DISTRICT HEALTH SYSTEM MANAGEMENT TO IMPROVE THE QUALITY OF MATERNAL AND CHILD HEALTH FROM KAPHO DISTRICT IN PATTANI PROVINCE,THAILAND

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PRIMARY HEALTH CARE MANAGEMENT FACULTY OF GRADUATE STUDIES MAHIDOL UNIVERSITY 2014

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entitled

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was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Master of Primary Health Care Management
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ACKNOWLEDGEMENTS

I would like to express my sincere gratitude and appreciation to the members of my thesis advisors. Dr.Supattra Srivanichakorn, she gave me a lot of opportunities and valuable advices. Her continuous encouragement and deep understanding arouse my enthusiasm. Dr.Yongyuth Pongsupap, his kind supports and courteous instructions led me in deep understanding of district health system. Dr.Bang-on Thepthien shared her ideas through her experience for conducting research, preparing manuscript and writing of this dissertation.

I also thank to staffs in AIHD, their kindness were very helpful to study and all my friends, for their moral support, sincere cooperation and generous assistance to study in here.

I would like to thank to all staffs in Kapho district, especially staffs at labor room. They offered numerous effort and kindness. I really appreciate with their cooperation.

Most importantly, I would like to give thanks to my family for their sustainable support. To my mother, who always support and give me guidance on continuing education. I also want to thank my wife for her love, supporting and encouragement throughout my study. My thanks also go to my 2 children when I need to leave them during the time I study. Also I thank my brother for encouragement.

Finally, this dissertation is dedicated to my father.

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DISTRICT HEALTH SYSTEM MANAGEMENT TO IMPROVE THE QUALITY OF MATERNAL AND CHILD HEALTH FROM KAPHO DISTRICT IN PATTANI PROVINCE,THAILAND

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ABSTRACT

This study was performed in a descriptive retrospective fashion to evaluate the result of District health system management, aiming to improve the quality of maternal and child health care (MCH) in Kapho District, Pattani Province, Thailand. Data collection was carried out by document review method. Data management and analysis were divided into two phases. In the first phase, covering the years 1999 to 2006, a situation analysis and past experiences were incorporated. The second phase lasted from 2007 to 2012, wherein a theoretical analysis was done.

The findings demonstrated that the District health system management positively influenced the quality of MCH care. As examples, Maternal Mortality Ratio was shown to be zero per 100,000 live births, since the fiscal year 2007 to 2012, and the Perinatal Mortality Rate was as low as 3.09 per 1,000 total births in 2012. Furthermore, there revealed improved service coverage to the MCH populations. For instance, four – section observation of antenatal care coverage showed an optimistic trend (69.9%, 78.98%, 80.43%) from the year 2010 to 2012. This was totally due to the comprehensive management system, comprising the following six core components:(i) service delivery, (ii) health workforce, (iii) health information systems, (iv) essential medication access, (v) financing, and (vi) leadership or governance.

KEY WORDS :DISTRICT HEALTH SYSTEM/MATERNAL AND CHILD HEALTH /PRIMARY HEALTH CARE

55 pages

การจัดการระบบสุขภาพระดับอำเภอเพื่อพัฒนาคุณภาพงานอนามัยแม่และเด็กจากอำเภอกะพ้อ จังหวัดปัตตานี , ประเทศไทย

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บทคัดย่อ

การออกแบบการศึกษาย้อนหลังเชิงพรรณนาที่ใช้ประเมิน ผลของการจัดการระบบสุขภาพระดับอำเภอเพื่อพัฒนาคุณภาพงานอนามัยแม่และเด็กจากอำเภอกะพ้อ จังหวัดปัตตานี , ประเทศไทยโดยการศึกษานี้เป็นการนำข้อมูลจากการทบทวนเอกสาร สำหรับการจัดการข้อมูลและการวิเคราะห์ข้อมูลแบ่งออกเป็น 2 ระยะ โดยระยะที่ 1 ตั้งแต่ปีพ.ศ. 2542 - 2549 ใช้การวิเคราะห์สถานการณ์และประสบการณ์ที่ผ่านมา และระยะที่ 2 ตั้งแต่ ปีพ.ศ. 2550 - 2555ใช้การวิเคราะห์ทางทฤษฎี

ผลการวิจัยแสดงให้เห็นว่า การจัดการระบบสุขภาพระดับอำเภอส่งผลต่อคุณภาพของงานอนามัยแม่และเด็ก โดยดูจากอัตราส่วนการตายของมารดาเป็น 0 ต่อ 100,000 การเกิดมีชีพตั้งแต่ปีงบประมาณพ.ศ. 2550-2555และอัตราการตายปริกำเนิดผ่านเกณฑ์ที่ตั้งไว้คือ 3.09 ต่อ 1000 การเกิดทั้งหมดในปีพ.ศ.2555 และทำให้ความครอบคลุมการจัดบริการดีขึ้นโดยดูจากการดูแลการฝากครรภ์ (อย่างน้อย 4 ครั้ง)มี แนวโน้มดีขึ้น (69.9 %, 78.98 % , 80.43% ตามลำดับตั้งแต่ปีพ.ศ. 2553-2555)นี้เป็นเพราะการเปลี่ยนแปลงระบบการจัดการที่ครอบคลุมในแง่ของหกองค์ประกอบหลัก คือ (1) การจัดบริการ (2) บุคลากรสาธารณสุข(3) ระบบข้อมูลสุขภาพ (4) การเข้าถึงยาจำเป็น (5) การเงิน และ (6) การนำหรือการอภิบาลระบบ

55 หน้า

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ANC	Antenatal Care
DHS	District Health System
MCH	Maternal and Child Health
PHC	Primary Health Care
WHO	World Health Organization

CHAPTER I
INTRODUCTION

1.1 Rationale and justification of the study

Since 1978, with the declaration of Alma-Ata, the World Health Organization (WHO) pronounced the concept of "Primary Health Care" (PHC). It is increasingly recognized that stronger health systems are considered necessary to deliver health care interventions and technologies for curing disease and prolonging life(1,3,6,7). The World Health Report 2000 defined overall health system outcomes as improved health and health equity. There are also important intermediate goals as the route from inputs to health outcomes is through achieving greater access to and coverage for effective health interventions, without compromising efforts to ensure provider quality and safety(2).

The strengthening of health care systems is an essential step in making health services accessible and affordable for population groups which would otherwise be unable to obtain the benefits of health promotion, good quality health care, and access to essential drugs. It is one part of the global health agenda and it is reflected in the 11th General Program of Work (2006-2015)(4) and the Medium-term Strategic Plan (2008-2013) to WHO's response(5). In addition, a District Health System(DHS) can be used as an excellent practical model for improved performance(6).

During the last few decades, concern for the quality of health care has been growing. This concern has been triggered by enhanced socioeconomic development, as reflected by higher public demand for quality health care(4). With this concern, the concept of the DHS is widely accepted as the core piece of health system development, and is the key to deliver the basic health services in developing countries(6,8). According to WHO, a DHS consists of a large variety of interrelated elements that contribute to health in homes, schools, work places and communities, through health and other related sectors providing health care in the district. It includes self-care and all health care workers and facilities up to and including the hospital at

the first referral level, and appropriate laboratory, diagnostic and logistic support services. Therefore, the district is the most appropriate level for coordinating top-down and bottom-up planning, for organizing community involvement in planning and implementation, and for improving the coordination between government and private health care. Many key development sectors are represented at this level, so the DHS is the backbone of PHC(3,8).

Development of human resources for DHS based on PHC requires a comprehensive manpower policy for the entire system, from the definition of manpower needs through basic training orientation, career development and working conditions. In the district, human resource development is concerned with the provision of relevant in-service training and support and supervision, and the re-orientation of health workers based on competency profiles rather than on out-dated duty schedules. It seeks to narrow the gap between managing and training for PHC, and to develop procedures, methodologies and materials that fit the requirements of the district(6,8,9,10,11,21).

No issue is more central to global well - being than maternal and perinatal health. Yet every day, 1,600 women and over 5,000 newborns (0 – 28 days) die due to complications arising from pregnancy, childbirth and postnatal period, many of which could have been prevented(12,13,14,15). It is in this context that in 2000, the international community agreed on a vision for the world's future which was translated into eight Millennium Development Goals (MDGs) to be achieved by 2015(14,15).

The most cost-effective health system for delivering Maternal and Child Health (MCH) services is the DHS. In the DHS, most MCH activities take place as close as possible to where most of the people live. The health centre provides basic services and the link to higher levels of care. The referral hospital provides services for emergencies and complications(8,15,16).

For the DHS to be able to fully respond to MCH care needs, levels of care should be integrated. The flow of referral from one level to another should be smooth, and supervision should permeate from the referral hospital down to the lowest level of care(17).

In 1970, Thailand had an infant mortality rate of 68 per 1,000 live births, while today it is estimated to be 13 per 1,000 live births. According to a 2008 study published in the medical journal Lancet, Thailand enjoyed the highest annual rate of reduction in child mortality among 30 low- and middle-income countries between 1990 and 2006. The maternal mortality ratio has also shown a similar decreasing trend(18) while maternal mortality is much higher in Thailand's Muslim majority southern provinces than elsewhere in the country, Health Ministry records show that,from October 2007 to June 2008 the maternal mortality rate in Pattani, Yala, Narathiwat, Satun, and Songkhla Provinces was 42.4 per 100,000 live births. In 2007 that number stood at 39.5, according to Health Ministry figures, as opposed to 17.7 nationwide. Thus, MCH remains a major challenge in Thailand's deep South(19).

Kapho District, Pattani Province faces the same challenge of the need to improve MCH. The planning cycle starts with a situation analysis focusing on relevant MCH-related policies, services, human, material and financial resources, as well as governance(6,8,15,16,17). With this information, managers and planners can then decide how to ensure MCH quality services, to make MCH program improvements and to achieve objectives and goals(15,20). The purpose of the MCH situation analysis as an initial planning step is to assess the status of national and district MCH strategy/program implementation. This assessment is expected to help in identifying strengths and weaknesses as well as possible solutions. Its output is also essential for priority setting(15,17).

1.2 Research Questions

1.2.1. Does DHS management affect the quality of MCH in Kapho District in Pattani Province, Thailand?

1.3 Research Objectives

1.3.1 General objectives

To study the results of DHS management to improve quality of MCH in Kapho District.

1.3.2 Specific objectives

1.3.2.1 To describe health systems in terms of six core components: (i) service delivery, (ii) health workforce, (iii) health information systems, (iv) access to essential medicines, (v) financing, and (vi) leadership/governance in Kapho District.

