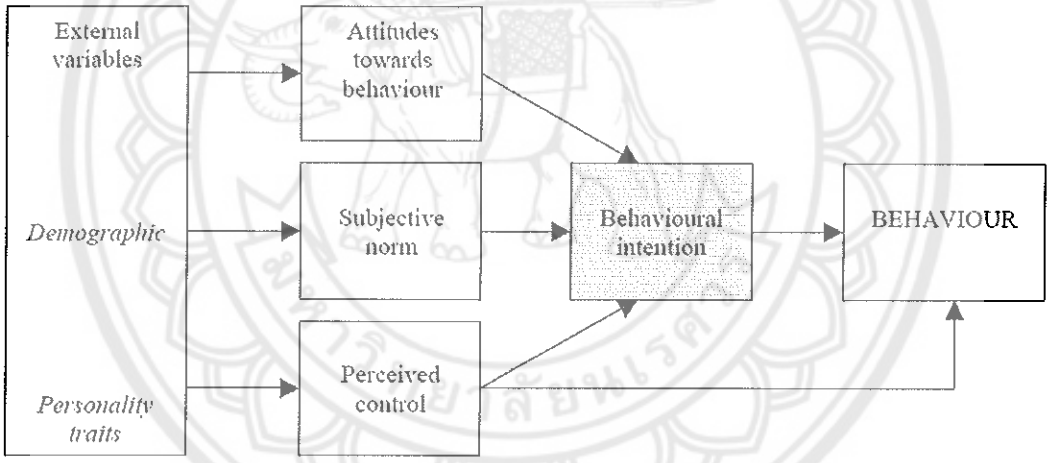


Figure 8 Theory of Planned Behavior

Source: Conner & Sparks, 1995

In the TPB, Behavioral Intention is determined by:

1. Attitudes towards behavior, determined by the belief that a specific behavior will have a concrete consequence and the evaluation or valorization of this consequence.

2. Subjective norms or the belief in whether other relevant persons will approve one's behavior, plus the personal motivation to fulfill with the expectations of others.

3. Perceived behavioral control, determined by the belief about access to the resources needed in order to act successfully, plus the perceived success of these resources (information, abilities, skills, dependence or independence from others, barriers, opportunities etc.)

4. Socio-demographic variables and personality traits which condition attitudes, subjective norms and perceived behavioral control. These are the same as in the HBM.

An outstanding aspect of the TPB is the central role of social network support. Health promotion among sex workers, with the collaboration of committed sex workers who were trained to distribute information and to offer support to their colleagues, provided positive results in a South African mining community (Campbell C., & Mzaidume Z., 2001). Similarly, the support of friends and partners has been central for South African adolescents to attend STD clinics (Meyer-Weitz A., Reddy P., Van Den Borne H.W., Kok G., & Pietersen J., 2000a). Another key factor emphasized in the TPB is the encouragement of feelings of self-control. In order to promote HIV/AIDS preventive measures, Meyer-Weitz and her colleagues (Meyer-Weitz A., Reddy P., Van Den Borne H.W., Kok G., & Pietersen J., 2000b) used a TPB approach in order to stimulate feelings of control and self-efficacy in negotiating with partners or clients to use condoms.

The advantages of the TPB are clearly the taking into account of motivational aspects of personal disease control and the influence of social networks and peer pressure. The examples above show how projects can take advantage of these factors, rather than limiting themselves to the transmission of knowledge messages. Unfortunately, the TPB approach has scarcely been used outside STDs/AIDS research.

The limitations are a potential overemphasis on these psychological factors, while under-valuing structural factors like limited access or availability of resources.

The Health Care Utilization Model

The socio-behavioral or Andersen model (Andersen R.M, 1995) groups in a logic sequence three clusters or categories of factors (predisposing, enabling and need

factors) which can influence health behavior. The model was specifically developed to investigate the use of biomedical health services. Later versions have extended the model to include other health care sectors, i.e. traditional medicine and domestic treatments (Weller S.C., Ruebush II T.R., & Klein R.E., 1997). Figure 9 outlines the different categories. An adaptation of the model has been proposed for studying health-seeking behavior for malaria (Rauyajin O., 1991).

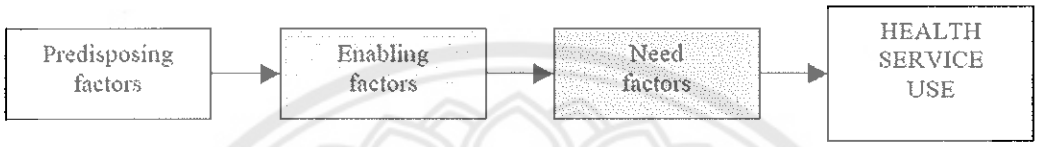


Figure 9 Health Care Utilization Model

Examples of the factors organized in the categories of the Health Care Utilization Model (Weller S.C. et al., 1997) are:

1. Predisposing factors: age, gender, religion, global health assessment, prior experiences with illness, formal education, general attitudes towards health services, knowledge about the illness etc.

2. Enabling factors: availability of services, financial resources to purchase services, health insurance, social network support etc.

3. Need factors: perception of severity, total number of sick days for a reported illness, total number of days in bed, days missed from work or school, help from outside for caring etc.

4. Treatment actions: home remedies (herbal, pharmaceuticals), pharmacy, over the counter drugs from shops, injectionists, traditional healers, private medical facilities, public health services etc.

The model centers specifically on treatment selection. It includes both material and structural factors, which are barely taken into account in the social psychology models. Weller and colleagues (1997) emphasized its particular use for working with statistical data on actual cases. The model has also been used for gaining evidence on the weight of different factors for health service use. Based on the data of Demographic and Health Surveys, a comparative study of six African countries has been carried out, using the categories proposed by Andersen (Fosu G., 1994).

Andersen's model has been modified in the International Collaborative Study on Health Care (Kroeger A., 1983). In addition to the predisposing factors and enabling factors, this version includes Health Service System factors, referring to the structure of the health care system and its link to a country's social and political macro-system. This is a valuable extension as it puts emphasis on the link of health-seeking behavior with structural levels within a macro-political and economic context. However, the model omits the 'need factors' which are central for understanding health-seeking behavior (Weller S.C. et al., 1997).

A further variant of Andersen's model was elaborated by Kroeger (Kroeger A., 1983). Based on an extensive and well-elaborated literature revision, he proposed the following framework (see Figure 10):

1. Interrelated explanatory variables, all of which are affected by perceived morbidity.

2. An individual's traits or predisposing factors: age, sex, marital status, status in the household, household size, ethnic group, degree of cultural adaptation, formal education, occupation, assets (land, livestock, cash, income), social network interactions.

3. Characteristics of the disorder and their perception: chronic or acute, severe or trivial, etiological model, expected benefits or treatment (modern versus traditional), psychosomatic versus somatic disorders.

4. Characteristics of the service (health service system factors and enabling factors): accessibility, appeal (opinions and attitudes towards traditional and modern healers), acceptability, quality, communication, costs.

The interaction of these factors guides the election of health care resources (dependent variables).

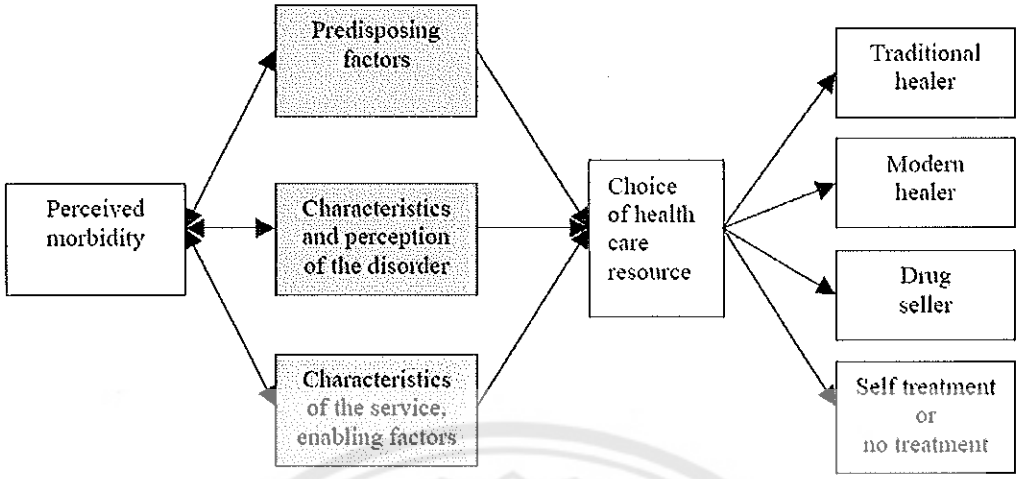


Figure 10 Kroeger's Model, 1983

The advantage of socio-behavioral models is the variety of the factors which are organized in categories, making interventions on therapeutic actions (or lack of actions) feasible. They permit the establishment of correlations with good predictability, but not specification of how and why the different factors affect therapeutic selection (Weller S.C. et al., 1997).

The "four As"

It has become popular among researchers to use different categories which group key factors for health-seeking behavior. The best known is the grouping into the "four As":

1. Availability: refers to the geographic distribution of health facilities, pharmaceutical products etc.

2. Accessibility: includes transport, roads, etc.

3. Affordability: includes treatment costs for the individual, household or family. A distinction is made between direct, indirect and opportunity costs.

4. Acceptability: relates to cultural and social distance. This mainly refers to the characteristics of the health providers – health workers' behavior, gender aspects (non- acceptance of being treated by the opposite sex, in particular women who refuse to be seen by male nurses/doctors), excessive bureaucracy etc.

The 'model' of the "four As" has been widely used by medical geographers, anthropologists and epidemiologists who mainly emphasized distance (both social and

geographical) and economic aspects as key factors for access to treatment (Good C.M., 1987).

The advantage of the "four As" is the easy identification of key potential 'barriers' for adequate treatment.

Pathway models

Starting with recognition of symptoms, they center on the path that people follow until they use different health services (home treatment, traditional healer, biomedical facility).

Figure 11 shows an example of a pathway model (Good 1987), which stresses the importance of 'significant others' and the decision-making process.

'Significant others' are part of the 'therapy managing group', a concept elaborated by Janzen (Janzen J.M., 1978) which is key for understanding decision making in therapeutic processes. This idea challenges the strong emphasis on the individual and stresses the pivotal role of extended groups of relatives and friends in illness negotiation and management. In the course of the illness episode, the involvement of support groups in illness management can successively change. Pathway models acknowledge these dynamics of illness and decision-making.

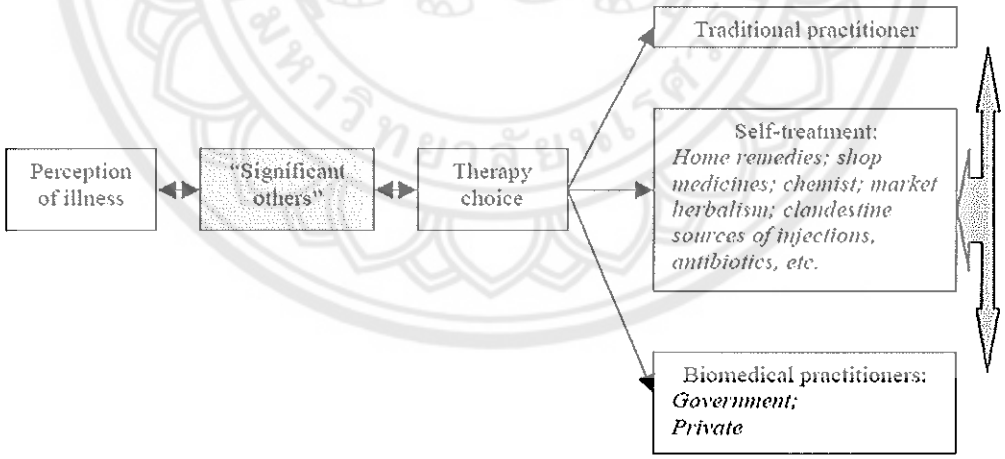


Figure 11 Good's Model, 1987

The bolt arrow indicates that people can move from one sector to another.

From literature reviewed mentioned above, it showed about the concepts and development of theories and the models relevant to health seeking behaviors. In this

study, health seeking behavior of the urban dweller related to catastrophic health expenditure. Their health seeking behavior depends on various factors as mentioned before. For the qualitative part of this study will employ the in-depth interview with both the poor and the non-poor residing in Nakhon-Sawan municipality to know the factors relate to health seeking behaviors and catastrophic health expenditure also. Semi-structure open-ended questionnaire modified from literatures will be used for collect the qualitative data (**Table 4**) consist of:

Demographic characteristics

There are Age, Sex, Education level, Occupation, Family size, Socio-economic status, Health insurance, financial burden of sampled households and social network interactions.

Psycho-social characteristics

Perceived susceptibility ("Emic" or native view, "Etic" or health professional view), Perceived severity of illness or health problems and its consequences, Perceived benefits of preventive or therapeutic health practices, Perceived barriers in access to care, days missed from work or school and prior experiences with illness.

Enabling factors

Availability: refers to the geographic distribution of health facilities, pharmaceutical products, performance of health services, etc., **Accessibility**: includes transport, roads, etc., **Affordability**: includes treatment costs for the individual, household or family. A distinction is made between direct, indirect and opportunity costs. **Acceptability**: relates to cultural and social distance. This mainly refers to the characteristics of the health providers – health workers' behavior, gender aspects (non-acceptance of being treated by the opposite sex, in particular women who refuse to be seen by male nurses/doctors), excessive bureaucracy etc. and **Social support** such as local health fund, health volunteers and subsidize from government.

Treatment action

Home remedies (herbal, pharmaceuticals), pharmacy, over the counter drugs from shops, injectionists, traditional healers, private medical facilities, public health services etc.

In conclusion, from various model of health care seeking behaviors reviewed above. The study needs to draw an interview guidance

Table 4 Guidance for in-depth interview (Modified from various models)

Demographic characteristics	Psycho-social characteristics	Enabling factors	Treatment action
-Age -Sex -Education level -Occupation -Family size -Socio-economic status -Health insurance -Financial burden -Social network interactions	-Perceived susceptibility ("Emic" , "Etic") -Perceived severity of illness -Perceived benefits of preventive -Perceived barriers in access to care	- Availability - Accessibility - Affordability - Acceptability - Social support	- Home remedies - Drug store - Traditional healers - Private medical facilities - Public health services

The study draws its new guidance questionnaire for in-depth interview. It can be seen in the Table 4 "Guidance for in-depth interview". The guidance composing with 4 main topics and 23 sub-topics.

Then we need to know the situation of health care utilization and barriers in access to care in Thailand.

Utilization of health care

Utilization of health care is a function both of individual attributes of the patient and organizational factors including the availability and accessibility of health care services. Among individual attributes, the severity of a person health problem or illness, his or her perception of vulnerability, cultural and psychological attitudes towards health care systems, influence utilization behavior of individuals (Andersen, 1975). Organizational factors include economic costs, availability, distance, and location of health care services.

Evidences from literature of health seeking behavior in Thailand since 1970 through 2003 from various studies, People seek care from both formal and informal health providers and from public and private health facilities. Table 5 shows health

seeking behavior of the Thai people over three decades before and early years after implemented (2001) UC policy in Thailand based on various surveys.

Table 5 Share of different health seeking behavior of Thai from 1970 to 2003 (%) by various surveys

Health seeking behavior	1970 *	1979 *	1985 **	1991 ***	1996 ***	2001 ***	2003 ***
Do nothing	2.7	4.2	-	15.9	6.9	5.1	5.4
Traditional medicine	7.7	6.3	2.4	5.7	2.8	2.9	2.6
Drug store	51.4	42.3	28.6	38.3	37.9	22.5	19.9
Health centers	4.4	16.8	14.7	14.8	20.8	22.4	22.2
Public hospital	11.1	10.0	32.5	12.9	12.9	32.7	30.7
Private clinic and hospital	22.7	20.4	21.8	12.4	18.7	14.4	17.9

Sources: * = Ministry of public health (MoPH)
** = Institute for Population and Social Research (IPSR), Mahidol University
*** = National Statistical Office (NSO)

During past three decades, several national household surveys have shown that the share of self-care and self-medication in the health seeking behavior of the Thai considerably decreased, while the use of health centers and public hospitals has significantly decreased, particularly after the economic crisis in 1997. Also many national policies on health sector reform and development have influenced changes of Thai people in health seeking behavior.

Since the national health care reform, Thai populations have changed their behavior on seeking care. The supply of public health providers were not increase. While as the health care utilization is increasing. So the increasing health care utilization made some barriers in access to care especially in urban area that has a complicated health care system.

Barriers to health care in urban area

Urban area where have more vulnerable and worth health (Montgomery MR et al., 2003; Murray CJL, & Lopez MR, 1996; Van Donk M, 2006; WHO, 2002a). In general, people with illness in urban should have more health care utilization rate than rural area. Incidences from many literatures in Thailand by various surveys indicate that health care utilization rate of people in urban areas are lower than those in rural. Therefore, there were have many barriers in access to care among urban dweller such as had no health insurance, use health service without comply their scheme, the illness is not included in core benefit package of health insurance schemes, and inconvenient in utilization of health care.

First we should understand more about barrier in access to care. What are barriers and how about the situations of health care utilization in urban area of Thailand?

Barriers to health care

Barrier to health service are significant factors which lead top inequitable access to and utilization of health services. They can be classified into various categories depending on the type of health care provided, place of analysis, and who is conducting the analysis. Barriers in access to health care can be classified as physical, financial, attitudinal and process barriers (California Health Care Foundation, 2000). Categories for understanding barriers in access to health care are presented as follows.

1. Physical barriers:
   1.1 Lack of available health services in area; and,
   1.2 Lack of resources for overcoming physical barriers (e.g. handicap, transportation).
2. Financial barriers:
   2.1 High cost of health services; and,
   2.2 Lack of health insurance coverage.
3. Attitudinal barriers:
   3.1 Cultural discordance between patients and providers; and,
   3.2 Perception of health service importance relative to other priorities.
4. Process barriers:

4.1 Lack of knowledge of eligibility for public assistance, health service coverage, and/or enrolment processes; and,

4.2 Limited office hours and employers who do not provide time off for utilizing health services.

In Thailand, there are some studied indicates barriers in access to health care. Firstly the studied of sustainable universal coverage: household met need by Supait Pannarunothai et al. (2002) urban dweller who had no any public insurance card. Table 6 shows that the most common reason was no house registry (21% for urban and 18% for rural). For this reason is relevant with the migration of rural people to urban particularly the poor in slum, who lives in house with no registry. So they cannot register for any public insurance card (Weraphong et al., 2007).

Table 6 Reasons for not having the card of 30 baht scheme

Reasons given	**Urban** (n = 871)	**Rural** (n = 574)
No house registry	20.8	17.9
Do not know	18.5	14.5
Do not bother	15.4	12.5
Were informed that could seek care without showing the card	1.4	1.7
No personal identification card	0.7	0.9
Others	43.3	52.4
Total	**100%**	**100%**

Further compliance rate to 30 baht scheme in urban area is lower than rural. Table 7 shows finding from four provinces by residence indicted that there are more barriers in access to health care in urban area in four provinces.

Table 7 Compliance rate to 30 baht scheme by residence in 4 provinces

Area	Ubon	Sukhothai	Samutsakorn	Phuket	All
Urban	43.6%	51.9%	48.8%	46.8%	48.0%
Rural	64.8%	68.5%	56.7%	53.7%	61.5%

Barriers in access to care in Thailand also the exclusion of benefit package of public insurance scheme. In Thailand type and scope of health services included in the UC benefit package are based on health services included in the SSS, VHC, and LIC benefit packages. The UC benefit package is comprehensive including primary, secondary, tertiary, and emergency health care, health promotions, prevention health services, and wide range of expensive health services. Diagnostic investigation, medicine and medical supplies whose quality is not below the quality of National Drug List, hospitalization including general bed and nutrition, referral system in necessary cases, and health education and immunization according to the National Health Program, are also included in the UC benefit package. Details of the exclusion list of the UC benefit package comprises (Prakongsai, 2008):

1. Groups of medical services that are beyond the basic needs of the population such as infertility treatment, artificial fertilization, transgender operation, cosmetic surgery without any medical indications, and excessive examination, diagnosis or treatment without any medical indication;

2. Groups of medical services for which a regular or specific budget from MOPH or other public organizations has been allocated such as mental requiring more than 15 days of hospitalization (as inpatient), drug-dependence treatment and rehabilitation as required by law relating to narcotics, and road-traffic accident victims who are entitled to care under the traffic accident insurance law; and

3. Other groups of services such as the same illness requiring more than 180 days of hospitalization, except for the case that require continuous care due to complications or medical indications, experimental medical treatment, peritoneal dialysis for end stage renal failure, hemodialysis with artificial kidney machine, and organ transplantation.

Lastly is an inconvenient to use public facilities in urban area. The study of "Universal coverage and community organization in protecting the poor" in Uttaradit, a province located in the north of Thailand, in 2007 by Weraphong et al. (Weraphong et al., 2007) Found that people who seeking care in municipal (Thuan, Lofgren, Chuc, Janlert, & Lindholm) area have more inconvenient than that in rural area. Table 8 shows differentiation of rural and urban residents in utilized public facilities.

Table 8 Comparing of health care utilization by residence

Comparing issues	Rural	Municipality
Facilities	Health center	Hospital
Distance to access	1 Km.	1 Km.
Waiting time (Average)	20 Min.	5 Hrs.
Satisfaction	Good	Poor

Out-of-pocket health expenditure

Organization for Economic Co-operation and Development (OECD, 2008) (OECD, 2001) defined that household out-of-pocket expenditure on health comprise cost-sharing, self-medication and other expenditure paid directly by private households, irrespective of whether the contact with the health care system was established on referral or on the patient's own initiative. the World Bank (Claeson M et al., 2001) acknowledging that "Out-of-pocket payments for health services, especially hospital care can make the difference between a household being poor or not".

Litvack J I, & Bodart C. (1993) defined that direct out-of-pocket payment is made by patients to either public or private health care provider at the time when health services are utilized. Although such payments have always been used by private health care provider to obtain revenue, suggestions of the World Bank in the mid-1980s encouraged an increase in user charges for public services in low-income and developing countries. Reddy S. and colleague (1996), Gillson L. (1997) and Children S.T. (2005) (Children, 2005; Gilson L, 1997; Reddy S, & Van demoortele J, 1996) stated that the proponents of user fees believed that the fees would increase revenue to

improve quality of public health services and expand coverage. However, the major objection raised to the implementation of user fees has been on inequity grounds, in particular that the poor would not be able to afford to pay, and thus would not be able to access necessary health services when needed.

WHO (2000) denoted that in the world, from literature found that families spend 50% or more of their non-food expenditure on health is likely to be impoverished as a result. Detailed household surveys show that in Brazil, Bulgaria, Jamaica, Kyrgyzstan, Mexico, Nepal, Nicaragua, Paraguay, Peru, the Russian Federation, Viet Nam and Zambia more than 1% of all households had to spend on health half or more of their full monthly capacity to pay, which means that in large countries millions of families are at risk of impoverishment. Invariably the reason is high out-of-pocket spending.

In Asia, Smith P. and Colleague (Smith P, Wong C, & Zhao Y, 2004) found that another World Bank study estimated that private health expenditure constituted 58% of total health expenditure in China in 2002. In addition, result from the equity in Asia-Pacific Systems (EQUITAP) project revealed that health care finance of the poorest country, Nepal, obtains three-quarters of its funding for health care from OOP payments, while the richest country, Japan, obtains only 12% from this source. But Donell O. and colleague (Donnell O et al., 2005) found that at similar levels of income, the OOP share does vary; for instance, it is greater in China than it is in Sri Lanka.

Thus, in 2006 the study of catastrophic payment for health care in Asia by van Doorsler E. et al. (2006) found that there is substantial variation across territories in the mean OOP budget share. Averaged across all households, OOP payments for health care absorb 4–5.5% of total household consumption in China, India, Bangladesh and Vietnam. All four of these countries rely on OOP payments for at least 60% of health financing. With the exception of (Thuan et al.) China, they are among the poorest countries examined here. Associated with poverty, population health deficiencies drive up expenditures on health care and medicines. The mean OOP budget share is much lower – 1.4–2.7% – in Malaysia, Thailand, Indonesia, the Philippines, Sri Lanka, Hong Kong, Kyrgyz and Nepal. With the exceptions of Indonesia, Kyrgyz and Nepal, these countries are less poor than the first group and

rely less heavily on OOP financing. The low mean OOP budget shares in Indonesia and Nepal, despite their heavy reliance on OOP financing, indicate low aggregate levels of spending on health care. This reflects the severity of poverty and the prioritization of subsistence needs. In the two high-income territories operating a social insurance model with co-payments – Korea and Taiwan – the mean OOP budget share is in the middle of the range, around 3.8%. The lower average budget share in Hong Kong (2.3%) is understandable given its higher levels of income and population health and, in comparison with Korea, its lower reliance on OOP financing.

For Thailand prior to UC, household spending on health from evidence of series of household socio-economic survey (Moses S et al.) shows the fluctuation of household health expenditure according to the country's economy and national health policies. The 1988 to 2001 SES (Table 9) indicated that during the economic boom period, monthly household expenditure reached the highest amount of 343 Baht per month in 1996, then decreased considerably after the economic crisis in 1997, and slightly dropped until the implementation of the UC policy in 2001. The monthly household health expenditure for health facilities significantly declined after the economic crisis, while the amount of household expenditure for self-medication slightly increased.

Table 9 Monthly household health expenditure during 1988-2002 (Baht / month)

Health expenditure	**1988**	**1990**	**1992**	**1994**	**1996**	**1998**	**1999**	**2000**	**2001**
Health expenditure Per month	143	185	226	262	343	287	273	263	264
Self-medication	31	35	39	39	41	48	42	49	46
Health facilities	112	150	187	223	302	239	231	214	218
- Public	52	62	76	85	148	107	94	91	98
- Private	51	75	96	117	134	115	122	108	110
- Other	9	13	15	21	20	17	15	15	10

Source: Thailand Health Profile 1999-2000 (Wibulpolprasert 2001a) and National Health Accounts in Thailand 1994-2005 (International Health Policy Program 2007a)

In addition, objective of the UC policy in Thailand were to provide accessible and equitable quality health services, and reduce the national, as well as household health care expenditure. To achieve objective government introduced health care financing reform as a crucial tool in achieving both efficiency and equity goals under the universal coverage policy to reduce household expenditure on health. However the study "Realigning public and private health care in south-east Asia" by Ramenh M. and Ashmer M. (Ramesh M, & Asher, 2000) found that Thailand after implemented UC policy comparing with three countries in south-east Asia Thailand can reduce OOP in the same proportion.

Table 10 Monthly household health expenditure during 1988-2002 (Baht / month)

	Indonesia		Malaysia		Philippines		Thailand	
	1996	2005	1996	2005	1996	2005	1996	2005
Total health expenditure (TH E) as% of GDP	2.2	2.7	3.1	3.5	3.5	3.4	3.8	3.5
Government health expenditure (Hughes D & Dumont K) as % of THE	28.5	34.7	48.0	54.4	41.0	83.0	47.2	63.9
Social security funds as % of GGHE	9.6	21.3	0.8	0.8	12.2	24.1	7.2	12.4
Private health expenditure on (PHE)	71.5	65.3	52.0	45.6	59.0	61.7	52.8	36.1
Private households' out-of-pocket payment as % of PHE	75.4	74.3	78.9	74.2	81.8	77.3	80.4	76.6

Table 10 (cont.)

	Indonesia		Malaysia		Philippines		Thailand	
	1996	2005	1996	2005	1996	2005	1996	2005
Prepaid and risk-pooling plan as % of PHE	4.3	6.0	9.0	13.2	6.6	12.8	9.5	15.6
External resources on health as % of THE	1.4	1.2	0.6	0.0	2.5	2.6	0.0	0.2

Source: National Health Account Tables 2007, World Health Organization, accessed at www.who.int/nha/country/en/index.html.

Evidences from literature reviewed mentioned above. Out of pocket expenditure for health in low-middle income countries still shared large fraction of household expenditure indicated that financial barriers in access to care may be occurred in many part of the world population. Further financial burden made households especially the poor household facing with bankruptcy from health care expenditure or named as catastrophic health expenditure would be described in the next part.

