

Promoting occupational health services for workers in the informal economy through primary care units

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Thailand has been spending greater efforts to improve safety, health and working conditions of informal economy workers such as home workers, street vendors, workers in small construction sites, or self-sustained farmers, often in remote villages. These informal workers account for a significant proportion of workers in Thailand and make an enormous contribution to the country's economy. However, they often work in substandard conditions, exposed to various hazards in the workplace without appropriate safety and health training and information. In order to reduce these risks, the Bureau of Occupational and Environmental Health, the Ministry of Public Health in Thailand has been conducting a pilot project to provide occupational health services at primary care units (PCU) for workers in the informal economy. This working paper reviews and analyses the substantial efforts of the PCUs in different districts under the guidance of the Bureau for Occupational and Environmental Diseases of the Ministry of Public Health. The paper highlights the impact of their efforts and recommends the next important steps at both national policy and provincial levels. It reinforces the message that Decent Work must be safe work, in the informal economy and elsewhere.

ILO Asia-Pacific Working Paper Series

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Somkiat Siriruttanapruk, Koji Wada, Tsuyoshi Kawakami
September 2009

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ISBN: 9789221227342

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ILO Subregional Office for East Asia

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First published [2009]

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Promoting occupational health services for workers in the informal economy through primary care units / Somkiat Siriruttanapruk, Koji Wada and Tsuyoshi Kawakami ; ILO Subregional Office for East Asia. - Bangkok: ILO, 2009

xii, 20 p. (ILO Asia-Pacific working paper series)

ISBN: 9789221227342; 9789221227359 (web pdf)

ILO Subregional Office for East Asia

occupational health / occupational safety / health service / primary health care / informal economy / Thailand

13.04.2

ILO Cataloguing in Publication Data

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Printed in Thailand

Preface

Thailand has been spending greater efforts to improve the safety, health and working conditions of informal economy workers such as home workers, street vendors, workers in small construction sites, or self-sustained farmers, often in remote villages. These informal workers account for a significant proportion of workers in Thailand and make an enormous contribution to the country's economy. However, they often work in substandard conditions, exposed to various hazards in the workplace without appropriate safety and health training and information. There is an urgent need to deliver practical occupational safety and health (OSH) protection measures to these workers.

The Ministry of Public Health of the Royal Thai Government has strengthened its Primary Care Unit (PCU) systems and the ministerial policy to respond to this important challenge. The Ministry has re-trained PCU staff at district levels in basic occupational safety and health issues and the trained PCU staff have started providing practical OSH services. The PCU staff work in the community where people live and are well-placed to know the immediate needs of local workers and to provide sustained OSH services to reduce OSH risks and promote a preventative culture in their work.

The International Labour Organization (ILO) also joined the efforts of the Ministry and learned much from the efforts of the informal economy workplaces. The efforts in Thailand have provided a good model for many other countries which need to establish workable OSH services in their informal economy workplaces, and have often been referred to at regional and international levels.

This working paper reviews and analyses the substantial efforts of the PCUs in different districts under the guidance of the Bureau for Occupational and Environmental Diseases of the Ministry of Public Health. The paper highlights the impact of their efforts and recommends the next important steps at both national policy and provincial levels. It reinforces the message that Decent Work must be safe work, in the informal economy and elsewhere.

This detailed analysis of the impact of the PCU model as an OSH service provider to informal economy workplaces was jointly carried out by Dr Somkiat Siriruttanapruk and his team in the Bureau of Occupational and Environmental Diseases, Department of Disease Control, Ministry of Public Health of Thailand, Dr Koji Wada, Kitasato University Faculty of Medicine, and Dr Tsuyoshi Kawakami, Senior OSH Specialist in ILO Subregional Office for East Asia. Mr Teerasak Siriratanothai and Ms Jae Eun Kim in ILO Subregional Office for East Asia provided secretarial assistance. This review work received financial support from the ILO/Korea Partnership Programme. The paper is expected to help Thailand and other countries understand better the impact of the PCU model on informal economy workplaces and to strengthen the national policy response and actions at the workplace level.

Bill Salter
Director
ILO Subregional Office for East Asia

Table of contents

page

1. Introduction.....	1
2. Objectives of the report.....	1
3. Review of occupational health services in Thailand.....	2
3.1 Labour force in Thailand.....	2
3.2 Ministries relevant to occupational health services in Thailand.....	2
3.2.1 Ministry of Public Health.....	3
3.2.2 Ministry of Labour.....	3
3.2.3 Ministry of Industry.....	3
4. Primary care units in Thailand.....	3
4.1 The structure of public health services in Thailand.....	3
4.2 PCUs in Thailand.....	4
5. Rationale for encouraging occupational health services at primary care units.....	5
6. The project by the Ministry of Public Health from 2004 to 2005.....	5
7. The project by the Ministry of Public Health in 2007.....	6
7.1 Method and activities.....	6
7.2 Expected outcomes.....	7
8. Findings at the primary care units and provincial health offices.....	7
8.1 Summary of findings.....	7
8.1.1 Occupational health services provided at PCUs.....	7
8.1.2 Allocation of resources for PCU staff.....	7
8.1.3 Knowledge of occupational health services among PCU staff.....	7
8.1.4 Health volunteers.....	8
8.2 Public Health Office in Samutprakarn province.....	9
8.3 PCU Te-Pa-Ruk, Samutprakarn province.....	10
8.4 PCU Tai-Ban, Samutprakarn province.....	10
8.5 Public Health Office in Phayao province.....	11
8.6 PCU Ban-Lao, Phayao province.....	11
8.7 PCU Mae-Peum, Phayao province.....	12
8.8 PCU Pa-Sang Hospital, Lamphoon province.....	12

	<i>page</i>
8.9 PCU Bang-Ya-Prak, Samutsakhorn province.....	13
8.10 PCU Ban-Kam-Pra, Samutsakhorn province.....	14
9. Good practices.....	14
10. On-going actions.....	15
10.1 Intensive follow-up support to PCUs by the Bureau of Occupational and Environmental Diseases, the Ministry of Public Health.....	15
10.2 Good support for PCUs by the Provincial Health Office.....	15
10.3 Promoting self-initiative of workers and employers in improving occupational health.....	15
10.4 Focusing on local needs.....	15
10.5 Combining occupational health issues with other priorities.....	15
11. Recommendations for future actions in occupational health services at primary care units.....	16
11.1 Summary of recommendations.....	16
11.2 Central governmental and provincial levels.....	16
11.3 At PCU level.....	18
12. Conclusions.....	20

Acknowledgements

The authors would like to acknowledge the staff of the Bureau of Occupational and Environmental Diseases, the Department of Disease Control, the Ministry of Public Health, Thailand for assistance during the entire mission. The authors also acknowledge the staff at the target PCUs and public health centres. We are grateful also to Ms Parichart Srinopnikom for her translation between English and Thai.