1.3.2.2 To assess planning and implementation of human resources for the health system in Kapho District.

1.4 Conceptual framework

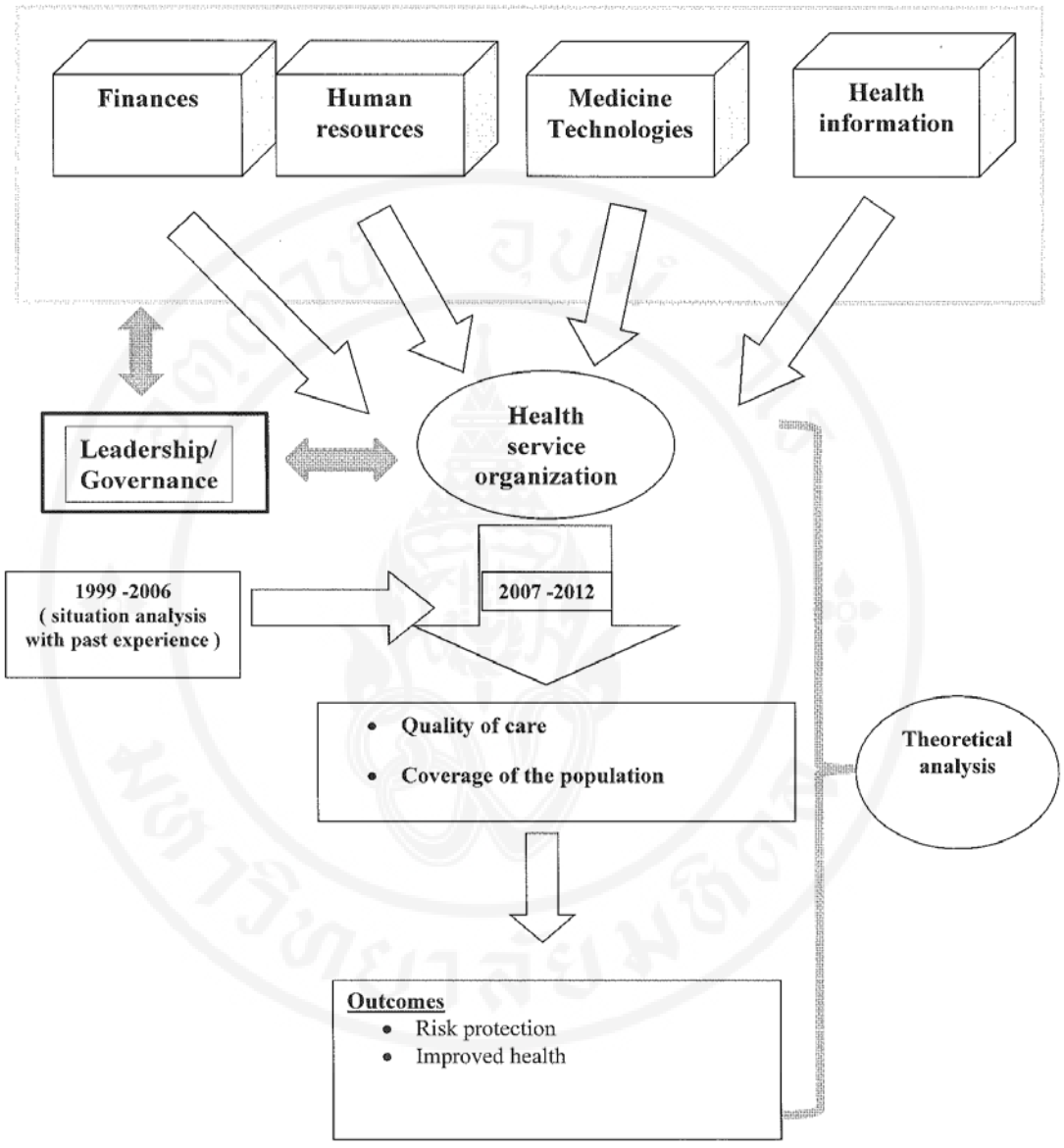


Figure 1.1 Conceptual framework

1.5 Definitions of terms

Primary Health Care as defined by the World Health Organization in 1978 is:

essential health care based on practical, scientifically sound, and socially acceptable methods and technology which is universally accessible to all in the community through their full participation, at an affordable cost, and geared toward self-reliance and self-determination (WHO & UNICEF, 1978)(22).

The District Health System is the means to achieve the end of an equitable, efficient and effective health system based on the principles of the PHC approach. This means that the DHS is more than just a structure or form of organisation. It is the manifestation of a set of activities that includes community involvement, integrated and comprehensive health care delivery, intersectoral collaboration and a strong bottom-up approach to planning, policy development, and management(8).

1.6 Limitations of the study

The major limitation is that this study is retrospective for the period of 1999 -2006 and data were collected by document review so data may not be totally complete or correct.

This study was conducted in Kapho District in Pattani Province,Thailand which is an area that has been affected by violence since 2004. Thus, conflict situation environment may influence interventions.

CHAPTER II
LITERATURE REVIEW

This chapter reviews the conceptual basis about primary health care, health systems, health systems frameworks and building blocks, district health systems, and maternal and child health.

2.1 Primary health care

The concept of PHC emerged during the 1970s. It is important to understand the concept of PHC as well as its current practice to fully understand its role in society and health (23).From the Health Assembly of the World Health Organization(WHO) and the Executive Board of the United Nations Children's Fund(UNICEF), and at the invitation of the Government of the Union of Soviet Socialist Republics, the International Conference on PHC was held from 6 to 12 September 1978 in Alma-Ata, capital of Kazakh Soviet Socialist Republic(1) promoted PHC and launched the Global Strategy for "Health for All by the Year 2000" in 1979 (24). The definition of health in this context is broad. Health is a fundamental human right and comprises much more than an absence of disease or infirmity for individuals and communities. Rather, it is a state of complete physical, mental and social well-being . Such a goal cannot be attained by the health sector alone but requires the action of many other social and economic sectors (1).

There is no consistency on how each country interprets PHC and it depends on the country's social and development context (1). PHC has a multiplicity of meanings depending on the perspective: A package or set of activities, level of care, or an approach of principle (25). Details of each meaning are shown below.

1) A package perspectives. PHC was defined in Alma Ata to consist of at least eight basic elements, namely: (1) an adequate supply of safe water and basic

sanitation, (2) the promotion of food supply and proper nutrition, (3) maternal and child health care, including family planning, (4) immunization against the major infectious diseases , (5) the prevention and control of locally endemic diseases, (6) appropriate treatment of common diseases and injuries, (7) health education, and (8) the provision of essential drugs (1,28).

Later on, this package was labeled as an essential health care package, basic health package, essential health services, etc. The content of this package largely depends on the main health problems existing in each country. Therefore, it is not meant to be a rigid package for worldwide implementation. In general, public health problems do not constitute a major challenge in most high-income or developed countries. Furthermore, usually there are public entities that are responsible to carry out public health programs. For this reason, PHC in several developed countries focuses more on medical services where family physicians usually become the backbone of the health system (26). In Thailand, The most common staffing pattern at primary care facilities is having health workers, nurses, and doctors (48%) but 46% of the facilities have no doctor. (27).

2) Level of care perspective. Level of care in a health services system as described below.

2.1) Refers to the first point of contact with, or the entry point into, the health system.

2.2) Primary care constitutes the first level of care in a continuing health care process and would commonly be delivered at a clinic, health post or a private practioner's surgery.

2.3) Primary care focuses on personal health or individual health care and is predominantly curative (or therapeutic), preventive and rehabilitative in nature(28).

3) An approach of principle perspective. PHC is an approach to health development. This PHC concept refers to implementation of a total health development strategy with emphasis on developing primary care as the first level of care of a continuum of care. The comprehensive PHC approach, as elaborated at Alma Ata, embodies a set of five key principles:

1.comprehensive care (which includes a combination of preventative, curative and rehabilitative and promotive services);

2.intersectoral collaboration and action;

3.active community participation and support of empowerment;

4.appropriate care and use of technology; and

5.equity(1,28).

By using the PHC approach as a health development strategy, many developed countries are able to provide effective and efficient health services to the community, through provision of accessible, affordable and quality family health services by family doctors as the first point of contact. At this point, services provided follow the basic principles of family practice. In developing countries in Asia and Africa, the use of the PHC approach as a health development strategy is manifest as the provision of basic health services to the community through the establishment of community health centers / health posts in every village (29).

The World Health Report 2008 revitalized PHC by defining a 4-point set of reforms include universal coverage reforms, service delivery reforms, public policy reforms and leadership reforms as described below.

■ that health systems contribute to health equity, social justice and the end of exclusion, primarily by moving towards universal access and social health protection – universal coverage reforms;

■ reforms that reorganize health services as primary care, i.e. around people's needs and expectations, so as to make them more socially relevant and more responsive to the changing world while producing better outcomes – service delivery reforms;

■ reforms that secure healthier communities, by integrating public health actions with primary care and by pursuing healthy public policies across sectors – public policy reforms;

■ reforms that replace disproportionate reliance on command and control on one hand, and laissez-faire disengagement of the state on the other, by the inclusive, participatory, negotiation-based leadership required by the complexity of contemporary health systems –leadership reforms.

The aims are to diminish exclusion and social disparities in health (25).

2.2 Health system, health systems framework and building blocks

A health system consists of all the organizations, institutions, resources and people whose primary purpose is to improve health. This includes efforts to influence determinants of health as well as more direct health-improvement activities. The health system delivers preventive, promotive, curative and rehabilitative interventions through a combination of public health actions and the pyramid of health care facilities that deliver personal health care — by both state and non-state actors. The actions of the health system should be responsive and financially fair, while treating people respectably. A health system needs staff, funds, information, supplies, transport, communications and overall guidance and direction to function. Strengthening health systems means addressing key constraints related to health worker staffing, infrastructure, health commodities (such as equipment and medicines), logistics, tracking progress and effective financing(30).

Health systems framework and building blocks

A key purpose of the Framework is to promote common understanding of what a health system is and what constitutes health systems strengthening. Clear definition and communication is essential. If it is argued that health systems need to be strengthened, it is essential to be clear about the problems, where and why investment is needed, what will happen as a result, and by what means change can be monitored. The approach of this Framework is to define a discrete number of "building blocks" that make up the system. These are based on the functions defined in World health report 2000. The building blocks are: service delivery; health workforce; information; medical products, vaccines and technologies; financing; and leadership and governance (stewardship).

The building blocks serve three purposes.

- First, they allow a definition of desirable attributes– what a health system should have the capacity to do in terms of, for example, health financing.

- Second, they provide one way of defining WHO's priorities.
- Third, by setting out the entirety of the health systems agenda, they provide a means for identifying gaps in WHO support.

While the building blocks provide a useful way of clarifying essential functions, the challenges facing countries rarely manifest themselves in this way. Rather, they require a more integrated response that recognizes the inter-dependence of each part of the health system(31,32)(see Figure 2).