Catastrophic health expenditure

One WHO conception of fairness in health finance (WHO, 2000) is that households should be protected against such catastrophic medical expenses. O'Donnell O. and van Doorsler E. (O'Donnell O, van Doorslaer E, Rannan-Eliya R et al., 2005) stated that out-of-pocket payments are the principal means of financing health. This has consequences for the utilization of health care and subsequently health. There are also potentially important consequences for household living standards. Welfare is reduced by the uncertainty of medical expenditures. Households may be able to borrow to cover unexpected medical bills but at the risk of being trapped in long-term debt. As a result, opportunities to escape poverty through investments in human capital may be lost. Where there is a lack of access to credit, a characteristic of less-developed economies particularly binding for the financing of

investments in health, medical expenses must be covered from the current household budget and from wealth. Some households might be able to finance medical expenses from savings, by selling assets or by cutting back on expendable items of consumption. Further, van Doorsler E. and colleague (Doorslaer et al., 2006) also stated that more severely economically constrained households may be forced to cut back on necessities and consequently be pushed into poverty. Illness then presents a difficult choice between diverting a large fraction of household resources to cover the costs of treatment and forgoing treatment at the expense of health.

Catastrophic expenditure for health care: definition

Approximating the catastrophic economic consequences of illness through high health payments budget shares has a number of limitations. First, it identifies only the households that incur catastrophic medical expenditures and ignores those that cannot meet these expenses and so forgo treatment. Through the subsequent deterioration of health, such households probably suffer a greater loss of welfare than those incurring catastrophic payments. In 2002, Pradhan and Prescott attempt to estimate exposure to, rather than incurrence of, catastrophic payments. Second, there is no distinction between types of medical care purchased. A wealthy household with the capacity to spend a large fraction of its budget on cosmetic surgery would not usually be considered to have experienced a catastrophe, but it would be considered catastrophic for a poor household to spend the same fraction on essential medicines for a sick child. However, in low-income settings in particular, little medical care consumption would be considered frivolous. Below, we present estimates of catastrophic payments that differentially weight large health budget shares incurred by the rich and the poor. Third, the choice of the threshold budget share above which health payments are considered catastrophic is obviously subjective. A common choice has been 10% of total expenditure (Claeson M et al., 2001; Pradhan M., & Prescott N., 2002; Ranson M. K., 2002); with the rationale that this represents an approximate threshold at which the household is forced to sacrifice other basic needs, sell productive assets, incur debt, or be impoverished (Russell S., 2004). Here we consider a range of thresholds defined with respect to both total consumption and non-food consumption. As argued above, use of the latter might be more appropriate to assess the disruptive effect of OOP payments on the living standards of the poor.

Researchers at the World Health Organization (e. a. Ke Xu, 2003) set the threshold at 40% of capacity to pay, defined as non-subsistence effective income. This is household expenditure net of the estimated cost of subsistence food needs. Subsistence spending on food is defined as the average food expenditure of households in the 45th-50th percentile of the food budget share distribution. Since the food budget share is declining with the total budget, this will roughly correspond to the food expenditure of those with median welfare (taking food share a money metric indicator of utility). Actual food expenditure is used for those spending less than this value. We prefer to avoid the problem of estimating subsistence food needs and keep the analysis more transparent by referring to OOP as a share of total and of non-food expenditure. Notwithstanding these limitations, most households that spend a substantial fraction of their budget on health care can be expected to experience a disruption to their material living standards. Such spending may therefore be used as a proxy to part of the catastrophic economic consequences of illness.

Previous studies from many researcher use 10% of total household expenditure or 40% of capacity to pay as a threshold to define catastrophic health expenditure. To choose in which threshold depended on disparity of household in researched areas.

Evidences from other countries

There were some evidences in worldwide and regional studies of household catastrophic health expenditure. Xu et al. (2003) analyzed cross-country's data from household surveys in 59 countries, to explore, by regression analysis, variables associated with catastrophic health expenditure. They defined expenditure as being catastrophic if a household's financial contributions to the health system exceed 40% of income remaining after subsistence needs have been met. They found that the proportion of households facing catastrophic payments from out-of-pocket health expenses varied widely between countries, from less than 0·01% in Czech Republic and Slovakia to 10·5% in Vietnam (see ANNEX 1, Table 2). Most developed countries have advanced social institutions such as social insurance or tax-funded health systems that protect households from catastrophic spending. Among these countries, only Portugal, Greece, Switzerland, and the USA had more than 0·5% of households facing catastrophic health spending.

Among developing countries, the lower limit was less than 0·5% in Namibia and Djibouti, and ten countries had more than 3% of households facing catastrophic health expenditures (Table 2). Two groups of countries have high rates of catastrophic spending: countries in transition, such as Azerbaijan, Ukraine, Vietnam, and Cambodia, although several other countries in transition do not have substantial catastrophic health spending; second, is in Latin America (Argentina, Brazil, Colombia, Paraguay, and Peru). As with the first group, not all countries in Latin America suffer from high levels of catastrophic spending. Finally, one country, Lebanon, does not fall into these groups but nevertheless has high levels of catastrophic spending.

Evidences in Thailand

In this part, presents the evidences of catastrophic health expenditure studied in Thailand separated in three periods; prior to universal coverage, transitional of UC period and after UC period.

Prior to Universal Coverage (before 2001)

The first study on health financing in household level in 1997 by Pannarunothai and Mills (Pannurunothai, & Mills, 1997) They found an inequitable pattern of out-of-pocket health expenditure by income quintile and per capita. The underprivileged were more likely to pay out of their-own pocket for their health problems, and to pay out of proportion to their household income when compared with more privileged groups. Out-of-pocket household health expenditure as a share of household income is presented in Table 11 the poorest income quintile had high annual health expenditure relative to income, of 21.2% after reimbursement. This figure is implausibly high when compared with other quintiles.

Table 11 Annual out-of-pocket health expenditure by socio-economic group

Socio-economic group	Health expenditure as % of household income after reimbursement
Household income quintile	
1	21.2
2	2.6
3	1.9
4	0.9
5	2.1

In the year 2000, Sujariyakul (Sujariyakul, 2000) studied on family ability to pay for hospital charge and financially catastrophic illness among patients in Songkla Province by defined out of pocket expense on health exceeding 15 percent of annual family income for financially catastrophic illness (FCI) and categorized patients into 2 groups: catastrophic and non-catastrophic costs found that FCI patients tended to be in old-age, low-income group, and reside in urban area as shown in Table 12

Table 12 Comparisons of the characteristics of patients with and without catastrophic out-of-pocket expenditure

Characteristics of patients	Patients without catastrophic costs (%) (n = 1592)	Patients with catastrophic costs (%) (n = 139)
Age group		
< 15	8.9	6.5
15 – 30	41.4	24.5
31 – 45	27.6	22.3
46 – 60	15.3	23.7
> 60	7.0	23.02

Table 12 (cont.)

Characteristics of patients	Patients without catastrophic costs (%) (n = 1592)	Patients with catastrophic costs (%) (n = 139)
Income class		
≤ 3,000	6.7	19.0
3,001 – 6,000	28.2	39.4
6,001 – 12,000	32.2	29.5
12,001 – 30,000	22.9	11.0
> 30,000	10.1	2.2
Residence		
Urban	50.1	56.8
Rural	49.9	43.2

Source: Modified from Sujariyakul, 2000

Transitional period of Universal Coverage (2000 - 2004)

In transitional period, the study of equity in financing healthcare: impact of universal access to healthcare in Thailand in EQUITAP Project by Limwattananon et al. (2005). They exploited five different data sets of the national household survey in pre- (years 2000 and 2001) and post- (years 2002 and 2004) universal health care coverage (UC) periods to analyze trends and patterns of the distribution of utilization and out-of-pocket (OOP) payments for public health care in relation to the distribution of household living standards. They found that the incidence of catastrophic health expenditure (defined as OOP payments for health care more than 10% of total household consumption expenditure), reduced from 5.4% in 2000 to 3.3% and 2.8% in 2002 and 2004, respectively for all households and from 4.7% to 3.2% and 2.6% during the same periods for members who previously belonged to the Low Income Scheme (LIC) and Voluntary Health Card Scheme (VHC) (who are currently UC) and UC groups. However, the catastrophe tended to be regressive against the poor

households after the UC policy was implemented (CI = 0.0358 in 2000 and 0.2062-0.1712 in 2002-2004).

After UC period

There are two studies of catastrophic health expenditure in household level in Thailand after UC policy has been launched.

In 2007, Weraphong and colleague (Weraphong et al., 2007) compared household catastrophic spending between the poor and the non-poor living in the rural and urban area in Uttaradit, a province located in the north of Thailand, and classified household into two socioeconomic groups: poor and non-poor households. The study used ten percent of household expenditure on health in a month as threshold of catastrophic health expenditure. The study found that only one in the poor households in rural faced catastrophic health spending. In addition, 4.3% of the UC members faced it. The poor UC households in urban had the catastrophic spending around five folds of that in rural area. The non-poor households in both areas who were the UC members faced the catastrophic health spending in 3.1% and 32.7% in rural and urban area, respectively.

The impact of the Universal Coverage policy on equity of the health care system in Thailand was studied in 2008 by Prakongsai (2008). The study analyzed catastrophic by used out-of-pocket payment over 10 percent of household income by income quintile as a threshold as shown in Table 13 the share of household facing catastrophic cost of illness decrease in all income quintiles, except the fourth quintile. The first quintile had the highest share of households in both years, while the fourth and the fifth quintiles had the lowest share in 2000 and 2002, respectively. On average, the share of households facing catastrophic spending on health decreased by approximately 24% from 2000 to 2002, the first quintile had the highest rate of decrease in the proportion of households facing catastrophic health expenditure. Follow by the fifth and the second quintile

Table 13 Share of households facing catastrophic health expenditure by income quintile in 2000 and 2002

Income Quintile	Percentage of household having OOP payment for health over 10% of household income		% change
	2000	2002	
1	9.97	5.61	-4.4
2	5.41	5.02	-7
3	4.82	4.81	0
4	3.79	3.98	5
5	4.26	3.41	-20
Overall	**6.11**	**4.65**	**-24**

From evidences mentioned earlier, household out-of-pocket payment on health all over the world is still a financial burden in both developed and developing countries especially heavily in developing countries where have no pre-paid policy. In Thailand, since prior to - till after UC policy implemented the poor households have heavier share of household payment for health than the better-off.

Equity in health

To clearly understand in the concept and principle of equity in various perspectives of obvious literatures, this part displays concept and principle of equity, equity in health and also equity in health care, the measurement of equity from those as the following.

Philosophies of health equity

Philosophies of social justice bearing on the issue of equity in health are diverse. This leads to debates about the meaning of equity in health and how best to achieve it. To understand the philosophies of social justice and the different viewpoints of health equity, there are three clear philosophical approaches: libertarianism, utilitarianism, and egalitarianism.

Libertarianism emphasizes a respect for natural rights, focusing in particular on two of Lock's natural rights-the rights to life and to possessions (Gillon R, 1986).

This provides a belief that people can acquire and transfer their properties without violating other rights. In health care, the libertarianism concept is concerned that a minimum standard of health care should be provided to all people, while additional health care can be obtained depending on an individual's purchasing power and preference. Libertarians view access to health care as "part of society's reward system" and people should be able to use their income and wealth to get more or better health care than their less wealthy fellow citizens if they wish. Thus, a libertarianism health care sector should be privately financed and health care should be rationed primarily according to willingness to pay. State involvement should be limited to ensure a minimum standard of care for the poor.

The second philosophy, utilitarianism, has different concepts and goals. Utilitarianism aims to maximize the sum of individual utilities or welfare. It gives equal weight to each individual's happiness. Therefore, in health care, utilitarianism has much in common with the notion of efficiency, allocating resources according to the likelihood of medical success. During the eighteenth century, the utilitarian concept was passionately adopted by advocates of radical social reform which sought to redistribute income, health care, and other utility-yielding goods from the rich to the poor (Williams A, & Cookson R, 2000). Redistribution is bound to be a good thing for a utilitarian, since the gain in happiness by the poor from one more unit of the benefit is assumed to be greater than the loss in happiness by the rich from one less unit (diminishing marginal utility).

The last philosophy is egalitarianism, which seeks to reduce inequality. Egalitarian health care should be financed according to ability to pay, while the delivery of health care should be allocated on the basis of need, which would promote equality in health. Williams (1993) supported this concept in his view of "access to health care being every citizen's right" that ought not to be influenced by income and wealth. Therefore, from an egalitarian viewpoint, a publicly financed system should dominate in health care financing, and health care should be distributed according to "need" and financed according to "ability to pay" (Wagstaff A, & van Doorslaer E, 2000).

Each of the three aforementioned board viewpoints generates a distinctive health care system with very distinctive characteristics, each different from other. In a

libertarian system, willingness and ability to pay are the determinants of access, and this is best accomplished in a market-oriented private system. In a utilitarian system, basic health services are available for every citizen and effective health services should be prioritized where they maximize the sum of utilities. Finally, equal opportunity of access for those in equal need is the determining rule in an egalitarian system. And this requires the establishment of a social hierarchy of need which is independent of who is paying for care. This equal access is best accomplished in a publicly financed health system.

In practice, health care system in low- and high-income countries are financed and delivered by mixture of system relying on different philosophies. Policy-makers in European countries give the impression of being much more inclined towards the egalitarian viewpoint in health care matters (Hurst J.W, 1991; Wagstaff A, & van Doorslaer E, 2000) rather than learning towards a more libertarian philosophy, like the US and some countries in Asia (Havighurst C, 2006; Mettanando Bhikkhu, 2007). Most studies of equity in health in European countries begin with the premise that payments towards health care should be related to ability to pay rather than to use, and health care should be distributed according to need rather than willingness or ability to pay (Andersen, 1975; Hurst J.W, 1991; Le Grand J, 1978).

The concept of equity

Equity, like beauty, is in the mind of the beholder (Wagstaff A, & van Doorslaer E, 1993). It is also a comparative principle concerning with ethical and cultural aspect (Perter F, & Evan T, 2001) and can be altered with time and space (Whitehead, 1992). Equity therefore, does not focusing on simple calculation for arithmetical equality but it involves the strategy of allocation and distribution that is appropriate to need, status and participation members in the society (Young H.P, 1994). In the other word, equity is an important concept for equalizing resource allocation and distribution to moderate the aim for extreme efficiency (Sheldon T.A., & Smith P.C, 2000). Hence value judgment to define whether a phenomenon is equity or not is complex. It is difficult to achieve unanimous consensus on equity and it cannot be judged with value-free attitude (Culyer A.J, 2001).

The principle of equity

The first basic principle for judging equity has been stated in Aristotle's conventional concept. Aristotle's concept of equity emphasizes straightforward judgment without bias, of which the meaning is similar to equality. Equity is categorized into two types: horizontal equity referring to the equity considered from arithmetical equality; and vertical equity referring to the equity considered from proportionate equality (Arthur J, & Shaw W.H, 1991; Combee J, & Norton E, 1991).

This conventional concept of equity is similar to the economic concept of equity (Culyer A.J, 2001; Mc.Clelland A, 1991; Wagstaff A, & van Doorslaer E, 1993). In economic concept, horizontal equity means persons with equal need should be treated equally, whereas vertical equity means persons with unequal need should be treated in an appropriately dissimilar way. Considering equity for health care context, it can also be categorized into two types: vertical equity for health care payment and horizontal equity for health care delivery (Culyer A.J & Wagstaff A, 1993b). The horizontal equity has been investigated in several studies e.g. Laison, et al., 1995; Peacock, et al., 1999; Walter, 2000; Wagstaff, et al., 2000; Goddard, & Smith, 2001; Pannarunothai and Reinberg, 1998. Nevertheless, vertical equity is not neglected (McIntyre D, & Gilson L, 2002; Walters H.R, 2000); it is usually examined in further investigation because the definition of disparity/inequity for the study of vertical equity is depended on the circumstance at certain time. Moreover, the study of vertical equity requires judgment and comments from several viewpoints of concerned parties. It is also concerned with the process of fair resource distribution, irrespective of the outcome. Therefore, it is difficult to reach a conclusion or establish an agreement on disparity/inequality. This is probably the reason why vertical equity is not usually mentioned in scope of study in spite of the fact that any work concerning equity usually has the implication for both horizontal and vertical equity.

Equity in Health Care

Equity in health care is a social ultimate goal because it reflects equal health or minimized health disparities. Although health disparities are inevitable, fair or acceptable health disparity must result from unavailable causes (Baraveman P, & Tarimo E, 2002; Whitehead, 1992; WHO, 2000). Nevertheless, the goal of equity in health is unachievable unless other social components, both a policy and pragmatic

levels, are also equity; for instance health care system, economic, society, environment, politics, etc. thus the equity in health needs common social agreement and strong commitment to a national policy. However, the essential mean for the evaluation of equity in health is that equality in health.

Referring to the above definition, equity in health care is just a component of equity in health but it is important because health is a derived demand for health care. As far as a person needs to be in good health, health care service will always be an essential mean. In addition, health care service is quasi-public goods thus the equity of health care implies the allocation of health care resources in response to need until achieving equity in health or minimizing health disparities (Culyer A.J, & Wagstaff A, 1993b; Whitehead, 1992; WHO, 2000). In conclusion, the ultimate goal of equity in health care is also equality in health. This goal is achievable only when each component of health care system is concurrently equality e.g. health care financing and the access to and the utilization of health care.

Therefore, this review of the concept concerning equity in health care in health care would be presented in four actions, the definition of equity in health care, concept associate with the context of equity in health care comprising need, access and utilization as following details.

Definition of equity in health care

Referring to Le Grand and Mooney (Le Grand J, 1978; Mooney G, 1987), equity in healthcare is defined with an interest in equal access to health care and equality in the context of health care provision regarding four issues as follow:

1. equality in health
2. equal expenditure for equal need
3. equal access for equal need
4. equal utilization for equal need

The level of practicality for each issue differs. The first two issues are difficult in practice because equality in health is an ultimate goal, which is ideal. In fact, a person's health or health status does not depend on health care only but it also depends on several other environmental contexts (Mc.Clelland A, 1991; Whitehead, 1992). Inequity in health is a sign of inequity in health care, as well as inequity in several other social aspects e.g. equity in economic status, politics, culture,

education, information, law, social service and resource utilization (Supait Pannarunothai et al., 2000)

Previous studies have shown that if equity in health care is extremely aimed to promote equality in health, the cost of treatment and medical prescription may be unnecessarily excessive. Such finding leads to a conflict of interest between the concept of equity and efficacy (Mc.Clelland A, 1991). Likewise, equal expenditure for equal need, which highly concentrates on arithmetical equality, is unrealistic because the cost for the receipt of health care does not involve only money cost, either out-of-pocket or the third party payment, but it also includes the transport cost and the opportunity cost of time from travelling, work leaving or waiting (van Doorslaer E, Wagstaff A, & Rutten F, 1993). It is difficult to value these cost in monetary term and to equal payment from everybody.

The access and utilization of health care can be investigated for the study of equity in health care resource distribution. The equity in access and utilization of health care means equal access and utilization according to health care need. It is evident that a study of equity in access and utilization requires precise definition of the term 'need', 'access', and 'utilization'.

Le Grand, however, underlines another issue in addition to Mooney's concept regarding equity in health care. He proposed that equality of choice sets should be also attend too. This means that every individual, irrespective of socioeconomic status, should have freedom to make a choice, be well informed, and have equal choices. Under such circumstance, two people making different choices are considered having equity in health care, regardless of whether the consequences of their choices are similar or not. In short, the equality of choice sets is the principle overlaying the concept of freedom or free-to-choose. However, it is difficult to apply this principle in practice, especially in aspect of complete information that should be equal between the provider and the consumer. Moreover, equal choice sets may lead to the waste of resources or ineffective utilization of limited resources since a large amount of resources has to be distributed equally despite different needs.

In 1984 the World Health Organization (WHO) declared equity is a top priority of health policy with an expectation of at least 25% reduction of disparities in health status across countries and different groups of population as classified by

gender, age, ethnic, etc. To achieve that goal, the WHO has attempted to improve or promote health status of countries or disadvantaged groups. In addition, the WHO defines the fallowing three characteristics indicating equity in health care that are highly precise for pragmatic approach (Whitehead M., 1992):

1. Equal access to available care for equal need.
2. Equal utilization for equal need.
3. Equal quality of care for all.

It is evident that the first two criteria are similar to the third and the fourth items listed in the definition proposed by Le Grand and Mooney. However, the WHO's definition is more précised by Le Grand and Mooney's, especially in aspect of access to health care. The WHO defines equal access to health care as fair distribution of health care, which can be further interpreted that health care is well distributed in accordance with health care need and the barriers to health care e.g. geographic barriers, nationality, gender, age, income, etc., are eliminated. This definition leads to consequent defining of health care in issue of rights and health insurance policy.

Health care utilization is considered in relation with the rate of utilization. Nevertheless, different rate of health care utilization in each social group cannot lead to the conclusion that there is inequity in health care. Further investigation is needed to disclose the causes of such difference before making a conclusion whether the disparity in health care utilization is equity or not.

The last criterion of equity in health care, which is concerned with quality, is an essential component. However, quality is complicate to assess because it is highly sensitive to the changes of resources supplying to health care system, either in aspect of resource deficiency or budget reduction. Moreover, decision about health care delivery, such as how to deliver to whom, is subjective judgment thus it is difficult to examine, especially in aspect of equity.

Hence the most concrete definition of equity in health care lies in equity in health care utilization (Wagstaff A, van Doorslaer E, & Paci P, 1991). The emphasis on health care utilization is a consequence of an argument about the definition of access to health care that in the difference curve of each individual differs despite equal opportunities to access in health care (Culyer A.J, & wagstaff A, 1993a; Lipsey

R.A et al., 1999; Wagstaff A, 1986) Thus, equal access to health care does not always lead to equal use in either aspect of quantity or type of health care.

The study of equity in health care utilization conducted by Wagstaff and associates has two highlight. Finally, the pragmatic definition of health care utilization was modified to suit any health care system. At the beginning, when many countries, especially the developed countries, could not yet organize the health insurance with universal coverage, health care utilization was assessed from health care expenditure (van Doorslaer E et al., 1993). Later, when health insurance already expanded to cover the entire population and the third parties paid the compensation for health care in various ways, the assessment of health care utilization was altered to focus on the use/nonuse behavior and the quantity of health care utilization (Gerdham Ulf-G, 1997; Goddard M, & Smith P, 2001; Schellhorn M, et al., 2000; van Doorslaer E et al., 2000; van Doorslaer E, Koolman X, & Puffer F, 2001). Secondly, this study quantified the magnitude of horizontal inequity in health care utilization to be most accurate or least deviated for the benefit of follow-up assessment and evaluation of the success of health policy regarding the equity issue, leading to further policy-making toward the right direction.

Concepts related to equity in health care

The concepts concerning need, access, and utilization are regularly emphasized in the definitions of equity in health care previously reviewed. These concepts are complicate and controversial and the three terms are sometimes used alternatively, especially in the assessment of access to health care with health care utilization. To have equity in health care as the top priority in health policy, the concepts of need, access, and utilization have to be well understood for most accurate assessment of equity in the following steps.

NEED. Health care need is a fundamental concept for the allocation and distribution of resources to achieve the goals of equity and efficiency (Culyer A.J, 1995; Mooney G, 1999). The concept of health care need derives from two basic factors: 1) health care is scarce – the need of every member of the society is not completely responded; and 2) health care is special goods – unlike common goods, the price mechanism in market system cannot be applied to the allocation of health care resources (Daniels N, 1985). Health care need is categorized into two types: 1) course-

of-life needs, and 2) adventitious needs. The course-of-life needs are the five basic needs for normal living comprising food, shelter, rest, medical care for prevention, promotion and cure, and other social services whereas the adventitious needs derive from uncertainties in a course of life (Daniels N, 1985). Fair health care resource distribution should respond to needs but restrict to the highest benefit (Beauchamp T.L, 1982; Culyer A.J, 1995). It is, therefore, similar to basic health services (Bayer R et al., 1983; Daniels N, 1985). A subsequent problem, however, is what index is sufficiently accurate or appropriate for measuring health need.

Generally, health status can be seen as proxies for health care need under the definition that when a person is present with health deviation from normal condition on account of morbidity, disability or risky health behavior such as smoking, drinking, or lack of exercise, that person has health care need at a high level. According to previous studies (Birch S et al., 1996; Deaton A.S, & Paxson C.H, 1998; Hulka B.S, & Wheat J.R, 1985; Hurd M.D, & McGarry K, 1997; Lurie N et al., 1994; van Doorslaer E, & Wagstaff A, 1992; Yergan J et al., 1981), health care need can be assessed or judged from morbidity measures in three ways, as follows:

1. Subjective model; for example, self-perceived or self-related health status either in aspect of physical, mental, or general health status. The results of assessment are generally graded into excellent, very good, good, moderate and poor.

2. Functional model, assessing the effect of illness on capability for usual activities, for instance, limited/restricted activity days, number of disability days, limited movement from chronic illness, number of bed-days, etc.

3. Medical Model, assessing the deviation from physiological norms due to medical diagnosis, for instance, the number of current health problem, etc.

The above proxies of health care need lead to further queries that which proxy is appropriate or sufficiently sensitive for indicating the level of health care need. The answer is that health is a multi-dimensional concept that cannot be judged with a single parameter (Idler E.L, & Kasl S.v, 1995; Pereira J, & Pinto C.G, 1993)

ACCESS. In American English 'Access' means "to use" whereas the British English defines 'access' as 'to have the opportunity to use' (Mooney G et al., 1992). Equity of health care access means equal opportunity of access to health care for people in equal need (Mooney G et al., 1991). The phrase 'equal opportunity of access

frequently appears in policy statements of many countries e.g. Bulgaria (1990), Finland (1987), The Netherlands (1985), Norway (1987), Poland (1987), Portugal (1990), Spain (1989), Sweden (1985), USSR (1988) (Mooney G et al., 1991). It also appeared in the policy statement of Thailand, especially after the economic crisis in 1997. The policy from the governments led by ex-Prime Minister Chuan Leekpai and then ex-Prime Minister Taksin Shinnawatra has the statement that legislative measures have been applied to control the access to health care as the access to health care and standardized public health services are prescribed as a fundamental right of Thai people and it is stated in the constitution of the kingdom of Thailand.

Therefore, the concept of access to health care seems to come from the supply side or the policy makers who attempt to eliminate the barriers to equal access to health care. To achieve potential access to health care, the following five factors are commonly considered (Carney K, 1981; Penchanaky R, & Thomas J.W, 1981): 1) availability – well distributing health care resources; 2) accessibility-eliminating barriers to the access such as health care cost; 3) acceptability-providing acceptable service; 4) affordability-ensuring clients' capability to pay for the service; and accommodation-modifying the health care system to accommodate the clients. The access to health care is generally assessed in two ways as follows:

1. Assessment as health resource distribution. The access to health care is assessed from quantitative data reflecting the change in quantity of health care resource distribution, as in the following examples: A) the expansion in numbers of primary health centers in the area outside municipality from the ratio 1:10,064 people in 1979 to 1:4,172 people in 1998; B) distance from home to the nearest health facility, as in the latest survey the elderly population could access to primary health centers within a distance of 1-4 kilometers from home or in transport time between 6 and 10-15 minutes from home; and C) the decrease in gap of health professional distribution among different areas, as reflect in physicians-population ratio in Bangkok which altered from 1: 762 in 1998 to 1 : 876 in 2005 and in the increase in distribution of physicians in other regions e.g. the North-Eastern from 1: 8,218 in 1998 to 1: 7,015 in 2005 (Wibulpolprasert, 2007). The assessment of access to health care this way is usually found in summary report of public operation thus it is more like process

evaluation. This kind of assessment gives answer concerning equality, inequity, because it is an assessment of single dimension.

