Towards realising primary health care for the rural poor in Thailand: health policy in action

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Abstract

We present the findings of a descriptive case study of a primary care unit (PCU) in rural Thailand five years after the introduction of Universal Health Coverage (UHC) in 2001. The aim was to access the quality of primary health care (PHC) in rural Thailand and to make recommendations to Thai stakeholders for its improvement within current resource constraints. The PCU was evaluated based on previously established standards and protocols. A theoretical perspective of PHC and its evaluation informed the attributes to be described; sources of evidence; methods of data-gathering; and approach to data analysis. The PCU was located in Nakhon Ratchasima ('Khorat') province, Thailand, and was considered by Thai stakeholders to be typical of the 9,738 PCUs in rural Thailand in terms of health profile of its patients and the health resources available to it.

We found that PCU service providers were knowledgeable of the way of life of their patients and their health problems; PHC programs (immunisations, ante and post natal care) were being conducted and common infections and minor injuries were being treated. On the other hand, inadequate resources were devoted to problem recognition and definition and health services for individuals were poorly coordinated. Because of lack of training and supervision for PCU staff, PHC services needed to be supplemented by the District Hospital. As a result, patients sometimes received inadequate care because information between services was not available in a timely manner.

The evaluation identified strengths and weaknesses in the quality of the delivery of PHC in rural Thailand by a careful study of one PCU. Thai stakeholders, including study participants, considered the recommendations appropriate for application in this setting and possibly other rural PHC settings in Thailand.

Abbreviations: GOHNET, Global Occupational Health Network; HIV/AIDS, human immunodeficiency virus/acquired immunodeficiency syndrome; PCU, Primary Health Care Unit; PHC, primary health care; SARS, severe acute respiratory syndrome; SIA, Safety Institute of Australia; UHC Universal Health Coverage.

Key words: quality in health care; primary health care; rural health care; Thailand.

Introduction

In 2001 Thailand established Universal Health Coverage (UHC) to provide primary health care (PHC) through its network of 9,738 primary care units (PCUs) (sometimes also called health centres) to make health care accessible for uninsured Thais (including about 40 million rural people). UHC (known as the '30 Baht Scheme') meant that, for patients, the cost of medical and hospital treatment was 30 baht per episode of care. [1] In October 2006, General Surayud Chulanont, the current Prime Minister of Thailand and Head of the Interim Government, abolished the 30 baht fee and made the health care program free. [2]

PHC services in Thailand provide treatment for common illnesses and injuries, health promotion, disease prevention and control and rehabilitation. PHC refers to first contact, continuous, comprehensive and coordinated care. [3, 4]

PHC for Thailand's rural poor has been problematic because of a shortage of rural medical practitioners [5] and challenges raised by recent epidemics, such as avian influenza, SARS and HIV/AIDS. [6, 7]

The authors, comprising the research team, looked at what PHC was being done, and how well it was being done, by one rural PCU. The aim was to provide Thai stakeholders, among whom were executives, senior provincial health officers and academics, with a report that would help them implement strategies to improve PHC throughout rural Thailand.

Methods

The authors evaluated the delivery of PHC at one PCU in Nakhon Ratchasima ('Khorat') Province, Thailand. The research design is best described as a case study. During the course of the study we were immersed in the life of the PCU for one month and lived in Provincial Health Services accommodation for that period.

The case study PCU was located about 250 km north-east of Bangkok and was chosen by the Thai stakeholders in collaboration with the researchers because it was considered to be representative of most PCUs throughout rural Thailand. Thai stakeholders included the Provincial Chief Medical Officer; Dean of Public Health from a rural university in another province; Community Hospital Director of the District Hospital; other provincial

health officers, including the Provincial Chief Development Officer in charge of Training and Research; and staff of the selected PCU and a Thai health professional/interpreter.

The population served by the case study PCU was comprised of 2800 villagers, most of whom were poor, [8] earning a seasonal income of about 3000 baht (around A$100) a month as labourers and small-scale farmers. [9] The nearest private doctor's clinic was 14 km from the PCU, but it was economically beyond the reach of most villagers. PCUs throughout the district were supported by a 30-bed referral hospital which served a total population of 27,616 people from 46 villages. Selected characteristics of the case study PCU and the district hospital are shown in Table 1.