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Abstract

The health of workers is essential to productivity and economic development. However, occupational health services are often not provided to workers in small and medium sized enterprises, and in the informal economy. In Thailand, the Bureau of Occupational and Environmental Health, the Ministry of Public Health has been conducting a pilot project to provide occupational health services at PCUs for workers in the informal economy. This pilot project has been funded by the ILO. The aim of this report was to review the progress of OSH services by PCUs and to propose policy recommendations to the Ministry of Public Health in order to develop sustainable occupational health services for workers in the informal economy at PCUs in Thailand.

Good practices were identified in the pilot project: 1. Intensive follow-ups to PCUs by the Bureau of Occupational and Environmental Diseases; 2. Good support to PCUs by provincial public health offices; 3. Promoting self-initiative of workers and employers in improving occupational health; 4. Identifying and supporting local needs; and 5. Combining occupational health issues with other priority issues such as food hygiene and product quality control.

The PCUs targeted workplaces in the informal economy to reduce their OSH risks. The PCU staff visited the target workplaces once or twice a month and provided the following services: risk assessment and advice on workplace improvement; health surveillance of work-related diseases and chronic diseases; basic occupational health education to workers and employers; and provision of safety equipment.

The following are recommendations for PCUs to further develop sustainable occupational health services to the informal economy:

1. Recommendations for short-term actions:
 - (a) Central government and provincial levels:
 - (i) Formulating clear guidelines on occupational health services at PCUs;
 - (ii) Increasing the regular budget allocation to occupational health services by PCUs.
 - (b) PCU level:
 - (i) Adding the results of occupational health assessments to the family health files of PCUs;
 - (ii) Advising the PCU staff to focus on practical low-cost improvement approaches in basic occupational health services.
2. Recommendations for long-term actions:
 - (a) Central government and provincial levels:
 - (i) Establishing national occupational health service strategies to meet local needs;
 - (ii) Promoting inter-ministry collaboration;
 - (iii) Collaborating with local technical institutions such as universities and other health research institutions;
 - (iv) Expanding the coverage of employment injury compensation to all workers.

(b) PCU level:

- (i) Training local health volunteers as basic occupational health service facilitators.

A pilot project of occupational health services for workers in the informal economy through PCUs has been completed with new experiences in the initial target provinces. PCU staff were able to access workers in the informal economy systematically through their community health network. The system for providing occupational health services at PCUs for workers in the informal economy will become a model not only for other provinces in Thailand but also for other developing countries.

About the author

Dr Somkiat Siriruttanapruk is an Occupational Health Physician in Thailand. His current post is Deputy Director of the Bureau of Occupational and Environmental Diseases, Department of Disease Control, Ministry of Public Health. He graduated from Ramathibordi Medical School, Mahidol University in 1988 and attained his MMedSc. and PhD. in Occupational Health from the University of Birmingham, U.K. Currently, his research topics are mainly on the development of occupational health services, including the Basic Occupational Health Services (BOHS) at both national and local levels.

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The responsibility for opinions expressed in articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by the International Labour Office of the opinions expressed in them, or of any products, processes or geographical designations mentioned.

Abbreviations

EII	Employment Injury Insurance scheme
ILO	International Labour Organization
NGO	Non-Governmental Organization
NICE	National Institute for the Improvement of Working Conditions and Environment
OSH	Occupational Safety and Health
PCU	Primary Care Unit
WHO	World Health Organization
WIND	Work Improvements in Neighbourhood Development
WISE	Work Improvements in Small Enterprises

1. Introduction

Industrially developing countries, including Thailand, have increasingly taken effective measures to prevent work-related diseases and to protect and promote the health of workers. However, there are still significant gaps between the workplace needs and the available government occupational health services. Due to globalization, new occupational hazards are increasingly spreading to developing countries. In particular, workers in the informal economy often face occupational hazards and do not have adequate occupational health services. Vulnerable workers, such as children, women, elderly workers, disabled workers, and migrant workers, in many developing countries are involved in the informal economy and are not able to access occupational health services. This is due to limited budgets and resources allocated to these services for the informal economy. Moreover, informal economy workplaces are often scattered and require innovative approaches to enable systematic access.

The World Health Organization (WHO) published *Global Plan of action on workers' health* in May 2007¹. It recommended several strategies such as 1. Establishing national policies for occupational health; and 2. Covering all workers with essential interventions and basic occupational health services for the primary prevention of work-related diseases and injuries. Basic occupational health services are an application of Alma Ata principles in occupational health.² The following principles are applied to basic occupational health services:

- Available to all working people;
- Address local needs;
- Adapted to local conditions;
- Affordable to providers and clients;
- Organized by the employer for employees;
- Provided by the public sector for the self-employed and the informal sector; and
- Supported by intermediate level services.

In 2004, the Bureau of Occupational and Environmental Diseases, the Ministry of Public Health, commenced the project to provide occupational health services at PCUs. PCUs in Thailand cover almost all communities and provide primary health care services. As of August 2006 there were 7,717 PCUs in Thailand. Even though PCUs have a comprehensive community network and are aware of the real situation of residents, few PCUs provide occupational health services. The provision of basic occupational health services at PCUs is consistent with international trends. This approach could be a good model not only for other provinces in Thailand but also for other countries.

2. Objectives of the report

The Bureau of Occupational and Environmental Diseases, the Ministry of Public Health, Thailand, designed and carried out two pilot projects to provide basic occupational health services to the informal

¹ *Global Plan of action on workers' health 2008-2017*. World Health Organization, 2007, http://www.euro.who.int/occhealth/networks/20070515_5 (accessed 29 August 2007).

² J. Rantanen et al.: "The opportunities and obstacles to collaboration between the developing and developed countries in the field of occupational health" in *Toxicology*, (2004), Vol.198, pp. 63-74.

economy. The ILO provided some financial and technical assistance to ensure the success of the project and support the initiative of the Bureau. ILO's Occupational Health Service Convention, No. 161 and other key ILO OSH standards were referred to. The first pilot project was conducted from 2004 to 2005 in order to develop an occupational health service model through PCUs. The second pilot project from February 2007 to November 2007 aimed to expand the occupational health service model to workers in the informal economy at eight PCUs.

The objectives of the report are:

1. To describe the current status of occupational health services through PCUs, especially:
 - (a) how PCU staff select their target workplaces and how they approach the selected workplaces;
 - (b) how often PCU staff contact their target workplaces;
 - (c) the type of occupational health services provided by the PCUs;
 - (d) how the PCU staff balance their occupational health service workload with other routine primary health care service activities and how the PCUs secure sufficient time for occupational health services.
2. To learn from the viewpoints of multiple stakeholders of PCU services including local, provincial and national authorities, workers, employers and others.
3. To develop policy recommendations for the Ministry of Public Health and relevant ministries to further strengthen sustainable occupational health services at PCUs.