2. Assessment as relationship between access and utilization. This assessment investigates how equal opportunity (have / not have health insurance) affects health care utilization. There is some studied about health insurance affect to health care utilization. The studied found that the people with health insurance allowing free medical care at the health facilities have higher rate of medical consultation than those with no health insurance or having health insurance with cost sharing scheme (Brook R.H et al., 1983; Hurd M.D, & McGarry K, 1997). However, equal opportunity in access to health care is not enough to cause differences in health status of people with or without health insurance (Hurd M.D, & McGarry K, 1997). Also, differences in health status among the samples are not affected by the payment scheme of health insurance policy, whether it is prepaid plan, free for services (FFS), or cost sharing (Brook R.H et al., 1983; Clement C.G et al., 1994; Lurie N et al., 1994).

The conclusion from the studies of equity in access to health care, especially within the creation of equal opportunity of access by providing health insurance, is that it is acceptable as a component for measuring equity. However, it is not yet sufficient to make a conclusion that whether equal opportunity can lead to the ultimate goal of equity in health care because access to health care is only a part of the process that contributes to the probability of health care utilization (WHO, 2000). Moreover, the policy management concerning resource distribution does not consider individual level need as the top priority; instead, the distribution of resource is mainly based on the area and the budget. Therefore, the concept of access to health care is not the best proxy and not the end-point in the assessment of equity in health care.

UTILIZATION. Health care utilization derives from the concept of access to health care. However, these two concepts are not same and are not interchangeable (even though alternative use of these two terms is frequently seen). Health care utilization is an interaction between demand and supply and it induces proximate outcome that helps a person to remain healthy. It is also a factor directly impacts to reduce externality affected from the morbidity (Mc.Clelland A, 1991). Health care

utilization, therefore, is more likely to reduce health disparities / inequities than access to health care.

Factors influencing health care utilization are categorized into three groups (Andersen R.M, 1995). The first group is population characteristics comprising 1) predisposing characteristics including health beliefs. Basic demographic factor (e.g. age and sex), socioeconomic factor (e.g. education, occupation, and income); 2) enabling factor such as household income, household member, area or regional of residence, health insurance, etc.; and 3) need. The second group factors are concerned with health care system, including policy, resources and organization. The last one is the external environment such as political or economic factors. Among all these factors, need-health care need in this case, is the significant factor as it is mostly influential to health care utilization (Manga P et al., 1987; Newbold K.B et al., 1995; Thomas J.W, & Penchanaky R, 1984). However, there is also an argument that the need concept neglects the preference of each individual (Mooney G, 1999).

Actual utilization, which is also known as realized access, can be assessed in several ways e.g. the number of ambulatory visits, incidence and quantity of utilization of hospital services, type of health care such as general physicians, specialist, hospital, health care expenditure. When the assessment reveals that health care utilization is consistent with health care need, there is equity in health care utilization.

The measurement of equity

Two fundamental types of judgment to identify what is equitable are 1) identification of existing standards of resource distribution and 2) judgment of equity interlining with judgment of social justice and fairness (Perter F, & Evan T, 2001). The second type will be discussed in details later in the part concerning social justice. The following review mainly focuses on the first type of judgment, which is a measurement of equity with quantitative approach using index of measuring equity. The index is a good mean for monitoring and evaluation, especially for evaluating whether a new intervention can reduce inequities. Economic concept of equity should have precise answer whether the subject being studied has equity; therefore, measuring instrument or measuring index is essential and it should have good quality like any research instrument (Mausner J.S, & Kramer S, 1985). The instrument should have validity, sensitivity, specificity, availability, and simplicity.

Measurement of equity in health care is categorized into two groups composing 1) measurement of ultimate goal-measuring inequality in health, and 2) measurement of proximate goal-measuring inequity in health care utilization. Each group can be measured with several indices. The following part will review the indices frequently used in research concerning health care, as shown in Diagram 1. The measuring methods, as well as strength and shortcoming of each index are also discussed as follow.

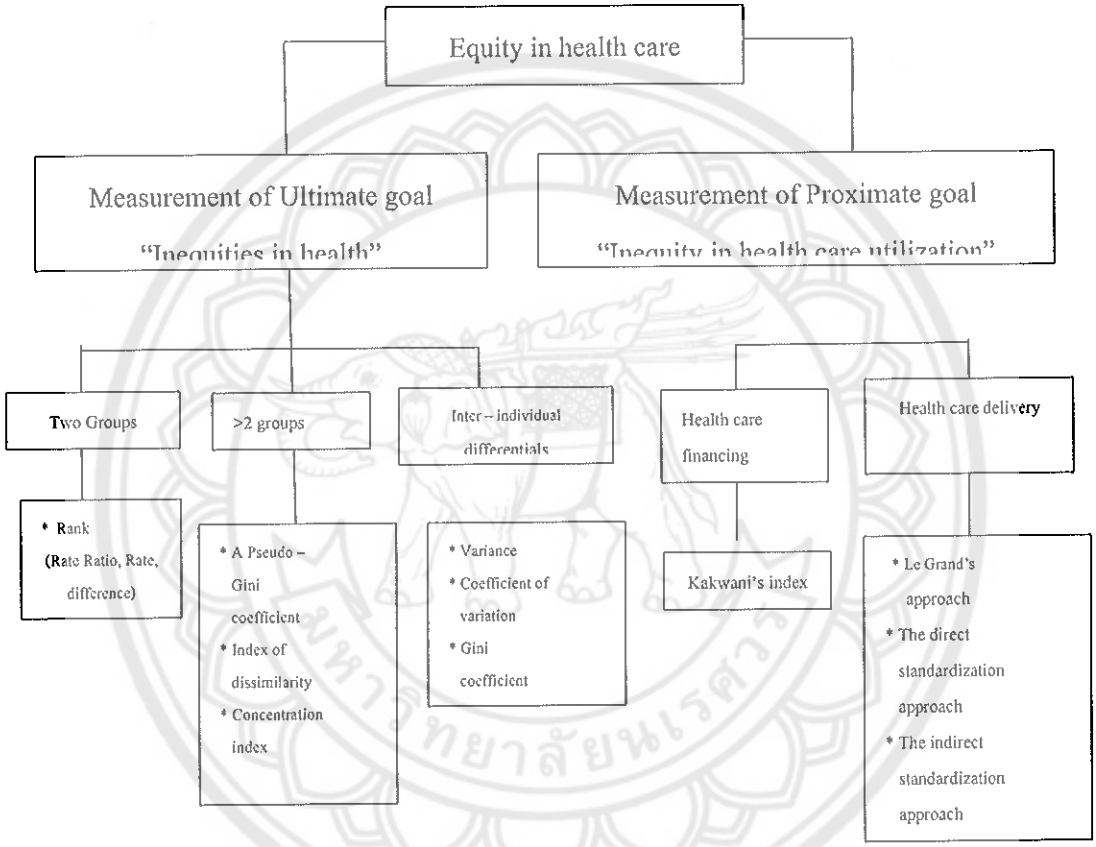


Diagram 1 Index of measuring equity in health care

In this study, the cross-sectional survey could find out health seeking behavior of samples, it also be used to collect households out-of-pocket health expenditure and finally calculates for incidence of household catastrophic health expenditure in Nakhon Sawan Municipality. Nevertheless, quantitative method cannot deeply describe about reasons in make decision to seek care in each facility, satisfaction in health care services and others problems related to access to care. Qualitative method wants to be used to describe furthermore.

Qualitative study in health care

In this part will state about using qualitative study in health care, firstly is to understand more about qualitative methods in health research. Then conducting of qualitative methods, and finally are qualitative methods employed in this study.

Qualitative methods in health research

Qualitative research methods have long been used in the social science. They are the principal methods employed by anthropologist to study the customs and behaviors of peoples from other cultures, and they are also used in such diverse areas as sociology, semiotics, psychology, education, history and cultural studies. Qualitative methods have much to offer those studying health and health care setting, and they are increasingly being used in health service research. However, because these methods have traditionally been employed in the social sciences, they may be unfamiliar to health care professionals and researchers with biomedical or natural science backgrounds. Indeed, qualitative methods may seem alien alongside the experimental and quantitative methods used in clinical, biological epidemiological research. Misunderstandings about the nature of qualitative method and their uses have meant that qualitative research is often labeled "unscientific". A frequent criticism is that qualitative data are necessarily subjective (and therefore, biased) and that such research is difficult to replicate and amounts to little more than anecdote, personal impression or conjecture (Pope C, & Mays N, 1999).

The uses of qualitative research

Instead of seeing quantitative and qualitative approaches as methodological opposites, each can be used to complement the other. One simple way in which this can be achieved is by using qualitative research as the preliminary to quantitative research. This model is likely to be the most familiar to those engaged in health and health service research. For example, qualitative research can classify phenomena, or answer the "what is X?" question, which necessarily precedes the process of enumeration of Xs. As health care deals with people and people are, on the whole, more complex than the subjects of the natural sciences, there is a whole set of such questions about human interaction, and how people interpret interaction, to which health professional may need answer before attempting to quantify behaviors or events. At their most basic, qualitative research technique can be used simply to

discover the most comprehensible terms or words in common use to include in a subsequent survey questionnaire. An excellent example of this can be found in preliminary work undertaken for the British national survey of sexual attitudes and lifestyles (Wellings K, Field J, Johnson A, & Wadsworth J, 1994). In the case, face-to-face interviews were used to uncover popular ambiguities and misunderstandings of a number of terms such as "vaginal sex", "oral sex", "penetrative sex" and "heterosexual". This qualitative work had enormous value in informing the development of the subsequent survey questionnaire, and in ensuring the validity of the data obtained because the language in questionnaire was clear and could be widely understood.

Qualitative research is not only useful as the first stage of quantitative research. It also has a role to play in "validating" quantitative research or in providing a different perspective on the same social phenomena. Sometimes it can force a major reinterpretation of quantitative data. For example, one anthropological study using qualitative methods uncovered the severe limitations of previous surveys: Stone and Cambell found that cultural traditions and unfamiliarity with questionnaires led Nepalese villagers to foreign ignorance of abortion and family planning services and to under-report their use of contraception and abortion when responding to survey (Stone L, & Cambell J.G, 1986). More often, the insights provided by qualitative research help us to interpret or understand quantitative data more fully. For instance, Morgan and Watkin's research on cultural beliefs about hypertension has helped to explain why rates of compliance with prescribed medications vary significantly amongst and between white and Afro-Caribbean patients (Morgan M, & Watkins C, 1988).

As well as complementing quantitative work, qualitative research may also be used quite independently to uncover social processes, or access areas of social life which are not open or amenable to quantitative research. This type of "stand alone" qualitative research is increasingly being used in studies of health service organization and policy. It has been used to considerable effect in evaluating organizational reforms and changes to health service provision from the viewpoint of patients, health professionals and managers (Packwood T, Keen J, & Buxton M, 1991; Pollitt C, Harrison S, Hunter D, & Marnoch G, 1991). This type of research has also been useful

in examining how data about health and health care shaped by the social processes that produce them – from writing lists (Pope C, 1991) to death certificates (Prior L & Bloor M, 1993) and AIDS registrations (Bloor M et al., 1991).

Methods used in qualitative research

Qualitative research explores people's subjective understandings of their everyday lives. Although, the different disciplines use qualitative methods in slightly different ways, broadly speaking, the methods used in qualitative research include direct observation, interviews, the analysis of texts or documents, and of recorded speech or behavior (audio/video tapes). Data collected by these methods may be used differently (for example, semiotics and psychotherapy and both use video and/or audio taped material but their analytical approaches are distinctive), but there is a common focus on talk and action rather than numbers. On one level, these "qualitative methods" are used every day by human being to make sense of the world – we watch what is going on, ask question of each other and try to comprehend the social world we live in. The key difference between this and the qualitative methods employed in social science is that the latter are systematic. Qualitative research, therefore, involves the application of logical, planned and thorough methods of collecting data, and careful, thoughtful and, above all, rigorous analysis. As several recent commentators have point out, this means that qualitative research requires considerable skill on the part of the researcher (Dingwall R et al., 1998; Malterud K, 1993). Perhaps more than some quantitative research techniques, qualitative research needs experienced researcher. One of problems arising from the rapid expansion of qualitative methods into medical and health fields is that the necessary skill and experience are sometime lacking.

Qualitative interviews in health care research

Mixed method will be employed in this study. Both two methods have to be used qualitative interview. In the quantitative method will conduct structured interview in collecting quantitative data. Particularly in the qualitative method will be employed semi-structured and depth interviews with the samples selected from quantitative data. The literature reviewed in this part is to understand types, processes and analysis of qualitative interview.

Interviews are the most commonly used qualitative technique in health care setting. There are three main types of interview: structured, semi-structured and depth interviews.

Structured interviews

Structured Interviews consist of administering structured questionnaires, and interviewers are trained to ask questions (mostly with a fixed choice of responses) in a standardized manner. For example, interviews might be asked: "Is your health excellent, good, fair or poor?" Though qualitative interviews are often described as being unstructured in order to contrast them with this type of formalized interview designed to yield quantitative data, the term "unstructured" is misleading, as no interview is completely devoid of structure. If there were no structure, these would be no guarantee that the data gathered would be appropriate to the research question.

Semi-structured interviews are conducted on the basis of a loose structure consisting of open-ended questions that define the area to be explored, at least initially, and from which the interviewer or interviewee may diverge in order to pursue an idea or response in more detail. Continuing with the same example, interviewees might initially be asked a series of questions such as: "What do you think good health is?", "How do you consider your own health?" and so on.

Depth interviews are less structured than this, and may cover only one or two issues, but it much greater detail. Such an interview might begin with the interviewer saying, "This research study is about how people think about their own health. Can you tell me about your own health experiences?" Further questions from the interviewer would be based on what the interviewee said, and would consist mostly of clarification and probing for details.

Interviews have been used extensively in studies of both patients and doctors. For example, Britten interviewed 30 attainders and non-attenders at two general practices to explore patients' ideas about medicine (Britten N, 1994). A semi-structure interview schedule of 16 questions was used, but respondents were also encouraged to talk freely. The data revealed that on the one hand much medicine taking was taken for granted and, on the other hand, that patients had many fears and powerful negative images of medicines. Black and Thompson interviewed 28 consultants and 34 junior doctors about their perceptions of the role of medical audit (Black N, & Thompson E,

1993). Although, the doctors accepted the need for audit, the study identified 19 obstacles to audit. In general, criticisms were leveled at the way audit was being implemented rather than at the underlying principles.

Clinical and qualitative research interviews have very different purposes. Although the doctor may be willing to see the problem from the patient's perspective, the clinical task is to fit that problem into an appropriate medical category in order to choose an appropriate from of management. The constrains of most consultation are such that any open-ended questioning needs to be brought to a conclusion by the doctor within a fairly short time. In a qualitative research interview, the aim is to recover the interviewee's own framework of meaning and the research task is to avoid imposing the researcher's structures and assumptions on remain open to the possibility that the concepts and variables that emerge may be very different from those that might have been predicted at the outset.

Qualitative interview studies address different questions from those addressed by qualitative research. For example, a quantitative epidemiological approach to the sudden infant death syndrome might measure statistical correlates of national and regional variations in incidence. In a qualitative study, by contrast, Gantley et al. interviewed mothers of young babies in different ethnic groups to understand their child rearing practices and hence discover possible factors contributing to the low incidence of sudden infant death in Asian populations (Gantly M, Davis D.P, & Murcott A, 1993). A quantitative study of single-handed general practitioners might compare their prescribing and referral rates, out-of-hours payment, list sizes, and immunization and cervical cytology rates with those of general practitioners in partnerships. A recent qualitative study used semi-structured interviews to examine the concerns of single-handed general practitioners (Green J.M, 1993). This research identified a range of problems perceived by this group of doctors, such as inadequate premises, difficulties finding locums and therefore with taking holidays, and difficulties with the general practitioner contact. Qualitative research can also open up different areas of research such as hospital consultants' views of their patients, or general practitioners' accounts of uncomfortable prescribing decisions (Bladley C.P, 1992; Britten N, 1991).

Conducting interviews

Qualitative interviews try to be interactive and sensitive to the language and concepts used by the interviewee, and they try to keep the agenda flexible. They aim to go below the surface of the topic being discussed, explore what people say in as much detail as possible, and uncover new areas or ideas that were not anticipated at the outset of the research. It is vital that interviewers check that they have understood respondents' meaning instead of relying on their own assumptions. This is particularly important if there is obvious potential for misunderstanding – for example, when a clinician interviews someone unfamiliar with medical terminology. Clinicians should not assume that interviewees use medical terminology in the same way they do.

Patton has written that good question in qualitative interviews should be open-ended, neutral, sensitive and clear to the interviewee (Patton M.Q., 1987). He listed six types of questions that can be asked: those based on behavior or experience, on opinion or value, on feeling, on knowledge, on sensory experience, and those asking about demographic or background detail (see APPENDEX B). It is usually best to start with questions that interviewee can answer easily and then proceed to more difficult or sensitive topics. Most interviewees are willing to provide the kind of information the researcher wants, but they need to be given clear guidance about the amount of detail required. This way, it is possible to collect data even in stressful circumstances (Cannon S., 1987, 1989)

The less structured the interview, the less the questions are determined and standardized before the interview occurs. Most qualitative interviewers will have a list of core questions that define the areas to be covered, based on the objectives of their study. Unlike quantitative interviews based on highly structured questionnaires, the order in which questions are asked will vary, as will the questions designed to probe the interviewee's meanings. Wordings cannot be standardized because the interviewer will try to use the person's own vocabulary when framing supplementary questions. Also, during the course of a qualitative study, the interviewer may introduce further questions as he or she becomes more familiar with the topic being discussed.

All qualitative researchers need to consider how they are perceived by interviewees and the effect of personal characteristics such as class, race, sex and social distance on the interview. This question becomes more acute if the interviewee

knows that the interviewer is also a doctor or nurse. An interviewee who is already a patient or likely to become one may wish to please the doctor or nurse by giving the responses he or she thinks the doctor or nurse wants. It is best not to interview one's own patients for research purposes, but if this cannot be avoided, patients should be given permission to say what they really think, and they should not be corrected if they say things that clinicians think are wrong (for example, that antibiotics are a suitable treatment for vital infections).

Interviewers are also likely to be asked questions by interviewees during the course of an interview. The problem with this is that in answering questions, clinical researchers may undo earlier efforts not to impose their own concepts on the interview. On the others hand, if questions are not answered, this may reduce the interviewee's willingness to answer the interviewer's subsequent questions. On solution is to say that such questions can be answered at the end of the interview, although this is not always a satisfactory response (Oakley A, 1981).

Researcher as research instrument

Qualitative interviews require considerable skill on the part of the interviewer. Experienced doctors and other clinicians may feel that they already possess the necessary skills, and indeed many are transferable. To achieve the transition from consultation to research interview, clinical researchers need to monitor their own interviewing technique, critically appraising tape recordings of their interviews and asking others for their comments. The novice research interviewers are needs to notice how directive he or she is being, whether leading questions are being asked, whether cues are picked up or ignored, and whether interviewees are given enough time to explain what they mean. Whyte devised a six point directive scale to help novice researchers analyze their own interviewing technique (see APPENDEX C) (Whyte W.F, 1982). The point is not that non-directive is always best, but that the amount of directive should be appropriate to the style of research. Some informants are more verbose than others, and it is vital that interviewers maintain control of the interview. Patton provided three strategies for maintaining control: knowing the purpose of the interview, asking the right questions to get the information needed, and giving appropriate verbal and non-verbal feedback (see APPENDEX D) (Patton M.Q, 108).

Holstein and Gubrium have written about the "active" interview to emphasize the point that all interviews are collaborative enterprises (Holstein J.A, & Gubrium J.F, 1995). They argue that both interviewer and interviewee are engaged in the business of constructing meaning, whether this is acknowledged or not. They criticize the traditional view in which a passive respondent is accessing a "vessel of answers" that exists independently of the interview process. The interview is an active process in which the respondent activates different aspects of her or his stock of knowledge; with the interviewer's help they conclude that an active interview study has two aims: "to gather information about what the research project is about and to explicate how knowledge concerning that topic is narrative constructed".

Some common pitfalls for interviewers identified by Field and Morse include outside interruptions, competing distractions, stage fright, awkward questions, jumping from one subject to another, and the temptation to counsel interviewees (see APPENDEX E) (Field P.A, & Morse J.M, 1989). Awareness of these pitfalls can help the interviewer to develop ways of overcoming them, ranging from simple tasks such as unplugging the telephone and rephrasing potentially embarrassing questions, through to conducting the interview at the interviewee's own pace and assuring the interviewee that there is no hurry.

Recording interview

There are various ways of recording qualitative interviews: notes written at the time, note written afterwards, and audio taping. Writing notes at the time can interfere with the process of interviewing, and note written afterwards are likely to miss out some details. In certain situations, written notes are preferable to audio taping, but most people will agree to have an interview tape recorded, although it may take them a little while to speak freely in front of a machine. It is vitally important to use good quality equipment that has been tested beforehand and with which the interviewer is familiar. A good quality portable microphone can enhance the recording quality of a cheap tape recorder. Transcription is an immensely time consumption process, as each hour's worth of a one-to-one interview can take six or seven hours to transcribe, depending on the quality of the tape. The costing of any interview-based study should include adequate transcription time.

Identifying interviewees

Sampling strategies should always be determined by the purpose of the research project (Field P.A, & Morse J.M, 1989). Statistical representativeness is not normally sought in qualitative research (Mays N, & pope C, 1995). Similarly, sample sizes are not determined by hand and fast rules, but by other factors, such as the debt and duration required for each interview and how much it is feasible for a single interviewer to undertake. Large qualitative studies do not often interview more than 50 or 60 people, although, there are exceptions (Holland J, Ramazanoglu C, Shape S, & Thompsob R, 1990). Sociologists conducting research in medical setting often have to negotiate access with great care, although, this is unlikely to be a problem for clinicians conducting research in their own place of work. Nevertheless, the researcher still needs to approach the potential interviewee and explain the purpose of the research, emphasizing that a refusal will not affect future treatment. An introductory letter should also explain what is involved and the likely duration of the interview and should give assurances about confidentially. Interviews should always be conducted at interviewees' convenience, which for people who work during the day will often be in the evening. The setting of an interview affects the content, and it usually preferable to interview people in their own homes.

In conclusion, qualitative interviewing is a flexible and powerful tool that can open up many new areas for research. It is worth remembering that answers to interview questions about behavior will not necessarily correspond with observational studies; what people say they do is not always the same as what they can be observed doing. That said qualitative interviews can be used to enable practicing clinicians to investigate research questions of immediate relevance to their everyday work, which would otherwise be difficult to investigate. Few researchers would consider embarking on a new research technique without some form of training, and training in research interviewing skills is available from universities and specialist research organizations.

Aanlyzing qualitative data

The nature of qualitative data

There is a widely held perception that qualitative research is small scale. As it tend to involve smaller numbers of subjects or settings than quantitative research it is

assumed, incorrectly that is generates fewer data than quantitative research, in fact, qualitative research can produce vast amounts of data.

As suggested before this part, a range of different types of data may be collected during a qualitative study. These may include jotted notes, full field notes, interview and documentary material, as well as the researcher's own records of ongoing analytical ideas, research questions and the field diary, which provides a chronology of the events witnessed, and the progress of the research. These data are not necessarily small scale: transcribing a typical single qualitative interview generates a considerable amount of raw data – anything between 20 and 40 single-spaced pages of text.

Verbatim notes or audio/video tapes of face-to-face interviews or focus groups are transcribed to provide a record of what was said. The preparation of transcribed material will depend on the level of analysis being undertaken, but even if only sections of the data are intended for analysis. The preservation of the original recording tapes or documents is recommended. Transcribing is time consuming. Each hour of material can take six or seven hours to transcribe depending on the quality of the tape and the depth of information required. Conversational analysis of audio taped material requires even more detailed annotation of a wide range of features of the talk studied, such as the exact length of pauses and the different types of emphasis in the spoken word. There are conventions for annotating transcripts for this purpose (Heritage J, 1984). Even when the research is not concerned with analyzing talk in this depth it is still important that the data provide an accurate record of what was said and done. The contribution of sights, laughs and lengthy pauses should not be underestimated when analyzing talk, and, as a minimum, these should be noted in the transcription.

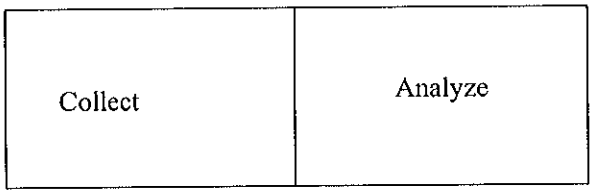
Field notes of observational research contain detailed, highly descriptive accounts of several hours spent watching and listening, and often taking part in, events, interactions and conversations. This unprocessed experience needs to be transformed into notes, and from there into data that can be analyzed. The jotted notes made in the field during an observational study need to be written up in full.

Whether using interviews or observation, the maintenance of meticulous records is vital these are the raw data of the research. National qualitative data archives

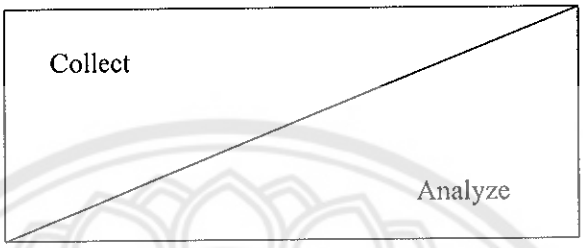
in Britain (E.S.R.C, established 1994) have made secondary analysis of qualitative data possible, and mean that it is even more important that full records of qualitative studies are kept to allow the possibility of further analysis in the future.

The relationship between analysis and the data collected

Transcripts of interviews and field notes of observation provide a descriptive record, but they cannot provide explanations. The researcher has to make sense of the data by shifting and interpreting them. In much qualitative research the analytical process begins during the data collection phase as the data already gathered are analyzed and fed into, or shape, the ongoing data collection. This is referred to as sequential analysis (Becker H.S, 1971) or interim analysis (Miles M, & Huberman A, 1984) (see Figure 12). It allows the researcher to check and interpret the data she/he is collecting continually and to develop tentative conclusions based on the data already collected, or hypotheses for subsequent investigation in further data collection. Compared with quantitative methods, this has the advantage of allowing the researcher to go back and refine questions and to pursue emerging avenues of inquiry in further depth. Crucially, it also enables the researcher to look for deviant or negative cases; that is, examples of talk or events that run counter to the emerging propositions or hypotheses, in order to refine them. This type of continuous analysis is almost inevitable in qualitative research; because the researcher is "in the field" collecting the data, it is impossible not to start thinking about what is being heard and seen.



Quantitative



Qualitative

Figure 12 Models of the research process

The Analysis

Although some of the initial analysis can be done whilst the data are being collected, as indicated above, there is still much to do once the researcher has left the field. Textural data, whether in the explored using some variant of **content analysis.** The most straightforward type of content analysis is quantitative. This uses an unambiguous, predefined coding system and produced counts or frequencies that may be tabulated and analyzed using standard statistical techniques. This approach is often used in media and mass communications studies. In general, qualitative research does not seek to quantify data, although simple counts can be useful in qualitative studies. One useful example of this approach is Silverman's research on communication in clinics (Silverman D, 1984). This quantified features such as consultation length and the patient's use of questions and combined this information with the qualitative analysis to confirm a series of propositions about the differences between private and NHS clinics. This type of analysis that counts items in the data is distinct from

qualitative analyses in which the data are preserved in their textual from and indexed in order to generate and/or develop analytical categories and theoretical explanations.

Qualitative research uses analytic categories to describe and explain social phenomena. These categories may be derived inductively, that is obtained gradually from the data, or used deductively, either at the beginning or part way through the analysis as a way of approaching the data. Though less commonly associated with qualitative research, more deductive forms of analysis are increasingly being used in applied qualitative research one example of this is the SCPR's framework approach (Ritchie J, & Spencer L, 1993).

Glaser B.G, & Strauss A.L (1967) coined the term grounded theory to describe the inductive process of coding incidents in the data and identifying analytical categories as they "emerge from" the data (developing hypotheses from the "ground" or research field upwards rather defining them a priori). This process involves identifying a theme and attempting to verify, confirm and qualify it by searching through the data. Once all data that match that theme have been located, the researcher repeats the process to identify further themes or categories.

The first stage in this process involves annotating or making up theme in the field notes or interview transcripts. This is sometimes referred to as "coding", although it does not involve assigning numerical codes in the quantitative sense (where exclusive variables are defined and given preset codes or values). To avoid confusion the term "indexing" may be preferred.

