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Primary Care Unit (PCU) Participatory Evaluation and Assessment Workshop: Evaluation of Two PCUs

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I. BACKGROUND

Thailand has reformed its public health system, adopting universal health care coverage, as of 2001. Under reform, 18 million uninsured and 29 million under-insured receive free prescription drugs, outpatient care, disease prevention, surgery and critical care. As of 2010, the Thai government has invested 4% of GDP towards universal health care, as compared to the world median of 6.2%. While many Thai are proud of achieving such reform at such low cost and in such little time, the country still struggles to afford the care they provide.[1] The country has a higher prevalence of non-communicable diseases (NCDs) than the regional average (South-East Asia), higher even than the regional prevalence of HIV/AIDS.[2] In 2010 the Thai National Health Security Office (NHSO) invested 2.5 billion baht in an on-going screening program for diabetes and hypertension. [3] The Thai Ministry of Health has placed an increased emphasis on NCD screening and prevention, particularly diabetes and hypertension, in recognition of the significant increase in NCDs affecting many developing countries.

At the invitation of Family Medicine practitioner from Chiang Rai Prachanukhor Hospital, Dr. Daranee Intralawan, our team was invited to work with the primary care units (PCU) of Huai Chom Poo and Panasawan, as well as 5 fourth-year medical students. Of the 32 PCUs in Chiang Rai Province, these two were chosen as they had no primary care nurse present, are staffed exclusively by health care workers and health

[1] World Health Organization (2010). *Thailand: Healthcare for all, at a price.* 30(2), 81-160
[2] Bundhamcharoen K, Odton P, Phulkerd S, Tangcharoensathien V. *Burden of disease in Thailand: changes in health gap between 1999 and 2004.* BMC Public Health. 2011;9(53):. doi: 10.1186/1471-2458-11-53.
[3] Ministry of Public Health. *Thailand healthy lifestyle strategic plan 2011-2020*. Bangkok, Thailand: The War Veterans Organizations of Thailand; 2011. p. 58

care volunteers, as well as their remote location.[4] We conducted participatory health education with skills workshops and first aid education, participatory assessment of NCD screening by health volunteers, and basis disease management by health workers, in addition to medical student education on participatory screening techniques.

II. ASSESSMENT

II-1. Chiang Rai Prachanukhor Provincial Hospital

The UHCMC team met with five volunteer 4th year medical students on the first day, to familiarize them with the goals of the project, as well as gain their input in customizing the proposed interventions. We also got to know their motivations for participation which included getting to know how the villagers lives, gaining new experiences, wanting to learn new skills as well as not wanting to waste their vacation time. The medical students also spoke English, and helped to facilitate discussions between the PCU staff and intervention team.

II-2. Huai Chomphu

A. ACTIVITIES

The onsite three part training session began with UHCMC/Chiang Rai Hospital team joining together with the PCU staff in an icebreaker activity using participant demographics such as age, occupation, children, etc (Appendix 3).

The second exercise involved First Aid scenarios for Burn Management, Fractures and Splinting, CPR – mannequin chest compression review, and assessment of the unconscious patient. The medical students acted out scenarios around each topic, and an interactive education, question/answer period followed. The group was asked how they treated each problem prior to disease education and management, as well as review. Pictures of splinting, improvised fractures using green sticks and posterior splint application with ace wraps and a wooden splint form comprised the fracture splinting workshop. The overall group was broken into 2 smaller groups for the splinting portion of the workshop. Reinforcement of "look, listen, feel" was done for assessment of the unconscious patient, as well as correct hand placement and execution of compressions were done for CPR review. Each participant was required to demonstrate hand position and compression speed, with group members reviewing and offering correction.

[4] Orratai Nontapet, Sang-arun Isaramalai, Wongchan Petpichatchain, Constance Wilhelmine Brooks. "Conceptual Structure of Primary Care Competency for Thai Primary Care Unit (PCU) Nurses", Thai J Nurs Res 2008; **12** (3) 195 – 206.