3. Review of occupational health services in Thailand

3.1 Labour force in Thailand

The total workforce in Thailand was about 33.8 million in 2003, according to the report of the labour force survey.³ At least 51.4 per cent of the total population was working in the informal economy. Approximately 40 per cent of the total population worked in agriculture, about 16 per cent in manufacturing, and about six per cent in construction. There were about two million migrant workers in Thailand, most of them from Myanmar.

3.2 Ministries relevant to occupational health services in Thailand

In regard to occupational health services in Thailand, there are three ministries involved: the Ministry of Public Health, the Ministry of Labour, and the Ministry of Industry.⁴ Each ministry has its own perspectives to strengthen the occupational health of workers or farmers.

³ *Labour Force Survey*. National Statistics Office, Ministry of Information and Communication Technology, Thailand. http://web.nso.go.th/eng/en/stat/lfs_e/lfse.htm (accessed 29 August, 2007).

⁴ S. Siriruttanapruk et al., *Integrating Occupational Health Services into Public Health Systems: A model developed with Thailand's Primary Care Units*. (Bangkok, ILO, 2006).

3.2.1. Ministry of Public Health

The Ministry of Public Health is in charge of public health in Thailand. The Bureau of Occupational and Environmental Disease under the Department of Disease Control provides technical support for occupational health services. There are about 70 staff in the Bureau of Occupational and Environmental Diseases: one director (M.D.), four physicians, six nurses, fifteen industrial hygienists, six laboratory technicians, and nine planners. The technical responsibilities of the Bureau of Occupational and Environmental Disease are: 1. Occupational disease surveillance; 2. Technical support; 3. Establishment of guidelines; 4. Training of health care workers; and 5. Research and development.

3.2.2. Ministry of Labour

The Ministry of Labour enforces the regulations on occupational safety and health and provides safety inspections for workplaces. There are three major units in charge of occupational safety and health: the Department of Labour Protection and Welfare for legislation, enforcement and services; the Social Security Office for employment injury insurance; and the Occupational Safety and Health Committee for developing overall national policy in cooperation with workers and employers. The Department of Labour Protection and Welfare, the Ministry of Labour, published Thailand's first master plan on occupational safety and health from 2002 to 2006⁵, and the Second master plan from 2007 to 2011. The National Institute for the Improvement of Working Conditions and Environment (known as NICE) and 12 regional offices are under the Ministry of Labour and provide technical services for occupational safety and health.

3.2.3. Ministry of Industry

The Ministry of Industry has been enforcing the Factories Act since 1992. The Factories Act controls factories with machines of five or more horsepower or more than seven workers. The Ministry of Industry has technical staff to enforce occupational health and safety regulations.

4. Primary care units in Thailand

4.1 The structure of public health services in Thailand

Both the public sector and private sector provide health services for the entire population in urban and rural areas under the supervision of the Ministry of Public Health. The basic structure for administration of health care services in Thailand is as follows:

⁵ *Master plan occupational safety, health and working environment years 2002-2006*. Department of Labour Protection and Welfare. Ministry of Labour, Thailand. <http://thaisafety.net/www.readyplanet.net/images/1098914091/OSH%20MP%201.pdf> (accessed 29 August 2007).

Table 1. Basic structure of administration for health care services in Thailand

Hierarchy of administration	Agency for health care
Provinces	Public Health Office, General Hospital
Districts	District Health Office/ Community Hospital
Subdistricts (=Tambols)	Health Centre (= PCU)
Villages	Health Volunteer

At province level, each public health office has a specialist in occupational and environmental health. These occupational health officers create occupational health service strategies and provide the planned services at workplaces. By contrast, the Ministry of Labour has offices at the regional and provincial levels but not at the village level. Each province has a safety and health committee for labour administration.

4.2 PCUs in Thailand

Primary health care is organized by the public through their communities to provide primary health care services. Health care units at subdistrict (tambol) level are called tambol health centres or PCUs. PCUs have more staff and can provide more specialized services than tambol health centres. As of 18 August 2006, there were about 7,717 PCUs in Thailand. The Ministry is expanding the establishment of PCUs.

PCUs are responsible for about 10,000 people. A PCU should be located in the area in which its target group lives, however if it is located outside the area, the population should not have to travel more than 30 minutes by car to reach the PCU.

PCUs are responsible for empowering the public to improve their physical and mental health. PCUs integrate health services in the following manner:

1. Provision of medical services for general illnesses and chronic diseases integrated with provision of health education on related health issues;
2. Provision of pro-active health care services integrated with health promotion and health prevention activities; and
3. Provision of dental care including general treatment, prevention, and promotion of dental care.

PCUs provide basic medical treatment, disease prevention programmes, home visits, health monitoring, and monetary support for health initiatives. PCUs also provide other services on food safety, school health, and maternal and child health.

As each PCU is responsible for a population of about 10,000, it has eight health care workers or a ratio of health personnel per population equal to 1:1250. Two professional nurses are responsible for a population of 10,000, the ratio of nurses to population equal to 1:5000. Health officers have a two-year education as health care workers.

The budget allocated to PCUs depends on the number of people from a national health security office and a provincial health office.

5. Rationale for encouraging occupational health services at primary care units

Workers in the informal economy are often unable to access occupational health services. There are also difficulties for PCU staff in reaching those who work in scattered areas and who do not attend to occupational health and safety. They usually have higher risks of occupational injuries and diseases.

In Thailand, there are some indications for PCUs to provide basic occupational health services for workers in the informal economy. PCUs cover almost all communities and households. Moreover, health volunteers who promote the health of local people play an important role in collaboration with PCUs. Health volunteers are ordinary people in villages throughout the country who apply to work with public health officers in the areas of disease prevention and health promotion. To date, there are more than 200,000 health volunteers throughout the country. This year the government decided to pay a salary of 600 Baht/month to each health volunteer as an incentive. We decided to empower health volunteers to work with occupational health teams in Basic Occupational Health Service provision. One health volunteer takes care of ten households. This network can provide not only primary health care but also basic occupational health services for workers in the informal economy and can focus on local needs efficiently.

6. The project by the Ministry of Public Health from 2004 to 2005

The Bureau of Occupational and Environmental Diseases, the Ministry of Public Health, developed a model integrating occupational health services into public health systems. The target was ten PCUs in five provinces. The Bureau of Occupational and Environmental Diseases accomplished the following steps to build the system:

1. Analysis of the existing occupational and environmental health situation;
2. Data collection to obtain baseline data and train PCU staff;
3. Pilot test of the provision of occupational health services through PCUs; and
4. Monitor the process and evaluate its effectiveness.