Indexing qualitative data is a lengthy and sometimes tedious process. It requires reading and re-reading the material collected to identify themes and categories – these may center on particular phrases, incidents or types of behavior. Sometimes interesting or unfamiliar terms used by the group studied can form the basis of analytical categories. Becker and Geer's classic study of medical school training uncovered the specialized use of the term "crock" to denote patients who were seen as less worthwhile to treat by medical staff and students (Field P.A., & Morse J.M., 1989; Becker H.s, & Geer B, 1982).

All the data relevant to each category are identified and examined using a process called constant comparison, in which each item is checked or compared with the rest of the data to establish analytical categories. Again, this requires a coherent

and systematic approach. The process of indexing focus group or interview material many include searching for particular types of narrative – such as jokes or anecdotes, or types of interaction such as questions, challenges, censorship or changes of mind. The key point to note about this indexing process is that it is inclusive; categories are added to reflect as many of the nuances in the data as possible, rather than reducing them to a few numerical codes. It is also to be expected that sections of the data – such as discrete incidents – will include multiple themes and are thus coded using several categories. It is, therefore, important to have some system of cross-indexing that allows the analysis of data items which fit into more than one category. A number of computer software packages have been developed to facilitate this aspect of the analytical process.

The process of indexing the data creates a large number of what Perry calls "fuzzy categories" (Perry S, 1994) or units. At this stage, there is likely to be considerable overlap and repetition between the categories. Informed by the analytical and theoretical ideas developed during the research, these categories are further refined and reduced in numbers by grouping them together. It is then possible to select key themes or categories for further investigation. In the study mentioned earlier, Becker and Geer pursued the use of the term "crock" by medical students to see what types of patients it described and when and how it was used. This meant collating all the instances when "crock" occurred in the data. Using these data, Becker and Geer were able to explain how medical students and staff categorized patients according to their utility for teaching/learning purposes. Once this was established, it became clear why "crock" (typically the elderly patient, or the homeless alcoholic) who offered little or no possibility for learning about new or challenging disorders, were treated with disdain.

Grouping categories together typically entails a process of cutting and pasting, that is selecting sections of data on like or related themes and putting them together. The mechanics of how to do this vary. In the past, multiple copies of notes or transcripts were used so that sections could be, literally, cut out and pasted next to each other or sorted into different piles. Cardex systems have also been used - writing out relevant chunks of data onto index cards that could then be grouped in a card filing system (Scrambler G, & Hopskins A, 1988). It is also possible to create matrices or

spreadsheets to facilitate this process of identifying themes. Whilst considered somewhat old-fashioned, this repeated physical contact and handling of the data has much to recommend it; the process of re-reading the data and sorting it into categories means that the researcher develops an intimate knowledge of the data, even if the process is laborious.

Word processor can be enormously helpful in searching large amounts of text for specific terms. While it is unlikely to be the sole focus of a qualitative research project, the simple frequency with which particular words or phrases appear in a piece of text can be illuminating. Word processing function can offer considerable advantages to researchers who traditionally would have used annotations in the margins of field notes or interview transcripts, colored pens, scissors and glue, card systems and paper files. By typing index terms directly into the computer file containing the textual data the "search" function can be used to gather chunks of text, which can then be copied and pasted. The split screen functions make this a particularly appealing method for sorting and copying data into separate analytic files.

Taking the analysis forward – the role of the researcher

One way of performing this next stage is called **analytic induction**. Linked to grounded theory this involves an interactive testing and retesting of theoretical ideas using the data. Bloor (Bloor M, 1978) describes in some detail how he used this procedure to reconstruct the decision making rules used by ear, nose and throat surgeons (see APPENDIX A). In essence, the researcher examines a set of cases, develops hypotheses or constructs and examines further cases to test these propositions – not unlike the statistical tests of association used in quantitative research.

In qualitative research, indexing the data and developing analytical categories tend to be carried out by a single researcher. However, some qualitative researchers have given attention to the notion that qualitative analyses may carry greater weight when they can be shown to be consistent between researchers (particularly when they have been undertaken to inform policy maker). This is close to the concept of inter-rater reliability, which is familiar in quantitative research. For example, Perry's study of patients with multiple sclerosis (Perry S, 1994), Daly et al.'s study of cardiac diagnosis (Daly J, McDonald I, & Willis E, 1992), and Waitzkin (Waitzkin H, 1991)

used more than one analyst in order to improve their analyses. However, the appropriateness of the concept of inter rater reliability in qualitative research is contested. Some qualitative research claim that a qualitative account cannot be held straightforwardly to represent the social world (just as all research findings reflect the identity of the researcher and the multiple nature of so called "reality"), thus different researchers are bound to offer different accounts. Another, less radical, assertion is that each researcher has unique insights into the data, which cannot be straightforwardly checked by others (Morse J.M, 1994).

In a recent contribution to the methodological debate (Armstrong D, Gosling A, Weinman J, & Mateau T, 1997). Attempted to answer a simpler empirical question: do qualitative researchers show consistency in their accounts of the same raw data? To test this, they asked six experienced qualitative researchers independently to analyze a single focus group transcript and to identify and rank the major themes emerging in the discussion. Another social scientist, who had not read the transcript of the focus group, then read the six reports in order to determine the main themes and to judge the extent to which the six researchers agreed. There was quite close agreement about the identity of the basic themes, but the six researchers 'packaged' or linkage and contextualized the theme differently. Armstrong et al. concluded that such reliability testing was limited by the inherent nature of the process of qualitative data analysis. On the other hand, the interpretations of the six researchers had much in common despite the fact that they were from both Britain and the United States and from more than one discipline (anthropology, psychology and sociology). By deliberately selecting a diverse range of analysts (albeit all experienced), Armstrong et al. constructed a though test of inter-rater agreement and one which would be unusual in a typical research study. It would be interesting to see the same exercise repeated with quantitative data and analysis and analysts from these different social science disciplines!

Despite the potential limitations of the term "reliability" in the context of qualitative research highlighted by Armstrong et al, there may be merit in involving more than one analyst in situations where researcher bias is specially likely to be perceived to be a problem; for example, where social scientist are investigating the work of clinicians. In a study of the contribution of the use of echocardiography to the

social process of diagnosing patients with suspected cardiac abnormalities. Daly et al. developed a modified form of qualitative analysis involving the sociologists who had managed the patients. The raw data consisted of transcripts of the consultations between the patients and the cardiologists' responses to a structured questionnaire and transcripts of open-ended research interviews with the cardiologists and with the patients.

First, the transcripts and questionnaire data were analyzed by the researchers in order to make sense of the process of diagnosis, including the purpose of the test. From this analysis, the researchers identified the main aspects of the consultations that appeared to the use of echocardiography. Next, these aspects or features of the clinical process were turned into criteria in relation to which other analysts could generate their own assessments of the meaning of the raw data. The cardiologists involved then independently assessments of the cardiologists and sociologists were compared statistically and the level of agreement was shown to be good. Finally, in cases where there was disagreement between the original researchers' analysis and that of the cardiologist, a further researcher repeated the analysis. Remaining discrepancies were resolved by consensus after discussion between the researchers and the cardiologists.

Although there was an element of circularity in part of this lengthy process (in that the formal criteria used by the cardiologists were derived from the initial researchers' analysis) and it involved the derivation of quantitative grading and statistical analysis of inter-rater agreement, which are unusual in a qualitative study, it meant that clinical critics could not argue that the findings were simply based on the subjective judgments of an individual researcher.

Applied qualitative research

Similar considerations arise in other areas where qualitative methods are deployed. One approach to qualitative analysis known as the framework approach has been developed in Britain specifically for applied or policy relevant qualitative research in which the objectives of the investigation are typically set in advance and shaped by the information requirements of the funding body (for example, a health authority) rather than emerging from a reflexive research process. The timescales of applied research also tend to be shorter than more "basic" social research and there tend to be a need to link the qualitative analysis to findings from quantitative

investigation. For these reasons, although the framework approach is heavily based in the original accounts and observations of the people studied (that is, "grounded" and inductive), it starts deductively from the aims and objectives already set for the study. It is systematic and designed so that the analytic process and interpretations can be viewed and assessed by people other than the primary analyst.

The topic guide used to collect data under the framework approach (for example, to guide depth interviews) tends to be more structured from the outset than would be the norm for much five stages of analysis, which are similar to the steps in more conventional qualitative analysis discussed. However, they tend to be more explicit and more strongly informed by a priori reasoning (Ritchie J, & Spencer L, 1993) (see APPENDIX B). Framework analysis is most commonly used with individual interview or focus group data. It is easy to see, even with a summary of the five stages, how laborious thorough qualitative data analysis can be.

In conclusion, this part has shown that analyzing qualitative data is not a simple or quick task. Done properly, it is systematic and rigorous, and therefore labor intensive for the researcher(s) involved and time consuming. Fielding contends that "good qualitative analysis is able to document its claim to reflect some of the truth of a phenomenon by reference to systematically gathered data", in contrast, "poor qualitative analysis is anecdotal, unreflective, descriptive without being focused on a coherent line of inquiry" (Fielding N, 1993). At its heart, good qualitative analysis relies on the skill, vision and integrity of the researcher doing that analysis, and as Dingwall et al. have pointed out, this many require highly trained and, crucially, experienced researchers (Dingwall R et al., 1998).

Gap of knowledge

From literature review, it consists of the concept and key principal of Universal Coverage, Urbanization and its impact on health of the urban population, definition of poverty and measurement method in an international level and within Thailand as well. Health care system in Thailand context was explored as well as health seeking behavior theories and models were used from the past until nowadays. Literature reviews about the utilization of health care has been conducted in various methods and areas in Thailand. Out-of-pocket expenditure in the world wild and

within Thailand studied by many researchers were reviewed as well as catastrophic health expenditure. The concepts and measurement of equity in health in various dimension was also explored. Qualitative study in health care will be investigated for policy recommendations to improve health care systems in the final part of this study. However, there were many studies about household catastrophic health expenditure conducted by used the data from national surveys and other secondary data. It lack of the data of informal cost related to health care from field survey study. It also has a few studies on household catastrophic health expenditure across socioeconomic, residential area and health insurance schemes comparing within urban area.

This study will focus on the Universal Coverage Policy in protecting urban city household from catastrophic health expenditure. Health seeking behavior of catastrophic cases would be explored as well as household health financial burden and coping strategy from health care expenditure under the Universal Coverage policy in Thailand.

CHAPTER III

RESEARCH METHODOLOGY

Introduction

In order to explore the issues raised in previous chapters, Thailand has launched the universal coverage policy since 2001. Most of Thai (about 99.4%) are covered by three main health insurance schemes; with UC (gold card) scheme, Civil Servant Medical Benefit Scheme (CSMBS) and Social Security Scheme (SSS). However, there are some areas in Thailand with densely settle and poor human living conditions called "slum", impact of urbanization, in many cities of Thailand. Living with poor health in hazardous environment causes too much burden of diseases such as HIV/AIDS, injury and violence, mental health and substance abuse, non-communicable disease and nutritional disorders. Further, earning low income made their low affordability also more barriers in access to public health care service, for instance living in house with no registry; their diseases were excluded of benefit package, and inconvenient to use public facilities. So slum dweller tends to face with household catastrophic health expenditure. And equity in health care expenditure across socioeconomic groups, residential area, and health insurance schemes are questionable.

Aims of this study are to know about health care seeking behavior of the poor and non-poor populations, household out-of-pocket health expenditure (OOP), and the appropriate health system for urban dwellers to reduce household financing burdens in Nakhon Sawan Municipality (NSM). This study needs to employed mixed methods in responding to research questions. Research questions in the study are:

1. How many percentages of households in NSM paid out-of-pocket expenditure for health care in the last month?
2. Do NSM dwellers face with CHE across SES group, health benefit scheme and residential area in NSM and why?
3. Is there equity in household health expenditure among different SES?
4. Which factors are related to CHE in NSM?

5. How to improve equitable in access to health care in an urban area?

Study design and methods

Study design

All the research objectives required mixed research method including quantitative analysis of the primary survey data, and qualitative study to explore household's catastrophic health care expenditure in each community, also the provider and community's stakeholder views to recommend health service policy in the urban setting of Thailand.

Quantitative study

The quantitative study employed a cross-sectional survey method in view of urban dweller seeking behavior and expenditure for health care in public and private sector. This study collected data from both urban poor and non-poor populations. Household's data were collected by face-to-face interview; respondent was representative of household members who was willing to participate in the study. Interviews were conducted by using a structured questionnaire during November 2008 to April 2009.

Subjects

In the quantitative method, the subjects were calculated for adequacy sample size and selected by multistage random sampling among urban dwellers in 70 communities of Nakhon Sawan municipality

1. Sample size

Sample size calculation was based on the probability of having equal chance to be selected. The number of sampled households were calculated by using Cochran's formula (1997) as follows:

$$n_o = \frac{(t)^2 * (p)(q)}{(d)^2}$$

Where t = value for selected alpha level of .025 in each tail = 1.96.

(The alpha level of .05 indicates the level of risk the researcher is willing to take that true margin of error may exceed the acceptable margin of error).

Where (p)(q) = estimate of variance = .25

Where P = 0.02 (Uninsured persons = 2%)

(Maximum possible proportion (.5) * 1- maximum possible proportion (.5) produces maximum possible sample size).

Where d = acceptable margin of error for proportion being estimated = .05 (error researcher is willing to except).

After applying values of the variables to the formula, what is the result for n?

2. Sample selection

The samples were selected by employing multi-stage random sampling technique as follows:

2.1 The first step, proportionately selecting communities from catchment areas of 6 Primary Care Unit in Nakhon Sawan Municipality from 61 communities.

2.2 The second step, to select households from selected communities. Two sets of households were listed by equal size, 5 poor and 5 non-poor households from each community. The poor households were randomly selected from a household list of Poverty Reduction Project and met criteria of the poor household characteristics (see below) and the non-poor households randomly selected from electoral voters list (see Figure 13).

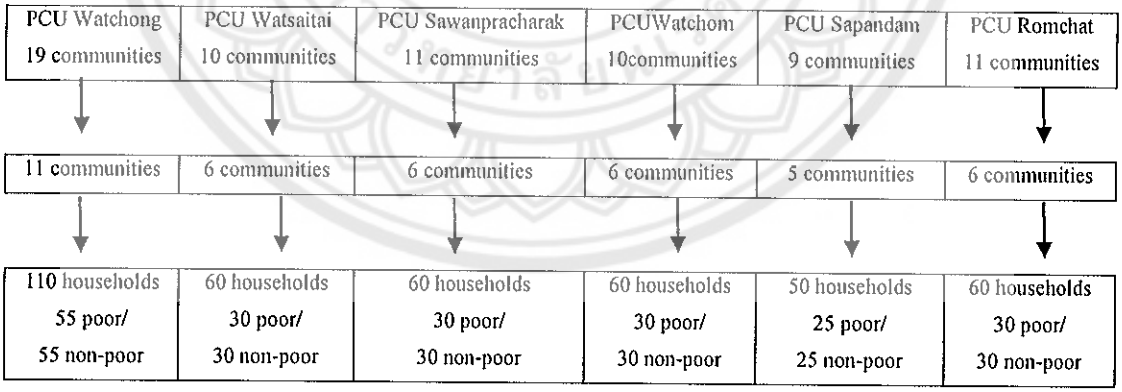


Figure 13 The sampling frame

The poor household characteristic

The poor household in the study was identified by head of each community and also in the list of Poverty reduction project of Thailand. The preliminary criteria

were used for collecting participated households in the study. (Household SES was classified by household income and consumption later)

Inclusion criteria

Households in Nakhon Sawan municipality with at least one member could inform interviewers on their household data after expressing willingness to participate in the study.

Data collection

The face-to-face interview was conducted at the selected household by trained health personnel to collect the data. The interviewee was representative of each selected household who responded to all questions in the questionnaire.

The questionnaire (see ANNEX 2) consisted of two parts; part 1 (F 1) to collect household data in the selected households and part 2 (F 2) was a form for patient who got ill in the past 30 days. The details of questionnaire were as follows:

F1: consisted of household information: 1) demographic data were concerned with age, sex, educational level, health care insurance scheme, occupation of respondent and household members. 2) Socioeconomic questions asked household income, source of income, household expenditure and household asset. 3) Health status questions explored the number of patients in each household, kinds of illness and treatment.

F 2: dealt with morbidity of sample, health seeking behavior and health expenditure for household of patient who reported illness in the last month; contained 1) health seeking behavior healthcare utilization, health insurance uptake. 2) Household health financing asked healthcare payment paid directly to healthcare providers, indirect payment related to healthcare such as transportation, food cost, losing working time cost etc. And 3) coping strategies of household asked difficulties when faced with unaffordable cost.

The questionnaire was adopted from standard questionnaire for household survey from Center for Health Equity Monitoring (CHEM), Naresuan University. Validity and reliability test was done in the neighboring municipality out of study area. The evaluation of questionnaire reliability- internal consistency was the Cronbach's α (Cronbach, 1984). The value of the coefficient of Cronbach for the questionnaire scale was 0.908.

Data Analysis

Demographic data were presented in descriptive statistics; frequency, mean, standard deviation, minimum and maximum. Socio-economic status was categorized according to the poverty line as a threshold. Household catastrophic health expenditure was calculated as household out-of-pocket payment on health care exceeding 10% of total household expenditure in a month. The relationships between demographic characteristics, residential area, Socio-economic status, morbidity, health seeking behaviors, health expenditure and household catastrophic health expenditure were proved by Mantel Haenszel Chi-square test. Finally, evidences of household catastrophic health expenditure among household income quintiles were collected to explore equity in health care expenditure, to know household health seeking behaviors, household financing, and also barriers in access to health care service. This study followed catastrophic case households to conduct qualitative study.

Qualitative study

This part of the study explored the reasons in decision making of households to seek care that caused household catastrophic health expenditure by qualitative study. In-depth interviews to stakeholders in both provider and consumer view for policy recommendation were undertaken as follows:

1. In-depth interview was conducted with household faced with catastrophic health expenditure (identified by statistics) to understand on the reasons for out-of-pocket health payment. Also to interview multi-level of health providers both public and private sector in the area on the problem of health provision in urban area.

2. Focus group discussion and in-depth interview were undertaken with multi-level health administrators in public and private sector, representatives of local government, health care personnel and Nursing college lecturers on an ideal health care system that could prevent catastrophic expenditure to the poor in Nakhon Sawan Municipality.

Subjects

The subjects for the qualitative studies were divided into two groups; the first group was the consumer's view, households faced with catastrophic health expenditure. The second group highlighted the provider's views, the other

stakeholders in health care system such as health administrators, health care providers and nursing college lecturers in the Nakhon Sawan Municipality.

The subjects for in-depth interview

The subjects for in-depth interview were identified from the quantitative study. The sampled households in Nakhon-Sawan Municipality facing with catastrophic health expenditure were identified to be subjects first. Then the researcher asked their neighbor who they may know who also met the criteria for further study. The subjects were selected by non-probability sampling as follows.

Non-probability Sampling

William M.K. (2009) states about nonprobability and probability sampling in web site www.socialresearchmethods.net as follows:

The difference between non-probability and probability sampling is that non-probability sampling does not involve **random** selection and probability sampling does. Does that mean that non-probability samples aren't representative of the population? Not necessarily. But it does mean that non-probability samples cannot depend upon the rationale of probability theory. At least with a probabilistic sample, we know the odds or probability that we have represented the population well. We are able to estimate confidence intervals for the statistic. With non-probability samples, we may or may not represent the population well, and it will often be hard for us to know how well we've done so. In general, researchers prefer probabilistic or random sampling methods over non-probability ones, and consider them to be more accurate and rigorous. However, in applied social research there may be circumstances where it is not feasible, practical or theoretically sensible to do random sampling.

Data collection

In-depth interview

The representative of household faced with catastrophic health expenditure that had some barriers in access to care and also financial problem were in-depth-interviewed by research team at their home. Open-end questionnaire composing with their illness, health insurance, health seeking behavior, barriers in access to care, household health financing, coping strategies. Lastly the recommendations for improving health care system in a municipality was asked. The data collection mainly used the digital tape recorder and the short note taking by research team.

An open-ended questionnaire:

Demographic characteristics

The open-ended questionnaire collected data on age, sex, education level, occupation, family size, socio-economic status, health insurance, financial burden of sampled households and social network interactions.

Psycho-social characteristics

Perceived susceptibility ("emic" or native view, "etic" or health professional view), perceived severity of illness or health problems and its consequences, perceived benefits of preventive or therapeutic health practices, perceived barriers in access to care, days missed from work or school and prior experiences with illness.

Enabling factors

Availability: referred to the geographic distribution of health facilities, pharmaceutical products, performance of health services, etc., **Accessibility**: included transport, roads, etc., **Affordability**: includes treatment costs for the individual, household or family. A distinction is made between direct, indirect and opportunity costs. **Acceptability**: related to cultural and social distance. This mainly referred to the characteristics of the health providers – health workers' behavior, gender aspects (non-acceptance of being treated by the opposite sex, in particular women who refuse to be seen by male nurses/doctors), excessive bureaucracy etc. **Social support** included such as local health fund, health volunteers and subsidy from government.

Treatment action

Home remedies (herbal, pharmaceuticals), pharmacy, over the counter drugs from shops, injectionists, traditional healers, private medical facilities, public health services etc.

Data Analysis for qualitative study

This qualitative study employed content analysis as a tool on data analysis. The analyses covered the content of illness, health seeking behavior, health care financing and also coping strategy of catastrophic cases. The content also covered provider's view on barriers in providing care in NSM. Analyses were focused for the contents of recommendations from various views of stakeholders. The ultimate goal of the study was to improve health care system to be more accessible for the poor in the future.

To understand more about content analysis, it needs to know the basis of this tool and why choosing it to use in the study?

Content Analysis

Content analysis is a class of techniques for mapping symbolic data into a data matrix suitable for statistical content analysis. When the term is used, one refers to the content analysis of cultural artifacts (e.g. book, architectural styles, discourse on prime-time television, etc.), That is, one refers to a mapping of non-numeric artifacts into a matrix of statistically manipulable symbols. Thus, content analysis involves measurement, not 'analyses' in the usual sense of the word. Whereas one might perform a content analysis of campaign slogans, one uses the data generated in such a content analysis to analyze (i.e. not 'content' analyze) the slogans' effects on public opinion. Texts and transcripts have been by far the most common objects of content analysis. (Neil J. Smelser, & Baltes, 2001)

Conceptual framework

This study exploited two different types of methodology. So the framework should be separated into different part of quantitative and qualitative study. The first part is conceptual framework for quantitative study that employed cross-sectional survey to collect the quantitative data.

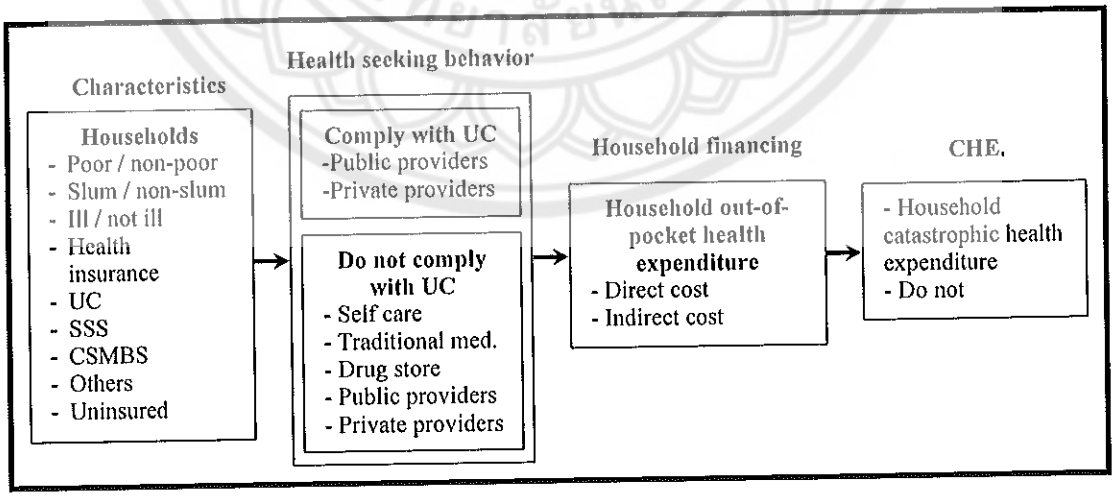


Figure 14 Conceptual framework

From Figure 14 the first part of the study was designed to respond the first research question. Aim of the study was to know the situation of household CHE in NSM. The quantitative method was surveying households in both the poor and the non-poor, slum and non-slum households collected from household list as well as health insurance schemes of household members. The representatives of households who knew the data of all members were the subjects. Face-to-face interviewing was investigated by trained health personnel from Primary Care Unit. The collecting data were: household general data in the first part, then health care seeking behavior of the member who reported ill in the last month in any household in the second part. The third part is about household financial considering in household out-of-pocket expenditure paid for health care both direct and indirect cost and lastly calculating for household catastrophic health expenditure. Lastly is to classify the household into two groups: household faced with CHE or not. Then the study need to know more details of the household faced with CHE. The qualitative study designed for responding to the rest of research questions.

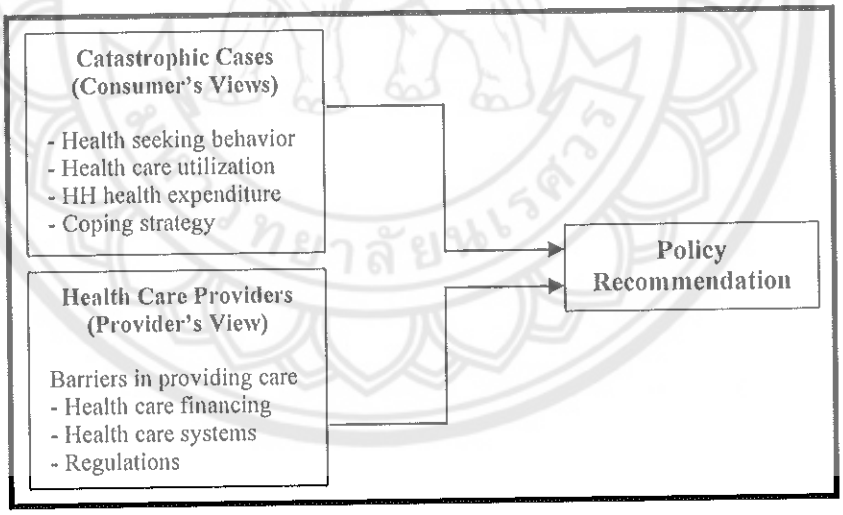


Figure 15 Conceptual framework for qualitative study

From Figure 15 the conceptual framework for qualitative study, it starts with the in-depth interview with catastrophic cases and health care providers. In the consumer's view focusing on health seeking behaviors, health care utilization, household health expenditure and coping strategy that related to CHE. While as the

focusing on health care financing, health care systems and regulation in the provider's view. Focus group discussion would be held for discussion on barriers in access to care and also barriers in providing health care in NSM. Then, all collected data would be analyzed by research questions. And finally is policy recommendations would be drawn from the results of content analysis.

Ethical considerations

This study was approved by the Institutional Review Board of Naresuan University (Ref N°52202030010, 2009 Dec. 22)

CHAPTER IV

RESULT OF THE STUDY

This chapter will present all the results of the study in quantitative and qualitative study. The quantitative study was published in The Southeast Asian Journal of Tropical Medicine and Public Health in a topic of "Catastrophic health expenditure (CHE) in an urban city: Seven years after Universal Coverage policy in Thailand". The study aimed to explore the incidence of household catastrophic health expenditure and which expenditure related with CHE in an urban city. It will be shown in the journal format that was published. Then the qualitative study will be presented in the topic of "Health system factors explaining household catastrophic health expenditure in an urban city in Thailand". The study aimed to explore health seeking behaviors and barriers in access to care of catastrophic cases in an urban city. The lastly is policy recommendations for improve health care systems in an urban city in Thailand.