After a lunch break, the third part of the training session revolved around non medication management of musculoskeletal pain (neck, shoulder, lower back pain) with stretching exercises, in addition to NCD screening and education. The medical students again acted out scenarios for diabetes and hypertension symptom presentation. Discussion was then facilitated by the medical students and Dr. Intralawan with the PCU health workers and volunteers regarding perceptions of NCD symptoms in the community, local management of disease, as well as how health care workers implemented disease monitoring. Non medication management of diabetes and hypertension were also solicited from the group. Verbal evaluation of the efficacy of the workshop, as well as future topics was conducted.

Approximately 20 people including the workshop team participated. From the burn workshop, we learned that burns were treated with toothpaste, raw eggs, aloe vera, tomatoes, MSG and it was thought that washing the burn with water should be avoided. There was a noted knowledge gap regarding the presenting signs and symptoms of diabetes and hypertension, when health volunteers were compared to health workers. There was also a knowledge deficit as to the underlying reason and importance of NCD screening. It was noted that community health volunteers are typically trained by the community health workers. Community health workers received their training from the provincial hospital. There was no set curriculum for health care volunteer education, and limited clinical training for health care workers. Health care worker training focused primarily on the logistics of patient referrals, and the circumstances for each disease entity that required referral.

In review of the musculoskeletal exercise, it was found that more information was needed as to the Thai perception of the causes of body pain, medical and non-medical treatment of pain as well as the perception of how Thai massage may be used to treat musculoskeletal pain. Medical student feedback noted that the PCU staff was more engaged and interactive in the smaller groups used for the fracture/splinting workshop. Key emphasis points for each skill workshop were needed for reinforcement. During the verbal workshop evaluation, the PCU staff requested information on wound management, pregnancy/prenatal care, dog bite/wound care, oral rehydration solution (ORS), snake bites. In addition, the need for better time management to cover more topics was noted.

II-3. Panasawan

A. ACTIVITIES:

The same three part exercise, 1) ice breaker, 2) First Aid scenarios, and 3) NCD scenarios and discussion, was performed in Panasawan, however the First Aid Scenarios were

changed, based on feedback from the Huai Chomphu workshop. The first aid scenarios were Burn Management, Fractures and Splinting, Bleeding, Fall from tree, Dog bite and Suture workshop. The scenarios for diabetes and hypertension were more interactive, to solicit baseline knowledge of presenting signs and symptoms of diabetes and hypertension, non medication management, as well as reasons for referral to a higher level of care. In addition, key points from each education segment were summarized and reinforced (Appendix 2).

Approximately 37 people including the workshop team participated. As in the previous burn workshop, we learned that burns were treated with toothpaste, aloe vera, MSG and it was thought that washing the burn with water should be avoided. All workshops were broken up into small groups for more interaction and hands on two way education. Open discussion of musculoskeletal causes of pain, medial and non medical treatment with positive and negative consequences was facilitated (Appendix 3). We discovered that many family members performed massage for pain relief on each other, and sought medical treatment when that didn't work. While many people acknowledged the utility of traditional Thai massage to treat musculoskeletal pain, there was no readily available masseuse.

III. FINDINGS:

A. COMMUNITY HEALTH WORKER (CHW) TRAINING:

1. Provincial Primary Care Unit staff members do not have enough time to provide direct supervision to health care workers or health volunteers in each village.

   The workshop was the first time that provincial PCU staff had the opportunity to directly interact and provide health care training at the village level. This is due to the lack of available funding and logistical support to provide direct supervision of primary care providers at the community level.

2. Training of health volunteers is dependent on community health workers (CHWs), employing training of the trainer (TOT) model[5] and there is a variation in the contents of each training exercise.

[5] Carlo, W., et al. (2010). "Newborn-care training and perinatal mortality in developing countries." N Engl J Med **362**: 614-623.

One of the 'negative' studies employed TOT model. It illustrates the problems of TOT approach and assumptions for TOT model.

The TOT model is employed to provide training for health volunteers and it was totally up to each individual health worker to decide what level of training s/he would provide. There is no standardized curriculum or guidelines. For example, some districts have already started mass screening for hypertension (HTN) and diabetes (DM) while others have not.