In conclusion, Dr. Somkiat Siriruttanapruk and his team suggested that PCU staff have the capacity to provide occupational health services and related health promotion activities to workers. The need for continued capacity building to increase knowledge and skills was identified. Advocacy was needed to create a national policy to apply the model to the remaining PCUs and to allocate a sufficient budget.

Pilot projects were carried out in the provinces of Khon Kaen, Suphanburi, Nakhorn Pathom, Lamphoon, and Phayao. Two PCUs were selected in each province. Following the achievement of the pilot project, the model was implemented in 12 other provinces with funding by the Thai Government.

The Ministry of Public Health provided training to develop the knowledge and capacity of PCU staff in occupational health. A total of 54 health personnel from PCUs and local health centres in the pilot area participated in the training.

7. The project by the Ministry of Public Health in 2007

The aim of the project was to develop occupational health service models for workers in the informal economy at the PCU level in five provinces. The objectives were:

1. To develop occupational health service models for workers in the informal economy at PCUs in five pilot provinces;
2. To develop a policy for relevant agencies on promoting occupational health services in the national health policy; and
3. To develop an understanding and requirements of occupational health services among relevant agencies.

The target areas and target groups were the following:

Table 2. Target areas and target groups

Target provinces	No. of target PCUs	Target group of workers
Kampangphet- Wang-Kam-Pra Health Centre	1	Agriculture workers
Samutprakarn- Tai-ban Health Centre and Te-Pa-Ruk Health Centre	2	SMEs workers
Samutsakhorn- Bang- Ya-Prak health centre and Ban-Kam-Pra Health Centre	2	Fishery and migrant workers
Pra Yao- Ban-Lao Health Centre and Mae-Peum Health Centre	2	Home workers
Lamphoon- Pa-sang Hospital	2	Home workers

7.1 Method and activities

- Literature reviews;
- Coordination for orientation of the project to relevant local agencies;
- Collection of needs of occupational health services in focus groups in target population;
- Collection of information about interests and feasibility of the provision of occupational health services by PCU staff through in-depth interviews;
- Development of models of occupational health services in each working group;
- Testing of pilot models of occupational health services and survey of occupational health problems in target population;

- Evaluation of the activities including collection and analysis of information of the occupational health services provided;
- Report of the project evaluation;
- Arrangement of a seminar/workshop to develop the policy on the provision of occupational health services for target workers;
- Arrangement of a meeting with relevant governmental and non-governmental agencies and workers' and employers' representatives to discuss requirements for proper occupational health services.

7.2 Expected outcomes

- Models of occupational health services for each working group;
- Guidelines for occupational health services for each target working group;
- Networks of occupational health services between PCUs and workers' and employers' representatives;
- Policies from relevant agencies on the provision of occupational health services for target group of workers.

8. Findings at the primary care units and provincial health offices

At the end of August 2007, one of the authors visited several PCUs and a few provincial health offices in Thailand in order to follow up services and to engage in discussions with staff and workers in the target workplaces. The map shows the provinces the author visited.

8.1 Summary of findings

8.1.1. Occupational health services provided at PCUs

The following occupational health services were provided at PCUs: 1. Risk assessment and improvement of workplace with a walk-through survey as the primary prevention; 2. Surveillance for work-related diseases and chronic diseases as the secondary prevention; 3. Health promotion; and 4. Provision of safety equipment.

8.1.2. Allocation of resources for PCU staff

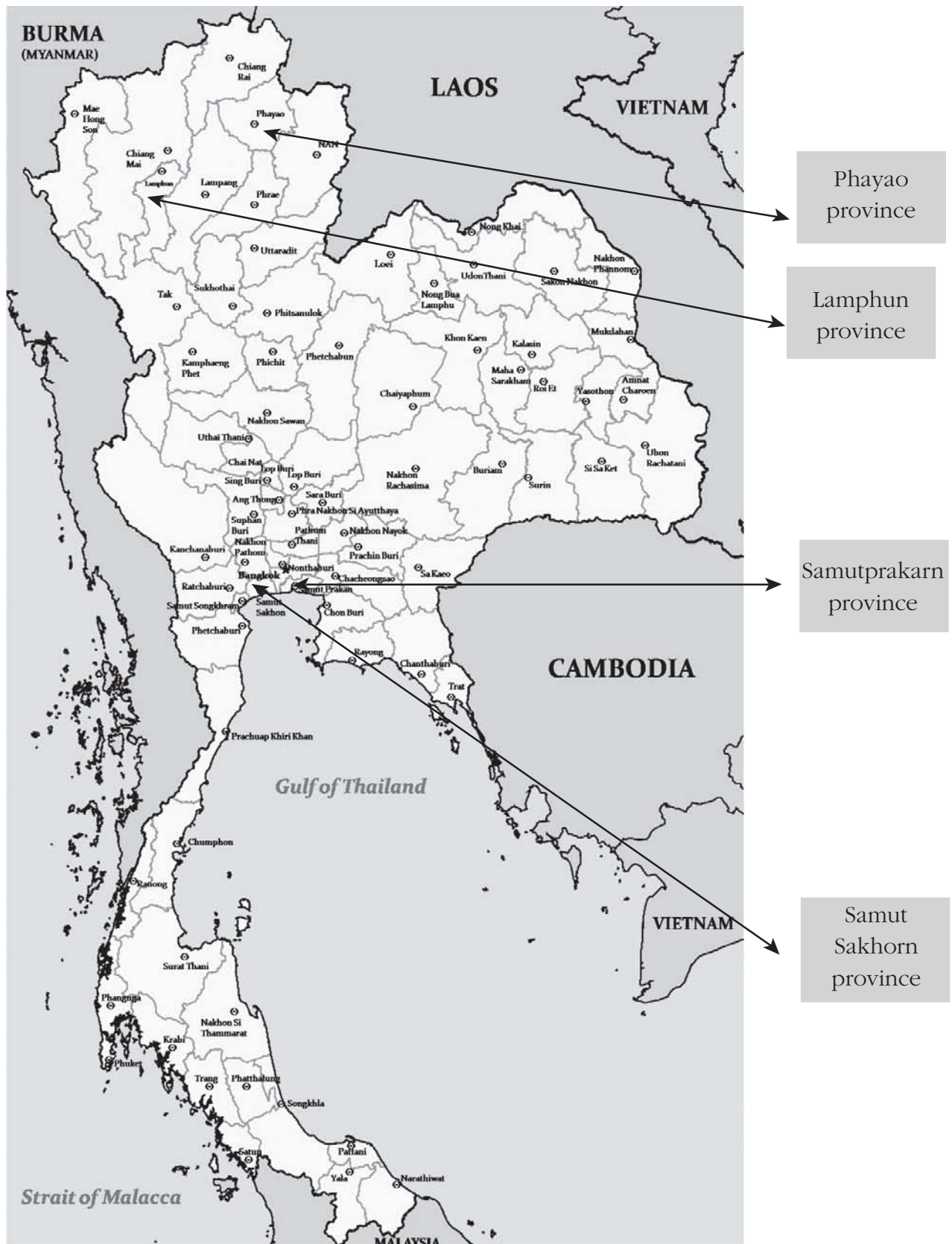
PCUs have numerous responsibilities including prevention, promotion, and treatment. Some PCU staff were concerned about their additional workload of occupational health services. However, they had a certain amount of time for providing basic occupational health services not as additional routine work but as extended routine work.