Table 1: selected characteristics of the case study Primary Care Unit and the associated District Hospital

	PCU	**District Hospital**
Nurses	3 nurses: 1 nurse manager 1 general nurse (4 years training) 1 public health nurse (2 years training)	23 nurses (training details not available)
Doctors	1 doctor, 5 hours a month	4 full-time doctors
Dentists	1 dental assistant, 3 hours a month	2 full-time dentists
Pharmacists	1 pharmacist, 3 hours a month	3 full-time pharmacists
Additional experts	None	15 (eg, health promotion officer, radiologist)
Population served	2,800 people from5 villages rural poor small scale farmers serving geographical area of $30km^2$	27,616 people from 46 villages rural poor small scale farmers serving geographical area of $200km^2$
Capacity	No inpatients beds 6,000 outpatients consultation per year	30 inpatient beds 38,000 outpatients consultations per year
Facilities	Two story concrete building Motor cycle for nurses providing community work	Single –level building with dormitory for inpatient accommodation; outpatients; radiology; laboratory; administrative areas; conference facilities; cars and ambulances.

According to the Community Hospital Director of the District Hospital in which the research was conducted, the main causes of death for the population served by the case study PCU were:

- Heart/circulatory disease (151.96/100,000 persons)
- HIV/AIDS and other infections (81.3/100,000 persons)
- Cancer (63.6/100,000 persons)
- Accidents (42.4/100,000 persons).

The leading causes of morbidity were respiratory disease, digestive problems, musculo-skeletal problems, infections and circulatory diseases.

The questions used to guide the evaluation were:

- What PHC is provided by the PCU?
- How well is PHC delivered by the PCU?

During the process of data collection, we sought to elicit whether the care provided by the PCU was relevant and appropriate for the patient; done well; made available in a timely manner to patients who needed it; continuous with other care and care providers; performed in a safe, efficient caring manner; and respectful of the patient. [10]

Starfield's approach to evaluating the quality of primary health care [11] informed the study variables and methods of data-gathering (Table 2). The latter were primarily qualitative, and included interviewing, focus groups, observations, and documentary and photographic analysis. Data were collected in field notes, and when focus groups and interviews were conducted they were then translated into English.

By accompanying the PCU staff on all their duties and using Kemmis and McTaggart's 'spiral of self-reflective cycles', [12] we reflected daily with the PCU staff on the data gathered. Each afternoon the researchers (with their field notes) and the PCU staff would discuss the patients seen in the clinic that day. These discussions involved examination of patient records in family folders. The family folder is the primary health record file in the PCU and it contains brief health information of all family members, a genogram, family members' general characteristics, major health problems of each, and progress notes on treatment. [13] Questions arising from these discussions provoked subsequent investigations. Every evening the researchers reflected on the data gathered and prepared questions to be answered the following day with the help of the PCU staff.

Thai stakeholders participated in two reflective focus groups (Table 3), each of about three hours duration; one in the first week of the research and a second at the end, when an interim report was presented and discussed. Both focus groups were facilitated by the principal researcher, and a Thai interpreter, who was also a health professional, was used throughout the project.

Table 2: Conceptual framework[1] used to guide study variables and data collection methods

Starfield's unique attributes and appropriate sources of evidence[1]		**Application to this study**
Unique attributes of PHC* and process elements/study variables* **	**Sources of evidence****	**Methods used in this study**
First contact care: Accessibility of the service and the extent of actual use of the service Process element of performance in regard to first contact care: utilisation.	Program design: hours of availability; accessibility to public transport; provision of care without requirements for payment in advance; facilities for handicapped; after-hours arrangements; ease of making appointments; and absence of language and other cultural barriers.	Program design was accessed by: interviews with staff and local health officials; taped focus groups with stakeholders; observations of daily activities of PCU over one month; observations of patient care; interviews with patients and villagers; review of charts of patients seen each day; home visits; attendance at governance meetings. Reviews of patients claims/costs under Universal Health Coverage (UHC); receipts; records (family folders); clinical and management documents of PCU. Attendance at presentations of 1) structure of health services in the District; and 2) Structure of health services at PCU. Documents reviewed: agenda of April meeting of the Contracting unit of the PHC Board; avian influenza simulation rapid response team exercise; after action review of above; checklist of yearly review of PCU activities; health education review document, which every household had to complete; health survey for diabetes and hypertension; list of disabled people; antenatal record book; personal health record book. Review of clinical information system: methods, nature of, frequency of, and type of communication.
Longitudinality: Person focused contact over time (involves the extent of provider-consumer contact for all but referred care) Process elements of performance in regard to longitudinality: population eligibility; patient identification with a particular provider.	Review of patient lists and interviews with patients about the regularity of their contact for disease management; management of signs and symptoms; administration(need for certification of illness and health) test results; need for and return from consultation for secondary level care; and prescription of drugs and other therapies.	
Comprehensiveness: Primary health care services to meet the common needs of the consumer over time. Process elements of performance in regard to comprehensiveness: problem recognition; diagnosis; management and assessment; knowledge of patient's social profile; recognition of psychological problems; attitude towards and knowledge of preventive and psychological needs.	Recognition of the range of activities the system is designed to handle.	
Coordination: Health –related services and information bought to bear on patient care. Process elements of performance in regard to coordination; recognition of information from visits elsewhere; documentation of medication and compliance; problem lists/problem-orientated medical records; preventive care.	Patient records and interviews; seeking information about prior visits; the organized system of referral and retrieval of information about the results of referral	