3. Most community health volunteers (CHVs) have never done any hands-on procedures such as suturing or CPR, however many of them are aware of risk factors for NCDs and risky behaviors. The role of CHVs is to promote health through education and guidance. Through our observations, they seem to be aware of the importance of living a healthy lifestyle as relates to food and exercise.

4. Many health volunteers have been in their role for less than 10 years, therefore, they are not aware of the task-shifting of health volunteers in Thailand from family planning, to EPI to NCDs over the last 20 years. Therefore, they may need a refresher course for their role related tasks, other than NCDs.

B. FAMILY MEDICINE RESIDENCY TRAINING:

5. A practice track for Family Medicine residency has been developed with the goal of increasing the number of primary care providers in the area.

6. Practice-based family medicine certification is now available for those who are doing their 3-year 'payback'/service obligation period after medical school. They can participate in the Family Medicine track and to be certified when they finish the 3-year period.

   It is not clear how many residents will be enrolled into the track this year, but up to two are expected. The curriculum for the family medicine residency has not yet been developed, but the provincial hospital is adapting the curriculum from the existing Chiang Mai University residency program. Even though there are medical students rotating from Chiang Mai University, 20-30 students from Chiang Rai province receive their clinical training directly from the Medical Education department of Chiang Rai provincial hospital. They will have a 3 year service obligation to serve in the province after medical school.

7. There is no strong incentive to become a family physician in Northern Thailand. It is neither an attractive job from a financial standpoint, nor an appealing one with regards to status in the medical community. In addition, there is vague benefit for going through the practice track for residency training, since there is no recertification process or CME requirement by the Thai family medicine board.

Primary care has not been established as a distinctive specialty in the medical community in Thailand. Primary care, including family medicine, is defined as 'the leftover from subspecialties' and it is still seeking its identity through a defined curriculum and qualifications for family medicine. It would be hard to impart a definitive idea of family medicine to learners including medical students and residents, if there is no clear structure or guidelines established yet in the medical community. In order to define its' identity as specialty, the organization of a group of core educators to advocate for its' identification is essential. The Provincial hospital primary care unit would be an ideal place to start primary care/family medicine advocacy through journal clubs, lecture series, and resident recruitment. The Global Health Track, Department of Family Medicine & Community Health, Case Medical Center (GHT-FM-CASE) is willing to support this effort to establish Family Medicine as a primary care specialty in Northern Thailand.

8. The evolution of a family medicine curriculum and it implementation during residency training in the Provincial hospital remains uncertain. There is the possibility of starting a Family Medicine inpatient service. Given the enormity of the patient load in the outpatient department, however, it would be extremely difficult to recruit competent clinicians with superb bedside teaching skills, without sufficient financial incentive.

IV. RECOMMENDATIONS:

A. NON-COMMUNICABLE DISEASE (NCDs):

1. The UN and WHO believe they can scale up what was learned from the HIV epidemic to tackle the NCD epidemic. One of their major assumptions is that many NCDs can be dealt with using cheaper generic medication, when compared with novel anti-retrovirals used for the HIV epidemic. Nonetheless, the WHO estimates that the cost of NCDs management for middle-income countries would be $2.50 per person per year[6]. It is important to evaluate the entire healthcare resources in a country before launching mass screening programs, and it is imperative to stimulate rigorous discussions in the policy and public health arena, to examine the feasibility of a screening strategy[7].

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[6] Hogerizeil, H., et al. (2013). "Non-communicable diseases 5. Promotion of access to essential meidicines for non-communicable diseases: practical implications of the UN political declaration." Lancet **381**: 680-689.

Illustrates the point learned from HIV epidemics and application of these principles for NCDs.

[7] Kim, J., et al. Ibid."Redefining global health-care delivery." **382**: 1060-1069.

Look at Fig 2 to demonstrate the concept of 'Care Delivery Value Chain'.

B. CHW TRAINING:

2. Both CHW and CHV training need to be dynamic processes to absorb the changing needs of the community[8]. Therefore, training methods and curricula require rigorous revision and process evaluation of the design and conduct of training programs. It should not be a static curriculum repeated many times, but rather it should be revised and improved upon constantly. Training programs require constant revision and vigilant surveillance in order to reflect the community's needs. GHT-FM-CASE is willing to provide technical assistance based on our previous experiences with other communities around the world.