8.1.3. Knowledge of occupational health services among PCU staff

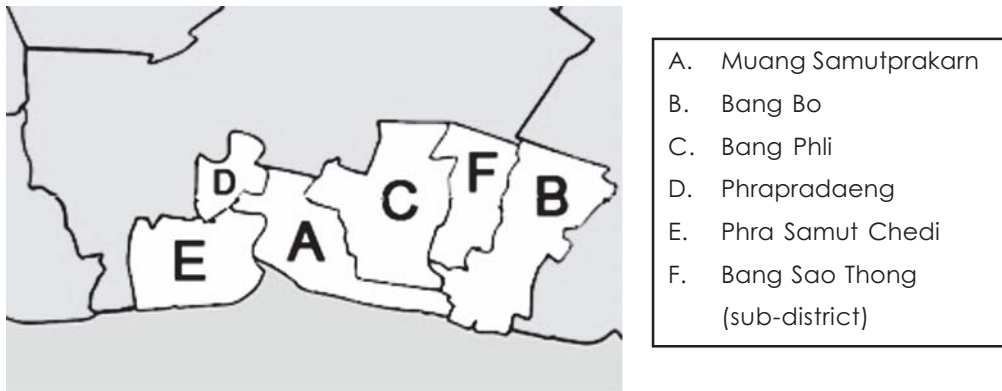
Most PCU staff have sufficient knowledge to provide basic occupational health services. Staff need more experience and training in primary prevention such as risk assessments and practical low-cost improvements with participatory approaches.

8.1.4. Health volunteers

Health volunteers are key stakeholders in primary health care in communities. Usually each health volunteer covers ten households. Some health volunteers promote occupational health initiatives such as risk assessment of pesticides.



8.2 Public Health Office in Samutprakarn province



Samutprakarn province is located at the lower end of the Chaophraya River. It is approximately 30 kilometers from central Bangkok and its population is 1,225,893. The main industries are agriculture and manufacturing. There are 7,697 factories with more than seven workers and five forced horsepower machines (33.5 per cent in Muang, region A on the above map, and 25.2 per cent in Prapradaeng, region D).

Three occupational health nurses and one occupational health physician are stationed in the provincial hospital. There are about 6,000 factories in Samutprakarn province. There are 90 PCUs in Samutprakarn, of which 75 are public and 15 are private. While private PCUs are attached to private hospitals, they are controlled by provincial health offices. One PCU covers between 6,000 and 16,000 residents.

The provincial health centre in Samutprakarn provides the following occupational health services:

- Risk assessments and improvement of working conditions;
- Surveillance of work-related diseases;
- Occupational health services for farmers;
- Healthy workplace projects; and
- Support for factories.

The provincial health centre in Samutprakarn has three teams in six districts. Team 1 is in charge of the Samutprakarn Public Health Office, Samutprakarn General Hospital, and others in the district. Team 2 is in charge of two districts in the western part of Samutprakarn, and Team 3 is in charge of three other districts in the eastern part. One team is comprised of about 12 staff of local health officers, staff in hospitals, and PCU staff. There are three nurses working in occupational health in the Samutprakarn General Hospital.

In 2006, the provincial health centre in Samutprakarn conducted risk assessments by walk-through surveys for workplace improvements in 50 factories. The factories were selected from enterprises with less than 50 workers and with some risk factors for the four target diseases: byssinosis, silicosis, lead poisoning, and noise-induced hearing loss. As a result of the first walk-through survey, the provincial health centre team provided analysis for improvement. The team then visited the factories for follow-up after six months.

The provincial health centre provides health check-ups and certain cancer screening programs. Also, various health promotion programs are provided free of charge, such as aerobics, dancing, and anti-smoking education.

8.3 PCU Te-Pa-Ruk, Samutprakarn province

The PCU Te-Pa-Ruk covers 17,383 people in five villages with one full time nurse, three health officers, and one part-time doctor. There are about 2,600 visitors to the PCU per month, 70 to 80 on a regular day and about 100 on the days when a medical doctor is present. The PCU opens every day. The major responsibilities of the PCU are immunization, maternity care, and treatment and care of school children. The primary contact unit of the PCU is Samutprakarn Hospital.

Table 3. The statistics of injury in workplaces in Samutprakarn in 2006

Types of injury	Number of cases
Death	43 cases
Disabled	1 case
Loss of some organs	707 cases
Inability to work under 3 days	9,198 cases

The target workplace was a metal roof assembly factory located within a two-minute walk from the PCU. There were 13 male workers in the factory. Some workers lived on the second floor of the factory. The PCU selected this factory because the employer did not attend to safety and health in spite of the existence of hazards. PCU staff visited the site once or twice a month during the pilot project.

The risk factors in the factory included chemical substances such as LPG gas, solvents and noise, resulting in injuries and back pain. PCU staff conducted a walk-through survey, annual health check-ups including hearing, lung function and vision tests, as well as health education. These services were matched to the needs of workers in the factory. It should be noted that even though the employer agreed to participate in the pilot project, the PCU staff could not have access to workers during their working hours.

8.4 PCU Tai-Ban, Samutprakarn province

There is one nurse and six health officers at the PCU Tai-Ban. A physician is present on Tuesday and Wednesday mornings.

The PCU Tai-ban had two target workplaces: a plastics factory and a cloth-weaving factory. There were six workers, one male and five females, in the cloth-weaving factory.

In the pilot project, the PCU conducted risk assessments by means of a walk-through survey, focus group meetings with a participatory approach, and health checkups including lung function tests, measuring blood pressure, and Pap smear tests for cervical cancer screening. The PCU staff visited the target workplace twice a month. PCU staff stated the need for educational opportunities on occupational services such as work improvement and walk through surveys.

8.5 Public Health Office in Phayao province



- A. Muang Phayao
- B. Chun
- C. Chiang Kham
- D. Chiang Muan
- E. Dok Khamtai
- F. Pong
- G. Mae Chai
- H. Phu Sang (King Amphoe)
- I. Phu Kamyao (King Amphoe)

Phayao province is one of the northern provinces of Thailand. The total population is approximately 500,000. There are two occupational health nurses and one physician at the Phayao General Hospital. The Department of Provincial Labour Protection Office has four inspectors and six staff.