1. Starfield B. Primary care: balancing health needs, services and technology. New York: Oxford University Press; 1998 (*p. 29-30; **p. 282; ***p. 255-261)

Table 3: Focus group participants and procedures

FOCUS GROUP 1		FOCUS GROUP 2	
Participants	**Procedures**	**Participants**	**Procedures**
• PCU staff: nurse manager, general trained nurse, public health trained nurse • Provincial Chief Medical Officer • Community Hospital Director of District Hospital • Nurse Manager of PCU at District Hospital • District Chief Health Officer (Public Health) • Health professional/interpreter	Topics discussed: • The nature of the research project, and what was required of the participants. All questions were answered and suggestions from participants recorded.	• PCU staff: nurse manager, general trained nurse, public health trained nurse • Provincial Chief Medical Officer • Dean of Public Health* • Community Hospital Director • Nurse Manager of PCU at District Hospital • District Chief Health Officer • Chief of Local Government • Head of Administration in Local Government • Assistant Provincial Chief Medical Officer • Provincial Chief Development Officer in charge of training and research and • Deputy Provincial Chief Development Officer (training and research) • Health professional/interpreter	Topics discussed: • The research process • The research findings, conclusions and recommendations. Stakeholders' opinions and discussion points, including possible means of implementation of recommendations, were recorded.

*At the time of the focus group 2 this informant had resigned from this position temporarily and was elected Senator of the Thai legislature. After the coup of 2006, he returned to the position of Dean of Public Health.

The standards and protocols against which the process elements were evaluated were those of the Australian College of Rural and Remote Medicine [14] and the Royal Australian College of General Practitioners, which were familiar to the Thai stakeholders and the researchers. The principal researcher was familiar with agricultural chemical management strategies as a member of the Safety Institute of Australia (SIA) and the Global Occupational Health Network (GOHNET).

The research proposal was approved by the Human Research Ethics Committee of the University of New England, Armidale, Australia. Nakhon Ratchasima Province Health Services accepted the Australian Ethics Committee approval to proceed. Information

sheets for participants and consent forms were translated into Thai and the Thai interpreter ensured that the informants understood their part in the research process.

Results

First contact care

Accessibility and utilisation of the services provided by the PCU were influenced by the lack of public transport. Most patients walked to the clinic, others came on the back of trucks, or on motorcycles carrying up to four people (including children). Handicapped or elderly patients were sometimes wheeled along the side of the road in barrows. The District Hospital reimbursed a local villager for the use of his truck in emergencies, when it was used as an ambulance.

Thais registered at other PCUs were welcomed at the PCU if they chose to come there. Elderly people attended for repeat prescriptions and minor illnesses. Patients with minor injuries came for dressings, because some of them could not afford to buy bandages or antiseptic.

The usual number of patients per day was between 10 and 20. On antenatal days, the PCU staff attended to between 20 and 30 women. When the doctor, pharmacist and dental assistant visited the unit, the number of patients swelled to between 60 and 80. Whereas the nurses sometimes spent up to an hour on a consultation, the doctor spent about five minutes with each person. The dental assistant bought a mobile dental chair to the PCU and treated about 15 people during each three hour session; extracting teeth and prescribing antibiotics for abscesses. The dentist at the District Hospital performed more difficult procedures (eg, fillings).

Longitudinality

Measurement of 'longitudinality' relates to who in the population is eligible to receive PHC from this PCU, and how exclusive that eligibility is. This is linked to the concept of identification of the patient with the provider over time.

Thais are registered at the PCU nearest where they live for purposes of UHC, but people sometimes sought care elsewhere. This occurred for reasons of privacy (e.g. women seeking abortions), convenience (e.g. seasonal workers who became injured in the district), or lack of confidence in the staff of the PCU at which they were registered. Clinical reports were not sent back to the home PCUs of such patients.

When a person was referred to a hospital, or for specialist services in Bangkok, the contact between the patient and staff at the PCU was disrupted. This was because the PCU staff did not receive timely advice on the diagnosis, treatment or prognosis that was made elsewhere, nor were they consulted on what part they could take in the patient's treatment or rehabilitation.