Catastrophic health expenditure in an urban city: seven years urban city: seven years After

CATASTROPHICHEALTHEXPENDITURE IN AN URBAN CITY: SEVEN YEARS AFTER UNIVERSAL COVERAGE POLICY IN THAILAND

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Running Title: CATASTROPHIC HEALTH EXPENDITURE IN AN URBAN CITY

Abstract. This study explored the burden of household out-of-pocket health expenditure on urban inhabitants with different socio-economic status and health insurance schemes in Nakhon Sawan Municipality. This study employed a cross-sectional survey by using a structured questionnaire. Health personnel from six primary care units interviewed a representative of the sampled households. Sampled households were selected by a two-stage random sampling technique. Descriptive statistics were used to describe general household characteristics, and Mantel-Haenszel odds ratio was used to explain the relationships between factors and catastrophic health expenditure. From 406 sampled households, there were 1,421 household members and 340 individuals who reported illness within the last month. The poor and non-poor groups reported hypertension, diabetes, and the common cold as the most common ailments. Most patients sought care at a regional hospital and then primary care units, drug stores, and private hospitals, respectively. Household out-of-pocket medical costs were most frequently paid to drug stores and to private clinics. The direct non-medical costs were mostly paid for transportation and food. Factors related to catastrophic health expenditure were the CSMBS cardholder, use of public hospital, private hospital, and clinic. Furthermore, catastrophic expenditures were related to non-medical costs and time loss for indirect cost. Catastrophic rates of the poor were 12.5 and 30.4 percent from direct and non-medical cost, respectively. The rates for the non-poor were lower.

Keywords: Catastrophic health expenditure; equity in health; out-of-pocket payment, Thailand

Introduction

Ill-health and poverty are mutually reinforcing and can generate a vicious cycle of deterioration and suffering in rapid growth urban areas. Important factors

involved are dense settlement (Department of Commerce & Bureau of the Census, 2002); increasing population (Vlahov, & Galea, 2002); inadequate provision for infrastructure and public services (USAID, 2004);negative impact on health from changing lifestyle of urban dwellers affected by HIV/AIDS(Van Donk M, 2006); traffic accidents and non-communicable diseases (WHO, & World Bank, 2004); and violence and crime, mental illness, and substance abuse (Allison K.W. et al., 1999; Izutsu T. et al., 2006).

The World Health Organization defined universal coverage as a mechanism to guarantee equal access to essential promotive, preventive, curative and rehabilitative health interventions for all citizens at an affordable cost, thereby achieving equity in access. The principle of financial-risk protection ensures that the cost of care does not put people at risk of financial catastrophe. A related objective of health-financing policy is equity in financing (vertical equity): households contribute to the health system on the basis of ability to pay (WHO, 2008).

Thailand's 2002 Universal Coverage Policy (Wibulpolprasert, 2007) covers almost all (92.3%) Thai citizens (Information Data and Communication Division Office, 2008)(Information Data and Communication Division Office, 2008) through three main government health insurance schemes: the Civil Servant Medical Benefit Scheme (CSMBS), the Social Security Scheme (SSS), and the Universal Coverage (UC) scheme. Nevertheless, non-medical household out-of-pocket payments, related to healthcare, still exist and cause household financial burden, particularly on the poor households in rural and urban areas. Despite the availability of health facilities in urban cities and the existence of universal coverage policy, many studies revealed that households still pay out-of-pocket for health care expenditures (e. a. Ke Xu, 2003; Limwattananon S., Tangcharoensathien V., & Prakongsai P., 2007; Pannarunothai S. et al., 2002; Supait Pannarunothai, & Renberg, 1998; Pannurunothai S., & Mills A., 1997; Sujariyakul A., 2000; van Doorslaer E., Wagstaff A., & Rutten F., 1993; Weraphong J., Pannarunothai S., Khongsawat S., & Yanachai C., 2007).

This study explored household catastrophic health expenditure in an urban city seven years after UC policy implementation. Nakhon Sawan was chosen because it is a large province in lower northern Thailand with average national economic growth. Within Nakhon Sawan Municipality, there were many types of healthcare

facilities, comprising both public and private sectors, such as a public regional hospital, primary care units, municipal health centers, private hospitals, private clinics, and private drug stores. The results could be generalized for other urban areas as it did for the voluntary health card project in the 1980s.

Materials and methods

A cross-sectional survey study was conducted in December 2008 on forty urban communities of Nakhon Sawan Municipality. Structured questionnaires were used to collect the data described below.

Sample size

Cochran's formula (Cochran, & G.W., 1997) was used for estimating the sample size. In 2008, Nakhon Sawan Municipality had 27,597 households with a total population of 90,454. The coverage rate of health care insurance was 99.4 percent. Therefore, the result from the calculation was about 387 households.

Sampled households

A two-stage random sampling technique was used for selecting households participating in the study. The first stage was to randomly select 40 clusters from 61 communities of Nakhon Sawan Municipality proportionately on household number. Disproportionate sampling was used to select ten households in each cluster in the second stage. To improve estimates of income effects, disproportionate sampling (Kalton G. & Anderson D.W., 1986) was used to select five poor and five non-poor households from each community. The poor households were randomly selected from the list of the Poverty Reduction Project that covered all the poor families, and the non-poor households were randomly selected from a household list of the six primary care units covering all households in the community.

Questionnaire

The structured questionnaire used in this study was adapted from the household survey questionnaires of the Centre for Health Equity Monitoring (CHEM), Faculty of Medicine, Naresuan University (Pannarunothai et al., 2002). The questionnaire was tested for reliability before using.

The first part of the questionnaire asked details about household demographics, and socio-economic and household members' health status data. Demographic data included age, sex, education level, nationality, religion, health

insurance, and occupation of household members. Socio-economic data included household income, expenditure, sources of income, assets, and debt of sampled households. Health status data included illnesses and healthcare utilization of household members in the previous month.

The second part asked about the samples' illness experiences in the previous month, followed by health seeking behaviors for each illness (use of health care services, use of health benefit coverage). The questions further asked about household health financing patterns (direct out-of-pocket health expenditure, medical cost paid directly to health care providers, and other out-of-pocket expenditure related to health care, such as transportation cost, food cost, working time loss and cost, and foregone income loss. The final questions focused on coping strategy of households faced with costs that household could not pay upfront (they had to sell household products, assets, or borrow money from others, etc.).

Interview

Health personnel working at six public primary care units in Nakhon Sawan Municipality were trained to be interviewers by the principle investigator (JW). Face-to-face interview technique was used for collecting household data. To reduce response bias, the trained-health personnel from another primary care unit carried out household interviews. The key informant of each sampled household acted as proxy respondent providing data of all household members to the interviewer.

Ethical considerations

This study was approved by the Institutional Review Board of Naresuan University (Ref N°52202030010, 2009 Dec. 22).

Data Analysis

The demographic characteristics were presented by using descriptive statistics, which included frequency, percentage, mean, median, and standard deviation. Household socio-economic status was classified into the poor and the non-poor by using the poverty line as a threshold as the samples were taken from two different sampling frames. Catastrophic health expenditure was defined as household with out-of-pocket health expenditure exceeding ten percent of all household expenditure in a month (e. a. Ke Xu, 2003). Household health expenditure comprised direct medical cost paid directly to health providers, and direct non-medical cost and

other indirect costs related to their illnesses. The relationships between demographic characteristics, residence area, socio-economic status, and household catastrophic health expenditure were analyzed by the Mantel-Haenszel Chi-square test.

Results

The face-to-face interviews produced 406 completed questionnaires, with 1,421 household members of whom 340 reported illnesses. The results of the study were presented in four parts: general characteristics, illness and health seeking behaviors, household out-of-pocket health expenditure and household catastrophic health expenditure, and equity in health care expenditure between the poor and non-poor households.

General characteristics

The total of 406 households were reclassified as poor or non-poor, using the poverty line as the threshold based on the most recent assessed income. The poverty line in the urban area of the lower north of Thailand in 2008 adjusted for inflation rates (Jitsuchon S., 2004) was THB1,539.8 (approximately USD 45) per person per month. From the specified threshold, 13.8 percent of sampled households had incomes under the poverty line; therefore, were designated as poor households.

In terms of individuals, 10.1 percent of the respondents were living in poor households and 89.9 percent in non-poor households. There were more females than males in both poor and non-poor households, but predominantly there were twice as many females in the poor than in the non-poor. There were also more elderly in the poor households than in the non-poor ones.

About one-third of the poor (34.5 percent), but less than a quarter of the non-poor (23.9 percent), reported illness in the 30-day recall period. Both groups had equally high health insurance coverage (96 percent). The UC scheme provided coverage to91.0 percent of the poor, but only 76.8 percent of the non-poor (Table 4.1).For the non-insured (6 poor and 56 non-poor), many of them were the elderly or children who had never accessed health services; therefore they were not registered and had no health card. A few of them were migrant laborers who also had no health card.

The mean income of the poor households was THB 2,400 per month, whereas the mean income of the non-poor households was higher, at THB 15,000 per month.

The mean household expenditure in the poor households was THB 3,300; lower than the non-poor households of THB 9,300 per month. Household assets of the poor were one-fifth of the non-poor, and this was true for household debt as well (Table 15).

Most of the key informants were the spouses of the household heads or their mothers: 60.7 percent in the poor and 72.6 percent in the non-poor households. Most of them completed primary school education (57.1 and 62.9%, respectively). Almost all key informants in this study were Buddhist (Table 16).

Morbidity rate

The morbidity rate of the poor was higher than the non-poor (347.2 and 227.1 per 1,000 populations, respectively). The most commonly reported illnesses were hypertension, diabetes, and common cold; the rates were 76.3, 69.4, and 27.8 per 1,000 populations in the poor and 51.7, 43.1 and 28.2 per 1,000 populations in the non-poor. The elderly consistently exhibited a higher morbidity, especially hypertension and diabetes, in the poor households (Table 17).

Health seeking behaviors

Facilities they chose for care when members of the sampled households became ill were the focus of this section. Sampled population who reported illness (383 people) made 434 visits to health facilities (50 of the poor who reported illness reported 62 health visits and 290 non-poor reported 312 visits). Most of the poor and the non-poor sought care at a tertiary regional hospital, primary care units, and drug stores at 38.7, 30.6, and 12.9 percent in the poor, and 36.8, 27.6 and 11.9 percent in the non-poor, respectively (Table 18).

Household out-of-pocket health expenditure

In the present study, household out-of-pocket health expenditure was categorized into two categories: direct medical costs and direct non-medical including indirect costs. Direct medical cost was out-of-pocket payment directly to health care providers. Direct non-medical cost was out-of-pocket payment for transportation and food. Indirect costs covered income loss of patients and of caregivers, and loss of working time cost that was related to illness. The results from the household survey indicated that most households frequently paid out-of-pocket for direct medical cost at drug stores, private clinics, and the public hospitals at 16.0, 6.0, and 4.0 percent of the poor households, respectively. Compared to the non-poor households, out-of-pocket

payments for direct medical cost were at 12.8, 7.2, and 5.8 percent, respectively (Table 19).

Direct non-medical cost and indirect cost related to illness were found to be more prevalent than the direct cost. Transportation cost was the most common other out-of-pocket payments for both poor and non-poor households (62.0 and 72.4 percent of households with illness) at the same median cost (THB40/month). The second most common was the food cost incurred in 38.0 and 26.9 percent of the poor and the non-poor households, respectively (Table 19).

Catastrophic health expenditure and related factors

In the present study, household catastrophic health expenditure was defined as household out-of-pocket health expenditure exceeding ten percent of all household expenditures in a month. Data of 406 households collected from forty communities found that the incidence of catastrophic health expenditure from both direct and indirect costs was higher in the poor than the non-poor households.

The incidence of household catastrophic health expenditure, when breaking down into direct medical costs, were12.5 percent of the poor and 7.1of the non-poor households faced with catastrophe. The non-medical and indirect costs were 30.4 percent of the poor and 18.3of the non-poor households facing catastrophe (Table 20).

The relationships between contributing factors and catastrophic household expenditures were analyzed by Mantel-Haenszel Chi-square test to control for the poor and non-poor covariate. For direct medical cost, the CSMB cardholders faced catastrophe 3.79 times higher than other cardholders did(p-value=0.004). Seeking care in a catastrophe at a public hospital was14.81 times higher than seeking care at other facilities did (p-value=0.001). Seeking care at private clinic had 3.70 times higher and at private hospital had 24.07 times higher when faced with a catastrophe than otherwise (p-value=0.01 and 0.001, respectively)(Table 21).

Other factors related to catastrophic health expenditure were transportation cost and time loss. Spending for transportation to seek care had a higher risk than not spending at 1.27 times. Patients whose time was lost in seeking care had 1.27 times higher risk when faced with catastrophe than those who did not (p-value=0.02) (Table 21).

Discussion

Urban poverty has become a global phenomenon. In the year 2002, 746 million people in urban areas were living under the international convention of the poverty line of less than USD2.00 per day (Ravallion, Martin, Chen S., & Sangraula P., 2007). The absolute number of urban poor has increased over the last fifteen to twenty years at a rate faster than in rural areas. Rapid urban growth has made Asia home to the largest share of the world's slum dwellers (USAID, 2004). Financial barriers to access of health care are an important cause of limiting utilization of services and health outcome improvements in urban areas. A significant proportion of the urban population works in the informal sector and is classified as "poor." This has two key implications for financial access to health care: first, workers in the informal sector are difficult to be included in contributory insurance schemes. Second, the uninsured have to pay out-of-pocket costs that contribute to both the incidence and the depth of poverty. Moreover, community support structures, including non-market options of borrowing for healthcare (a catastrophic protection mechanisms), are hard to find in urban areas (World Health Organization, 2010).

A study of household catastrophic health expenditure in Thailand in 2004 found that some households still faced catastrophe and impoverishment (Limwattananon S. et al., 2007). Bypassing the designated services without proper referral resulted in the use of inpatient services in private and public hospitals outside the users' home provinces, and services not covered by the package were major causes of catastrophic expenditure and impoverishment.

The catastrophic health expenditure in the present study used the WHO definition for catastrophic health expenditure as household out-of-pocket health expenditure exceeding 10 percent of household expenditure in a month. The present study found that it was valid for detecting catastrophic health expenditure in the poor households, but it had some problems in the non-poor households. From the collected data, all sampled households reported some expenditure. Health expenditure in the poor households was commonly a significant fraction of their household income, so it was an effective tool to measure catastrophic expenditure in this group.

A number of sampled households on the poor list were later classified as non-poor by the poverty line, indicating that the non-poor households in the present study

were actually not rich households. Even the CSMBS cardholders were at risk of facing catastrophic health expenditure because of the uncovered services (drugs, devices, and surcharges for room and board) at public hospitals. The use of public hospitals contributed to catastrophic access, which suggested that the sampled households had less faith in the primary care units close to their homes, and they preferred to pay out-of-pocket for bypassing services.

In the present study, transportation cost was a significant proportion of other out-of-pocket expenditures to both poor and non-poor households in this urban area; then food costs and costs of working time loss. The poor were more vulnerable than the non-poor when experiencing catastrophic health expenditure from non-medical and indirect costs. Furthermore, out-of-pocket payments for non-medical cost (both poor and non-poor paid almost the same level by median and by mean, Table 6) caused more poor households to face catastrophe. These patterns reveal an inequity in household health expenditure in an urban city despite the universal coverage policy.

More than half of the world population resides in urban cities. Rapid and unplanned urbanization poses new challenges for already overstretched and weak health systems worldwide. Evidence from the present study reinforces the recommendations of the World Health Report 2010 that the monitoring and evaluation of the universal coverage should focus on policy effectiveness of protecting households from catastrophe or impoverishment (World Health Organization, 2010). The findings also confirm that catastrophic health expenditure occurred more in households with a greater proportion of elderly members (Somkotra, & Lagrada, 2009).

The government of Thailand should consider providing the urban poor higher accessibility to health care facilities, such as drug stores and private clinics, apart from the public primary care unit closest to peoples' homes. The study of the Community Pharmacy Model under the Universal Coverage Scheme indicated that community pharmacists were efficient health care providers who provided good access to care with good quality pharmacies on a controlled payment scheme (Lochid-amnuay S., Waiyakarn S., Pongcharoensuk P., Cynthia P., & Keokitichai S., 2009). Therefore, the healthcare system in Thailand should consider involving drug stores in providing

easier access to healthcare. This could reduce household financial burden, especially in the poor households.

The strengths of this study were that first-hand data were collected directly from sampled households by interview technique, conducted by local health workers working in the study area; biases were reduced by assigning another health worker for the interviews. Therefore, the reliability of the data was less in doubt. Furthermore, the questionnaires employed for data collection focused on non-medical cost related to health care expenditure that is commonly not available in national surveys. The sampling strategy of randomly selecting an equal number of poor and non-poor households from the list made comparisons between poor and non-poor possible.

Weaknesses of the study were that it was the cross-sectional survey; the methodology normally detected only the situations occurring at the survey time, and quality of care was difficult to measure. Proxy respondents for the family members may cause inaccuracies; nevertheless, the present study encouraged the research team to collect follow-up data on the sampled households that faced catastrophe to validate the results. Non-representative, cluster sampling strategy, and a small sample size of poor households inhibited more robust statistical analyses to higher confidence conclusions.

Access to care in urban areas is a critical problem that exists around the world. The main principle of universal coverage policy is to ensure that people have access to key promotive, preventive, curative, and rehabilitative health interventions at an affordable cost. Accessibility to health care depends on various factors, such as being a health insurance member, perceived quality of healthcare service, quantity and distribution of healthcare resources and facilities, barriers on service arrangements, and official time of healthcare facilities. The findings from the present study suggested that the urban poor were sicker and still faced catastrophic health expenditure from their health seeking behaviors via the healthcare system provided in urban areas.

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Table 14 General household characteristics

Characteristic	Poor		Non-poor	
	n	%	*n*	%
Number of households	56	13.8	350	86.2
Resided in slum area	20	35.7	109	31.1
Sex				
Male	56 (38.9)		580 (45.4)	
Female	88 (61.1)		697(54.6)	
Total	144		1,277	
Age group				
< 5 yrs	5 (3.4)		95 (7.5)	
5-20 yrs	19 (13.2)		293 (22.9)	
20-35 yrs	19 (13.2)		242 (18.9)	
35-60 yrs	39 (27.1)		439 (34.4)	
60+ yrs	62 (43.1)		208 (16.3)	
Total	144		1,277	
Household members	144	10.1	1,277	89.9
Report illness	50	34.5	290	23.9
Health insurance				
UC	131	91.0	981	76.8
CSMBS	6	4.2	103	8.1
SSS	1	0.7	128	10.0
Others	0	0.0	9	0.7
No insurance	6	4.2	56	4.4

Table 15 Household financing

Household financing	Poor (*n*=56)			Non-poor (*n*=350)		
	Median	Mean	SD	Median	Mean	SD
Monthly income (THB1,000)	2.0	2.4	1.5	10.0	15.0	16.5
Monthly spending(THB1,000)	2.8	3.3	3.1	7.6	9.3	6.8
Asset (THB1,000)	32.5	115.4	188.1	165.8	500.3	1035.4
Debt (THB1,000)	4.9	30.2	56.3	20.0	158.4	486.3

Table 16 General characteristics of key informant

Characteristics	Poor (*n*=56)		Non-poor(*n*=350)	
	n	%	*n*	%
Relation with head of household				
Father	2	3.6	27	7.7
Mother	16	28.6	115	32.9
Son/daughter	4	7.1	29	8.3
Spouse	18	32.1	139	39.7
Others	16	28.6	40	11.4
Education level				
No education	15	26.8	49	14.0
Primary school	32	57.1	220	62.9
Secondary school	7	12.5	46	13.1
Certificate	1	1.8	19	5.4

Table 16 (cont.)

Characteristics	Poor (*n*=56)		Non-poor(*n*=350)	
	n	%	*n*	%
Bachelor and higher	0	0.0	10	2.9
Others	1	1.8	6	1.7
Religion				
Buddhist	56	100.0	346	98.9
Christian	0	0.0	4	1.1

Table 17 Morbidity rates of leading diseases by socio-economic group

Disease	Poor(*n*=144)		Disease	Non-poor(*n*=1,277)	
	n	Rate/1000 populations		*n*	Rate/1000 populations
1. Hypertension	11	76.3	1. Hypertension	66	51.7
2. Diabetes	10	69.4	2. Diabetes	55	43.1
3. Common cold	4	27.8	3. Common cold	36	28.2
4. Psychiatric	2	13.9	4. Paralyze	8	6.3
5. Paralyzed	2	13.9	5. Peptic ulcer	7	5.5
6. Motorcycle accident	2	13.9	6. Allergy	7	5.5
7. Asthma	2	13.9	7. Leg pain	6	4.7
8. Cataract	2	13.9	8. Tooth ache	6	4.7
9. Heart	2	13.9	9. Back pain	6	4.7
10. Others	13	90.3	10. Others	93	72.8
Total	50	347.2	Total	290	227.1

Table 18 Health seeking behaviors by socio-economic group

Facilities	Poor (*n*=62)		Non-poor (*n*=312)	
	n[a]	%	*n*[a]	%
Primary care units	19	30.6	86	27.6
Private clinics	4	6.5	21	6.7
Regional hospital	24	38.7	115	36.8
Drug stores	8	12.9	37	11.9
Other government hospitals	2	3.2	18	5.8
Private hospitals	5	8.1	35	11.2

[a]One patient used more than one facility

Table 19 Household out-of-pocket health expenditure by socio-economic group

Household out-of-pocket	Poor *n*=50)					Non-poor (*n*=290)				
	n	%	Median (THB)	Mean (THB)	SD (THB)	*n*	%	Median (THB)	Mean (THB)	SD (THB)
Direct medical cost										
Drug stores	8	16.0	100.0	171.3	195.7	37	12.8	80.0	140.0	247.8
Private clinics	3	6.0	140.0	406.7	514.7	21	7.2	400.0	441.4	349.5
Public hospital	2	4.0	540.0	540.0	650.5	10	3.4	1,030.0	2,004.0	2,534.6
Other government hospitals	0	0.0	0.0	0.0	0.0	7	2.4	2,700.0	9,800.0	13835.1
Private hospitals	1	2.0	6,000.0	6,000.0	6,000.0	18	6.2	900.0	2,326.7	3,326.4
Direct non-medical& indirect										
Transportation	31	62.0	40.0	89.8	117.8	210	72.4	40.0	94.6	271.7
Food	19	38.0	30.0	126.6	263.0	78	26.9	50.0	116.8	252.6
Loss of working time cost	3	6.0	150.0	183.3	104.1	26	8.9	200.0	350.0	374.6
Income loss of patient	1	2.0	350.0	350.0	350.0	14	4.8	290.0	820.0	1,417.2
Income loss of care giver	0	0.0	0.0	0.0	0.0	9	3.1	150.0	313.3	321.6
Others	3	6.0	20.0	23.3	5.8	1	0.3	50.0	50.0	50.0

Table 20 Incidence of household catastrophic health expenditure by socio-economic group

Expenditure	Catastrophe			
	Poor (*n*=56)		Non-poor (*n*=350)	
	n	%	*n*	%
Direct medical cost	7	12.5	25	7.1
Non-medical and indirect cost	17	30.4	64	18.3

Table 21 Incidence of catastrophic health expenditure from direct medical cost and contributing factors by socio-economic group

Factor	Poor	Non-poor	df	*p*-value	Odds ratio	95% Confidence Interval	
	%(*n*)	%(*n*)					
Health insurance							
CSMBS			1	[a]0.004	3.79	1.57	9.11
Yes	0.0 (2)	16.7 (54)					
No	13.0 (54)	4.4 (296)					
UC			1	0.71	0.61	0.17	2.20
Yes	12.5 (56)	6.0 (318)					
No	0.0 (0)	9.4 (32)					
SSS			1	0.87	1.21	0.48	3.06
Yes	0.0 (1)	7.3 (96)					
No	12.7 (55)	5.9 (254)					
Health seeking behavior							
Public hospital			1	[a]0.001	14.81	5.46	40.15
Use	50.0 (2)	42.1 (19)					
Not use	11.1 (54)	4.2 (331)					
Drug store			1	0.187	2.21	0.84	5.82

Table 21 (cont.)

Factor	Poor	Non-poor	df	*p*-value	Odds ratio	95% Confidence Interval	
	%(*n*)	%(*n*)					
Use	37.5 (8)	8.1 (37)					
Not use	8.3 (48)	6.1 (313)					
Clinic			1	[a]0.01	3.70	1.27	10.81
Use	28.6 (7)	13.6 (22)					
Not use	2.0 (49)	6.1 (328)					
Private hospital			1	[a]0.001	24.07	8.78	65.98
Use	100.0 (1)	45.5 (22)					
Not use	10.9 (55)	3.7 (328)					

[a]Significant at p-Value <0.05

Table 22 Incidence of catastrophic health expenditure from non-medical and indirect cost by socio-economic group

Factor	Poor	Non-poor	df	*p*-value	Odds ratio	95% Confidence Interval	
	%(*n*)	%(*n*)					
Non-medical cost							
Transportation			1	0.158	1.47	0.89	2.39
Use	60 (25)	59.3 (64)					
Not use	51.6 (31)	49.6 (286)					
Food			1	0.520	1.24	0.72	2.14
Use	24 (25)	21.9 (82)					
Not use	35.5 (31)	19.9 (268)					

Table 22 (cont.)

Factor	Poor %(*n*)	Non-poor %(*n*)	df	*p*-value	Odds ratio	95% Confidence Interval	
Indirect cost							
Time loss			1	[a]0.020	3.04	1.27	7.28
Yes	8 (25)	12.5 (64)					
No	0 (31)	5.2 (286)					
Wage loss (patient)			1	0.450	1.69	0.46	6.14
Yes	8 (25)	3.1 (64)					
No	0 (31)	3.1 (286)					
Wage loss (care giver)			1	0.890	1.29	0.26	6.34
Yes	0 (25)	3.1 (64)					
No	0 (31)	2.4 (286)					

[a]Significant at p-Value <0.05

From the quantitative study shown above, we knew an incident rate and factors related to household CHE in an urban city. To respond the next research questions, the study should explore the causes of CHE focusing on health care seeking behaviors, health care expenditures and coping strategies of the CHE cases. The solution of these problem that how to improve health care systems to be more accessible in an urban setting is the last question. The last research question should be investigated in the qualitative study. The CHE cases were used to be index cases in the qualitative study. Furthermore, policy recommendations should be drawn from stakeholders in the health care systems in an urban area.

Health system factors explaining household catastrophic health expenditure in an urban city in Thailand

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Abstract

Sustainable development goals (SDGs) of the United Nation has the vision of "leaving no one behind" focusing on eradicating extreme poverty by 2030 and putting justice and equity at the heart of development goals. Universal health coverage (UHC) is one of policy that can protect the poor from household bankruptcy. Thailand has launched UHC policy to provide coverage to all Thai citizens through three main government health insurance schemes. Many studies revealed that the policy effectively protect households from paying high out-of-pocket (OOP) expenses for healthcare, especially the poor. However, a household survey in Nakhon Sawan municipality reported a higher rate of catastrophic health expenditure (CHE) arising from indirect costs among the poor than the non-poor.

The present study aims to explore health seeking behaviors (HSB) among catastrophic cases. And to find the ways to make health care system more accessible. Representatives of households facing CHE and health care providers were interviewed using interview guideline based on key factors of HSB.

28 index cases were followed by the researcher team at home. Structured questionnaire created from seven models of health care seeking behaviors was used to be a guideline. Then health care providers and health administrators from both public and private sector were interviewed and discussion for the solution to improve health care system in urban setting.

Results showed users' and providers' views. Barrier of access to care was a key factor that led health care cardholders sought care not covered by their insurance scheme and caused catastrophe in the users' view. In the providers' view, a key factor emerging from content analysis was "problems of health care providers in providing health care services". It reflected perceived quality on health care services in NSM under the UC policy.

There are 3 recommended options for improve an MSM health care systems to be more accessible. Policy makers should consider provide outpatient services close to communities. The first option is private clinics and drug stores were most frequently used by NSM population should be involved in the systems. The second option is multi-disciplinary team should working closely with NSM staff, provides long term care for patients at home in all community. The last option is family doctor provides comprehensive care for its registered populations under direct distribution of capitation to health care facility.

Keyword: health seeking behavior, out-of-pocket, catastrophic health expenditure, urban health care systems, Municipality.