The occupational health nurses, in collaboration with the Department of Labour Protection at the Provincial Labour Protection Office, visited 48 sites (with 1,214 workers) in 2006. These target workplaces were defined by the risk of injury and the number of workers above 50 years of age. Of those workplaces, 37.5 per cent were designated high-risk because of the lack of safety officers and safety committees, inadequate lighting, and other issues. In 2007, they planned to visit 79 small enterprise workplaces.

8.6 PCU Ban-Lao, Phayao province

PCU Ban-Lao has three nurses and one health officer. Although there is not a full-time doctor in the PCU, it is possible to contact a doctor at the main contact unit (Mae Chai Hospital) by telephone. The PCU opens everyday from 8:30 to 16:30. Farmers comprise 80 per cent of workers.

The PCU mainly provides health promotion programs, primary care and vaccination programs. Health volunteers are also involved in providing workplace improvements. Some health volunteers have succeeded in reducing the use of chemicals and pesticides.

The target workplace of the Ban-Lao PCU was a family-operated business that assembled rain drainage and pipes. The target group were 14 families with 40 people who worked two days per week and six hours per day, depending on orders. Prior to the intervention, the workers wore neither masks nor gloves. Some workers used lead for soldering pipes, while others installed the pipes on the roof.

The PCU staff visited the site twice a month. They provided training to manage chemicals, conducted lead blood tests and annual health check-ups. PCU staff focused on three occupational hazards including falls, chemicals such as lead, and injuries. After the intervention, the workers began to wear masks, used an electric fan for ventilation, and washed their hands before eating. A worker removed the kitchen from the workplace in order to avoid contamination from some chemicals.

There was a discussion between local government officers and PCU staff on the occupational health initiative. Local government should take the initiative, but in practice, the PCU plays an important role in providing services.

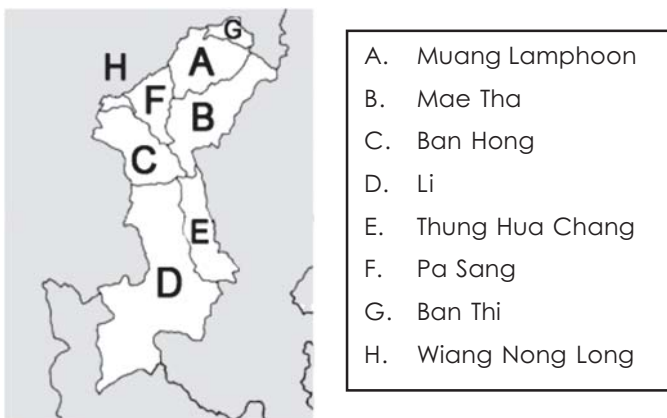
8.7 PCU Mae-Peum, Phayao province

There are three nurses, one health officer, one dental officer, and some clerks in Mae-Peum PCU. It covers 18 villages and 2,450 households. The total population is approximately 10,000. About 60 people visit the PCU for general services every day. The main contact unit is the Phayao Hospital.

The target workers of Mae-Peum PCU were home workers sub-contracted in clothing and shoe manufacturing. There were about 40 workers who usually work from 8:00 to 17:00.

The PCU provided risk assessments by means of walk-through surveys and health check-ups. After the intervention, workers contributed to preventing back pain by exercising during their break time, with a general interest in their health and safety.

8.8 PCU Pa-Sang Hospital, Lamphoon province



Lamphoon province is located in the north of Thailand. In 2005, the total population of Lamphoon was approximately 400,000 with 58,641 in Pa-Sang province, region F on the above map.

The PCU at the Pa-Sang Hospital covers nine villages with a population of 6,703. About 67 per cent of the total working population are farmers. Everyone has national health security but only 405 persons are covered by social security. There are five nurses and two technical staff. The PCU provides treatment, care for the elderly, TB prevention, HIV prevention, human resources development, Thai traditional medicine, and occupational health. There are 150 health volunteers in the community.

There are 90 beds and five general practitioners in Pa-Sang Hospital. The number of health care workers in this area is limited. There used to be a nurse and a physician who were trained in occupational health, however they left for other health care facilities.

Occupational health services in the PCU have been available since 2004. They have developed service programmes, educated staff, and provided treatment for workers who visit the PCU. The PCU staff visit workplaces and create focus groups among farmers in order to provide education, not only in regard to general health but also in terms of chemical substances.

The target population was agricultural workers growing fruit called longans. There were about 80 people involved in the pilot project. People in the village started to use organic pesticides and fertilizers that were less toxic. The Ministry of Agriculture also encouraged them to use organic pesticides and fertilizers at no cost.

The community leaders were willing to promote occupational health services. Some of them were convinced of the importance of occupational health. Given their awareness of the importance of occupational health services, their interest in this subject is likely to continue.

The major concern of the leaders was their budget. A leader in the community stated that, due to the limited budget, not all farmers could participate in meetings. Another leader also mentioned that he needed protective equipment such as gloves, masks, boots and other items.

Usually people work in their own orchards and hire some workers for the harvest. After finishing in their own orchards, some farmers go to work in a larger plantation.

Each health volunteer treats up to ten households. Currently, there are no incentives for health volunteers, however a local government officer mentioned that health volunteers would need some incentives in the near future.

8.9 PCU Bang-Ya-Prak, Samutsakhorn province



- | | |
|----|--------------------|
| A. | Muang Samutsakhorn |
| B. | Krathum Baen |
| C. | Ban Phaeo |

Samutsakhorn province is close to Bangkok and is on the Gulf of Thailand. Fisheries and salt production are the major industries in this province.

PCU Bang-Ya-Prak is located in Muang Samutsakhorn province, region A in the map above. PCU Bang-Ya-Prak covers approximately 12,000 people including about 1,000 migrant workers, most of them from Myanmar. There are about 80 visitors every day. The PCU opens from 8:00 to 20:30 from Monday to Friday and in the morning on Saturdays and Sundays. The PCU is also working with a Non-Governmental Organization (NGO) to protect the rights of migrant workers.

The target workplace was a fisheries ship. There were about 40 workers who were mostly from Myanmar. PCU staff provided risk assessments and health promotion activities. Risk assessments identified hazards such as the smell of fish, hydrogen sulphide originating from rotten fish, poor ergonomics, and wet floor. There had been an accident where a worker's finger was pinched in the machine winding up the fish net, resulting in the loss of the finger. The target workplace had also installed a lightning rod on the ship to avoid a lightning strike.

The PCU has already started an injury reporting system. From January 2007 to October 2007, 86 serious injuries and 506 minor injuries were reported with the possibility that there was some under-reporting of cases. In the future, the PCU would define injuries and use the statistics to prevent injuries.