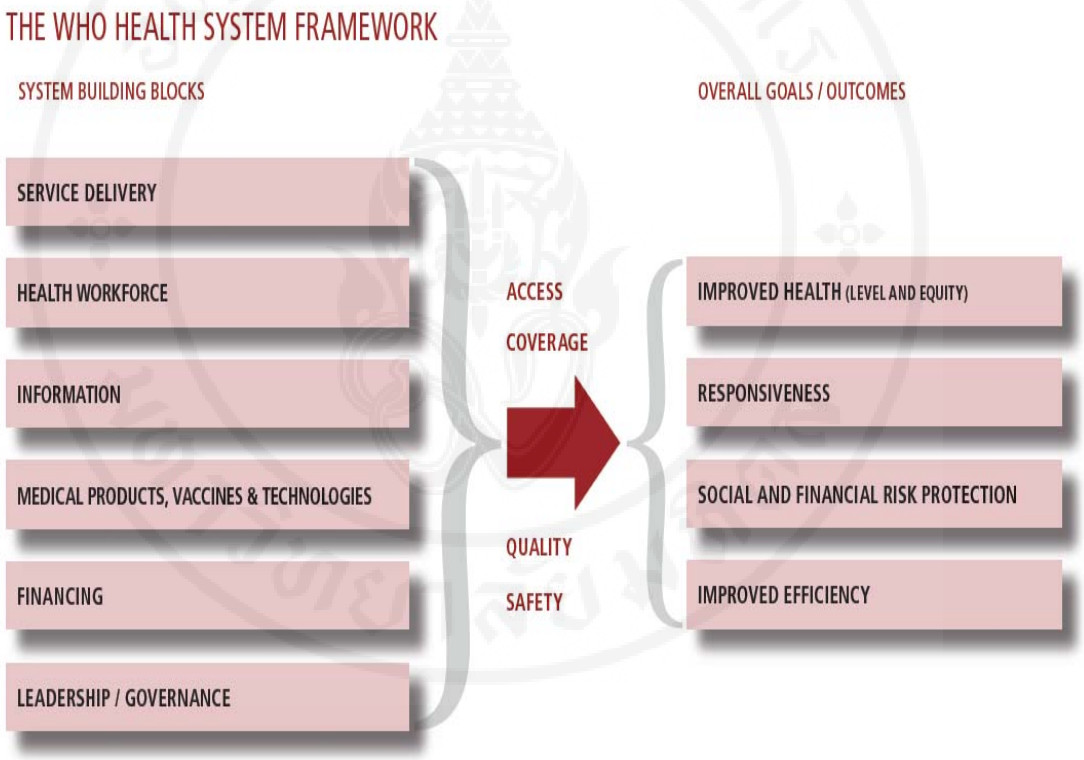


Figure 2.1 The WHO Health Systems Framework

The six building blocks of a health system

• Good **health services** are those which deliver effective, safe, quality personal and non-personal health interventions to those that need them, when and where needed, with minimum waste of resources.

• A well-performing **health workforce** is one that works in ways that are responsive, fair and efficient to achieve the best health outcomes possible, given

available resources and circumstances (i.e. there are sufficient staff, fairly distributed; they are competent, responsive and productive).

• A well-functioning **health information** system is one that ensures the production, analysis, dissemination and use of reliable and timely information on health determinants, health system performance and health status.

• A well-functioning health system ensures equitable access to essential **medical products, vaccines and technologies** of assured quality, safety, efficacy and cost-effectiveness, and their scientifically sound and cost-effective use.

• A good **health financing** system raises adequate funds for health, in ways that ensure people can use needed services, and are protected from financial catastrophe or impoverishment associated with having to pay for them.

• **Leadership and governance** involves ensuring strategic policy frameworks exist and are combined with effective oversight, coalition-building, the provision of appropriate regulations and incentives, attention to system-design, and accountability(31).

The six building blocks contribute to the strengthening of health systems in different ways. Some cross-cutting components, such as leadership/governance and health information systems, provide the basis for the overall policy and regulation of all the other health system blocks. Key input components to the health system include financing and the health workforce. A third group, namely medical products and technologies and service delivery, reflects the immediate outputs of the health system, i.e., the availability and distribution of care. Inevitably, any type of division of a complex construct such as the health system is fraught with problems. This is also true for the framework, which focuses on health sector actions and underplays the importance of actions in other sectors. It does not take into account actions that influence peoples' behaviours, both in promoting and protecting health and the use of health-care services. The framework does not address the underlying social and economic determinants of health, such as gender inequities or education, and also does not deal with the substantial and dynamic links and interactions that exist across each component.

On the other hand, focusing on these separate components helps put boundaries around this complex construct and permits the identification of indicators and measurement strategies for monitoring progress(30).

2.3 District Health System

The following definition of the district health system was adopted by the WHO Global Programme Committee in 1986:

A District Health System (DHS) based on PHC is a more or less self-contained segment of the national health system. It comprises first and foremost a well-defined population, living within a clearly delineated administrative and geographical area, whether urban or rural. It includes all institutions and individuals providing health care in the district, whether governmental, social security, non-governmental, private, or traditional. A DHS, therefore, consists of a large variety of interrelated elements that contribute to health in homes, schools, work places, and communities, through the health and other related sectors. It includes self-care and all health care workers and facilities, up to and including the hospital at the first referral level and the appropriate laboratory, other diagnostic, and logistic support services. Its component elements need to be well-coordinated by an officer assigned to this function in order to draw together all these elements and institutions into a fully comprehensive range of promotive, preventive, curative and rehabilitative health activities.'

Throughout this document, the term district is used in a generic sense to denote a clearly defined administrative area, which commonly has a population of between 50,000 and 500,000, where some form of local government or administration takes over many of the responsibilities from central government sectors or departments, and where a general hospital for referral support exists. The actual organization of district health systems obviously depends on the specific situation in each country and each district, including the administrative structure and personalities involved. Nevertheless, the general principles for developing such systems are based on the Declaration of Alma Ata and the Global Strategy for Health For All, and incorporate the following:

- equity
- accessibility
- emphasis on promotion and prevention
- intersectoral action
- community involvement
- decentralization
- integration of health programmes
- coordination of separate health activities.

In reviewing the DHS, we need to consider districts' vertical relationships with higher management levels, their horizontal relationships with local departments of other ministries, between different health programmes, and their external relationships with the communities and organizations they serve. It is, therefore, important to differentiate between district systems and the district level. DHS refer to the entirety of the district covering all elements and, thus, all levels. The district level refers to the managerial stratum usually placed in the district capital that is hierarchically located between the national and regional or provincial levels and the communities. This level is also often referred to as the intermediate level

The scope of the management responsibilities at the district level will depend to a considerable extent on the way political and executive authority is distributed, on the degree of decentralization that has taken place, and on the availability of qualified manpower.

As the responsibility and authority for promoting, implementing and supporting PHC becomes part of the district operation, close attention will need to be paid to those aspects which can be regarded as the main pillars of the district health system. These are:

- organization, planning and management
- financing and resource allocation
- intersectoral action
- community involvement
- development of human resources.

Organization, planning and management refers to the organizational structure and the managerial process for establishing PHC. This is a broad subject area and covers the roles, goals and responsibilities of different organizations and units in the district, programme planning, manpower planning, health and management information, monitoring and evaluation, coordination of programmes and activities within the health sector and with other non-governmental, private and community health organizations and agents, and the provision of drugs, supplies and transport. The development of systems and procedures, and their adaptation to the changing role of the district, are essential functions of management. Action research provides the means for finding practical solutions to operational problems and is, therefore, an essential ingredient in the development of strategies and plans, and in monitoring and evaluating the cost and the effectiveness of different interventions and activities.

Financing and resource allocation are part of planning and management. They are addressed separately to denote their key role in developing and sustaining health services. They are highlighted to draw attention to the need for the district to take an active role in resource allocation decisions, identification of sources of financing and development of useful financial information systems.

Intersectoral action in the district concerns the promotion and coordination of different sectors' contributions to health and improvement of the quality of life. It covers environmental changes, such as clean water, improved sanitation and housing, better food supplies and the raising of income and educational levels as means of improving health. Achieving equity and reaching vulnerable groups are critical issues that require intersectoral perspectives and collaboration.

Community involvement addresses the task of mobilization, putting in motion a widespread process of collective organization and involvement which leads to increased human and material resources at the local level being channeled into development efforts. It seeks to create support mechanisms in order to establish the preconditions for full participation and to clear the way for the required changes. It is

also concerned with community health workers and with other change agents in the community.

Development of human resources for district health systems based on PHC requires a comprehensive manpower policy for the entire system, from the definition of manpower needs through basic training orientation, career development and working conditions. Human resource development is concerned with the provision of relevant in-service training and support and supervision, and the re-orientation of health workers based on competency profiles rather than on out-dated duty schedules. It seeks to narrow the gap between managing and training for PHC, and to develop procedures, methodologies and materials that fit the requirements of the district(8).

2.4 Maternal and child health (MCH)

The current situation of maternal and neonatal health.

Since 1990, the estimate of the global annual number of maternal deaths has exceeded 500,000. Although the number of under-five deaths worldwide has fallen consistently – from around 13 million in 1990 to 9.2 million in 2007 – maternal deaths have remained stubbornly intractable. Limited gains have been made worldwide towards the first target of Millennium Development Goal (MDG) 5, which aims to reduce the 1990 maternal mortality ratio by three-fourths by 2015. The maternal mortality ratio strongly reflects the overall effectiveness of health systems, which in many low-income developing countries suffer from weak administrative, technical and logistical capacity, inadequate financial investment and a lack of skilled health personnel. Scaling up key interventions – for example, antenatal HIV testing, increasing the number of births attended by skilled health personnel, providing access to emergency obstetric care when necessary and providing post-natal care for mothers and babies – could sharply reduce both maternal and neonatal deaths. Enhancing women's access to family planning, adequate nutrition and affordable basic health care would lower

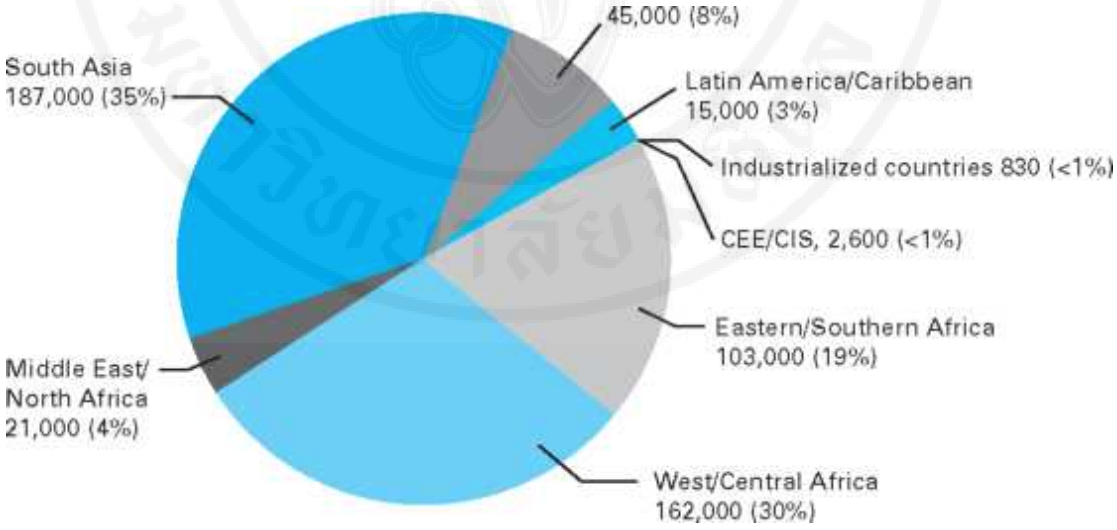
mortality rates further still. These are not impossible, impractical actions, but proven, cost-effective provisions that women of reproductive age have a right to expect.