   CHWs and CHVs need refresher training for conventional tasks for non-NCD health management such as diarrhea and pneumonia treatment. The conventional IMCI approach[9] has been challenged recently as well, since it fails to incorporate the latest portable technologies such as pulse oximetry, at the peripheral level of the health care system[10]. This is another example to why the contents of training exercises should be constantly revised and improved upon, based on available technologies and the feasibility of its implementation in the community[11].

3. Conduct training exercises to strengthen the on-site, hands-on training of community health workers at Chiang Rai provincial primary care unit 2 times per year.

   Currently, the Primary Care department in Chiang Rai provincial hospital does not have the capacity to provide direct training to all PCUs in the districts. Therefore, we have to be selective in creating several 'pilot' villages where we can provide direct, hands-on training for the next 2-3 years.

   The effectiveness of this training will be closely followed by PCU staff. We witnessed that current knowledge and skill level of health volunteers varies substantially depending on districts. Some districts are already implementing mass screening for HTN and DM, while others are not. We will select 2 villages to examine the impact of training by

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[8] Arifeen, S., et al. Ibid."Bangladesh: Innovation for universal health coverage 3. Community-based approaches and partnerships: innovations in health-service delivery in Bangladesh." 2012-2026.

Illustrates the changing needs in communities in Bangladesh and CHWs work in the past few decades.

[9] WHO (2001). Model chapter for textbooks. IMCI. Geneva, , WHO**:** 1-33.

There are so many books and handouts for IMCI approach. But the key concept is to develop contextually appropriate strategy locally.

[10] Ralston, M., et al. (2013). "Global paediatric advanced life support: improving child survival in limited-resource settings." Lancet **381**: 256-265.

For instance, take a look at their table 3 and 4.

[11] Howitt, P., et al. (2012). "Technologies for global health." Ibid. **380**: 507-535.

But at the same time, we should reiterate the fact that technologies alone are not the solution. They should come with training and appropriate interpretation.

participatory evaluation. Community Health Workers (CHWs) will be brought to Chiang Rai hospital for training 2 times per year, so that they can focus on hands-on training without the distraction of patient care at the village PCUs. Then, CHWs will provide hands-on training for community health volunteer (CHVs) at the village PCU under the direct supervision and observation of PCU staff from Chiang Rai hospital. Topics for CHW training will include NCD, ANC, and review of the IMCI approach, in addition to topics requested by CHWs and pilot communities.

Dr. Morikawa and volunteer graduates of the track (CASE-FM-GHT) will return annually for the next 2- 3 years.

4. Participatory evaluation should be conducted to assess the understanding CHWs and CHVs of the subject matter, as well as ascertain the impact of the training. The evaluation would also facilitate their participation in the design, execution and evaluation of each training exercise.

5. Evaluation activities should facilitate active participation from the participants and transfer the ownership of the training from 'us' to 'them' so that they can participate in revision and improvement. Designing evaluation activities for this purpose requires creative thinking far from our entrenched 'academic' thinking, where we 'take' data from 'them'[12]. We employed the 'Five Stones' method for participatory evaluation, but the categories and the voting process should be revised to capture the true feelings and honest feedback of training efficacy from the PCU staff.

6. Active partnership with other primary care players in the area, such as NGOs and local diabetic care organizations should be sought out to strengthen training and enhance community-based education/awareness of NCDs.

   Twice a year practical training would not be enough to tackle the NCD epidemic in the area. Multiple modalities and interventions should be employed, and possible healthcare resources in the area need to be integrated. The public health system is already overwhelmed with dealing with current tasks and patient load. It is unreasonable to ask them to provide more without any additional resources. If there is no additional funding, novel interventions employed in other countries, such as SMS texting[13] for screening campaign, BP monitoring, radio broadcasting should be employed to enhance community awareness of targeted illnesses.

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[12] Diaz, A., et al. (2013). "Variation in the interpretation of scientific integrity in community-based participatory health research." Soc Sci & Med **97**: 134-142.