8.10 PCU Ban-Kam-Pra, Samutsakhorn province

PCU Ban-Kam-Pra covers 13,913 people in three villages. The target workplaces were four fish processing factories. Through risk assessments of the workplaces, the PCU identified poor light, slippery floors, poor ventilation, poor ergonomics, and the smell of fish as major workplace hazards. Some factories hired migrant workers from Myanmar.

Some occupational health issues were combined with food hygiene quality control. For example, workers who removed fish bones wore gloves to prevent knife injuries and to keep products clean. They also cleaned the floor frequently to prevent slips and to keep the floor clean. In addition, improvements were identified in the target workplaces, for example, adjusting the height of work benches, using a chair instead of working on the floor, and using a carriage to transfer products.

9. Good practices

In conjunction with this review study, the Ministry of Public Health organized meetings with local authorities relevant to occupational health services. These meetings could be continued to provide opportunities to discuss occupational health from multiple perspectives and to reach a consensus for improving occupational health services through PCUs.

A national workshop took place to further discuss occupational health services at PCUs. The target PCU staff, other interested PCU staff, provincial health officers, local authorities, representatives of the Ministries of Labour and Industry, and representatives of employers attended the workshop. The workshop provided a firm step forward for establishing a nationwide model for basic occupational health services at PCUs in other provinces.

Training for health volunteers was planned and implemented. The system of health volunteers is a good public health system model in Thailand. Health volunteers work as service providers for primary health care in communities. The Ministry of Public Health is going to provide some training for health volunteers so that they will be able to provide basic occupational health services in their communities.

10. On-going actions

Participating PCUs have implemented many good practices to establish practical occupational health service models to meet local needs. These good practices provide useful models to other provinces which aim to strengthen their occupational health services for the informal economy through PCUs.

10.1 Intensive follow-up support to PCUs by the Bureau of Occupational and Environmental Diseases, the Ministry of Public Health

Most PCU staff acknowledged and appreciated the intensive support of the Bureau of Occupational and Environmental Diseases. Some experts have visited the target PCUs a few times in order to encourage the PCU staff to provide quality services and consultations. Such regular follow-up visits motivated the target PCU staff, ensured continuous services, and identified improvements needed to upgrade the PCU services for local people.

10.2 Good support for PCUs by the Provincial Health Office

Some provincial health offices have provided occupational health services to enterprises at the community level. In this effort, the provincial health offices have collaborated with PCUs to provide occupational health services to the target enterprises. This collaboration between provincial health offices and PCUs has strengthened occupational health services at the province level in a systematic way.

10.3 Promoting self-initiative of workers and employers in improving occupational health

PCU staff have promoted the self-initiative of workers and employers in improving occupational health. Employers often have a general fear that they may not be able to comply with all occupational health legal requirements and be subject to penalties under the regulations. Therefore some employers tend to avoid contacting public health offices and labour inspection offices for advice. In the pilot project, the staff of PCUs did not rely on penalties under the regulations. Instead, they provided practical and friendly advice for improvements and encouraged workers and employers to take ownership of occupational health improvements.

10.4 Focusing on local needs

PCU staff know their communities well, so they are able to identify the practical needs of local people to improve occupational health. The improvement needs in workplaces are varied, depending on the local situation. National guidelines on improving occupational health are expected to provide a framework for occupational health services and allow local staff to design and implement the service content based on local needs.

10.5 Combining occupational health issues with other priorities

In Samutsakhorn province, food hygiene quality control was a priority in the fish processing industry. Workers and employers developed good examples to jointly improve food safety and occupational health. For example, wearing appropriate gloves was useful in preventing knife injuries and also for keeping products clean. Another example was to clean floors frequently to prevent slips as well as to keep floors clean. These joint improvement approaches assisted employers and workers in understanding the benefits of basic occupational health improvements.

11. Recommendations for future actions in occupational health services at primary care units

The pilot project of provision of occupational health services by PCUs for workers in the informal economy in Thailand has progressed well with many positive experiences. For further development of sustainable occupational health services at PCUs, the following recommendations are proposed.

11.1 Summary of recommendations

The recommendations are divided into short-term and long-term actions at central government and provincial levels, and at PCU level.

1. Recommendations for short-term actions:

- (a) Central government and provincial levels:
 - (i) Formulate clear guidelines for occupational health services at PCUs; and
 - (ii) Increase the regular budget allocation for occupational health services by PCUs.

- (b) PCU level:
 - (i) Include the results of occupational health assessments in the family health files of PCUs; and
 - (ii) Advise PCU staff to focus on practical, low-cost approaches to improve basic occupational health services.

2. Recommendations for long-term actions:

- (a) Central government and provincial levels:
 - (i) Establish national occupational health service strategies to meet local needs;
 - (ii) Promote inter-ministry collaboration;
 - (iii) Collaborate with local technical institutions such as universities and other health research institutions; and
 - (iv) Expand the coverage of employment injury compensation to all workers.

- (b) PCU level:
 - (i) Train health volunteers to be facilitators of basic occupational health services.

11.2 Central governmental and provincial levels

This section describes the detailed recommendations for central government and provincial level actions. Short-term action 1. Formulate clear guidelines on occupational health services at PCUs.

Occupational health services have not always been recognized as a responsibility of PCU staff. The Bureau of Occupational and Environmental Diseases has already published basic guidelines for occupational health services at PCUs and disseminated the guidelines to all PCUs in Thailand.

However, PCU staff need more effective guidelines to provide occupational health services. Guidelines for use at provincial and PCU levels are needed to enable the PCU staff to be confident enough to provide practical occupational health services.

PCU staff and occupational health nurses in hospitals want to visit more workplaces in order to provide occupational health services. However, some employers do not allow health care workers from PCUs and hospitals to enter the workplaces, yet they do not refuse labour inspectors of the Labour protection office due to their legal power.

The new, more detailed guidelines should include the following issues:

- Importance of occupational health services as a mandate of PCUs;
- Practical low-cost approaches to reduce occupational health risks;
- Evaluation and support measures to promote occupational health services at PCUs; and
- Responsibilities and legal justification of PCU staff to provide basic occupational health services and also duties and rights of workers and employers to build healthy workplaces.

Long-term action 1. Establish occupational health strategies based on local needs.

Provincial public health offices could play an important role in establishing strategies for occupational health based on local needs. In order to promote the strategies above, the recommendations should be included in the key performance indicators applied by the Ministry of Public Health as a tool for results-based management.

Short-term action 2. Allocate a regular budget to occupational health services.

A regular budget for occupational health services is essential in order to sustain further services. There are some possibilities for budget allocation from 1. Local authorities (district or sub-district), 2. Provincial health offices, 3. National health security, 4. Workers' compensation schemes and social security, 5. Foundations, and 6. Workers. Considering the possibilities, local authorities could provide some funding in order to encourage prevention as a model.