Comprehensiveness

As indicated in Table 2, measures of the comprehensiveness of PHC services deal with: problem recognition; diagnosis, management and reassessment; knowledge of patients' social profile; recognition of psychological problems; and attitudes towards and knowledge of preventive and psychological needs. The following examples demonstrate the complex nature of the problems presenting to the PCU and the inadequacy of some diagnoses by PCU staff:

1. While waiting to see the doctor on his monthly visit to the PCU, middle-aged women chewed betel nuts as they talked together. When these women went to the dentist for extraction the first author noted what appeared to be palatal leucoplakia (precancerous slowly developing change in the mucous membrane) and gum disease. The same women complained to the doctor of longstanding insomnia and abdominal pain. They were diagnosed with 'insomnia' and 'dyspepsia', and given sedatives and antacids. It was neither considered nor recorded that the women were betel-nut chewers, although they openly enjoyed the habit as they waited to be seen.

2. A cluster of four people, one man and three women, presented over a period of 18 hours with fatigue, headaches, dizziness, itchy skin, blurred vision and sore eyes. On examination they all exhibited very low blood pressure. The diagnosis was 'weakness', and they were treated with vitamin B complex and analgesics without advice on the possible cause of the condition or means of preventing its recurrence. We found that these patients were all agricultural workers who did not use personal protective equipment when spraying chemicals in the hours before presentation at the PCU. The most severely affected woman had a blood pressure of 90/60. The researchers and PCU staff followed up this woman the next day at her second worksite and found that her blood pressure had returned to normal.

3. Six people, four men and two children, presented with cuts and deep lacerations to the feet and lower legs. These injuries, including those of the children, occurred at work, and were caused by knives, machinery or broken glass. The villagers either went without shoes entirely or wore rubber 'thongs' or 'flip-flops'. Although antibiotics were used, healing was delayed because the staff were not permitted to take swabs for microbiological diagnosis and sensitivity testing; dressings were cheap and not water-proof; and the local water was not clean. Preventive strategies (e.g. encouragement to wear shoes) were not considered. Two of the men smelt of alcohol and their regular and excessive alcohol intake was known to the PCU staff. The latter did not comment or try to intervene about the alcohol abuse, explaining to us that it was a private matter for the patient.

We observed that many older patients presented regularly with the same complaints, and received the same combination of medications, without their clinical data being reviewed

periodically for reassessment. One woman with diabetes, who had multiple PCU service contacts, several inpatient stays in the District Hospital and ten doctor consultations, had no reassessment or enquiry about her lack of compliance with control of blood sugar.

Coordination

Measures of coordination included: retrieval of health information about consultations conducted elsewhere; documentation of medication and compliance; problem lists/ problem-orientated medical records; and population and individual preventive care. Coordination was problematic at the PCU in many ways.

There were instances of children with congenital disorders and blindness who had been referred to specialists, but no information accompanied the family on return, or was sent back to the PCU. The PCU did not have a landline telephone. The staff relied for communication on mobile technology, erratic internet connections, and personal travel (mainly by motorcycle). They did not have ready access to supervision about problem cases.

There were several tools used in the PCU for documentation of patients' records: the family folder; a personal records book; and an antenatal care records book. Information on the social, occupational and economic history of the patient, together with the history of clinical or surgical contact, was not gathered together in one file. Primary data such as those contained in laboratory reports were transcribed by hand, with the possibility of introducing errors. The personal records book and the antenatal care records book were used to a variable extent by the community.

The PCU staff showed some natural reserve in talking of 'moral' or 'private' matters (e.g. alcoholism, drug addiction and HIV/AIDS) although, on enquiry from us, they were generally well aware of patients' problems. This was not just discretion in front of the researchers: such issues tended to be ignored, not being discussed in interviews with patients or recorded in family folders. The Thai interpreter would return at a later stage by himself without the 'farangs' (Thai word meaning foreigners) and discuss some of these culturally sensitive issues fully with the staff to gain a better understanding of their approach in these matters.

Statistics on HIV/AIDS were collated by local government officials. Testing was done confidentially at the District Hospital and provision for income support was available through local government. However, information that existed on the incidence of HIV/AIDS and its prevention was not freely disseminated. Condoms were available on request as part of the HIV/AIDS program of the Ministry of Public Health and we were told PCU staff advertised this in villages. However, although AIDS was the fifth most common cause of death in the district, only one man asked for condoms during the period of our research. In antenatal care, women were given the choice of an HIV test, but, as they had to pay themselves, only about half took up the offer.