Trends in maternal and newborn health

Maternal mortality

The most recent UN inter-agency estimates suggest that in 2005,536,000 women died from causes related to pregnancy and childbirth. The vast majority of maternal deaths – more than 99 per cent, according to the 2005 UN inter-agency estimates – occurred indeveloping countries. Half of these (265,000) took place in sub-Saharan Africa and another third (187,000) in South Asia. Between them, these two regions accounted for 85 percent of the world's pregnancy-related deaths in 2005. India alone had 22 per cent of the global total.

East Asia/Pacific



* Percentages may not total 100% because of rounding.

Source: World Health Organization, United Nations Children's Fund, United Nations Population Fund and the World Bank, *Maternal Mortality in 2005: Estimates developed by WHO, UNICEF, UNFPA and the World Bank,* WHO, Geneva, 2007, p. 35.

Figure 2.2 Regional distribution of maternal deaths*

Maternal deaths, 2005

Direct causes

The timing and causes of maternal and newborn deaths are well-known. Maternal deaths mostly occur from the third trimester to the first week after birth (with the exception of deaths due to complications of abortion). Studies show that mortality risks for mothers are particularly elevated within the first two days after birth. Most maternal deaths are related to obstetric complications – including post-partum haemorrhage, infections, eclampsia and prolonged or obstructed labour – and complications of abortion. Most of these direct causes of maternal mortality can be readily addressed if skilled health personnel are on hand and key drugs, equipment and referral facilities are available.

Indirect causes

Many factors contributing to a mother's risk of dying are not unique to pregnancy but may be exacerbated by pregnancy and childbirth. Attributing these causes to pregnancy is difficult owing to the poor diagnostic capacity of many countries' health information systems. Nonetheless, assessing the indirect causes of maternal deaths helps determine the most appropriate intervention strategies for maternal and child health. Collaboration between condition-specific programmes – such as those to address malaria or AIDS –and maternal health initiatives may often be the most effective way to address some of these indirect causes, including those that are highly preventable or treatable, such as anaemia. Maternal anaemia affects about half of all pregnant women. Pregnant adolescents are more prone to anaemia than older women, and they often receive less care. Infectious diseases such as malaria, which affects around 50 million pregnant women living in malaria-endemic countries every year, and intestinal parasites can exacerbate anaemia, as can poor quality diets – all of which heighten vulnerability to maternal death. Severe anaemia contributes to the risk of death in cases of haemorrhage. Anaemia is highly treatable with iron supplements offered through maternal health programmes. This intervention, however, remains limited in both coverage and effectiveness in some developing countries, mostly as a result of low access to basic health care and, more specifically, to quality antenatal care and support. Encouragingly, there are signs that efforts to address

anaemia by fortifying staple foods like flour are beginning to accelerate at the national level in a number of developing countries.

Maternal iodine deficiency during pregnancy is associated with a higher incidence of stillbirths, miscarriage and congenital abnormalities. These risks can be reduced and prevented by ensuring optimal maternal iodine status before or during pregnancy. Universal salt iodization and, in some cases, iodine supplementation are essential to ensure optimum iodine intake during pregnancy and childhood.

Neonatal mortality

Some 86 per cent of newborn deaths globally are the direct result of three main causes: severe infections –including sepsis/pneumonia, tetanus and diarrhoea – asphyxia and

pre-term births. Severe infections are estimated to account for 36 percent of all newborn deaths. They can occur at any point during the first month of life but are the main cause of neonatal death after the first week. Clean delivery practices are clearly important in preventing infection, but maternal infections also need to be identified and treated during pregnancy. Infections in newborns require rapid identification and treatment as soon as possible following childbirth.

Asphyxia (difficulty in breathing after birth) causes 23 per cent of newborn deaths and can largely be prevented by improved care during labour and delivery. The condition can be alleviated by a trained health worker who is able to detect its signs and resuscitate the newborn. Pre-term birth (delivery at less than 37 weeks of completed gestation) directly causes 27 per cent of newborn deaths. Infants born prematurely find it more difficult than full-term babies to feed, maintain normal body temperature and withstand infection. Preventing malaria in pregnant women can have a positive impact on the incidence of premature births in malaria-endemic areas. Low birth weight, which is related to maternal malnutrition, is a causal factor in 60-80 percent of neonatal deaths(12).

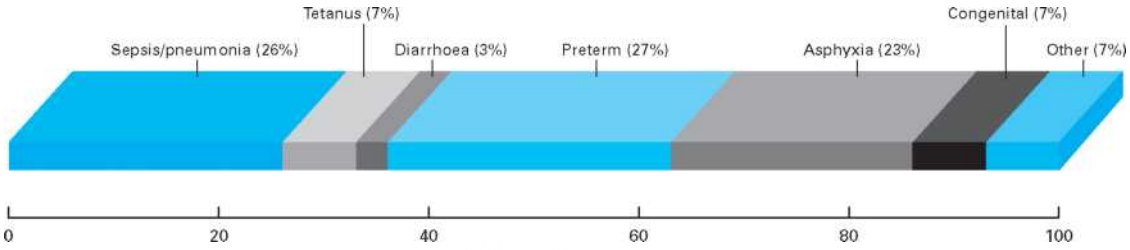


Figure 2.3 Direct causes of neonatal deaths, 2000

CHAPTER III
RESEARCH METHODOLOGY

3.1 Study design

This study used a descriptive retrospective study design. Kapho District in Pattani Province of Thailand was selected as the study site.

Methodology for MCH situation analysis includes:

•Literature review; trends analysis of MCH statistics (national surveys; DHS etc.)

•Definition of the target population and study sites (facilities to be assessed).

•Identifying sources of data: (i) policy statements, publications, technical reports, health statistics; national census report, etc.; (ii) Health management information systems; Country MCH profile; (iii) National surveys, DHS, maternal mortality survey reports, etc.

•SWOT analysis.

SWOT (Strengths, weaknesses, opportunities & threats) Analysis: SWOT profiles the context of the MCH situation analysis and is a powerful technique that helps identifying specific programme's strengths and weaknesses and understanding opportunities and threats, during implementation of the MCH plan. The SWOT profile helps focus activities into areas with comparative advantage in terms of strengths and opportunities. By focusing on key factors affecting MCH strategy implementation, now and in the future, the SWOT analysis provides a clear basis for examining performance and prospects as well as providing guidance for effective implementation of the proposed plan.

•Health system impact assessment

-Assess district health system management strategies described in previous plans and reports on their implementation.

-Review the most recent district plans for MCH care. What strategies are described in those plans?

-Review reports, evaluations and other documents assessing strengths and weaknesses of current district strategies. What strategies are, or appear to be, working? What strategies are not working? Why?

-Develop a list of possible strategies for achieving each objective.

3.2 Target population and study sites

The target population of study are mothers who were ANC clients in Kapho District clinics and delivered at the Kapho District Hospital.

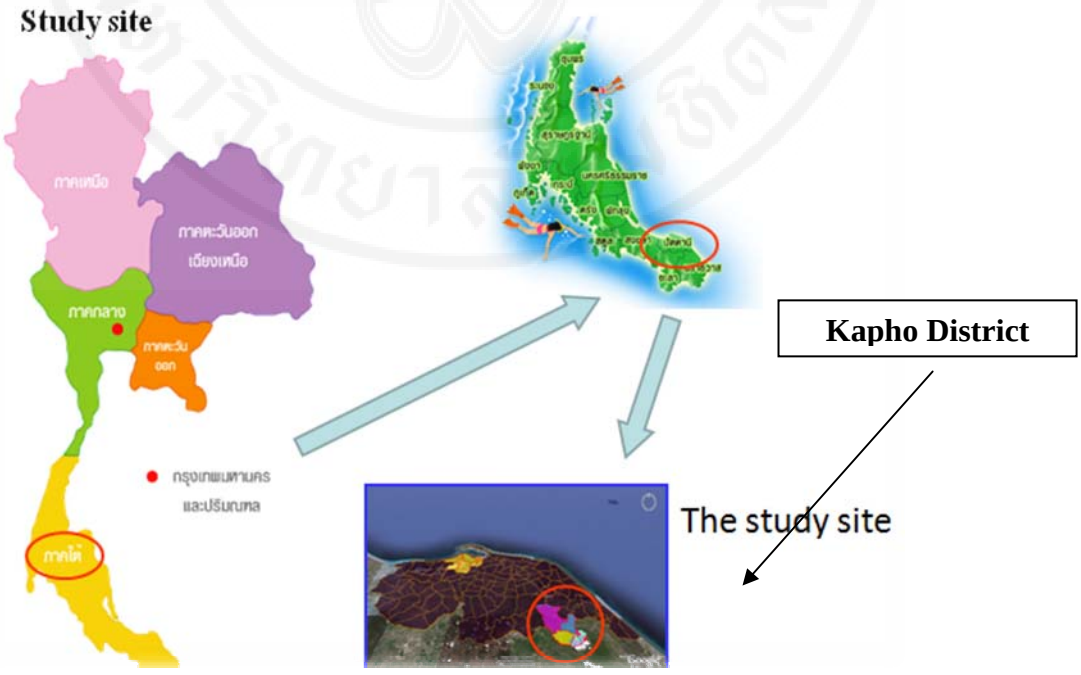


Figure 3.1 The Region of Kapho District in Pattani Province, Thailand

Source: Google maps

3.3 Data collection

The data for this study were collected by document review. Data sources include office records on health services and resources (records of staff employed; medicines and supplies, infrastructure and available equipment, etc.), financial data from finance office records, human resources team meeting records, proceedings of MCH board meetings, proceedings from CUP board meetings, the MCH handbook, demographic and health surveys and reports of other institutions which collect health-related information, such as the civil registry, records of non-governmental health organizations, etc.

3.4 Data management and analysis

Phase 1. For the period of 1999-2006 a situation analysis and past experience were used.

Phase 2. For the period 2007-2012 a Theoretical analysis was used.

Design of district health system management to improve quality of MCH in Kapho District used descriptive statistics, including frequency distributions and trends analysis of MCH statistics**.**

Figure 3.2 Conceptual model of district health system management: Implementation levels of the M&E plan

Inputs indicators:

- Adequate maternal and child health (MCH) policy in place;
- Adequate human resources availability;
- Availability of required health facilities;
- MNH norms and standards availability;

- Equipment, essential drugs availability;

Process indicators:

- Functioning reporting system;
- Attendance rate of staff in training;
- Regularity of supervision;
- Functioning of community health committees;
- Staff work load;
- Utilization (outpatient /inpatient);
- Appropriateness of referrals.

Output indicators:

- Skilled attendant at birth coverage
- Skill level of MNH staff

Outcome indicators:

- Maternal mortality ratio
- Neonatal mortality rate
- Maternal lifetime risk

Shortlist of indicators for district monitoring of improved quality of MCH.