Background

Thailand has launched universal coverage policy since 2001 to ensure equitable access to health care for the entire population. National Health Insurance Information Service Center (National Health Insurance Information Service Center, 2008) stated that UC consisted of three major schemes i.e. Universal Coverage Scheme (UC), Social Security Scheme (SSS) and Civil Servant Medical Benefit Scheme (CSMBS). Currently it covers 61,629,229 persons, equal to 98.75 percent of the Thai population. Information Data and Communication Division Office of Nakhon Sawan provincial office (Information Data and Communication Division Office, 2008) reported that 98.9 percent of the population is covered by some health insurance scheme, including 85.1 percent who are UC cardholders, 5.6 percent SSS beneficiaries, 8 percent CSMBS members; only 0.6 percent is uninsured.

Contexts of Thailand health care systems

The UC scheme promotes use of primary care at the district level by shifting health service delivery from tertiary care hospitals to primary care. District provider networks through the contracting method for which registration of beneficiaries with a provider network is required. A contractual agreement is made between the government and a Contract or Unit for Primary care or ''CUP'' as the main provider for its registered population. The CUP comprises all health centers in a district along with a primary care unit located in the district hospital. Patients can access either health centers or district hospitals in this network, and refer to provincial or regional hospitals is covered if care beyond the clinical capacity of the CUP is needed. The

CUP receives a capitation budget for ambulatory care according to the number of people registered and reimburses the expenses for inpatient care based on diagnostic-related group (DRG) weights from a pooled inpatient budget. (Jongudoumsuk P, 2002).

SSS beneficiaries are also entitled to free ambulatory and admission services but only at registered hospitals.

Beneficiaries under **CSMBS** have access to free ambulatory and admission services, with free choice of providers that are paid by Fee-For-Service (FFS). (Limwattananon S., Tangcharoensathien V., & Prakongsai P., 2005)

Household survey in 2009 (Weraphong J, Pannarunothai S, Luxananun T, Junsri N, & Deesawatsripetch S, 2013) "Catastrophic health expenditure in an urban city: 7 years After Universal Coverage Policy in Thailand" by disproportionate sampling to has more estimate of the poor found that 95.6 percent of samples were covered by any health care insurance. Most of samples (78.3%) were covered by UC, then SSS cardholders (9.1%), CSMB members (7.7%), other insurance (6.3%) and no-insurance (4.4%).

The relationship between contributing factors and CHE was confirmed by Mantel-Haenszel Chi-square test. For medical cost, found that CSMB members had low risk to face with CHE than other health care cardholders 3.79 times significantly at p-value = 0.004. Sought care at public hospital has low risk to face with CHE than other facilities 14.81 times significantly at p-value = 0.001. Sought care at private sector (private clinic and private hospital) also had low risk to face with CHE significantly at p-value = 0.03 and 0.001 respectively

Further, results from the study also found an inequity in health care expenditure existed among different socio-economic status. Poor households paid more of their income in indirect household health expenditure than the better-off. Access to care of catastrophic households is questionable even under UC policy. Other factors related to CHE was wasting time, NSM patients who lost their time in seeking care had higher risk to face with CHE than those who was not loss time in seeking care.

Why catastrophic households still pay out-of-pocket (OOP) health expenditure is a crucial main question to be addressed to find the causes of such health expenditure. Research questions are:

1. What health seeking behaviors incurred an OOP health care cost among the poor households faced with CHE in Nakhon Sawan Municipality?

2. What are causes of OOP health expenditure paid by the poor catastrophic cases in Nakhon Sawan Municipality?

3. How to provide an appropriate health care systems that improves more accessibility to health care in Nakhon Sawan Municipality?

Method

This present study was a qualitative study using in-depth interviews and focus group discussions with household members and health care providers. Open-ended semi-structured questions were created on health care seeking behavior models. The questionnaire also addressed household health financing and related factors in seeking care among the CHE cases. The households with CHE in the previous study (Weraphong J et al., 2013) were the samples (28 cases). Face to face in-depth interviews were carried out as a research method to deeply understand the complex situations. Representatives of health care providers were identified from a list of health care facilities associated with the index cases. Selected subjects had good understandings of health systems in the municipality and were willing to participate in the study. These included a private clinic owner, a drug store owner, a director of a private hospital, a health personnel working in a primary care unit (PCU) and another working in the municipal health center. The household data of index cases were reviewed by the main investigator (JW) prior to data collection at subjects' home in each community. Interviews were recorded using digital tape recorders; note taking was also employed to record contents of interviews during interviewing. Interviews were conducted in 2009 at the sample homes and places of work. Content analysis was used to analyze by using Microsoft® Word 2007, then coded and transferred to Microsoft® Excel 2007 then grouped into relevant research questions. Finally, the contents was analyzed to respond the questions.

Results

From 28 cases were recruited. The sample size of the CSMB was 2, the SSS was only 4 and the UC was 22. Health care utilization was mostly through private hospitals, private clinics, public hospital and PCU. Most of illnesses were chronic non-communicable diseases (NCDs) such as hypertension, diabetes, allergy, heart diseases and headache (see Tables 23 and 24).

Table 23 General characteristics of sample

No	scheme	Diseases	utilize	occupation	Debt	Borrows from
1	UC	Headache	PCU/drug store	Elderly	N/A	N/A
2	CSMB	HT	Clinic/PCU	Retired Civil Servant	6000	son
3	SSS	Kidney fail	Private hospital	Municipal employee	10000	cousin
4	UC	DM	Clinic/drug store	Elderly	30000	cousin
5	SSS	Hemorrhoid	Clinic/drug store	Private employee	N/A	N/A
6	UC	HT	Public Hospital	Elderly	400	Neighborhood
7	UC	HT	Clinic/drug store	Comm. Health Volunteer	N/A	Informal debt
8	UC	HT,DM	Public Hospital	Elderly	N/A	N/A
9	UC	Joint pain	Clinic/drug store	General employee	N/A	Young Bro.

Table 23 (cont.)

No	scheme	Diseases	utilize	occupation	Debt	Borrows from
10	UC	DM,HT, heart	Public Hospital	Handicap	100/month	Older sister
11	UC	HT	Public Hospital	Elderly	N/A	N/A
12	UC	HT,lipid, heart	Public Hospital	Elderly	Transportation	Neighborhood
13	UC	Heart	Public Hos/clinic	Elderly	N/A	son
14	UC	Allergy	PCU/drug store	Elderly	500	Neighborhood
15	SSS	Viral B	Private hospital	Retired Rail.employee	27000	Save Money
16	UC	HT	Public/private hosp.	Elderly	2000	Neighborhood
17	UC	Rheumatoid	PCU/drug store	Private employee	N/A	cousin
18	UC	Rheumatoid	Private hospital	Vendor	10000	Informal debt
19	UC	Heart	PCU/Private hospital	Comm. Health Volunteer	N/A	Son
20	UC	Labor	PCU	Private employee	N/A	N/A
21	UC	URI	PCU	Junkyard sale	200 (waste time)	Informal debt

Table 23 (cont.)

No	scheme	Diseases	utilize	occupation	Debt	Borrowing from
22	SSS	Labor	Private hospital/PCU	Gas station employee	lost wage (300)	colleague
23	CSMB	Accident	Clinic/drug store	Civil Servant's father	N/A	Son
24	UC	Allergy	Public Hospital	Mechanic	500	Save Money
25	UC	DM	Clinic/ drug store	Seller	400/ month	Informal debt
26	UC	Gallstone	Public/ private hos.	Vendor	N/A	Bank
27	UC	URI	Private/ public hosp.	Beautician	N/A	Save Money
28	UC	HT	Private hospital	Elderly	40000	Land sale

Table 24 Health care utilization by sampled households

Facility	Frequency (visits)			Total (visits)	percent
	UC	SSS	CSMB		
Public hospital	10	0	0	10	23.8
Private hospital	6	3	0	9	21.4
Drug store	7	1	2	9	21.4

Table 24 (cont.)

Facility	Frequency (visits)			Total (visits)	percent
	UC	SSS	CSMB		
Private clinic	5	1	4	7	16.7
Public primary care unit	6	1	0	7	16.7
Total (persons/visits)*	22/34	4/6	2/4	28/42	100

*One person used more than one facility

Decisions made in choosing health care facilities was complicated. Because of complexity of health care systems in urban area, health insurance beneficiaries faced barriers in access to care at registered health care facility, and the attitude of health care providers. These factors incurred OOP health expenditure leading to CHE. Reasons for choosing health care facility are presented below.

1. Private clinic

Nine visits out of 28 households from in-depth interview found that they sought care at private clinics. Five were UC card holders, 1 the SSS beneficiary and 4 CSMB members. The reasons in choosing private clinic were:

1.1 Long waiting time at public hospital

A care giver of a paralysis case who was an SSS beneficiary (retired rail employee) told *that "I rarely took him to public hospital, since he became sick. We always take him to private clinic. Except when he needed an x-ray. Waiting so long time is not good for an old patient with paralysis I think"*. Same as a UC cardholder with diabetes (a vendor) told that, *"In my experience, sought care at public hospital took so long time waiting. I had to go to private clinic first, if not better, I was willing to go to public hospital for a second choice"*. Another case with hypertension who was a UC cardholder (village health volunteer) told about his last visit that *"The last time I went to public hospital, I waited for service for 2 hours and my wife waited for fasting blood sugar test for half a day"*.

1.2 Dissatisfaction in public health facility

A hypertension case of UC benefit (elderly) told about her unsatisfied services at public hospital *that "when I have got sick, I know what kind of medicine*

that effectively match to my illness. If I ask for that medicine, she (a health personnel) often replied that you are not a doctor why you know what good for you." She further sadly explained that *"OK, I am not a doctor but I think I know my own symptoms and what kind of effective medicine from my past illness. But she always not listen to me and prescribes the drug that I'm not want"*

Another case, an SSS cardholder with hemorrhoid (private employee) told about his experience that *"only once I went to private clinic, my hemorrhoid got cured, before that I went to public hospital many times but it never get better. He (health personnel) only prescribed the drug and told me to soak my ass in potassium permanganate"*

Lastly is a UC cardholder (general employee) with chronic joint pain told that, *"I ask for injection at public hospital, they always refuse me. So I went to private clinics and asked for injection, it made me better"*

1.3 Convenient access to private clinic

An old woman (UC cardholder) with hypertension (elderly), frequently treated at a private clinic nearby her home told that, *"it is very convenient, the private clinic is so close to my home. I love to go there because of quick service and I can early come back home. If I went to public hospital I had to wait for a long time."*

Health care seeking at private clinics was related with convenient access to care nearby their home, dissatisfaction and long waiting time at public facility causing users paid out-of their own pocket if the visited private clinic was not included in public health care schemes.

2. Private hospital

Out of 9 visits at private hospital, 6 were made by UC beneficiaries, 3 were the SSS. Reasons in choosing private hospital are:

2.1 Compulsory registration to private hospital

Populations in the catchment area of private hospital were compulsorily forced to register to private hospital, especially the SSS beneficiaries.

The first case was an employee of the municipality covered by the SSS with chronic kidney failure. He told that *"All employees were forced to register*

with a private hospital. The municipality did not allow me to register with public hospital even I asked for. It made me reluctant to use service at private hospital"

The second case was a UC card holder with gallstone (a vendor) living in the catchment area of private hospital. She was forced to treat her illness at registered private hospital. She told that *"I went to this private hospital for free health care services many times, but when I got a serious pain due to gallstone I need to go to public hospital that I thought it has higher efficacy and also it's close to my home. But I had to pay out-of-my own packet because I was not registered with it. I don't know how they make zoning area; I want to tell them which facility I want to go for my illness".*

2.2 Mistrust with emergency service at public hospital

A UC cardholder with bad experience 20 years ago when she took her son to public hospital but health personnel paid little attention to her son, she decided to go to private hospital and paid her own expenditure. She told that, *"I went to private hospital because I thought that if I went to public hospital in the night time, they maybe not caring me".*

A care giver disclosed dissatisfaction with a public hospital when she took her father a UC cardholder (Elderly) who had a serious injury from a bicycle accident about 8 years and paid her own payment to private hospital. She told that *"my father fall down from a bicycle and had a serious injury in his mouth and his tooth was broken. He also had a congenital heart disease. I first took him to a public hospital and waited for services on the bed with no attention from health personnel. I was afraid that my father would die if wasted time. I decided to call EMS from private hospital. He was admitted at private hospital for 7 days and he had paralysis when came back home. All members of my home do not favor public hospital, we all go to private clinic and private hospital".*

2.3 Satisfaction on health care services of private hospital

An SSS beneficiary with hepatitis (retired rail employee) and a long time user of private hospital told that *"Using health care services at private hospital is more convenient and quick, for example nurses very kindly welcome me and if I want to take an x-ray, I just ask for it with no waiting time and no doctor order needed."*

Second case was an SSS beneficiary in labor (private employee), she decided to deliver at private hospital (despite registered with public hospital) and paid her own payment for surplus expenditure from SSS fund. She told that *"health care service at private hospital is so fast, easy to see doctor, although I had retained placenta she (doctor) came to take care of me immediately. I thought that if I attended public hospital I might die"*

Compulsory registration to private hospital can cause OOP for health care services if they feel they do not get good service at private hospital. On the other hand people who had bad experiences with public hospital especially for emergency care pay OOP at private hospital and feel satisfied with services at private hospital.

3. Public hospital

Ten visits to public hospital were mainly the UC (10). Most visits were free of charge but some incurred OOP payment if bypassing from primary and secondary health care facilities with no referral letter. It made some household OOP. The reasons for choosing public hospital are:

3.1 Entitle for free health care services

A UC cardholder with hypertension (elderly) registered with public hospital regularly sought care at public hospital for continuing treatment. He told that *"because of I can use free services even at with long time waiting, I come here every time of doctor appointment"*. A UC cardholder with diabetes and hypertension (village health volunteer working for a primary care unit of the public hospital) told that *"Because I am a village health volunteer, my waiting time is not so long. Health personnel always hurry serves me as early as I arrive. Until nearly noon I get medicines and then back home."*

A UC cardholder with heart disease (elderly) who registered with public hospital always seeks care at registered facility, told that *"because it (public hospital) located near my home so I seek care here, it is not matter even sometime I was complained by health personnel. I have little money, public hospital is my choice, but if I have enough money I will go to private hospital because it has faster services."*

A UC cardholder with hypertension and diabetes (elderly) residing on the other side of the river with no boat transport facing with barrier in access to care, she always went to public hospital every 2 months. She told that: *"I'm a regular*

patient of public hospital and use free service there, my barrier is transportation cost. It is about 200-300 Baht per round trip. I have to go to public hospital because it has no nearer facility. Even it so hard in travelling and longtime waiting, it is better than paying OOP for health service at other facility." As well as a UC card holder with heart disease (village health volunteer) who living in the same community, gives a reason that: *"I went to public hospital because I can use free services. Once I ever came to private hospital and clinic when I have enough money, I lost a lot of money and now I am bankrupt so I have to go to public hospital even I always face with difficulty and long line waiting."*

A UC member with diabetes (Elderly) living not far from public hospital, a regular user of public hospital, told that: *"I sold my farmland in the countryside and paid all money for private facilities. Now I have not enough money so I have to go to public hospital".*

3.2 Satisfaction with public hospital and home health care

A UC cardholder with diabetes (vendor) who was compulsorily registered with private hospital near her home and was always not satisfied with registered facility, she normally pays OOP for health care services at public hospital. She told that *"Private hospital services are sluggish and trivial, having appointment for FBS testing one day and prescription another day. I lose so much earning time. So I went to public hospital, just half a day waiting, got medicines back to home".*

3.3 Not satisfied with private hospital services

A UC cardholder with gallstone (Vendor) living in the catchment area of private hospital then was compulsorily registered with private hospital, but her home was not far from public hospital, she regularly goes to public hospital without referral letter making her paid OOP for health care services. She said *"I went to private hospital for free service at least 3 times, but my illness still not better. Doctors just prescribed the drug for me. I agreed to pay to public hospital that I made me better after just only one injection. I paid 200 Baht for that injection".*

The poor UC cardholders need to seek care at public hospital because of free of charge at service point. In some cases they faced with CHE because of compulsory registration with private facility but using services at public sector.

4. Primary care unit (PCU)

Seven visits at the primary care unit were mainly by the UC (6) and one by SSS. The reasons they chose to seek care at PCUs are:

4.1 Patient with mild condition by self-assessment

A retired SSS beneficiary with paralysis who always seeks care at private clinics or private hospital. Except when he and his relatives assessed his illness in mild conditions. His care giver (daughter in law) told that *"we took him to PCU only when he had mild conditions, almost of visited were at private clinics out of official time"*. Another case is an SSS beneficiary told that *"Actually I went to seek care at PCU only on Wednesday and Friday (medical doctor working on), even though a half of the day of chance to see a doctor. I hurry went to PCU on the day I want to seek care at PCU by free of charge. Normally, seeks care at private clinic is the most conveniently access"*.

4.2 Avoid from crowded condition at public hospital

A Village health volunteer who is a UC cardholder with no congenital disease. She always seeks care at public PCU she said that *"just got a common cold, head ache and heat so I went to PCU because it easier to access than public hospital"*. As well as a patient with hyper tension who always sought care at public hospital in the past, she turn to seeks care at PCU near her home in the present time. She said *"get drugs from PCU in every 3 months, it is more convenient than seek care at public hospital. Even it is increasing of patients at public PCU nowadays"*.

The main causes of CHE is they usually choose more conveniently access to care. To avoid from crowded condition, such as private hospital, private clinics and drug stores that they have to pay OOP for care (if they have enough money). Nevertheless, even access to care with free of charge the transportation and losing wage made some case facing with CHE also.

5. Drug store

Drug store is the frequently used by the subjects 9 cases (21.4%). It very conveniently to access when they had a mild condition they had to seek care a drug store first.

Suggestions from users

The catastrophic cases recommended that better access would improve health care systems in NSM. They made recommendations categorized by type of health care facilities as follows:

1. Local health center

A UC cardholder, she being ill with Hypertension and had some trouble in travelling to public facilities. In the past, her mother ill with TB was taken care by health personnel at her home till died. So she thought that if local health center staff visit her home she will more convenient in access to care. She said *"I want staff (health personnel of local health centers) to do home visits like others in provinces that I have seen in TV"*.

2. Public primary care unit

A Hypertension case resided 20 kilometers far from public hospital that she usually goes to see the doctor every two month. She faced with some barrier in travelling to public hospital because it has no public transportation from her residential area. The transportation cost by hired motorcycle is about 120 Baht per travelling. She wanted public primary care unit distributed to her community, she said *"I want PCU located close to my home"*.

3. Public hospital

A health volunteer holding UC card, she ill with Diabetes and usually goes to see the doctor at public hospital every two month. Her career is a vendor, lengthy waiting at public hospital made she lost her income she recommended that *"I want it (public hospital) to be more convenient and faster than it is"*. She also want OPD of public hospital be extended its area to be more waiting seats *"OPD has limited seats for waiting. I have to wait far from waiting point because there are no free seats. So I am unable to hear when they call my name"*.

A UC cardholder told about her experience, she took her nephew to public hospital at night due to his vomiting caused by high fever. In the past, her nephew always had this condition and she knew that he will recover if he takes an anti-vomiting pill. She asked for anti-vomiting pill from doctor but doctor denied, she complained *"I asked for anti-vomiting pill from doctor, the doctor said "never mind it will be better" and did not give me a pill"*. Her nephew was not recovering so she

further complained *"I want the doctor listen to me. Sometimes I told him but he would not listen to me"*.

A chronic fingers joint pain case who is a UC cardholder, she sought care at many facilities in NSM but it was not recovering with too much OOP borrowed from her neighbor. Finally she went to see a specialist at public hospital for three times but her illness still not recovering and she cannot work due to her illness. She did not know what kind of her illness due to doctor did not tell her. She need to be recovered and back to work as she ever. She stated that *"I want them to treat me so that I am cured"*.

At the OPD of public hospital in NSM, All crowded patients always queue up in the same line. An SSS beneficiary told about inconvenient in seeking care at public hospital that she always leaves her work and lose income in the day she went to seek care due to lengthy waiting and she recommended that *"I want public hospitals to have a special channel for SSS cardholders"*. As well as a UC cardholder that was not satisfies with queue up system with general patients at OPD because of her illness. She ill with Allergy and she always had more illness when she went to seek care at public hospital. She recommended that *"I want public hospitals to have a special clinic for allergy cases so that others are not infected while waiting for health care services"*.

At injection room in OPD of public hospital an old woman who is UC cardholder was shouted at by health personnel because she entered to the room before she was called. Since that time all her family did not go to public hospital and finally faced with CHE. Her niece recommended *"I want health personnel to change so that they are more polite and will not shout at me"*.

Providers' views

Results from in-depth interviews with health care providers in NSM are presented in this part. Quantitative results from the previous study were introduced before interviews were conducted. Representatives of health care providers comprise owners of a private clinic and a drug store, a director of a private hospital, health personnel working at a primary care unit and another working in an NSM health center. Interviews by the main investigator and research team. In-depth interviews were also conducted at the health care facility of interviewees using unstructured questionnaires. To elicit ideas for a better health care system in NSM. A key factor

emerging from content analysis is "Problems of health care providers in providing health care services". It reflected experience of health care providers in NSM under the universal coverage policy.

Problems of health care providers in providing health care services

It has some barriers in providing care in NSM. The problems was summarized and Problems of health care services provided in NSM are presented for each health care provider as follows:

Private clinic

According to results from in-depth interviews, catastrophic cases used private clinics frequently and wanted to comply with their health insurance card for the free service they provided and easy to access. Some private clinics joined with UC and SSS schemes in the past but most now have resigned from both schemes for administrative reasons.

A representative of a private clinic is a retired physician working at his own clinic who agreed to participate in the study. His clinic is popular used by poor people, especially elderly in NSM because its fees are low - only 30-50 Baht per case. His clinic also participated in both UC and SSS schemes in the past. He explained his reasons for dropping out from both schemes: *"I think it is difficult, as there are many things that private clinics cannot do. I agree that UC scheme is suitable for public hospitals with more extensive OPDs. High capital costs disadvantage private clinics"*. He explained further: *"We are not experts in all diseases; if we have cases such as wounds or poxes that need to be dressed every day, they have to go to hospital. If we charge 200-300 Baht per visit for dressings, patients might be not satisfied; if we charge only 50-60 Baht, it is not worth it for us"*. Another reason was: *"I have always been contracted to SSS scheme with agreement of 120 Baht per visit with the main contracting hospital. Recently the hospital reduced the subsidy to 80 Baht per visit because it is short of funds. My capital per visit is reduced to nearly 80 Baht so it is not worth it for me"*.

Drug store

Another facility that catastrophic cases use frequently in NSM is the drug store. Many of catastrophic cases want their card to be available for use at drug stores that provide easy access. A representative of drug store was interviewed to explore the

possibility of stores joining with health insurance schemes. He explained that there were too many barriers in joining with health care systems: *"We agreed to join any health insurance scheme to provide a front line health service instead of people having lengthy waits in public hospitals"*. He also asked further.

"A question for policy makers is whether their systems are ready to be implemented. There are too many barriers from government regulations, such as drug stores must have a permanent pharmacist and they need to be 'quality' drug stores to join health care systems. In addition, drug stores have problems such as whether they have enough reserve capital to serve all users and all year before being reimbursed".

Private hospital

Results from in-depth interview with catastrophic cases found that there was both satisfaction and dissatisfaction with services of the same private hospitals. Representatives of a private hospital where has participated in the UC scheme were interviewed. They told about strengths and weaknesses of private hospitals in health care systems. *"Health services at private hospitals can be accessed over 24 hours with short waiting times, but some patients may not be satisfied because staff is not a fully qualified doctor"*. A director of a private hospital described problems of health service systems: *"Nowadays all Thai are covered by some health insurance scheme. Why do some still seek care at private hospitals? Private hospitals still survive because people face lengthy waits for service at public hospitals and so they are willing to pay just 400-500 Baht once or twice a year. It is not too much financial burden for them. Chronic patients come to private hospitals because they do not want to lose at least 3 hours of paid work every month at public hospitals; private hospitals provide services for a small group of patients who prefer convenient health care services"*.

Primary care unit

One purpose in launching PCU is to ensure that all people have access to essential health care services. There are 6 public primary care units in NSM. The interviewee is a health personnel working at a PCU which is open 12 hours per day (only one of six PCUs). The interviewee said: *"There are too many CSMB cases here. Our annual report found that CSMB cases constitute about 50-60 percent of all users"*. Responding to a question about why such a small fraction of the poor UC seeks care at PCU she said: *"The poor cannot conveniently access care at official*

opening times, and when PCU is closed they go to clinics". "There is also personal value; people think that free access to care may mean they are supplied with low quality drugs that differ from paid OOP".

NSM local health center

There are 3 local health centers providing primary health care services for NSM population. These centers are not popular with NSM people. A health personnel working at a local health center explained why: *"There are about 10 cases per day. The reason is because we have no doctor here and we focus on community health not on treatment".* NSM authority denied contracting with NSHO on capitation basis. The interviewee explained the reasons: *"There were too many problems, our administrators did not agree with UC scheme because its regulations cause too much trouble. For example, we must proportionately have sufficient doctors and nurses in our facility and we cannot search for them".*

Health systems administration in NSM is a crucial barrier in providing health care for many health facilities that are willing to join any of the health insurance schemes. It is difficult to manage the different types of health care facility and different types of health care insurance schemes with different regulations. Complexity and lack of common approach to administration affects their accessibility to people in NSM. To draw recommendations for the better health care systems in an urban systems. The study team held the group discussion to seek more suggestions from stakeholders in health care systems in NSM by type of health care facility as fallow:

Suggestions from providers

Private clinic

A representative of a private clinic recommended how health care systems in MSN could be improved: *"There should be 4 or 8 OPD at city corners and doctors would be hired to work there. The remuneration for doctors working at extended OPD should be 50-100 Baht per visit or at least 1,000-2,000 Baht per day".*

Private drug store

A drug store owner recommended: *"Drug stores would agree participating in health care systems to enable really conveniently user access that can reduce time loss if a monthly reimbursement system is introduced quickly".*

Private hospital

A director of a private hospital recommended: *"If you are concerned for people in NSM, there should be at least an additional 3-4 more extended OPDs in NSM area by renting buildings from private owners"*. He also recommended: *"Private hospitals may be involved with health care systems by rotation of staff working at extended OPDs"*.

Local administrator

A representative of local administrators spoke at the public forum, he talked about problems of health care systems in NSM especially at public hospitals: *"Once I had a meeting with NSM people. They wanted to have more public hospitals in NSM because public hospitals are crowded with patients. I agree with this idea. NSM authority has sites for building another public hospital, but no budget to do so. I hope that central government should subsidize us"*.

Suggestions from health administrators

A former regional health inspector suggested that *"Urban health care system in Thailand should employ public-private mixed systems. Because we can share resources to provide better accessible care for all"*. He also suggested that *"to reduce documentary burden of private clinic's owner we should design private clinic as extended OPD. This extended OPD clinics distribute covering all area of urban area. The compensation will pay back per visit directly to the doctor"*.

A former assistant of permanent secretariat of Ministry of public health suggested that "CUP (contacting unit for primary care) split in the urban city is the better way to provide more accessible health care systems". He also described more that *"Capitation of urban populations should be split to provide health care services for only urban residences. CUP split should act as autonomous body that can has its own solutions for better care of urban residences"*.

Suggestions from a nursing collage lecturers and municipal health personnel

Summarized from group discussion with nursing collage lecturers (field trainer of nursing students on home health care study) and municipal health personnel working actively in urban community. They have the same solutions suggested that: *"there are many cases unable to access to public care in any community, they need*

holistic home health care. Their problems such as lack of care giver, unable moving from the bed (bed ridden case) and other barriers due to their health problem and/or transportation". The best solution summarized from their suggestion that policy maker should provide multi-disciplinary health care team together with local authority's staff. This team can help people to improve social determinant of health (SDH) (Michael Marmot, 2010) for healthier life.

Health professionals can't do this alone. They need to be surrounded by a system of care that is closer to the complex realities of people's lives and equipped to deal with their real, interconnected needs. What if patients could choose who they construct their care path with, be that their local pharmacist, care giver, psychiatrist or GP?

All recommendations of health care providers are relevant. Crowded public hospitals are a crucial problem that needs to be solved. The suggestions from both side would be used as the guideline of group discussion to find solutions for the better health care systems in urban setting.