Look at the table for instance to contrast our and their thought process.

[13] de Lepper, A., et al. (2013). "Response patterns to interactive SMS health education quizzes at two sites in Uganda: a cohort study." Trop Med & Int Health **18**(4): 516-521.

C. FAMILY MEDICINE RESIDENCY:

7. The Family Medicine curriculum for practicing physicians should be strengthened so that Chiang Rai provincial hospital becomes one of the training sites for family physicians in Thailand through the practice track.

8. Family Medicine training in Thailand is at a crossroads: Chiang Rai provincial hospital is about to start a family medicine residency to train 'practice track' family medicine residents, offering an intensive course on the weekends for practicing general practioners (GPs) in the area, to become family physicians. But first, the core teaching staff for family medicine should be defined and their academic activities should be funded and supported.

9. A curriculum for medical students including global health should be developed. The essence of global health training is to teach cultural relativism and social determinants of health on an inter- and intra-country scale. Both are relevant in northern Thailand where the health care system serves multiple ethnic communities, as witness to the increasing divergence of wealth brought about by rapid economic development and change. Global health is not a luxurious topic to examine exotic illnesses brought from outside, but rather it is a subject to prepare learners to address insidious yet drastic changes brought from inside the society. It is part of essential skills and knowledge base needed to understand the health status gap among various populations.

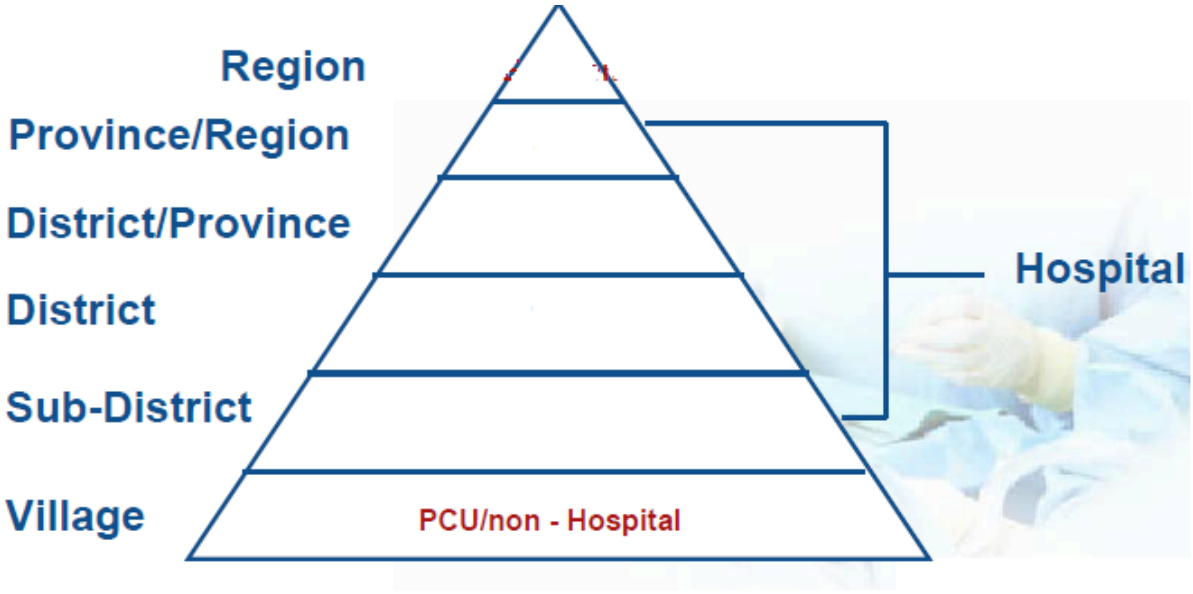
10. A culture of professionalism, self-learning, continuing medical education and academic pursuit should be nurtured in the discipline of Family Medicine.