- Antenatal care coverage including early ANC and at least four visits
- Child birth attended by skilled health workforce
- Prevalence of anemic women
- Birth asphyxia
- Prevalence of low birth weight newborns
- Perinatal Mortality rate
- Maternal Mortality Ratio
- Exclusive breastfeeding

CHAPTER IV
RESULTS

Scope of the chapter

4.1 Assessment of the health district

a. Geography

b. Demography

c. Socio-economic profile

4.2 Impact of Economic, Social and Environmental conditions on lifestyle and health

4.3 MCH Status and Problems

4.4 Situation analysis with past experience

4.5 Implementation progress of the District Health System

1) Health financing
2) MCH workforce
3) Equipment, medicines and supplies
4) MCH information systems
5) MCH service delivery
6) Leadership or Governance

4.1 Assessment of the health district

a. Geography

Kapho District is located in the Southeastern part of Pattani Province, Thailand, bordered by three provinces, that is Pattani, Yala and Narathiwat. It is situated about 68 kilometers far from the center of province. Its boundaries were surrounded as the followings (Figure 4.7):

- North: Thung Yang Daeng District, and Sai Buri, Pattani Province
- South: Raman District, Yala Province
- East: Bacho District, Narathiwat Province
- West: Thung Yang Daeng District, Pattani and Raman District, Yala Province

Figure 4.1 : Geography of Kapho District

b. Demography

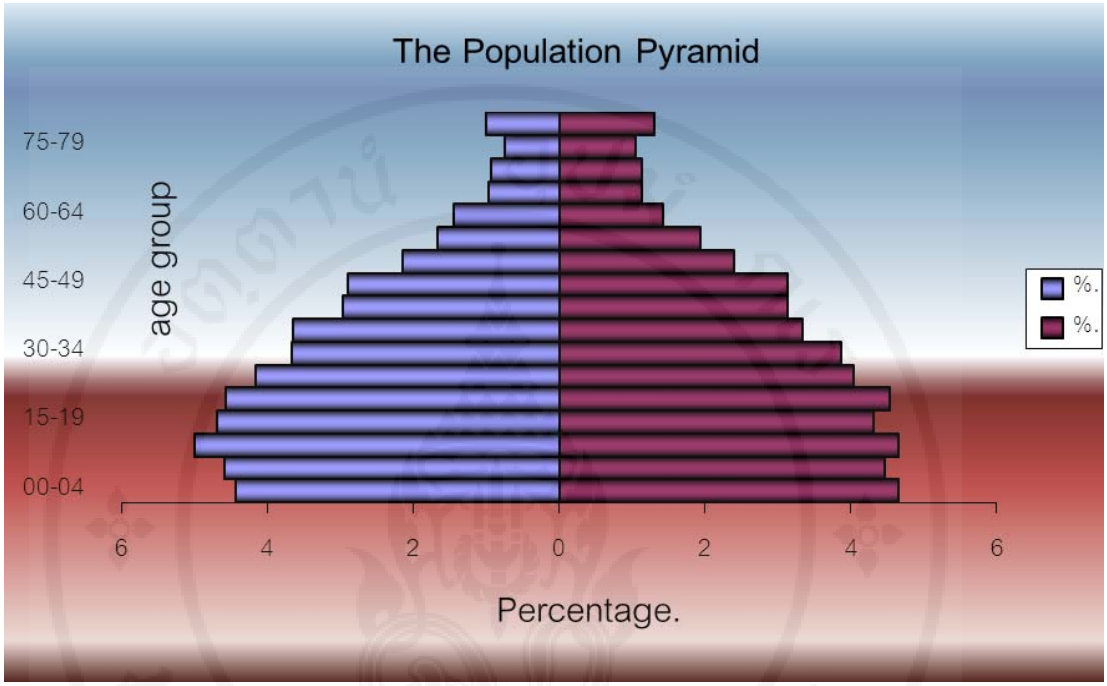


Figure 4.2 The pyramid population is a graphical illustration that shows the distribution of various age groups in a population of Kapho District.

Agriculture is the major economic activity in the area. The main local produces are rubber plantation and fruits such as longan (Lansium domesticum) and durian. Agricultural areas cover approximately 89.96 km^2 of livestock on household consumption. Major transportation to Kapho District is mainly by driving through a Highway number 4060 (Sai Buri - Rueso District, Narathiwat Province) and Provincial Highway No. 4075.

4.2 Impact of Economic, Social and Environmental conditions on lifestyle and health

Composition of populations in the district was found to be as the followings:

- Male:Female ratio was 49.51:50.49.
- Majority of the population was adolescent group (27.79%, aged between 0-14), followed by teenage to early adults (26.30%, aged between 15-30). The percentage of population became less among the elderly (7.03%, aged 60-74) and very old groups (4.07%, aged 75-89).
- Virtually all (about 96 percent) of population were Muslim and the remaining (four percent) was Buddhist.
- The daily living style is in accordance with the religious beliefs. Yet, the local tradition tended to evolved further as the technology progresses and the easy accessibility to the Internet, particularly among the two major population groups.

The topography of the Kapho District is composed mostly of flat hills. As such, agriculture remains the chief source of living, particularly, rubber plantation. However, this major activity yielded declining income owing the lowering budget of the year 2012, which in turn, led to career and financial insecurity. Anthropometric data of Pattani revealed its leading level of poverty (approximately 20%) in parallel with Narathiwat Province in relation to the Thailand Millennium Development Goals Report 2004 indicated that while poverty levels have been declining steadily over the years both nationally and in the South, the proportion of poor people in those three southernmost provinces remains two to three times higher than the national average. Child and maternal mortality rates are also higher in these provinces than elsewhere in the country with factors such as gender, culture, religion and language affecting the provision of and access to primary health care services(33).

4.3 MCH Status and Problems

The MCH situation analysis remains a powerful technique that helps identify specific the program's strengths and weaknesses, as well as opportunities and threats understanding during the MCH plan implementation. Such analysis deployed MCH health data, in the form of graph (Figure 4.9) and table (Table 4.1), in Kapho District from the year 1999 to 2007. Furthermore, the SWOT profile provides comparative advantages by focusing on key factors affecting MCH strategy implementation, as well as providing guidance for effective implementation of the proposed plan in the future.

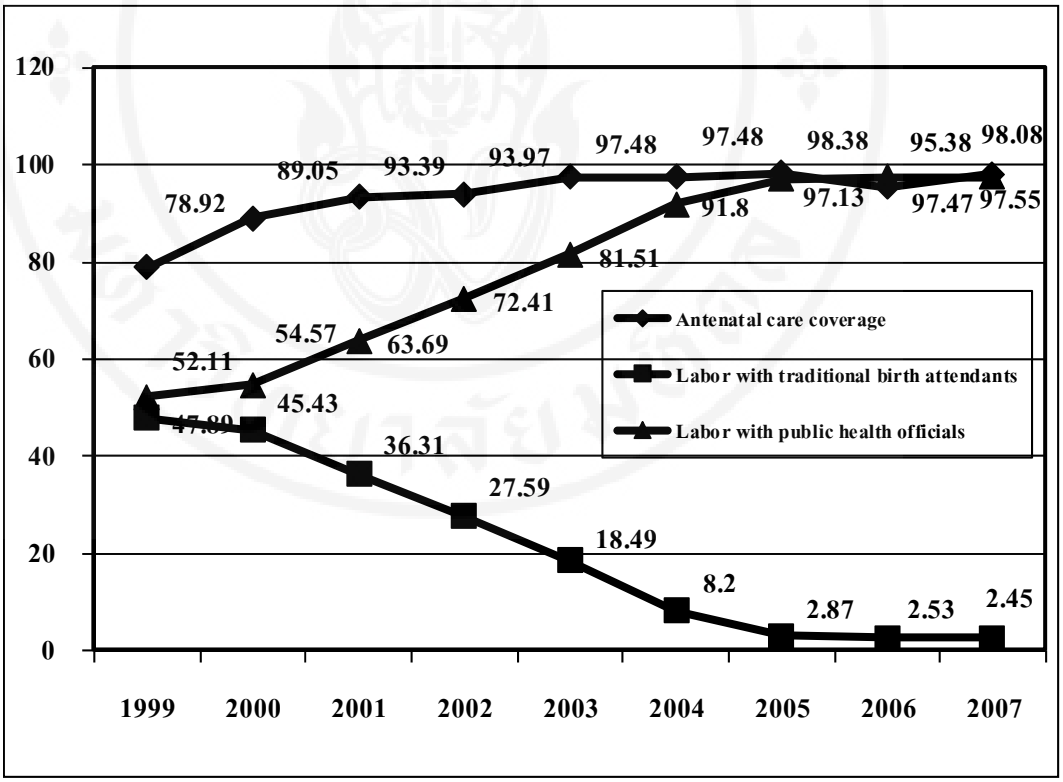


Figure 4.3 showed the results of antenatal care coverage among pregnant women and the results of delivery with public health officers since the fiscal year 1999 to 2007

Table 4.1 Information delivery from the delivery room of Kapho hospital since the fiscal year 2001 to 2007

The fiscal year / Item	2001	2002	2003	2004	2005	2006	2007
pregnant women(total)	79	105	99	190	193	202	252
Normal delivery	72	99	92	183	183	197	241
Vacuum extraction	3	2	6	6	10	5	11
Birth asphyxia	1	0	1	3	0	6	2
Refer maternal	4	5	5	8	6	5	14
Maternal Dead	-	-	-	1	-	-	-

The situation analysis derived from the graphs and tables, to solve MCH health problems in Kapho District, Pattani, since the year 1999 to 2007. This was based on PDCA problem solving scheme, by which over a period of time, being appended to form the following three aspects:

I. Increasing service accessibility and motivation

- Data survey regarding pregnant women
- ANC appointment for constant four visits according to the age of gestation as follows:
  - The 1st visit at gestational age of 1 - 24 weeks
  - The 2nd visit at gestational age of 25 - 28 weeks
  - The 3rd visit at gestational age of 29 - 32 weeks
  - The 4th visit at gestational age 33 weeks and more
- Monthly briefing on prevalence of pregnant and postpartum women in means of mapping for surveillance and comprehensive care

- Home visit, aiming at least once a month in the no – show cases
- Close follow up, targeting those with gestational age of 34 weeks and more. Twice a week follow up for the no or low risk group and once a week for risky group. Adequate time allotment was spent on health education for pregnant women, their spouse and relatives.
- Labor room visit for pregnant women of 34 weeks gestational age and above, their spouse and relatives to create familiarity and preparation before giving birth
- Transferring system to the hospital on delivering day
- As a motivating method, gift rendering for those pregnant women who completed the ANC visits and delivered at the hospital
- Certificate with a photograph of father, mother and child to those delivering at the hospital

II. Improving service quality

- Regular meeting between the concerned parties including health staff, traditional birth attendants, community health volunteers and community leaders
- Community forum held for community development and resolution of maternal and child health care problems in the local areas, namely, Loto Village, Plonghoy Sub-district of Kapho in Pattani Province
- Training for traditional birth attendants on Thai Herbal Compression in postpartum women and Thai massage to stimulate the flow of milk during breastfeeding
- Compensation arrangement for those traditional birth attendants bringing pregnant woman to the hospital for delivery

III. To promote community participation

- Meeting for clarification to officer responsible for the job, traditional birth attendants, community health volunteer and community leaders

- The forum community to the development of community and find solutions for maternal and child health in problem areas, such as Loto Village. Plonghoy Sub-district of Kapho in Pattani Province