Policy Recommendations

After focus group discussion with all stake holders and health administrators, health care systems in an urban city need to be redesign to be more accessible for urban residences especially the poor group. Results from focus group discussion are 3 options as follow:

The First Option: Public-Private Mixed System (PPMS)

The reason of scarce on health care resources in public sector such as health care personnel, health care financing, health care facilities, etc. It made some barriers in access to care of urban poor UC cardholders.

The scarce of health personnel working in urban PCUs is the main reason would be mentioned in this option. Urban city in actually, there are 5 Primary health care facilities under a public hospital in the study area. Family doctor (1 doctor : 10,000 population in any cluster was set by primary care policy of Ministry of Public Health) (NHSO, 2012). Also family doctors working in 4 PCUs they could not equitably distribute to all people in an urban city. Other health care worker working with Family doctor as Family Care Team (FCT). FCT composing with family doctor, nurses, health workers, physical therapist, pharmacist and community health

volunteers. In actually, only 4 PCTs provided for all population (86,703) (Municipality, 2016). It means that there are 1 PCU hold on 21,675 registered population.

Nowadays, all PCUs in an urban city open in official time (08.30 AM - 4.30 PM) on Monday to Friday. People recognizes that access to care at public PCUs is not differ from other public facilities in an urban city, it has long line waiting every day. Most of users are CSMBS members that are very welcome because of financial reason. Any PCU can claim all services budget from central government) The Comptroller General's Department(. This income is the directly main income of the PCUs. So, this phenomenal made more barrier in access to care for the poor (UC cardholders) at PCUs. CSMBS member can wait for services because it has not incurred waste their income. Differ from most UC cardholders, Crowd condition and long line waiting made they lost all day income (about 8.5 USD). For this reason forced most of UC cardholders sought care at private facilities instead.

Results from previous study on health care seeking behavior of the urban poor found that private providers such as private clinics and private drug stores are most frequently used by sample households. Because it easy to access since it locates in every community and also out of time services is available. So, is it possible to get them involve in urban health care systems?

In the study area, private clinic owners who ever collaborated with the UCS revealed that why they resigned from UCS. They complained about burdens of documentary record used for re-imbursement from NHSO. Also the budget claimed from NHSO was not worth for services at private clinics. Drug store owners also stated about reimbursement duration that so long time to get budgets back from NHSO. It often made shortage stock of medicine in their store. Further they concerned on the honesty of other drug store owner on prescription by themselves.

The Supplementary Package (SP) (Chernichovsky, 2000) is chosen to be used in this option. SP is suitable for the present health care system of Thailand. Capitation are distributed to health care facilities through Contracting Unit for Primary Care (CUP) that contracted with NHSO.

The solutions of this problem was set after in-depth interview and discussion with health care administrators, health care workers in public sector and

representatives of local government authority, the owner of private facilities. Summarized from content analysis, the new pattern of health care provision in urban setting will be shown as below:

Health care systems in an urban city should be designed for more accessibility of the poor UC cardholders in an urban city by employed Supplementary Package (SP) pattern. The policy maker should emphasize on private sector comprises with private clinic, private hospital and private drug store involved in the systems.

The new pattern of public-private mixed system in an urban setting should reduce some barriers in access to care on the users' side and also reduce some provision burden in the providers' side.

Private clinics: Physical doctor in the private clinic normally working on their own as sole practitioners. The health care system in urban city should cooperate with private clinics for more accessible of the poor UC cardholders. However, private clinics involved in the systems should be shift into the different services package. New services package of private clinic, sole practitioner provide only physical examination, diagnosis, operative and drug prescription. This new package should decrease workload of private clinics practitioner. In general, private clinics have a few staff. Most of them are sole practitioner solely working in the clinic. So if private clinic working all activities (as ever did) such as getting patients' information, physical examination, laboratory examination, treatment, prescription and documentary records (for reimbursements) etc. It loaded too much time per case that was not worth for any private clinic. These are barriers of service procedures that made them resigned from the scheme. NHSO should pay budget to private clinic for service by case, it will not be complicated method. The prescriptions from drug store and medical operatives' prescription from PCU and hospital should be used as reimbursement documentaries for claiming budget from NHSO. The reimbursement documentaries should be recorded and send to NHSO via internet by public/private drug store, PCUs and Private extended OPD.

Private hospital: It very clearly known about double standard of Private hospital services between UC cardholders and patients who paid their own OOP health care expenditures. Thus the crowd condition in all PCUs occupied by CSMBs

Members rather than UC cardholders. It made the urban poor have barriers in access to care and finally forced them facing with catastrophic health expenditure.

The reason of why CSMBS member usually uses private hospital is the present Thai health care systems allows CSMBS member can access to health care services at registered private hospital. The private hospital can directly claim health care expenditure from central government fund. The solution for this problem should be changed on demand side. An urban health care systems could shift CSMBs customer to use private hospital first. This tactic can help the poor UCs cardholders has more chance to access to care in public PCUs near their home.

In addition, private hospital which contracted with NHSO. By using the same package of Private clinic, private hospital should have a special extended OPD for UC cardholder.

Where the patient from private clinics and private hospitals will got their prescribed drug and medical operations?

Public drug store: The tertiary hospital should launch more drug store in an urban city. Public drug store should provide 24 hours delivery for all patients. All patient means patients who got prescriptions from private hospital (extended OPD), PCUs and Thus users from private clinics involving in UC scheme. Only walk in customer that should pay their own OOP for drugs. The public drug store should be located at least 4 corners of an urban city as a convenient public pharmacy. Majority of dispensary at public drug store should be done on prescription issued by medical doctors.

Furthermore, the convenient public drug store should record all prescriptions in the program linked to NHSO for claim its own pharmaceutical cost and medical care services from private clinics/hospital and PCUs.

Private drug store:

One of the most favorite health facilities used by the poor UC cardholders is private drug store. It really good distributing around an urban city. It ease to access thus has no waste time in waiting for services. The problems from private clinic owner concerned about truthfulness of any other private drug stores' owner. And a long time waiting for claiming budget from NHSO. The solution of this problem was drawn from discussion with stake-holders in an urban city is:

All area in an urban city, at least one private drug store located in any community. Private drug store should act as a convenient drug store. Drug prescription prescribed by medical doctors from public hospital, Public PCUs and Private Clinics can be used to get the drugs from these private drug store. And also these prescription are used for reimbursement the fund from NHSO via internet. This is a solution for untruthfulness of private drugstore owner.

Furthermore, the second solution for long waiting time claiming budget from NHSO. The special track funding for private drug store should be founded at NHSO. The reimbursement should be done every week via internet banking to prevent shortage supply of drugs in private drug store.

The Second Option: Multi-disciplinary Family Care Team (MDFCT)

A crowded condition and long-line waiting at the public hospital is recognized by urban people. It made OOP expenditure occurring among the poor UC cardholders and finally fall to catastrophic cases as shown in the past chapter.

Thailand public healthcare system can generally be divided into three levels of care: primary, secondary and tertiary. Secondary and tertiary care mainly include specialist and hospital services. The gate keeper of Thailand health care systems is primary care. Primary care is the first level of care in the whole health care system and also the first point of contact for each family members in a continuing healthcare process.

A good primary care system provides the public with access to better care which is comprehensive, holistic, coordinated, and as close as possible to where people live and work. Primary care provides preventive care as well as quality management of diseases to everyone which is important for promoting health of the population. Primary care contributes to the health of the population and covers a wide range of services which includes the delivery and provision of:

1. health promotion
2. prevention of acute and chronic diseases
3. health risk assessment and disease identification
4. treatment and care for acute and chronic diseases
5. self-management support; and

6. rehabilitative, supportive and palliative care for disability or end-stage diseases

Family care team cares about patients beyond the treatment of their diseases. He is capable of providing comprehensive, continuing, whole person and preventive care to an individual and family in their own community or environment so as to ensure physical, psychological and social well-being for his patients. As part of the multi-disciplinary care team, he also co-ordinates the care provided by other healthcare professionals.

At the present time, Thailand health care systems has launched a policy of primary care cluster (PCC). A cluster covered about 10,000 populations. Under any PCC, it has at least 4 family care teams. A family care team consists of 2-3 health care workers in every 1,250 - 2,500 population (Pawabutr, 2014). There are 5 PCUs under public hospital and 5 health centers under City Municipality in an urban city. In actually, only 5 PCUs under the public hospital are working on full options of a good family care team mentioned above. Nevertheless, family care teams have been working hard on prevention, promotion and rehabilitation and long term care in communities. Patients with chronic diseases need more than physical and mental therapies. There are some threats from social determinants that leads to unhealthy condition such as career, habitat, environment, socio-economy etc.

Furthermore, other vulnerable group such as the poor resides in urban setting who has barriers in access to public health care services. The systems should provide holistic care for the poor with chronic diseases at home. Primary care cluster should cooperate with local government and other social fund in community subsidize wages for care giver.

The Third Option: Comprehensive Primary Health Care (CUP Split)

This option needs to change the current health financing systems. Nowadays, the capitation of UC cardholders allocated to health care facilities through Contacting Unit for Primary care (CUP).

CUP is normally functioned and authorized by hospital director. One CUP in general covers all peoples in one district (about 10,000 to 30,000 populations). CUP acts as administrative center of primary care in the area. Thailand health care systems should decentralization by allocates capitation to primary care units.

CUP should directly contact with NHSO. similar to Family Doctor in United Kingdom (England, Scotland and Wales) (Martin Roland, Bruce Guthrie, BChir, & Thome, 2012). The differentiation between the present system and CUP split is financial allocation. In the year 2015, capitation was fixing divined to multi-type of services by NHSO. It has no choices to manage this budget in another way. Huge proportion is post illness services that not respond to the objectives of primary care as well. Only 13.25 percent that used for prevention and protection peoples in communities.

As we know that curative service is more expensive cost and less efficiency than health prevention and promotion. Especially the rising threaten from Non-communicable diseases (NCDs) worldwide. Urbanization and lifestyle change in the modern world are the main causes of NCDs threaten progress towards the UN Millennium Development Goals and post-2015 development agenda. Poverty is closely linked with NCDs. The rapid rise in NCDs is predicted to impede poverty reduction initiatives in low-income countries, particularly by increasing household costs associated with health care. Vulnerable and socially disadvantaged people get sicker and die sooner than people of higher social positions, especially because they are at greater risk of being exposed to harmful products, such as tobacco or unhealthy food, and have limited access to health services.

In low-resource settings, health care costs for cardiovascular diseases, cancers, diabetes or chronic lung diseases can quickly drain household resources, driving families into poverty. The exorbitant costs of NCDs, including often lengthy and expensive treatment and loss of breadwinners, are forcing millions of people into poverty annually, stifling development.

In many countries, harmful drinking and unhealthy diet and lifestyles occur both in higher and lower income groups. However, high-income groups can access services and products that protect them from the greatest risks while lower-income groups can often not afford such products and services.

In the context of middle income developing country. Thailand should be strengthen on primary care service for increasing more effective health care systems. So the solution should split CUP from provincial hospital in urban setting to be autonomous CUP as mentioned above.

In conclusion, to prepare health care systems for responding to urbanization, increasing of elderly population with chronic illness and patients with non-communicable diseases that come with life style change of urban population. 3 options recommend in this chapter were designed on evidence based study. After UC policy have been implemented since 2001, it can be called a pro poor policy. The recommendation is fine tunes of the policy. That were drawn for more protecting the poor UC cardholder falling into spiral poverty in an urban setting that have complicated barriers in access to care of the urban poor.

Interview guideline

A literature search using "health seeking behavior" as key words found models to describe behavior of the sick poor in seeking care and also the reasons behind their decisions. The literature search was done via internet. Seven models were identified and these provided a basis for questions in the questionnaire. The models are:

1. Knowledge, Attitudes and Practices (KAP)
2. Focused Ethnographic Studies (FES) and rapid assessment
3. The Health Belief Model (HBM)
4. The Theory of Reasoned Action and the Theory of Planned Behavior
5. The Health Care Utilization Model
6. The "four As" model
7. Pathway models

Common items were identified for the in-depth interview guideline. There are four factors with 22 items related to health seeking behavior. The questionnaire composing four factors; demographic characteristics, psycho-social characteristics, enabling factors and treatment action, or will be named "DPET" model. The DPET model was modified from seven models based on health belief model (Sheeran P & Abraham C, 1996) as shown in Table 1

Table 25 Guidance for in-depth interview (Modified from seven models)

Demographic characteristics	Psycho-social characteristics	Enabling factors	Treatment action
-Age -Sex -Education level -Occupation -Family size -Socio-economic status -Health insurance -Financial burden	-Perceived susceptibility ("Emic" , "Etic") -Perceived severity of illness -Perceived benefits of preventive -Perceived barriers in access to care	- Availability - Accessibility - Affordability - Acceptability and - Social support	- Home remedies - Drug store - Traditional healers - Private medical facilities - Public health services

The guideline for in-depth interview comprised four parts and twenty two items (details of the in-depth interview guideline, see Annex 1) composing:

1. Demographic characteristics

General demographic characteristics relates to interviewees who reported illness and were faced with CHE including age, gender, education level, occupation, family size, socio-economic status, health insurance and financial burden.

2. Psycho-social characteristics

Perceptions of susceptibility ("emic" or native view, "etic" or health professional view), severity of illness or health problems and its consequences, benefits of preventive or therapeutic health practices, barriers in access to care, days missed from work or school and prior experiences with illness.

3. Enabling factors

Utilization of health care facilities, comprising:

Availability: geographic distribution of health facilities, pharmaceutical products, performance of health services, etc.

Accessibility: transport, roads, etc.

Affordability: treatment costs for the individual, household or family. A distinction is made between direct, indirect and opportunity costs.

Acceptability: cultural and social distance. This mainly refers to the characteristics of the health providers – health workers' behavior, gender aspects (non-acceptance of being treated by the opposite sex, in particular women who refuse to be seen by male nurses/doctors), excessive bureaucracy etc.

4. Treatment action

'Here is a list of possible treatments for an illness:

Home remedies (herbal, pharmaceuticals), pharmacy, over the counter drugs from shops, injectionists, traditional healers, private medical facilities, public health services etc.

The guideline for in-depth interview comprised four parts and twenty two items:

1. Demographic characteristics

General demographic characteristics relates to interviewees who reported illness and were faced with CHE including age, gender, education level, occupation, family size, socio-economic status, health insurance and financial burden

Questions include:

How old are you?

Age……years Sex……

At what level did you complete your education?

Educational Level……

What is your career?

Occupation……

How many members live in your home more than 6 months per year? Number of family members (living more than 6 months)……person

Socio-economic status (researcher complete from database)……...

What is your health care card holding? Health care insurance……..

2. Psycho-social characteristics

Perceptions of susceptibility ("Emic" or native view, "Etic" or health professional view), severity of illness or health problems and its consequences,

benefits of preventive or therapeutic health practices, barriers in access to care, days missed from work or school and prior experiences with illness.

Questions are:

How about your illness?

.....

Is it severe, moderate or mild condition?

.....

How do you think about health care service provided by health care facilities you went to?

.....

Do you face any barriers in access to health care service?

.....

While you attended health care facilities, did you and your care giver miss work or school? .....and How much did it cost you while you have an illness? .....

How about your prior experience with illness?

.....

3. **Enabling factors**

Utilization of health care facilities, comprising:

Availability: geographic distribution of health facilities, pharmaceutical products, performance of health services, etc.

Accessibility: transport, roads, etc.

Affordability: treatment costs for the individual, household or family. A distinction is made between direct, indirect and opportunity costs.

Acceptability: cultural and social distance. This mainly refers to the characteristics of the health providers – health workers' behavior, gender aspects (non-acceptance of being treated by the opposite sex, in particular women who refuse to be seen by male nurses/doctors), excessive bureaucracy etc.

Availability

Questions are:

How far from your home to health care facilities or drug stores?

.....

Accessibility

Questions are:

How about your transportation to get health care service in health care facilities that you went to? .....

Who took you to health care facilities? .....

Affordability

How much out-of-pocket payment did you make for medical costs? .....Baht

How much of your own and your care giver's out-of-pocket payment was for food while you were ill? .....'.....Baht

How much of your and your care giver's out-of-pocket payment was for transportation to access health care services? .....Baht

How much did you and your care giver lose income that you could have earned while you were ill? .....Baht

Was health expenditure a financial burden for your household?

.....

Acceptability

Questions are:

How satisfied were you with health care services provided by health workers? .....

Social support

Questions are:

While you were ill, did you get financial support from some health fund from your community, local government or other organization? .....

4. Treatment action

Questions are:

'Here is a list of possible treatments for an illness:

Home remedies (herbal, pharmaceuticals), pharmacy, over the counter drugs from shops, injectionists, traditional healers, private medical facilities, public health services etc.

Which of the above facilities did you seek to use from the health care service?.....and why? .....

CHAPTER V

CONCLUSIONS AND DISCUSSION

This chapter aims to present the overall of the study. Starting with the rationale of the study, research questions, research methodology, results and finally is discussion of the study. Discussions are the strength and weakness of study design, analysis and limitation of the study. Lastly is recommendation for further study.

Rationale

The rapid changes in the modernized world affected to daily life of its populations. Migration from the rural to urban cities occurring over the changing time. The reasons of migrating is to find more opportunity in working, studying and earning more income. The rapid growth of urban city called urbanization. Urbanization causes crowded living condition in almost city over the world. Poor living conditions and unhealthy environment and urban life style affected to people health status. Health status of urban populations affected from social determinant of health (Anne Mills) that was changed rapidly in the modernized world. Then more health need among urban populations (especially, the rising of morbidity rate of NCDs) made hospitalization dramatically increase in recent decades. Scarce of public health resources in providing essential health care services for urban poor in the low and middle income country. It made some group of people paid their own OOP health expenditure for health care in many reasons such as long line waiting for free charge in public facility, ill with the condition out of benefit package, used other facility that was not registered with, etc.

Thailand is a developing country, after Universal Coverage (Basch C) implemented since 2001, Thailand is one of the leader of developing country that can launch UC policy with successfully implementation (Timothy G. Evans, et al., 2012). Even too many studies revealed that the policy is a pro-poor policy. The poor and poorest quintiles trend to have more frequently utilization in public health care facility. Nevertheless, while as everyone has more chances in access to care, it means health

care demand (both true and false) is increased but the supply (Duggal) in public sector is unchanged. Recent changes of health care system in health care policy reflect an emphasis on "consumer-driven" health care occurring barriers in access to care by clouded hospitalization. Is it has equity in access to health care among people living under this situation is questionable. Especially in the poor living in urban setting that has

Equity in health has many dimensions, access to care by equal chance is matter for outcome of health care systems. Government should reduce potential barriers in access to health care which can be financial; geographic; racial; cultural and informational; or time-related. The differentiation among socio-economic status (Bloor M) in urban cities around the world is still clearly appearance.

Furthermore, Sustainable development goals (SDGs) Of the United Nation has the vision of "Leave no one behind" focuses on eradicating extreme poverty by 2030 and putting justice and equity at the heart of development goals. Universal Coverage (Basch C) is one of policy that can protect the poor from bankruptcy related to household health care expenditure.

Research questions

From the rationale mentioned above, the study set three research questions, there are: Can UC protects the poor from spiral impoverishment is the main question of the study. The second question is what the causes of CHE are. And the last question is how to improve health care systems to be more accessible for urban poor.

Design and Analysis

This study employed mixed methodology composing with quantitative and qualitative study. The quantitative study using cross-sectional survey technique and qualitative study using in-depth interview and focus group discussion as a study tool.

The study first defined and reviewed measuring method to identify the poor in an urban setting. The urban poor in this study was defined by using the poverty line in the urban area of the lower north of Thailand in 2008 adjusted for inflation rates (THB 1,539.8/month) (jitsuchon, 2004). Multi-stages sampling was used to select sample household. There were 406 sample households from 40 clusters of 61

communities in an urban city. Catastrophic health expenditure was defined as household with out-of-pocket health expenditure exceeding ten percent of all household expenditure in a month (e. a. Ke Xu, 2003). Then identified factors (created from health care seeking behavior models) related with CHE by using Mantel-Haenszel Chi-square test.

Then used content analysis to analyze the contents from in-depth interviewed and focus group discussion with CHE cases and stakeholders in both provider's and user's views. Tri-angulation was made among stake-holders by informed the data before interviewing.

Discussion

The strength of the study

1. Mixed methodology used in this study was appropriate for answering the research questions. The quantitative study could clearly explain on the situation of CHE in an urban city and could also detect the factors that related with CHE. The qualitative study could explore the causes of CHE through health care seeking behaviors of CHE cases.

2. A field work study is the most strength method of this study, the study team went to sample's household not only for collecting the digit data, and we have also seen the context of sample's lifestyle and the real living environment. The collected data are exactly real data from the original sources.

3. Interview with providers, users, health workers and administrators could help to look around of stake holders' view of solution. All recommendations of the study were synthesized from their opinions.

4. The trained health care staff from public hospital was benefit to the study. The staff familiar with CHE cases. So investigation team had no waste time to create familiarity with the cases. And also it was not difficult to find CHE households because of helping from them.

The weakness of the study are:

1. Lack of database on household's income in an urban city. The data used in this study was informed by household representation. The data from household representation cannot confirmed for correctness.

2. Multi threshold in the process of identifying CHE cases. It made the study had rare subjects for analysis to find out the factors related to CHE.

3. In actually, patients often used more than one health care facility in a recall period time (a previous month), that made them confuse in some information.

Results of study (Chapter 4)

The first study is a quantitative study on "Catastrophic health expenditure in an urban city: seven years after universal coverage policy in Thailand" was conducted in December 2008 on forty urban communities of Nakhon Sawan Municipality (NSM). It was published on "The Southeast Asian Journal of Tropical Medicine and Public Health" (Southeast Asian J Trop Med Public Health, 2013) this study explored the burden of household out-of-pocket health expenditure on urban inhabitants with different socio-economic status and health insurance schemes in Nakhon Sawan Municipality. The study employed a cross-sectional survey by using a structured questionnaire. Health personnel from six primary care units interviewed a representative of the sampled households. Sampled households were selected by a two-stage random sampling technique. Descriptive statistics were used to describe general household characteristics, and Mantel-Haenszel odds ratio was used to explain the relationships between factors and catastrophic health expenditure. From 406 sampled households, there were 1,421 household members and 340 individuals who reported illness within the last month. The poor and non-poor groups reported hypertension, diabetes, and the common cold as the most common ailments. Most patients sought care at a regional hospital and then primary care units, drug stores, and private hospitals, respectively. Household out-of-pocket medical costs were most frequently paid to drug stores and to private clinics. The direct non-medical costs were mostly paid for transportation and food. Factors related to catastrophic health expenditure were the CSMBS cardholder, use of public hospital, private hospital, and clinic. Furthermore, catastrophic expenditures were related to non-medical costs and time loss for indirect cost. Catastrophic rates of the poor were 12.5 and 30.4 percent from direct and non-medical cost, respectively. The rates for the non-poor were lower.

Then the qualitative study was conducted in May 2009. In-depth interview was done by using constructed questionnaire at the CHE cases' household by the main investigator (Ke Xu et al.) and health personnel from social medical office of public

hospital. Aims of this study are to explore health seeking behaviors and to find the causes of CHE. There were 28 index cases followed by the research team at home. Structured questionnaire created from seven models of health care seeking behaviors (HSB). Then health care providers and health administrators from both public and private sector were interviewed and discussed for the new options improving health care system in an urban setting.

Results showed users' and providers' views on health care systems in an urban city. Barriers in access to care was a key factor led health care cardholders sought care that not covered by their insurance scheme then caused catastrophe in the users' view. In providers' view, a key factor emerging from content analysis was "problems of health care providers in providing health care services". It reflected perceived quality on health care services in urban city under the UC policy. An effective of health care systems was reflected from resources sharing among public and private sector was still not cleared.

There are 3 recommended options for improving an urban health care systems to be more accessible. Policy makers should consider providing out-patient services close to any community.

The first option is private clinics/hospital and drug stores (the most frequently used by an urban city populations) should be involved in the systems by public-private mixed (PPM) concept. The private providers are good distributed locates in all urban community. Easy to access for the urban poor, health care system should be redesigned to support for this option. The specific reimbursement section for private sector should be initiated at every provincial branch of National Health Security Office for faster claimed system.

The second option is multi-disciplinary health care team work together with the local administrative organization's staff, community health volunteers and care givers provide long term care for vulnerable cases at home. There is a good model of long term care in Thailand provides holistic care for bed-ridding group of aging called Lam-Sonthi Model. Nevertheless, this model provided good care for only the specific vulnerable group. This option aims to extend long term care services to others such as chronic non-communicable patients that can help to protect complicated patients in the future that can reduce both household and public health expenditure to be catastrophe.

The last option is family doctor with multi-disciplinary team provides comprehensive care for its registered populations under directly distribution to any cluster (a cluster health care facility.

Research Findings

Findings of the study summarized as follows: there are prevalence rate of morbidity comparing between group, health seeking behavior and incidence of catastrophic health expenditure between socio-economic groups.

Firstly is the prevalence of morbidity per thousand population between the poor (144) and the non-poor (1,277) groups as shown in the following table.

Table 26 the prevalence of morbidity of samples in an urban city comparing between socio-economic groups

Disease	**Poor(*n*=144)**		**Disease**	**Non-poor(*n*=1,277)**	
	n	**Rate/1000 populations**		***n***	**Rate/1000 populations**
1.Hypertension	11	76.3	1. Hypertension	66	51.7
2.Diabetes	10	69.4	2. Diabetes	55	43.1
3.Common cold	4	27.8	3.Common cold	36	28.2
4.Psychiatric	2	13.9	4. Paralyze	8	6.3
5.Paralyzed	2	13.9	5. Peptic ulcer	7	5.5
6.Motorcycle accident	2	13.9	6. Allergy	7	5.5
7.Asthma	2	13.9	7. Leg pain	6	4.7
8.Cataract	2	13.9	8. Tooth ache	6	4.7
9.Heart	2	13.9	9. Back pain	6	4.7
10. Others	13	90.3	10. Others	93	72.8
Total	**50**	**347.2**	**Total**	**290**	**227.1**

Referring to the Table 26 from the survey, the total morbidity rate in the poor is higher than the non-poor. They ill with non-communicable diseases in both groups. It also clearly be seen that the prevalence rate of all diseases are higher in the poor group. So it can be assumed that the poor health worse than the non-poor. And when they got ill, which health care facilities they went to seek care.

There had a slightly different between the poor and non-poor group in seeking care. The poor favor sought care at public facilities than the non-poor except in other government hospitals (Table 27). The other government hospitals sought care by the non-poor are the super tertiary hospital in Bangkok. They went to see specialist that not available in the study area. It revealed some inequity in access to specialist between socio-economic groups. The poor had less chance to access to the specialist. While as the poor used more at primary care unit and regional hospital that in the public sector, drug store in the private sector. The non-poor used more at private clinics.

Table 27 Health seeking behaviors by socio-economic group

Facilities	Poor (*n*=62)		Non-poor (*n*=312)	
	n[a]	%	*n*[a]	%
Primary care units	19	30.6	86	27.6
Private clinics	4	6.5	21	6.7
Regional hospital	24	38.7	115	36.8
Drug stores	8	12.9	37	11.9
Other government hospitals	2	3.2	18	5.8
Private hospitals	5	8.1	35	11.2

[a]One patient used more than one facility

The majority of findings of this study is the incidence of household catastrophic health expenditure in Nakhon Sawan Municipality. It indicates that it had some problems in health care systems made them paid household out-of-pocket for

health care. Especially in the poor, seem to have more paid than the non-poor. (See Table

Table 28 Incidence of household catastrophic health expenditure by socio-economic group

Expenditure	Catastrophe			
	Poor (*n*=56)		Non-poor (*n*=350)	
	n	%	*n*	%
Direct medical cost	7	12.5	25	7.1
Non-medical and indirect cost	17	30.4	64	18.3

It can be seen from Table 28 that Proportion of both direct medical cost and non-medical and indirect cost was more incurred in the poor rather than the non-poor group in the study area. This incidence revealed that the poor paid more for health care expenditure.