Hospitals at the provincial level receive some funding for health care services. To date, virtually all of the funds are spent on treatment. Under certain circumstances, it is possible to allocate some of the budget to prevention. A director of a hospital with control of the budget should consider allocating a portion of the budget to prevention, including occupational health.

Long-term action 2. Promote inter-ministry collaboration.

Three ministries of Public Health, Labour and Industry are relevant to occupational health services. These ministries should increase their collaborative activities in occupational health services. There are already several good practices at the provincial level. For example, occupational health nurses from a provincial hospital and provincial labour officials have carried out joint visits to local enterprises to improve health and safety. In some agricultural provinces, the PCU staff and provincial agricultural extension officers have worked together for the safety and health of farmers. Further inter-ministerial collaborative activities should be promoted.

Long-term action 3. Collaborate with local technical institutions such as universities and relevant health research institutions.

Several universities in Thailand, including Mahidol, Chulalongkorn, Sukhothai, Chiang Mai, and Burapa Universities, provide occupational health and safety education and carry out research activities. These universities have networks which can potentially support occupational health services at PCUs. For example, Mahidol University in Thailand has carried out participatory training activities by using the WIND (Work Improvements in Neighbourhood Development) training programme for farmers⁶.

The National Institute for the Improvement of Working Conditions and Environment (NICE), the Ministry of Labour, has extended participatory occupational safety and health training services to small enterprises, home workplaces, construction sites, and agricultural farms in many provinces. NICE has strong networks in its regional centres that can reach many grassroots workplaces at the provincial level. The Ministry of Public Health has its regional environmental health centres which are also active in occupational health services. These technical institutions are expected to serve as technical advisory agencies to strengthen occupational health services at PCUs.

Long-term action 4. Expand the coverage of Employment Injury Insurance to all workers.

The Employment Injury Insurance scheme (EII) in Thailand is a compulsory insurance system operated by the government. The EII aims to provide compensation to victims of work-related injuries and illnesses. Approximately nine million workers (about 25 per cent of the total number of workers) were covered by the EII in 2007. It is desired that all workers, including the self-employed in the informal economy, will be covered in the future. The next important step for the EII is to expand coverage to workers in small enterprises. Another option is to develop a pilot social security scheme that can cover those in the informal economy and provide health insurance for work-related health problems.

11.3 At PCU level

This section describes the detailed recommendations for PCUs.

Short-term action 1. Include the results of occupational health assessments in the family health files of PCUs.

PCUs are expected to make practical work-related health risks assessments in each family and keep the record of improvements in the family files stored at the PCUs. Through this activity, PCU staff would be able to advise each family on how to reduce work-related health risks and monitor the improvements. This service will become an extension of the routine service of PCUs. The PCU staff have developed comprehensive family health files in their responsible communities including their jobs and economic status. While updating the family files, the PCU staff could play a vital role in reducing occupational risks in the community and provide basic occupational health education.

Short-term action 2. Advise PCU staff to focus on practical, low-cost improvement approaches in basic occupational health services.

⁶ S. Arphorn et al: *A case study in occupational health and safety promotion for farmers*. Ind Health 2006, vol.44, pp. 98-100.

PCU staff are expected to provide basic occupational health services focusing on practical low-cost methods. The service is in line with the ILO's Occupational Health Service Convention, No. 161. The Convention stresses the preventative roles of occupational health service providers. Occupational health services should monitor workers' exposure to specific health hazards, supervise sanitary installations and other facilities for the workers, and provide advice on the possible impact that the use of technology may have on workers' health. *The Global plan of action on workers' health* published by the WHO in 2007 also emphasized the importance of primary prevention of occupational hazards.

For this purpose, a participatory approach should be promoted. The ILO Work Improvements Small Enterprises (WISE), which has often been used in Thailand, is a good model for a participatory approach. The six principles of WISE are: build on local practices; focus on achievements; link working conditions with other management goals; use learning by doing; encourage the exchange of experiences; and promote workers' involvement.

The Ministry of Public Health has carried out many occupational health workshops at community level and intensive follow-ups. Pagaiya et al. also suggested that education for nurses in PCUs in Thailand with workshops and educational outreach visits were effective. Further workshops could focus on basic occupational health services as primary prevention.⁷

Long-term action 1. Training health volunteers as basic occupational health service providers.

Thailand has developed a health volunteer system at community level which has already spread throughout the entire country. Community people who are interested in helping their neighbours receive health care services are eligible to be health volunteers after receiving some training. Health volunteers play very important roles in promoting health in their communities. For example, when their community has an urgent health issue such as an outbreak of an infectious disease, this health volunteer network disseminates the information for preventive health measures quickly and also identifies cases of disease in their role as a partner of PCUs. Under this existing structure, some health volunteers have contributed to the provision of occupational health services and assisted villagers in reducing the use of pesticides.

Health volunteers can contribute to strengthening basic occupational health services in Thailand. The Ministry of Public Health is planning to provide more training in occupational health to health volunteers in different provinces. Guidebooks or practical training tools such as good practice booklets and action-checklists would be useful to disseminate basic occupational health service approaches to health volunteers. As mentioned before, the six principles of the WISE training programme are also able to offer practical ideas for the volunteers. These measures would result in preventing health impairment due to work and promoting healthy workplaces, especially for workers in small enterprises and the informal economy.

⁷ N. Pagaiya and P. Garner: *Primary care nurses using guidelines in Thailand: a randomized controlled trial*, in *Tropical Medicine and International Health* (2005), Vol. 10, pp. 471-477.

12. Conclusions

The pilot project to provide basic occupational health services for workers in the informal economy through PCUs in Thailand has been completed as planned. The participating PCU staff experienced practical occupational health services and gained confidence in promoting the services in their provinces.

PCUs handle many subjects relating to primary health care and the workload of PCU staff is already large. Occupational health services are not currently considered a responsibility of PCUs. However, PCUs have an advantage in terms of reaching workers, especially in the informal economy and small- and medium-sized enterprises. In the future it is recommended that PCUs become a routine basic occupational health service provider at the community level.

It is recommended that PCUs focus on simple and easy-to-implement methods in occupational health service. Their basic occupational health service approaches should use practical methods like walk-through methods to identify workplace improvements or focused group meetings among community people to promote primary prevention. Secondary prevention such as health check-ups is also important. However, primary prevention should be stressed as the priority approach by PCUs.

Some other recommendations could be identified to further develop basic occupational health services in Thailand. The aim of this review was to assess the process of the project by the Ministry of Public Health in Thailand. Further impacts of the PCU model should be evaluated in the future.

The model established by the participating PCUs is widely applicable to other provinces in Thailand as well as in other countries. We hope that the PCU staff and governmental agencies will further strengthen sustainable occupational health services through the wider application of the PCU model.