- Education training traditional birth attendants on Thai Herbal Compress in postpartum women and Thai massage to stimulate the flow of milk
- Compensation management to traditional birth attendants who take a pregnant woman to the hospital for delivery

4.4 Situation analysis from past experience

Situation analysis was done by applying past experience (since 1999 to 2007) along with development and outcome of integrated and participatory MCH model for Kapho District, Pattani Province. This was based on the principles of PDCA problem solving in the following ways(Figure 4.9 ,Table 4.1):

a. The first solution was done by trial and error for problem solving. For example, the nearby Raman District hospital applied some powerful strategies, namely, motivating pregnant women by giving gifts as a motive to give birth in the hospital, and compensation arrangement for the traditional birth attendants who brought the pregnant women to deliver at the hospital. During the fiscal year 1999 to 2000, the antenatal care coverage (at least four visits) fell behind the standard, being 78.92% and 89.05% (of criterion 90%) respectively. In the year 2001 to 2002, such coverage became higher than expected, 93.39%, 93.97%, respectively. This was owing to a more proactive scheme. In the same way, child delivery under supervision of public health officers was fell below the expectation during 1999 to 2002 - 52.11%, 54.57%, 63.69% and 72.41% (criterion 90%) respectively. This could be drawn from the assumption that the service might not be impressive and that the pregnant women were unaware of such service. Personal beliefs like fear of giving birth in the unequipped hospital did matter somehow.

b. Next of problem solving process targeted maternal and child health by incorporating several health activities during the year 2003 to 2004. By applying the standardized hospital project on safe motherhood, there noted a positive progression in antenatal care. This could be observed from the higher percentage antenatal care coverage (97.48%) and the improving rate of giving birth under supervision of public health officers – 81.51% in 2003 and 91.80% in 2004. Various antenatal care measures and practices were made plausible, practical and proactive. To name a few, provision

of health volunteers in search for pregnant women in the communities, antenatal care monitoring, postpartum home visit by public health workforce, month volunteer meeting for problem discussion and solving, and hospital survey for feedback from mothers delivering in the hospital. Feedbacks were necessary for satisfaction improvement but might not be given truthfully or reflected the true opinion at all times. As an example, many mothers suggested no comments upon admission. Yet, once health volunteers paid them home visits during postpartum, comments were concealed such as requirement for an allocated place to perform Islamic newborn welcoming rites.

In addition, other creative activities were incorporated to further enhancement of the program, namely, mapping, gift giving and home visits for pregnant women, health education provided to the spouse and relatives, relative visit at the delivery room, transferring service for hospital child delivery, and compensation for traditional birth attendants who accompanied pregnant women to deliver at the hospital. These activities and follow-ups should be continuously reinforced while actual problem analysis should be done periodically.

c. In 2005 to 2007, antenatal care coverage reached its full standard and delivery under supervision of the public health officers was in a very good position (as high as 100% in some months of the year). However, due to the hospital safe motherhood project standard, some schemes were modified such the gift rendering to the pregnant women who completed full ANC visits and delivered at the hospital. Likewise, cancellation of compensation to traditional birth attendants arose because of shortage of financial support from the hospital. Newly developed activity was a certificate with photo of parents and newborn presented to the mothers who gave birth at the hospital, leading to great service satisfaction. Proactive operations concentrated more on the preparation for the community development and solutions to maternal and child health dilemmas in problematic areas such as Loto Village, Plonghoy Sub-district.

Suggestions

1) From the MCH care point of view, this is an important problem in the three southern provinces and is difficult to solve. In the past, the team kept the solved problem by using the Plan-Do-Check-Act (PDCA) process periodically since 1999 to 2007. As a lesson, the solution must rely on the determination, multidisciplinary paticipation, as well as the continuous people's contributions and access to cultural traditions. Presently, the dilemma of maternal and child health decreases in Kapho District.

2) Teamwork enhances workers to develop their potential. Successful communication brings about new ideas, acceptable morale, job satisfaction and increased level of job achievement.

3) What to do further in the operation of MCH is to aim for maternal safety and alive childbirth. This can only be achieved by promoting learning process created by health promotion process. Using the "empowering" method, that is "to help him save yourself", to reach the goal of health promotion in the future.

4.5 Progress towards Implementation of a District Health System

Activities to strengthen MCH services

In this MCH planning tool, it is recommended that proposed program implementation be based on health system strengthening (HSS) approach that is most likely to lead to better health outcomes through improvements in access, quality and efficiency. Key MCH activities in Kapho District will therefore focus on the following six HSS components, depending on available resources. Priority should be given to key activities aimed at filling up identified gaps.

1) Health financing:

- Establish / implement / support exemption/reduced price mechanisms for poor section of the population to cover expenditures for MCH services related to the national policy(Thirty-baht health insurance program) and the province policy.
- Develop district grant proposal for MCH.

2) MCH workforce:

- In-service training on guidelines: Pregnancy, Childbirth, Postpartum and Newborn Care; Managing Complications in Pregnancy and Childbirth; Managing Newborn Problems;
- Setting up of deployment criteria, retention and motivation mechanisms;
- Implement performance - based contracts (Pay for Performance scheme);
- Improve quality of district training institutions for health professionals;
- Support MCH - related continuing medical education at district level; District Planning Tool for Maternal and Newborn Health Strategy Implementation

3) Equipment, medicines and supplies:

- Conduct district needs assessment for pharmaceutical management emphasizing MCH medicines (availability, quality, rational use, distribution etc);
- Provide required commodities;
- Purchase required equipment and supplies for maternity care;
- Set up or strengthen maintenance system and etc.

4) MCH information systems

- Data since 2007 to 2009 appeared to be collected with no clear goals, indicators or targets. It is collected by nurses of the hospital and staff of the district health center who are not trained to do so. This, hence, resulted in poor data collection and time wasting, whereby data is not converted into useful information. Data was merely shuffled to the provincial and national level with no or little feedback to the staff.
- Nursing staff had attended workshops designed to give them guidelines on how to collect data, but never on data analysis and interpretation. This resulted in poor motivation and affected the reliability, validity and ultimate quality of the data.

- There were mechanisms set up for clinic or hospital staff to routinely assess their work or to measure progress, achievements and constraints. The amount of data was enough to render of useful information.
- During a workshop in 2011 to 2012, clinic nurses made the following points about the clinic information system:

- Redundant data collection was cancelled. Instead, using only the data collected from the delivery room and antenatal care handbook.
- There were administrative staff to help with the collection of information.
- There was some important information being collected.

5) MCH service delivery:

- Update district MCH norms and standards: Kapho Hospital used Saiyairak hospital program to develop and accredit in 2009 and 2012
- Provide ANC and Family Planning outreach services
- Setting up of quality assurance mechanism
- Supervision of district maternity services
- Strengthening of referral and counter - referral system (transportation & communication)
- Integration of prevention of mother - to - child transmission of HIV activities into MCH services
- Maternal death audits at facility level
- Strengthening of linkages between health facilities / services and communities (women's groups; men) to support Quality Facility Childbirth

Monitoring & Evaluation:

- In-training service in Monitoring & Evaluation for maternity service providers;
- Organize data collection, analysis and dissemination of district MCH data (both quantitative & qualitative) from various reports / studies / surveys;
- Establish vital registration system;

- MCH short programmed review; Update service availability mapping;
- Conduct operational research addressing specific MCH issues (e.g. MCH services utilization rate; effectiveness and efficiency of community – based health insurance scheme; MCH service access barriers; MCH service client satisfaction etc).

6) Leadership or Governance.

"WHO has recommended that one of the primary roles of a Ministry of Health is to develop health sector policy, with the aims of improving health system performance and promoting the health of the people" (The World Health Organization, 2000). This role could be fulfilled through the following activities, among others:

- Address equity issues through subsidies for poor people to have access to MCH services;
- Hold regular coordination meetings with stakeholders and other sectors (e.g. Civil Society organizations) to facilitate inter-sectoral synergies and transparent decision - making process
- Promote best MCH practices

Table 4.2 : Characteristic of the MCH Policy/ Project in Kapho District from the year 2007 to 2012

Year	Policy/ Project	Activity
2007	Service quality improvement according to the standard of safe motherhood hospital project	- Service development according to the standard of safe motherhood hospital project - The "Immediate antenatal care once pregnant" project
2008	Preparation for the assessment by the Saiyairak hospital program	- Assessment study tour by the Saiyairak hospital program at the provincial level - Staff potential development pertaining to the care taking of pregnant women and standardized management of childbirth

Table 4.2 : Characteristic of the MCH Policy/ Project in Kapho District from the year 2007 to 2012 (cont.)

Year	Policy/ Project	Activity
2009	Certification and accreditation in compliance with the standard set forth by the Saiyairak hospital program	- Structural design and improvement to achieve the standard of quality - Standard medical equipment procurement - Potential staff acknowledgement of infant life saving (NCPR) and breastfeeding
2010	- Supervision and evaluation of the service area by the team of provincial level - MCH board meeting at the provincial level - Development of quality standard according to the Sustainable Health care & Health Promotion by the Appreciation and accreditation (SHA) project	- Medical equipment purchase according to the quality criteria for Well Child Clinic, Labor Room, ANC quality - Development of manuals and guidelines for rural hospital - Workforce training on NST reading practice, ultrasonographic procedure assistance, and high risk maternal care - Environmental improvement in accordance with Islamic way of maternal and child care
2011	Supervision and evaluation of the service area by a team of district level.	- The MCH board meeting at the district level and CUP meeting - Situation assessment and supervision by the CUP board - System management by systematized single District management
2012	Certification according to the standard of Saiyairak hospital program	- Continuous service quality improvement - Contribution involvement of community networks, local government, religious leaders, community leader to develop maternal and child health care performance - Strengthening the Saiyairak club for mother and child care in the community

The above activities affected the strengthening of MCH services. District monitoring indicators to improve the quality of maternal and child health were the followings (Table 4.3):

- Antenatal care coverage including early ANC and at least four visits
- Child birth attended by skilled health workforce
- Prevalence of anemic women
- Birth asphyxia
- Prevalence of low birth weight newborns
- Perinatal Mortality rate
- Maternal Mortality Ratio
- Exclusive breastfeeding

Table 4.3 District monitoring indicators to improve the quality of MCH in Kapho district since the fiscal year 2007 to 2012

Item	KPI	criterion	2007	2008	2009	2010	2011	2012
1	pregnant women(total)		345	348	294	274	334	323
2	%Antenatal care coverage (early ANC before 12 wk)	60%	73.69	74.14	78.99	56.5	69.09	69.87
3	%Antenatal care coverage (at least 4 times)	90%	98.08	98.14	95.7	69.9	78.98	80.43
4	Prevalence of anemia in women	< 10 %				43.49	16.73	7.71
5	Prevalence of low birth weight < 2,500 gram	< 7 %	7.1	9.9	7.43	10.04	6.61	4.81
6	%Exclusive breastfeeding	>25 %	15.55	31.72	40.47	29	29.94	38.46
7	Perinatal Mortality rate	9 per 1000 total births	11.9	19.53	7.27	12.55	27.23	3.09
8	%pregnant women having delivery at the hospital	92%	98.6	98.14	97.03	100	100	100
9	%Birth asphyxia	30 per1000 live births	7.93	11.95	11.15	11.02	3.09	3.05
10	Maternal mortality Ratio (MMR)	36 per 100,000 live births	0	0	0	0	0	0

From the above Table 4.3 , indicators were classified into three categories: indicators for the MCH service coverage improvement, indicators for the MCH risk protection improvement and indicators for MCH health care improvement (Figure 4.10, 4.11 and 4.12).