Medicines were handed out liberally after each consultation. These included antibiotics,

anti-inflammatories, antifungals, antihistamines, analgesics, antacids and sedatives. No record of the medications received by the family was included in their folder. Some medications (e.g. digitalis) could not be dispensed by the nurses, even for repeat prescriptions, and writing out repeat prescriptions took up a large part of the time of the doctor's monthly visit to the PCU.

Discussion

Principal findings

The PCU can act as a 'gatekeeper' to specialist health services in the District Hospital, protecting the patient from unnecessary medical treatment and limiting access to high-cost medical services. [15] There is a trade-off between freedom of the patient to choose and operational efficiency of health services management. Both the transport arrangements and the lack of advanced-level medical functions (e.g. reassessments, clarifying differential diagnoses, supervision and training, and complex case management) at the PCU did not allow it to act in a gatekeeper role. The PCU could not provide comprehensive care for the patients over time because of a lack of diagnostic skills of the PCU staff; and lack of access to direct supervision by the PCU staff.

PHC differs from secondary and tertiary care because of the lack of differentiation of the problems that present in the primary care setting. [11] The women with insomnia, decayed teeth and dyspepsia are examples of poor problem recognition and staff-selective attitudes towards preventive health because betel nut is the most widely used stimulant in the developing world and is associated commonly with dental decay, oral cancers, insomnia, stomach discomfort and intestinal cancers. [16] Betel-nut chewing was considered by the PCU staff to be the private business of the patients and not part of their responsibility as health professionals. Similarly the presenting symptoms of the agricultural workers were not considered work-related. However, such symptoms are commonly attributed to agricultural chemical toxicity. Acute chemical toxicity is the major problem arising from the use of pesticides in the developing world. [17] Community preventive strategies were not developed from an awareness of local need because preventive health programs were decided nationally. Despite the weakness of problem definition, the health data from the PCU went on to become statistics in district, provincial and national health databases.

PCU staff were not included in ongoing health interventions initiated by other services, with the result that patients could not go to the PCU for informed follow-up care. Because these patients were poor and not medically literate, this was a deficiency in the quality of health services available to them. While the family folder is important institutionally and traditionally because it conveys a family focus, it had shortcomings as a medical record as it was not adapted to the mobility and privacy of the rural people.

Strengths and weaknesses of the study

The strengths and weaknesses of this study are those associated with the case study design. A strength of the design is the intense focus on a single case (here it was the rural PCU). Such an approach has the potential to provide new insights into complex organisational issues that may be used to build theory. [18] This research was further strengthened by the use of Starfield's conceptual framework [11] and the involvement of PCU staff and Thai stakeholders in the final stages of data analysis and interpretation. The main weakness of the design is that the results are not able to be generalised to the relevant population; a problem of external validity. Despite these known limitations, Thai stakeholders accepted the findings presented in an interim report as a true account of PHC at that case study PCU, and considered them to be applicable to other rural PHC settings in Thailand.

Policy and practice implications

As a result of our study, it was recommended that health professionals in rural PCUs in Thailand would benefit from:

- clinical supervision with specific, regular and close attention from experts;
- provision of timely/appropriate/accurate information to use for patient care;
- training programs for clinical, community, occupational and management skills-development at the PHC level; and
- authority to prioritise services for the disabled and aged through the development of a health advocacy role for the PCU Manager.

With a community approach in PHC as recommended by the World Health Organization (WHO) in 2003, [7] PCU staff should be trained to recognise and institute control measures for occupational illnesses; conduct assessments of mental status, and provide supportive counselling for alcohol and drug abuse; teach children to floss and brush teeth regularly; and provide education on HIV/AIDS prevention. Thailand has one of the highest pharmaceutical drug consumption rates per capita in the world, [19, 20] a fact that indicates a strongly embedded bias towards curative rather than preventive medicine. Improving the efficiency of the supply and use of drugs is one management system change that would reduce costs substantially. Health initiatives to provide trained health professionals are needed where public health infrastructure and occupational and environmental health are poorly developed and the community lives in or near poverty. Research into methods and processes of collaboration and communication between primary and secondary care needs to be carried out in order to integrate community, PCU and hospital services.

Conclusion

This process evaluation of one PCU in rural Thailand five years after UHC was

introduced in 2001 was undertaken to provide Thai stakeholders with recommendations to improve the quality of PHC within current resource constraints. The evaluation concluded that improvements in the performance of PHC in rural Thailand could be made so that resource use could be maximised.

Thai stakeholders contributed to the evaluation and accepted the interim report as a true account of PHC at the case study PCU. They considered the recommendations appropriate for application in this setting and possibly other rural PHC settings in Thailand and indicated that they intended to implement the recommendations in the study province.

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Competing interests

The authors declare that they have no competing interests.

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