11. With the enormity of the mission of treating infectious diseases as well as the NCD epidemic, provincial PCU staffs are overwhelmed by the day-to-day task of clinical care and its logistical workload. It is extremely difficult for them to detach themselves from these chores to reflect on their values and thought process, to nurture academic inquiry. But these are essential tenets of what it means to be an academician and clinical educator. Clinicians without reflection and continuous learning are like a leaky faucet draining water. They will not retain any wisdom or knowledge in any meaningful way. One of the major purposes of annual visits by an outsider is to ensure the 'detachment' of the PCU clinical staff from their overwhelmingly busy daily life, and provide reassurance and guidance for their academic pursuits, to be academic educators.

V. APPENDICES

1. Thai Healthcare System
2. Key Education Points
3. Activity Narrative

APPENDIX 1: Thai Healthcare System



District Health System Management: A case study from district health system development in Nakhon Ratchasima Province, Samrerng Yanggratoke, MD, MPH, October 20, 2009

http://www.health.nu.ac.th/hdm2009/oral/15CH2_Samrerng.pdf

Appendix 2: Key Education Points

First aid

1. Burns – how bad (1st, 2nd or 3rd degree) and how big (% palm measurement), cover (dressing or plastic bag), what to refer (20% or greater)
2. Fracture/Splinting – reduce and immobilize
3. CPR – hand placement, compression speed
4. Unconscious – do injury assessment, large bone fracture usually accompanies internal injuries
5. Bleeding – direct pinpoint pressure, leave in foreign object
6. Dog bite - wound cleaning, irrigate, no suture, cover

Diabetes: Signs and Symptoms

1. Polydypsia
2. Polyuria
3. Polyphagia
4. Fatigue
5. Peripheral Neuropathy
6. Blurred Vision

Refer for elevated blood sugar

Hypertension: Signs and Symptoms

1. Headache
2. Fatigue
3. Blurred Vision

Refer for persistent hypertension

APPENDIX 3: ACTIVITY NARRATIVE

Community 1 - Huai Chomphu

- Huai Chomphu is a village located in Mueang Chiang Rai, in the Northern Province of Chiang Rai.
- It's estimated population is roughly 14,000 as of 2005
- The Primary Care Unit is staffed by 1 CHW, a masseuse, and a PCU chief who was in attendance during our visit
- A total of 13 healthcare volunteers participated, coming in from villages located 6-10km away
- Our staff consisted of 5 medical students, 4 doctors and 3 support staff from Chiang Rai Prachanukroh Hospital one of which was a nurse

The day began with an icebreaking session. Dr. Intralawan introduced our team and Dr. Morikawa continued with the introduction. He then asked all of the people who live in Chiang Rai to stand up to distinguish themselves from the rest of the group. Then he asked anyone who had been to Bangkok to stand-up. Doctors were asked to stand up and then volunteers. This was followed by who has boy children, girl children, who likes to eat bananas, or papaya, followed by anyone in their 20s, then 30s, then 40s and finishing with 50s and 60s.

The first session after the icebreaking consisted of first aid training. One of the medical students, started by mimicking a burn, presenting himself to the health worker/volunteers as if he had sustained a burn to his left arm. We asked them to let us know what they would do to address his injuries. The first response by a volunteer was to put aloe vera. Suggestions that followed were to put tomatoes on the burn, egg white, toothpaste, MSG (monosodium glutamate), avoid water, and finally to refer to a primary care center.

We asked what if Pac's skin is peeling? The response form one of the health care workers was to use NS to wash the wound, silver nitrate cream, and leave open, follow up on the wound/cleaning everyday afterwards. Another suggestion was to leave the wound open so it could dry easily. When asked how to manage pain, the response was to use paracetamol or thai traditional medicine, such as various herbs and ginger.

The participants were then showed pictures of 1st/2nd/3rd degree burns and instructed on the key differentiation between the types of burns by assessing depth and size. We emphasized using the palm of one’s hand to measure burn size and distribution. They were instructed that

any burn covering above 20% of the body is life-threatening and requires immediate referral to a higher care center. When asked about leading causes of death from extensive burns, responses were death from excessive pain, from infection and from shock (unclear of the understanding behind psychological vs physiological shock). The explanation was provided that dehydration and hypovolemic shock in severe burns is the leading cause of death.

Most common causes of burns in the community cited were burns from cooking fire, hot oil, motorbike engines, and regions involved were mostly extremities.