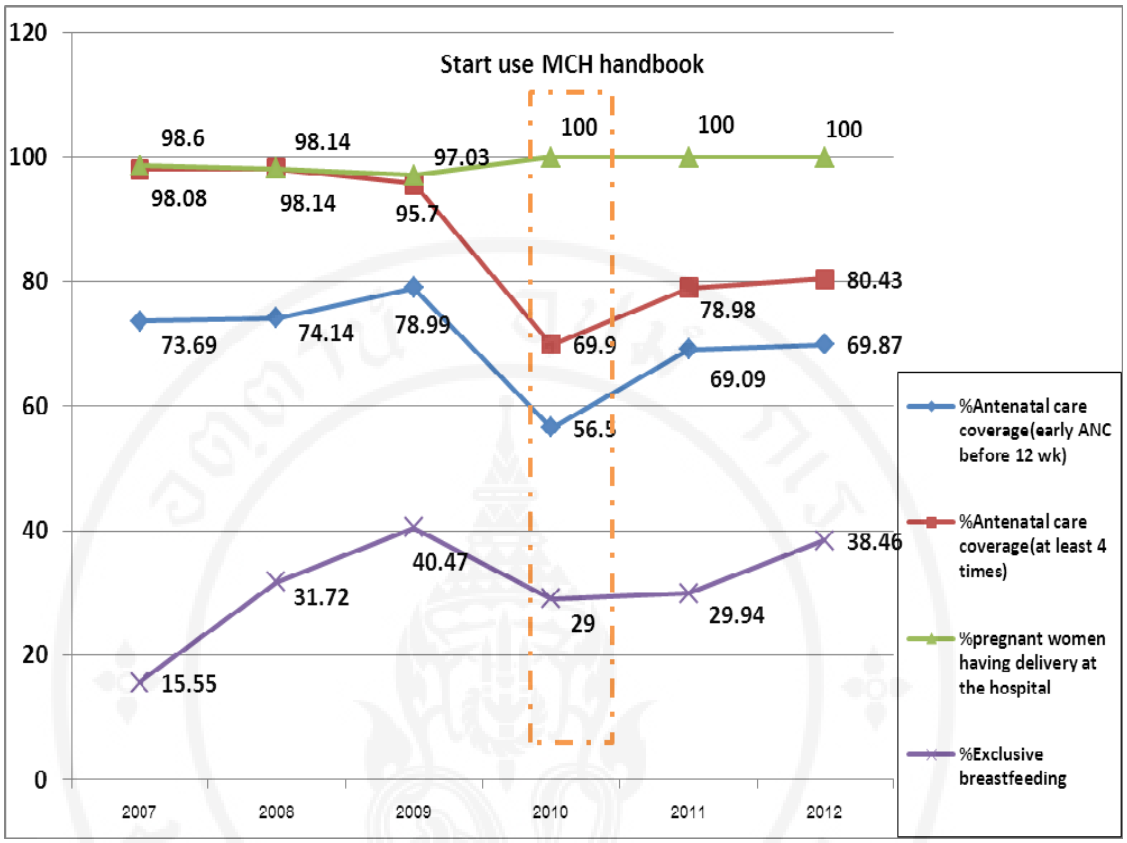


Figure 4.4: District monitoring indicators to improve MCH service coverage in Kapho District since the fiscal year 2007 to 2012

From this figure, the source of the reliable information impacted effectiveness of the management. This could be seen from the orange rectangle patch line as the initiation of applying all information from the MCH handbook, which was more reliable than the MCH working group report. By this way, the MCH team was able to identify more accurately the actual problems. Antenatal care coverage - early ANC before 12 weeks of gestation and at least for four visits and exclusive breastfeeding – was discussed and resolution was sought.

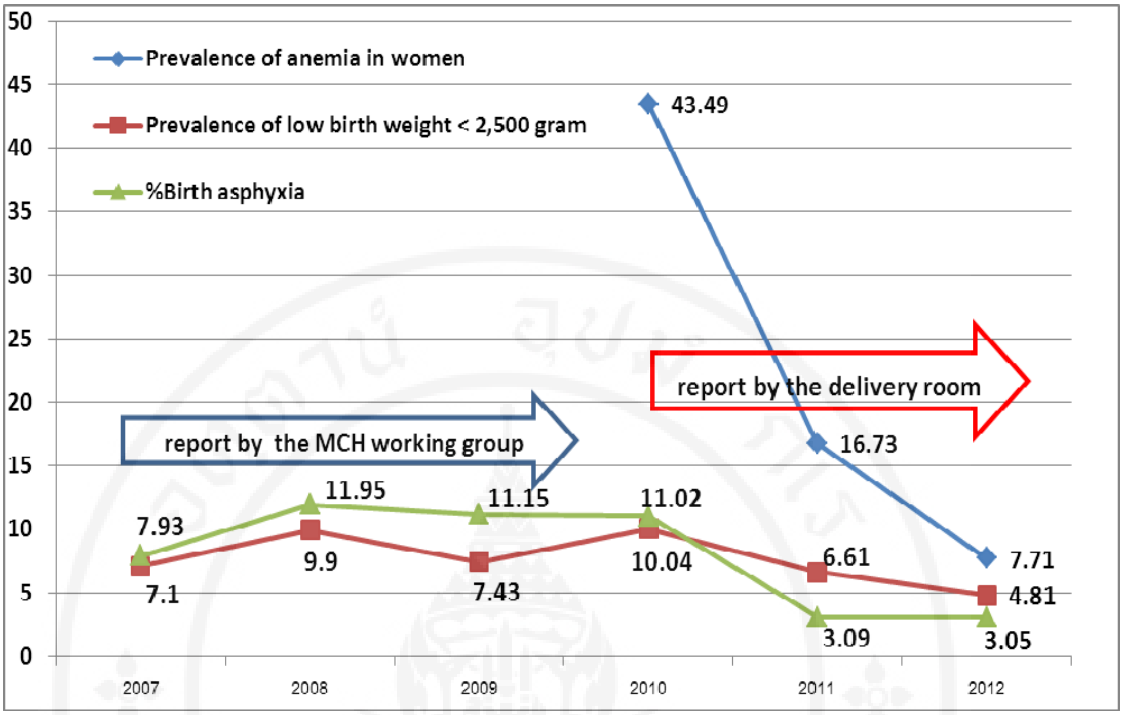


Figure 4.5 : District monitoring indicators to improve MCH risk protection in Kapho District since the fiscal year 2007 to 2012

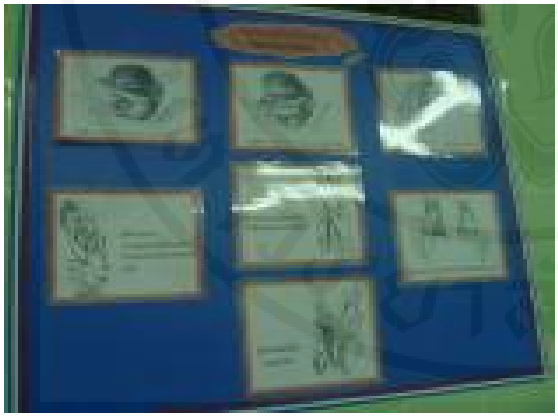
Figure 4.11 demonstrated all indicators for the improvement of MCH risk protection. By applying such parameters, prevalence of anemic women, birth asphyxia and low birth weight newborns were highly decreased. Redundant data collection was cancelled by the mean of using data collected from the delivery room and antenatal care handbook as a single source. By this method, reliable analytic data revealed more precise problems, resulting in better resolution and outcomes such as birth asphyxia problem as described below.

Birth asphyxia

To share and learn in post term group

Using the MCH handbook for screening preterm risk

The stick figure to help emergency in the delivery room.



Monitoring fetal heart rate throughout the period of childbirth.

The reconstruction of knowledge and practice Neonatal Resuscitation

Buy Doptone for each Primary Health Care Unit

Figure 4.6: Activities of implementation for birth asphyxia problem solution

Implementation activities for birth asphyxia problem solution.

Health financing

- Developing the MCH grant proposal for problem resolution.

MCH workforce

- Increasing the labor unit manpower by competency evaluation.
- Training of NST reading and interpretation with the Pattani hospital.
- Skill training in delivering the breech presentation and helping the shoulder dystocia delivery by the Pattani hospital.
- Annual knowledge reconstruction and practice on neonatal resuscitation.
- Regular review and improvement of the clinical practice guideline (CPG) performance according to new guidelines.

Equipment

- Doptone facilities rendered to all Primary Health Care Unit to examine and detect the abnormality heart rate of the fetus.

MCH information systems

- Using the data collected from the delivery room and antenatal care handbook as an only source.
- Using the MCH handbook for preterm risk screening.
- The MCH Board monitored and evaluated the issue in every meeting by using the Plan-Do-Check-Act (PDCA) process periodically in order to seek the most favorable solution.

MCH service delivery was divided into**:**

- **The mother part** included the followings**:**

- The stage at the exchange of learning in pregnant mothers, Post term.

- A referral system for those pregnant women with 38-week or more gestational age to the hospital for further antenatal care.

- Track management for post – term pregnancy. With the no-show within three days, the public health officers from the Primary Health Care Unit would search for and accompany the post-term pregnant mothers to the hospital.

- Initial pregnancy risk evaluation. Three or more maternal risks would be put forth to further surveillance and medical report.

- Health education in the care of pregnancy by involving the husband and family participation.

- **The baby part** covered:

- Screening of pregnant women at risk of preterm delivery. Information about the high-risk pregnant women would be given to the public health officials of Primary Health Care Unit to follow up closely.

- Guideline of pregnancy and pre-term care.

- A referral system for transferring the pregnant women and pre-terms to the Pattani hospital, where all the necessary resource were well facilitated.

- **Process during delivery** included:

- The initial pregnancy risk identification and evaluation. Three or more maternal risks would be put forth to further surveillance and medical report.

- Initial fetal heart rate monitoring and throughout the entire laboring period.

- High – Risk Unit preparation for the high - risk pregnancy.

- Partograph deployment during entire delivery period.

Monitoring & Evaluation:

The MCH Board monitored and evaluated the issue in every meeting by using the Plan-Do-Check-Act (PDCA) process periodically in order to seek the most favorable solution.