Factors related with catastrophic health expenditure that was proved by using the Mantel-Haenszel Chi-square test found that the CSMB cardholders, seeking at a public hospital, private clinic faced with a catastrophe than otherwise.

The next finding is found from the qualitative study. The precision in choosing health care facility based on waiting time for the working age group. A half day waiting time in public facility means they loss all day income. For the aging, there are many factor related with precision making. Firstly is geographic and transportation. The second based on the available cash if they had enough money they always choose a private practitioner that they familiar with. If not they always went to public facility. For the bedridden group based on available time of caregivers, it normally went to private clinic/hospital after working time.

It need to be change on health care systems to facilitate private sector to involve in the systems. To eradicate barriers in providing care of private facility, the system should redesign in reimbursement system to be faster and reduce documentary burdens.

There are over supply of health care resources that can provide for all urban residents in an urgent time. The available resources are in both public and private sector. Public – private mixed systems is suitable for Thailand that need no more time waiting for health care resources producing.

Furthermore, there are the good proactive health care in Thailand, primary health care staff in public sector (both central and local) working together with other social group available in all area. The policy should consider supporting more for financing for primary care.

Discussion

Poor health and the urban poverty is a vicious cycle in the modern world, one third of urban dwellers – 828 million people – lives in a slum, producing slum within cities. Rapid change on lifestyle and other SDH affected to the rising on both morbidity and mortality rate of non-communicable diseases (NCDs) in working age and ageing group in middle and low income counties around the world. If the urban poor still facing with barriers in access to care, it will made a huge health care financial burden in both public facility and patients' household in the near future.

This mixed method study revealed an incidence of household CHE., Health seeking behavior, barriers in access to care and other factors related to household OOP health expenditure in an urban setting. Evidences showed some barriers in access to care with free of charge at public facilities in an urban city. It also recommended for the more accessible health care systems providing health care for urban peoples.

The result indicated that UC policy in Thailand confirmed the right in access to care for entire population. Nevertheless, the other factors such as urbanization, socio-economic status, geo-graphic, demographic structure changing affected to health care systems. Furthermore, it has not health care resources

Limitation

Limitation of the study is:

1. The complications of health care systems in the study area affected to the results. Because of the CHE cases had chosen more than one health care facility in the recall period, many of CHE cases used both public and private sector that confused.

2. It is not easy to get any suggestions for a better health care systems from an urban population. In generally, Thai people tough that health care service systems depending on the providers, they have never been participated in the health care services system at all.

3. The investigator team composing with health care worker so the user who is the key informants were not dare to suggest the different or opposite idea due to predominance of the investigation team.

Suggestions for the further study

1. It need to know that how public-private mixed systems should be implemented in urban health care systems.

2. An appropriated pattern and role of private facilities in providing care for urban residences.

3. Ministry of public health promotes the new policy of Primary Care Cluster (PCC) should consider in providing holistic care and multi-disciplinary team working with local authority staff.

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APPENDIX

APPENDIX A

Some potential sampling advantages in the use of focus groups

1. Does not discriminate against people who cannot read or write

2. Can encourage participation from those who are reluctant to be interviewed on their own (such as those intimidated by the formality and isolation of a one-to-one interview)

3. Can encourage contributions from people who feel they have nothing to say or who are deemed "unresponsive patients" (but who engage in the discussion generate by other group member).

APPENDIX B

Analysis

Stage in the analysis of field notes in a qualitative study of ear, nose and throat surgeons' disposal decisions for children referred for possible tonsillectomy and adenoidectomy (T&A)

1. Provisional classification – For each surgeon all cases categorized according to the disposal category used (for example, T&A or tonsillectomy alone)

2. Identification of provisional case features – Common features of cases in each disposal category identified (for example, most T&A cases found to have three main clinical signs present)

3. Scrutiny of deviant cases – Include in (2) or modify (1) to accommodate deviant cases (for example, T&A performed when only two of three signs present)

4. Identification of shared case features – Features common to other disposal categories (history of several episodes of tonsillitis, for example)

5. Derivation of surgeons' decision rules – From the common case features (for example, case history more important than physical examination)

6. Derivation of surgeons' search procedures (for each decision rule) – The particular clinical signs looked for by each surgeon

Repeat (2) to (6) for each disposal category

ANNEX 1

Table 29 Ten leading causes of burden of disease, by region, 2001

East Asia and Pacific	Percentage of total DALYs(3,0)	Europe and Central Asia	Percentage of total DALYs (3,0)
1 Cerebrovascular disease	7.5	1 Ischemic heart disease	15.9
2 Perinatal conditions	5.4	2 Cerebrovascular disease	10.8
3 Chronic obstructive pulmonary disease	5	3 Unipolar depressive disorders	3.7
4 Ischemic heart disease	4.1	4 Self-inflicted injuries	2.3
5 Unipolar depressive disorders	4.1	5 Hearing loss, adult onset	2.2
6 Tuberculosis	3.1	6 Chronic obstructive pulmonary disease	2
7 Lower respiratory infections	3.1	7 Trachea, bronchus, and lung cancers	2
8 Road traffic accidents	3	8 Osteoarthritis	2
9 Cataracts	2.8	9 Road traffic accidents	1.9
10 Diarrheal diseases	2.5	10 Poisonings	1.9
Latin America and the Caribbean	**Percentage of total DALYs(3,0)**	**Middle East and North Africa**	**Percentage of total DALYs (3,0)**
1 Perinatal conditions	6	1 Ischemic heart disease	6.6
2 Unipolar depressive disorders	5	2 Perinatal conditions	6.3
3 Violence	4.9	3 Road traffic accidents	4.6
4 Ischemic heart disease	4.2	4 Lower respiratory infections	4.5
5 Cerebrovascular disease	3.8	5 Diarrheal diseases	3.9

Table 29 (cont.)

Latin America and the Caribbean	Percentage of total DALYs(3,0)	Middle East and North Africa	Percentage of total DALYs (3,0)
6 Endocrine disorders	3	6 Unipolar depressive disorders	3.1
7 Lower respiratory infections	2.9	7 Congenital anomalies	3.1
8 Alcohol use disorders	2.8	8 Cerebrovascular disease	3
9 Diabetes mellitus	2.7	9 Vision disorders, age-related	2.7
10 Road traffic accidents	2.6	10 Cataracts	2.3
South Asia	**Percentage of total DALYs(3,0)**	**Sub-Saharan Africa**	**Percentage of total DALYs (3,0)**
1 Perinatal conditions	9.2	1 HIV/AIDS	16.5
2 Lower respiratory infections	8.4	2 Malaria	10.3
3 Ischemic heart disease	6.3	3 Lower respiratory infections	8.8
4 Diarrheal diseases	5.4	4 Diarrheal diseases	6.4
5 Unipolar depressive disorders	3.6	5 Perinatal conditions	5.8
6 Tuberculosis	3.4	6 Measles	3.9
7 Cerebrovascular disease	3.2	7 Tuberculosis	2.3
8 Cataracts	2.3	8 Road traffic accidents	1.8
9 Chronic obstructive pulmonary disease	2.3	9 Pertussis	1.8
10 Hearing loss, adult onset	2	10 Protein-energy malnutrition	1.5

Source: Lopez et al., 2006b

Table 30 Infant and child mortality rates for urban and rural populations in selected countries (per 1000 births)

Country and year	Infants (Age <1 year)			Children (Age 1–4 years)		
	Urban	Rural	Total	Urban	Rural	Total
SUB-SAHARAN AFRICA						
Benin (1996)	84	112	104	72	98	90
Burkina Faso (1998/99)	67	113	109	66	137	130
Cameroon (1998)	61	87	80	53	80	72
Central African Rep. (1994/95)	80	116	102	53	70	63
Chad (1997)	99	113	110	101	103	103
Comoros (1996)	64	90	84	18	36	32
Cote d'Ivoire (1994)	75	100	91	49	73	65
Eritrea (1995)	80	74	76	53	92	83
Ethiopia (2000)	97	115	113	58	88	85
Gabon (2000)	61	62	61	30	40	32
Ghana (1998)	43	68	61	36	58	52
Guinea (1999)	79	116	107	76	107	99
Kenya (1998)	55	74	71	35	38	37
Madagascar (1997)	78	105	99	53	77	72
Malawi (2000)	83	117	113	71	106	102
Mali (1996)	99	145	134	102	149	137
Mozambique (1997)	101	160	147	55	92	84
Namibia (1992)	63	61	62	25	36	32
Niger (1998)	80	147	136	107	212	193
Nigeria (1999)	59	75	71	52	73	67
Rwanda (1992)	88	90	90	74	80	80
Senegal (1997)	50	79	69	41	94	75
Sudan (1990)	74	79	77	46	71	63
Tanzania (1996)	82	97	94	42	59	56

Table 30 (cont.)

Country and year	Infants (Age <1 year)			Children (Age 1–4 years)		
	Urban	Rural	Total	Urban	Rural	Total
Togo (1998)	65	85	80	38	79	69
Uganda (1995)	74	88	86	64	78	77
Zambia (1996)	92	118	108	90	98	95
Zimbabwe (1999)	47	65	60	23	37	33
NEAR EAST & NORTH AFRICA						
Egypt (2000)	43	62	55	10	19	15
Jordan (1997)	27	39	29	5	7	5
Morocco (1992)	52	69	63	7	31	22
Turkey (1998)	42	59	48	10	16	12
Yemen (1997)	75	94	90	22	38	35
EUROPE & EURASIA						
Kazakhstan (1999)	44	64	55	7	10	9
Kyrgyzstan (1997)	54	70	66	4	13	10
Uzbekistan (1996)	43	44	44	9	14	12
ASIA & PACIFIC						
Bangladesh (2000)	74	81	80	24	35	33
Cambodia (2000)	72	96	93	22	34	32
India (1999)	49	80	73	17	35	31
Indonesia (1997)	36	58	52	12	22	19
Nepal (1996)	61	95	93	23	53	51
Pakistan (1990/91)	75	102	94	21	33	29
Philippines (1998)	31	40	36	15	23	20
Viet Nam (1997)	23	37	35	7	12	12
LATIN AMERICA & CARIBBEAN						
Bolivia (1998)	53	100	74	20	38	28
Brazil (1996)	42	65	48	7	15	9
Colombia (2000)	21	31	24	3	5	4

Table 30 (cont.)

Country and year	Infants (Age <1 year)			Children (Age 1–4 years)		
	Urban	Rural	Total	Urban	Rural	Total
Dominican Republic (1996)	46	53	49	9	18	13
Guatemala (1998/99)	49	49	49	9	20	16
Haiti (2000)	87	91	89	27	65	53
Nicaragua (1997)	40	51	45	9	14	11
Paraguay (1990)	33	39	36	13	10	11
Peru (2000)	28	60	43	11	27	18

Source: Demographic and Health Surveys (DHS), STAT compiler

Table 31 Proportion of households with catastrophic health expenditures

country	Proportion	Uncertainty Interval (80%)	
	of households (%)	Lower (%)	Upper (%)
Argentina	5.77	5.51	6.02
Azerbaijan	7.15	6.43	7.86
Bangladesh	1.21	1.01	1.41
Belgium	0.09	0.01	0.18
Brazil	10.27	9.49	11.04
Bulgaria	2.00	1.77	2.23
Cambodia	5.02	4.57	5.47
Canada	0.09	0.06	0.13
Colombia	6.26	5.88	6.64
Costa Rica	0.12	0.00	0.23
Croatia	0.02	0.10	0.29
Czech	0.00	0.00	<0.01
Denmark	0.07	0.00	0.14

Table 31 (cont.)

country	Proportion	Uncertainty Interval (80%)	
	of households (%)	Lower (%)	Upper (%)
Djibouti	0.32	0.17	0.47
Egypt	2.80	2.39	3.21
Estonia	0.31	0.13	0.49
Finland	0.44	0.25	0.62
France	0.01	0.00	0.02
Germany	0.03	0.02	0.04
Ghana	1.30	1.11	1.49
Greece	2.17	1.93	2.40
Guyana	0.60	0.33	0.87
Hungary	0.20	0.11	0.29
Iceland	0.30	0.10	0.50
Indonesia	1.26	1.20	1.32
Israel	0.35	0.23	0.46
Jamaica	1.86	1.45	2.28
Kyrgyz	0.62	0.38	0.86
Latvia	2.75	2.47	3.04
Lebanon	5.17	4.81	5.53
Lithuania	1.34	1.15	1.54
Mauritius	1.28	1.10	1.46
Mexico	1.54	1.36	1.71
Morocco	0.17	0.10	0.25
Namibia	0.11	0.04	0.18
Nicaragua	2.05	1.76	2.34
Norway	0.28	0.08	0.49
Panama	2.35	2.07	2.62
Paraguay	3.51	3.04	3.98
Peru	3.21	2.84	3.58

Table 31 (cont.)

country	Proportion	Uncertainty Interval (80%)	
	of households (%)	Lower (%)	Upper (%)
Philippines	0.78	0.71	0.85
Portugal	2.71	2.42	3.01
Republic of Korea	1.73	1.65	1.80
Romania	0.09	0.01	0.17
Senegal	0.55	0.38	0.72
Slovakia	0.00	0.00	<0.01
Slovenia	0.06	0.01	0.12
South Africa	0.03	0.02	0.04
Spain	0.48	0.31	0.64
Sri Lanka	1.25	1.13	1.37
Sweden	0.18	0.06	0.42
Switzerland	0.57	0.47	0.68
Thailand	0.80	0.70	0.89
UK	0.04	0.01	0.07
Ukraine	3.87	3.36	4.39
USA	0.55	0.42	0.69
Vietnam	10.45	9.90	11.00
Yemen	1.66	1.46	1.86
Zambia	2.29	2.03	2.54

Table 32 Percentages of households incurring catastrophic payments for health care

country	threshold	OOP payments as share of total household expenditure				OOP payments as share of non-food expenditure		
		5%	10%	15%	25%	15%	25%	40%
BANGLADESH	Headcount	27.63	15.57	9.87	4.49	24.55	14.73	7.13
	Concentration index	0.182	0.233	0.279	0.391	0.212	0.314	0.458
	Rank weighted headcount	22.60	11.94	7.11	2.73	19.33	10.10	3.86
CHINA	Headcount	28.37	12.61	7.01	2.80	21.05	11.23	4.81
	Concentration index	0.010	-0.00	0.029	0.159	-0.11	-0.12	-0.03
	Rank weighted headcount	28.08	12.71	6.80	2.36	23.47	12.58	4.98
HONG KONG	Headcount	12.98	5.86	3.04	1.09	5.86	2.46	0.86
	Concentration index	0.016	-0.00	0.093	0.167	-0.05	-0.00	0.087
	Rank weighted headcount	12.76	5.87	2.76	0.91	6.20	2.47	0.78
INDIA	Headcount	25.59	10.84	5.52	1.83	20.92	9.76	3.44
	Concentration index	0.072	0.091	0.142	0.278	0.062	0.121	0.260
INDONESIA	Headcount	9.57	4.43	2.59	1.13	8.28	4.40	1.95
	Concentration index	0.097	0.200	0.300	0.477	0.082	0.182	0.359
	Rank weighted headcount	8.63	3.54	1.81	0.59	7.60	3.60	1.25
KOREA REP.	Headcount	20.94	10.36	6.11	2.56	9.79	4.82	1.85
	Concentration index	-0.04	-0.02	0.001	0.095	-0.06	-0.01	0.086
	Rank weighted headcount	21.89	10.61	6.10	2.32	10.42	4.91	1.69

Table 32 (cont.)

country	threshold	OOP payments as share of total household expenditure				OOP payments as share of non-food expenditure		
		5%	10%	15%	25%	15%	25%	40%
KYRGYZ REP.	Headcount	15.53	5.84	2.30	0.50	18.05	9.29	2.64
	Concentration index	0.172	0.209	0.237	0.237	0.103	0.121	0.191
	Rank weighted headcount	12.86	4.62	1.75	0.38	16.18	8.16	2.13
MALAYSIA	Headcount	6.62	2.01	0.98	0.36	2.48	0.78	0.21
	Concentration index	0.056	0.163	0.301	0.523	0.049	0.212	0.574
	Rank weighted headcount	6.25	1.68	0.68	0.17	2.36	0.61	0.09
NEPAL	Headcount	14.72	5.90	3.09	1.18	17.12	9.24	4.57
	Concentration index	0.103	0.032	0.096	0.219	-0.07	-0.11	-0.14
	Rank weighted headcount	13.19	5.71	2.79	0.92	18.39	10.28	5.21
PHILIPPINES	Headcount	9.21	4.60	2.68	1.14	7.23	3.81	1.58
	Concentration index	0.152	0.195	0.240	0.375	0.109	0.152	0.259
	Rank weighted headcount	7.80	3.70	2.04	0.71	6.44	3.23	1.17
SRI LANKA	Headcount	10.97	2.98	1.54	0.47	9.32	3.40	1.31
	Concentration index	0.124	0.236	0.321	0.484	-0.05	-0.02	-0.10
	Rank weighted headcount	9.61	2.27	1.05	0.24	9.83	3.47	1.44
TAIWAN	Headcount	19.14	6.35	2.79	0.87	4.47	1.49	0.41
	Concentration index	-0.01	-0.02	-0.05	-0.08	-0.03	-0.07	-0.02
	Rank weighted headcount	19.38	6.50	2.94	0.95	4.63	1.60	0.42

Table 32 (cont.)

country	threshold	OOP payments as share of total household expenditure				OOP payments as share of non-food expenditure		
		5%	10%	15%	25%	15%	25%	40%
THAILAND	Headcount	8.43	3.52	1.92	0.80	4.54	1.83	0.71
	Concentration index	0.123	0.204	0.269	0.391	0.056	0.179	0.200
	Rank weighted headcount	7.39	2.80	1.41	0.49	4.28	1.50	0.57
VIETNAM	Headcount	33.77	15.11	8.47	2.89	29.37	15.10	5.97
	Concentration index	-0.03	0.027	0.097	0.295	-0.12	-0.10	-0.01
	Rank weighted headcount	34.84	14.70	7.65	2.03	33.19	16.64	6.04

ANNEX 2

Questionnaire

A STUDY OF HOUSEHOLD CATASTROPHIC HEALTH EXPENDITURE OF URBAN SLUM DWELLER IN NAKHONSAWAN MUNICIPALITY

questions about household income and coping strategies when ill

There are two types of questionnaire: for each household and members who got ill

This questionnaire has two parts:

Part 1: Household income and expenditure (F1)

Part 2: For household member who reported ill (F2, F3)

F1: For each selected household

This questionnaire uses to collecting the data of household fundamental economy in researched area.

Household address:

Number of household.....Community name.....Tel.....

Household ID:

Rounds (1, 2, 3, 4): Date _____

Part 1: Household's economy and population

Respondent data

1. Respondent: who are you in this household? [ ] 1 Father [ ] 2 Mother [ ] 3 Son / Daughter [ ] 4 Other (name).....	Respond [ ]
2. Educational level of respondent	Reduc [ ]

[ ] None [ ] 2 Primary school [ ] 3 Secondary school [ ] 4.Occupation [ ] 5 Under graduated and more [ ] 6 Other (name).....	

Household's data

3. Which area is this household located? [ ] 1 General urban [ ] 2 Urban slum	Resident [ ]
4. Which religion is this household respected? [ ] 1 Buddhism [ ] 2 Islam [ ] 3 Christ [ ] 4 Other (name).....	Religion [ ]

Did you have any household's member got ill during past 30 days?

☐ No: .....Go to section 2

☐ Yes: ....Fill in both section 1 and 2

Section 1: For household where have member's current illness report

The first part composts with 3 sections please fills in square box with x in front of chosen item.

In this household, how many members were ill during the past 30 days? _____ member(s).

Section 1 Patient name:

1. _____ ☐ Do no thing ☐ Go to health care facility
2. _____ ☐ Do no thing ☐ Go to health care facility
3. _____ ☐ Do no thing ☐ Go to health care facility

4. _____ ☐ Do no thing ☐ Go to health care facility

5. _____ ☐ Do no thing ☐ Go to health care facility

6. _____ ☐ Do no thing ☐ Go to health care facility

7. _____ ☐ Do no thing ☐ Go to health care facility

8. _____ ☐ Do no thing ☐ Go to health care facility

9. _____ ☐ Do no thing ☐ Go to health care facility

10. _____ ☐ Do no thing ☐ Go to health care facility

Please records detail of each patient in section 2.

Section 2:

1. Household income and expenditure

Household member's	**1**	**2**	**3**	**4**	**5**	**6**
Relation in household	***Head***					
6. Age						
7. Gender						
8. Education level						
9. Occupation						
10. Health insurance scheme 10.1 CSMBS						
10.2 UC (30 Baht)						
10.3 SSS						
10.4 Other (name).....						
10.5 Have no insurance						
11. Income (from any sources) Monthly income (Baht / month) Salary / Wage						
Pension						
Lease (land and/or house)						
Profit (Commercial)						
Other (name).....						
Annual income (Baht / year) Bonus						
Claimed (insurance)						
Sell crop, land or any else						
Interest, distribution						
Prize from Lotto, scholar, debt turning						

Other (name)……..						
Summary of personal income						
12. Summary of household income						
13. Household's expenditure in last month ***Food expenditure***						
Non-food expenditure						
Rent / paid by installment for residence						
Transportation expenditure						
Educational expenditure						
Entertainment expenditure						
Electricity, public utilities expenditure						
Health care expenditure						
Drug store						
Private clinic						
Public hospital						
Private hospital						
Other expenditure for health						
Summary of person's expenditure						
14. summary of all of monthly expenditure						

52. Household's asset and dept

Asset (quantity and cost (Baht))	**Dept (quantity and cost (Baht))**
Land _____Baht	House _____Baht
House _____Baht	Auto-mobile_____Baht
Auto-mobile_____Baht	Motorcycle _____Baht
Motorcycle _____Baht	Else _____Baht
Bicycle_____Baht	Education _____Baht
Tricycle _____Baht	Health care cost _____Baht
Television_____Baht	Other _____Baht
Video / DVD_____Baht	……_____Baht
Radio_____ Baht	
Refrigerater_____Baht	
Microwave owen_____Baht	
Telephone _____Baht	
Mobile phone _____Baht	
Computer _____Baht	
Deposit _____Baht	
Other _____Baht	
Summary _____Baht	Summary _____Baht

Summary

1:_____

Household's income and expenditure (Check for reliability of data)

15. Summary of all income from all members ***Monthly income*** Salary / Wage	
Pension	
Lease (land and/or house)	
Other (name)……	
Annual income	

Bonus	
Claimed (insurance)	
Sell crop, land, or any else	
Interest / contribution	
Prize from lotto, Scholarship, dept turning	
Other (name).....	
16. Summary of monthly income	
17. How much household expenditure in the last month? Food	
Non-food	
Health care	
Other health care expenditure	

Summary

2:_____

18. Summary of all household members' health care expenditure: _____

F2:

Part 2:

For household that some of member got ill (Members' ID 1, 2, 3.....)

Use this form for one person (who got ill)

Part 1 composts with 3 sections, please mark x in [ ] in front of chosen item

Patient's name: _____

Members' ID:_____

Number of household.....Community's name.....Tel.....

Household's ID:

Rounds: (1, 2, 3, 4), Date: _____

Section 1 General data

Patient profile

1. Age (Completed) ……. years	Page [ ]
2. Sex [ ] 1 Male [ ] 2 Female	Psex [ ]
3. Marital status	Pmar [ ]
[ ] 1 Single [ ] 2 Married	
[ ] 3 Divorce [ ] 4 Separate	
[ ] 5 Widow	
4. Educational level of patient	Peduc [ ]
[ ] 1 None [ ] 2 Primary school	
[ ] 3 Secondary school [ ] 4 Occasion	
[ ] 5 Under graduated and more [ ] 6 Other ……	
5. Occupation	Poccupa [ ]
[ ] 1 Civil servant [ ] 2 Profession/Administrator	
[ ] 3 Commercial [ ] 4 Employee	
[ ] 4 Other (name)..... [ ] 6 None	
6. Personal status in household	Pstatus [ ]
[ ] 1 Head [ ] 2 Income earner	
[ ] 3 Dependent person	
7. Details of illness (name)……	Dx [ ]
8. Kind of illness	Illness [ ]
[ ] 1 Acute [ ] 2 Chronic	
9. For acute illness, how long have you ill? ……days	Adays [ ]
10. For chronic illness, how about your satisfaction of health care service?	Csat [ ]
[ ] 1 not satisfied [ ] 2 satisfied	
[ ] 3 very satisfied	

Section 2 Illness and health expenditure during last month

11. Where did you go to receive health care service and how much of payment? (Out patient case)	
Health center (name).....	Chentre [ ] [ ]
[ ] 0 not utilized [ ] 1 utilized ..... Baht	
Municipality's health center (name).....	Munche[ ] [ ]
[ ] 0 not utilized [ ] 1 utilized ..... Baht	
Primary care unit (PCU).....	PCU [ ] [ ]
[ ] 0 not utilized [ ] 1 utilized ..... Baht	
Private clinic	Clinic [ ] [ ]
[ ] 0 not utilized [ ] 1 utilized ..... Baht	
Public hospital (name).....	Ghosp [ ] [ ]
[ ] 0 not utilized [ ] 1 utilized ..... Baht	
Private hospital (name).....	Phosp [ ] [ ]
[ ] 0 not utilized [ ] 1 utilized ..... Baht	
Alternative medicine (name).....	Almed [ ] [ ]
[ ] 0 not utilized [ ] 1 utilized ..... Baht	
Other (name).....	Seek [ ] [ ]
[ ] 0 not utilized [ ] 1 utilized ..... Baht	
12. For this illness, were you admit to hospital?	
Public hospital (name).....	Aghosp [ ] [ ]
[ ] 0 not utilized [ ] 1 utilized ..... Baht	
Private hospital (name).....	Aphosp [ ] [ ]
[ ] 0 not utilized [ ] 1 utilized ..... Baht	
13. Informal payment related with this illness	
Traveling cost [ ] 0 not paid [ ] 1 paid ...Baht	Travel [ ] [ ]
Food cost [ ] 0 not paid [ ] 1 paid ...Baht	Food [ ] [ ]
Waste Time [ ] 0 not paid [ ] 1 paid ...Baht	Time [ ] [ ]

Lost wage (patient)	[ ] 0 not paid	[ ] 1 paid …Baht	Wa-ill [ ] [ ]
Lost wage (care giver)	[ ] 0 not paid	[ ] 1 paid …Baht	Wa-cg [ ] [ ]
Other expenditure	[ ] 0 not paid	[ ] 1 paid …Baht	Ocost [ ] [ ]
Summary of all expenditure.....Baht			Scost [ ]

Section 3 Ability to pay of household and coping strategy for health care expenditure

14. Which source of finance that you got firstly to pay for health care?			Paid [ ]
[ ] 1 Cash in pocket [ ] 2 Household saving			
[ ] 3 Insurance [ ] 4 Borrowing			
[ ] 5 Sold household's asset [ ] 6 Social security			
[ ] 7 Other (name).....			
15. How much did you pay in the first time? .....Baht			Fpaid [ ]
16. How much did you pay in the following time?			
Cash in pocket	[ ] 0 not paid	[ ] 1 paid...Baht	Pcash [ ] [ ]
Household's saving	[ ] 0 not paid	[ ] 1 paid...Baht	Psaving[ ] [ ]
Claim from insurance	[ ] 0 not paid	[ ] 1 paid...Baht	Pclaim [ ] [ ]
Sold household's asset	[ ] 0 not paid	[ ] 1 paid..Baht	Pvalue [ ] [ ]
Sold occupational asset	[ ] 0 not paid	[ ] 1 paid..Baht	Passet [ ] [ ]
Borrowing	[ ] 0 not paid	[ ] 1 paid..Baht	Pborrow[ ] [ ]
Asked for exemption	[ ] 0 not paid	[ ] 1 paid..Baht	Pbeg [ ] [ ]
Social security	[ ] 0 not paid	[ ] 1 paid..Baht	SS [ ] [ ]
Other	[ ] 0 not paid	[ ] 1 paid...Baht	Pother [ ] [ ]
Summary of expenditure (15+16).....Baht			Sumcost [ ]
17. Are you have some difficulty of payment for this illness?			Paydiff [ ]
[ ] 0 No			
[ ] 1 Yes, a little			
[ ] 3 Yes, too much			