We ended the first aid discussion on burns by demonstrating on the medical student Pac how to assess a burn, wash the wound, apply medicated cream/ointment and then wrap or cover the area.

The next topic was splinting of fractures or sprains. Again, the medical students performed a skit where they were riding a motorbike, sustained a collision, fell over and had a severe injury of the left ankle. The group was asked to help the medical student. The first volunteer came to assess the area, make sure there was no bleeding and then wrapped the leg. The group had many questions about this scenario. They wanted to know about bleeding associated with fractures, the pain involved with managing, how hard to pull for reduction, whether or not to do anything for an open fracture and about large fractures from severe accidents (such as pelvic fractures).

We split the participants into 2 groups and reviewed the proper mode of reducing a fracture and then immobilizing. We used tree branches as bones to demonstrate the concepts of reduction. We used participants to demonstrate immobilizing using makeshift splints.

The last component of the first aid discussion involved the assessment of an unconscious victim. Again, the students performed a skit that involved a car accident with one of them sustaining an injury resulting in unresponsiveness. The participants were reluctant to assess or perform any intervention on the mock patient. One volunteer came forward to assess for bleeding and to shake the patient. He also attempted to perform compressions, but placed his hands on upper left chest.

We then demonstrated on a mannequin assessing for responsiveness, checking for breathing, then the correct positioning, depth and rate of compressions. They were also instructed on how to assess pulse. Each participant was requested to individually demonstrate to the group the steps of assessing and performing CPR. This then led into questions about choking and performing the Heimlich maneuver as well as injuries sustained from falling from a tree.

At noon we broke away for a 1 hour lunch break.

After lunch we asked all the participants about how many people experience LBP or shoulder pain. Almost everyone raised their hand. We were preceded by Dr. Morikawa demonstrating to the group each individual exercise and having the group collectively perform 10 repetitions of the exercise.

The last session of the day was reviewing NCD management with focus on diabetes mellitus and hypertension. One of the medical students was presented as a patient complaining of headache and blurry vision. The patient only knows that at one time he was told he had 'high sugar'. The participants suggested talking to the patient about dietary changes and exercise. They were prompted to explain further, 'what dietary changes?'. Suggestions such as reduce consumption of sticky rice, carbonated beverages, juices, etc. were offered.

The patient then agreed to make the lifestyle changes. He returned a week later to present with persistently high sugars. Many participants did not know how to proceed. The community health workers had more knowledge and reported that they would check the sugar, have patient return in a week to recheck and then if necessary refer the patient to a doctor to have medications started.

A similar scenario was posed with a patient presenting with high blood pressure. For both of these scenarios the health volunteers had minimal interaction, many losing interest and participating less. In an effort to raise the importance of the issue we reviewed the complications associated with these diseases such as diabetic foot ulcers, blindness, stroke, heart attack, etc. The knowledge of these conditions was variable with more understanding demonstrated by the health care workers rather than the volunteers.

Our evaluating process consisted of asking for feedback and comments from the group. Overall they had positive comments about 'feeling more confident', 'feeling like a part of the process', 'happy to learn first aid; had a kit but didn't know how to use it', and 'it was worth our time and would do it again'.

Suggestions for the future were, 'knowing more about pregnant patients', 'symptom management such as stomach ache', 'knowing more about cancer; its causes and prevention', and 'medication use (many patients request amoxicillin for stomach pain)'.

Overall, upon our internal review we found that the more interactive scenarios had participants more engaged. The skits performed by the medical students worked to loosen people up, had everyone laughing and paying attention. We feel that questions about these topics were much more open and forthcoming. The afternoon session with NCD was a lot less interactive and less engaging. We are uncertain whether the lack of interest was due to the difficulty of the material, the manner of presentation or the attendants' baseline understanding.

We are uncertain of what benefit the NCD discussion provided and have determined to re-structure this portion for future sessions. We also called into question our 'Pain Away' exercises and whether the participants found this relevant and/or useful. We will also restructure this portion for the next community visit.