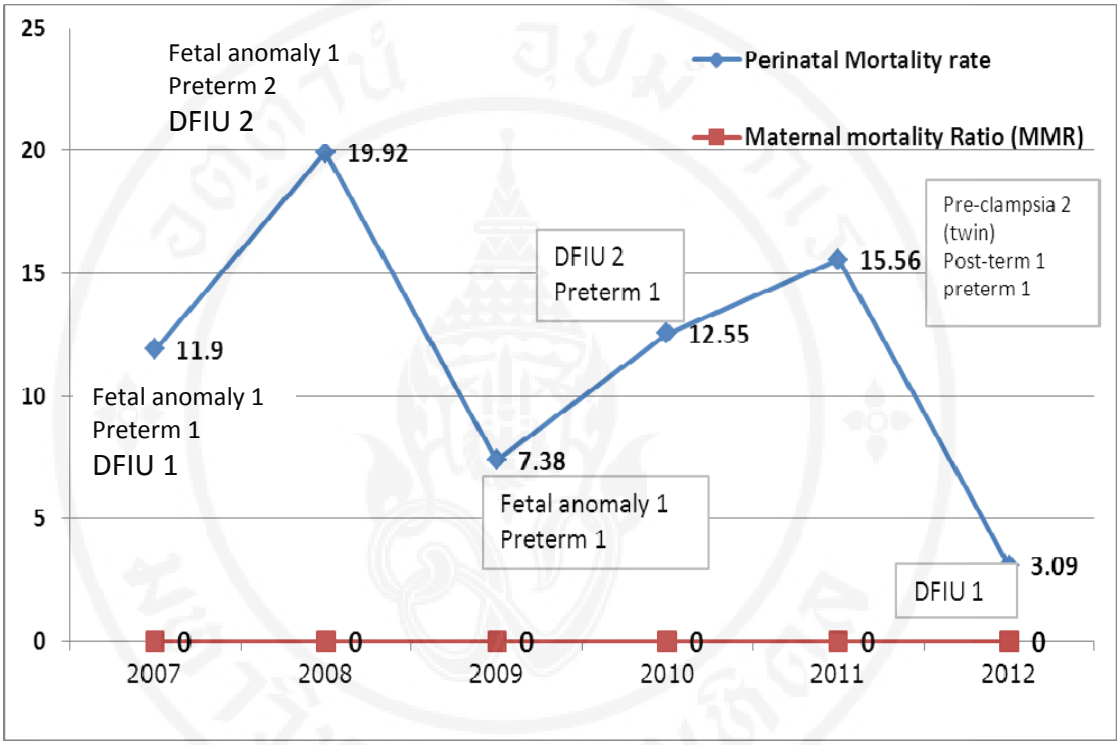


Figure 4.7: Indicators for district monitoring of MCH health improvement in Kapho District since the fiscal year 2007 to 2012

From figure 4.13, Maternal Mortality Ratio was shown to be zero per 100,000 live births, since the fiscal year 2007 to 2012, and the Perinatal Mortality Rate was as low as 3.09 per 1,000 total births in 2012.

CHAPTER V
DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

1. The District health system management positively influenced the quality of MCH care. As examples, Maternal Mortality Ratio was shown to be zero per 100,000 live births, since the fiscal year 2007 to 2012, and the Perinatal Mortality Rate was as low as 3.09 per 1,000 total births in 2012. Furthermore, there revealed improved service coverage to the MCH populations. For instance, four – section observation of ANC coverage showed an optimistic trend (69.9%, 78.98%, 80.43%) from the year 2010 to 2012. This was totally due to the comprehensive management system, comprising the following six core components: (i) service delivery, (ii) health workforce, (iii) health information systems, (iv) essential medication access, (v) financing, and (vi) leadership or governance.

2. Figure 4.10 that show the importance of the data acquisition. The source of reliable information definitely impacted the subsequent efficient management. That is to say, use of information in the MCH handbook in the delivery room is more accountable than from the MCH working group. Data from both were differentiated by the orange rectangle patch line. Discrepancies did exist when arriving to the practice and outcomes. To demonstrate, the ANC was recorded as above the set criteria in the year 2007 to 2009. Yet, when applying the guidelines in MCH handbook, the ANC was observed lower than the standard in the year 2010 to 2012. This was due to the following reasons:

- The staff performance was measured by indicators so they are afraid to report lower information criterion.
- From the year 2007 to 2009, the process of information storage was very poor. However, since 2010 to 2012, by use MCH handbook to record the information pertaining to the delivery room, information storing procedure became more reliable.

3. Once the MCH team applied such reliable information for situation analysis, actual problems could be actually identified. For examples, the left behind ANC coverage issues, encompassing early ANC before 12 weeks, ANC for at least four visits and exclusive breast-feeding were brought to discussion. This was carried out in every meeting by using the process of Plan-Do-Check-Act (PDCA) periodically in order to seek a solution, leading to favorable outcomes.

4. From table 4.2 show information of MCH policy/ project that connected to the activity in Kapho District since the fiscal year 2007 to 2012, the DHS, we need to consider district vertical relationships with higher management levels, its horizontal relationships with local departments of other ministries, between different health programs, and its external relationships with the communities and organizations it serve. It is, therefore, important to differentiate between district systems and the district level. District systems refer to the entirety of the district covering all elements and thus, all levels. The district level refers to the managerial stratum usually placed in the district capital that is hierarchically located between the national, regional or provincial levels, and the communities. It effectively affects the management of health workforce, financing, equipment, medicines and supplies.

5.2 Conclusion

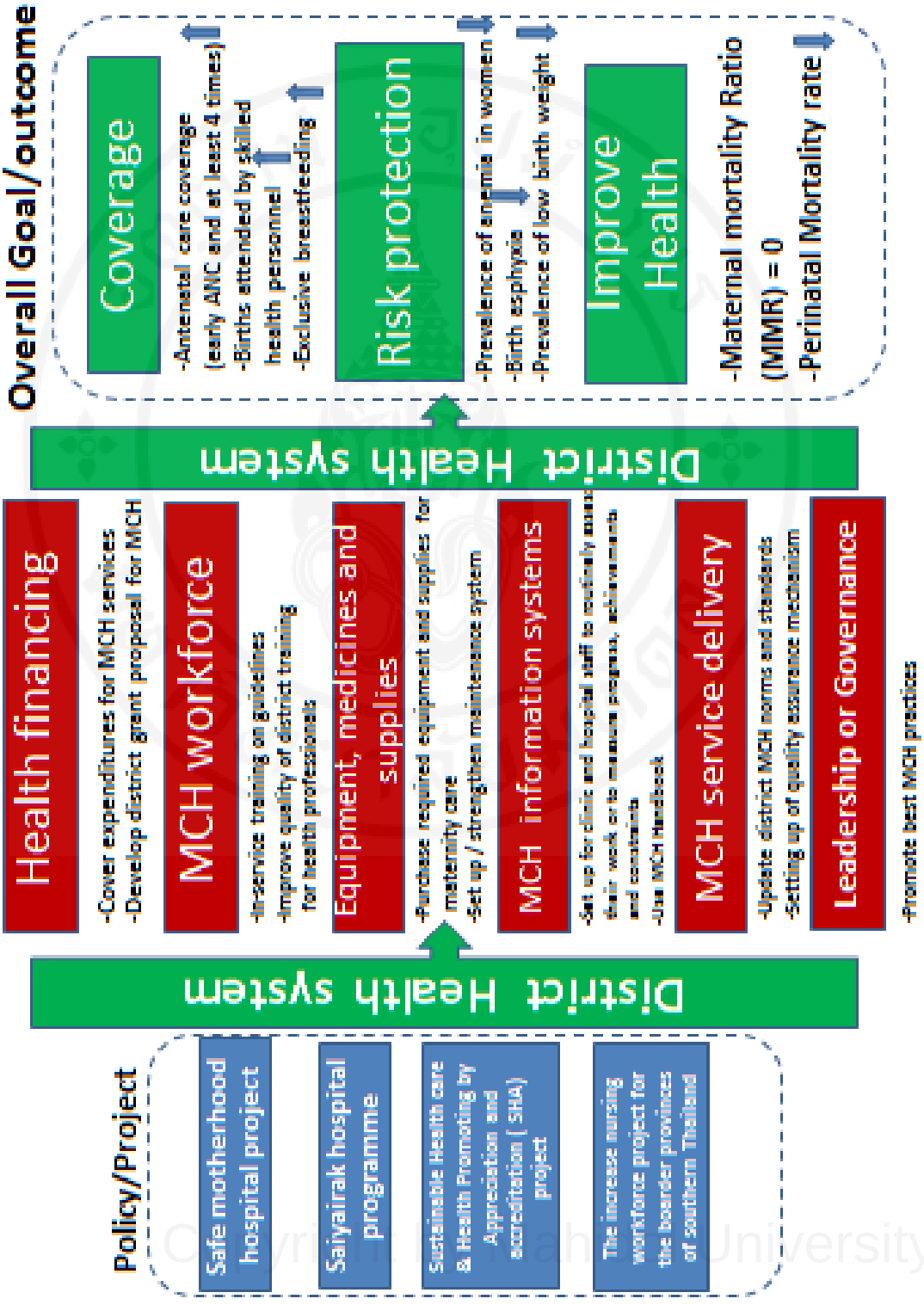


Figure 5.1 Framework of MCH project

From the figure 5.14 show framework of the MCH project incorporated the above-mentioned six core components into the health system so as to improve the health care and enhance health equity among populations in the Kapho District since the fiscal year 2007 to 2012, the framework significantly directed the concerned practitioners to consider a variety of relationships in the community in order to put forth the effectiveness. The first to mention was the district vertical relationships within the different management levels. Next, the horizontal relationships between the district and the local departments or involved ministries, as well as with different health programs. Lastly, its relationships with the external communities and organizations it served.

The six building blocks contribute to the strengthening of Kapho DHS in different ways. Key components of the health systems include, specifically, financing and health workforce. Additionally, some cross-cutting components, such as leadership or governance and health information systems, provide the basis for the overall policy and regulation of other health system blocks. Finally, medical products, technologies and service delivery, reflect the immediate outputs of the health system which are availability and distribution of health care.

Quality improvement is a method through which the effectiveness of activities within the MCH Service and changes were identified in order to make progression in service delivery. Situation analysis from the past experience was supported by a quality improvement framework and performed to review, improve and implement the strategies.

Finally, the framework enhanced the delivery of a qualified and safe service. As illustrations, Maternal Mortality Ratio was shown to be zero per 100,000 live births, since the fiscal year 2007 to 2012, and the Perinatal Mortality Rate was as low as 3.09 per 1,000 total births in 2012. Furthermore, there revealed improved service coverage to the MCH populations. For instance, four – section observation of ANC coverage showed an optimistic trend (69.9%, 78.98%, 80.43%) from the year 2010 to 2012. What's more, the clinical risk management system covered the potential MCH service to boost the risk protection and management. This could be obviously seen from the declined number of anemic women, birth asphyxia and prevalence of low birth weight newborns.

5.3 Recommendations

- The strengthened district health care systems could be essentially used as an excellent practical model for performance improvement.
- District is the most appropriate level to incorporate the top-down and bottom-up planning, to involve the entire community in planning and implementation, and to integrate the coordination between the government and local health care.
- Human resource development for DHS was based on PHC, requiring a comprehensive manpower policy for the entire system.
- In the district, human resource development rendered the followings:
  - provision of relevant in-service training
  - supervision and support
  - the re-orientation of health workers based on competency profiles

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