Community 2 - Panasawan

- Panasawan is a village located in Mueang Chiang Rai, in the Northern Province of Chiang Rai.
- It's population is roughly 14,000 as of 2005
- The Primary Care Unit is staffed by 2 CHWs and 1 PCU chief, who were in attendance during our visit
- A total of 25 'health volunteers' participated, coming in from the surrounding areas; the age breakdown was 2 in their 20s, 4 in their 30s, 7 in their 40s, 1 in their 50s. The remainder arrived late and demographics were unobtainable.
- Our staff consisted of 5 medical students, 4 doctors and 2 support staff from Chiangrai Prachukroh Hospital

Similar to the previous community the day began with introductions made by Dr. Intralawan in Thai with the addition of a schedule overview for the day. Dr. Morikawa then started the icebreaking scenario. Participants were asked to stand up based on the following identifiers: medical students, nurses, community health workers, health volunteers, who has previously visited Chiang Rai, visited Bangkok, visited the US, enjoys soccer, bananas, mangos, is currently in their 20s, then 30s, 40s, 50s and 60s. While this served to have participants smiling and engaging by identifying themselves it also served as a means for us to document types of participants and their age for our own demographics.

With our more organized schedule we began first aid training at 9:30am, allocating roughly 30 minutes to complete each component including assessment of current practices, review of management and interventions, questions & answer session and wrap-up. The first case was once again a burn scenario. One student acted out a scenario where he sustained a burn injury, using a color photo to show the group his injury. Everyone then broke out into 2 groups of roughly the same size, led by either Dr. Lecky or Dr. Malik with Drs Morikawa and Intralawan acting as supervisors. Each group had 2-3 medical students acting as interpreters and

assistant instructors. Color photos of 1st, 2nd and 3rd degree burns were shown to the participants. Responses on management were similar to the first community including MSG, aloe vera, toothpaste, egg whites and seeking the help of a 'magic man' as modalities of treatment. They were then instructed on the basics of care and referral. Questions were answered and the topic was summarized by Dr. Intralawan to the group as a whole.

The second component of first aid was again splinting of fractures and sprains. The students acted out an injury to the whole group and then we had the break-out sessions. Responses by this group were much more accurate with several members identifying the need for reduction and immobilization without the hands on knowledge of how to perform the maneuvers. This was then demonstrated to each group and members were encouraged to perform mock reduction and to actually wrap a volunteer in a splint. Dr. Intralawan closed the session in the same manner as above. Questions from this community were a lot more focused on this topic and demonstrated a relatively good grasp of the instructed material. The review elicited the correct responses from many of the participants.

The next component was managing a medical student who fell after climbing a tree. The main injury was a bleeding lower extremity. Most participants correctly identified the signs of excessive blood loss, citing pallor, blue lips, fatigue and drowsiness as alarming signs. They also correctly chose pressure as the effective management choice. They were then instructed on direct point pressure and length of time to exert pressure, leaving large foreign objects in place to prevent further bleeding, basic principles of a tourniquet, including the risk of ischemia if left on too long, and elevating the bleeding extremity. All members displayed a strong understanding upon review and the session took roughly 15 minutes to complete.

The final planned component was management of a dog bite injury with the key principle being to clean the wound and leave it open. Using the mock scenario, again played out by a medical student, the participants were shown a picture of a large dog bite. They had many questions on appropriate wound management, with concerns for infection and closure of the wound. One participant reported that, "a dog bite is a sign that a person's spirit has left their body. Rubbing an egg on them can help call the spirit to return to the body". This sentiment was echoed by a few other participants. As our time management was much more controlled we completed all the planned sessions an hour earlier than predicted. The questions generated on appropriate wound management led to an interactive workshop on suture placement.

Instruments were shown to all participants with instruction on their proper handling. Single, interrupted sutures were then demonstrated on gauze and latex mannequins with instrument and/or hand tying for knots. All participants watched the suture placement, however not all practiced hands-on placement. Those who demonstrated strong interest were coached further, and the session was not made obligatory, allowing those with less interest to stand back.

Surprisingly, many of the volunteers picked up the skill relatively quickly and with an impressive skill. Suture placement was not reviewed with the complete group at the end. Instead, those who were willing to continue practicing were allowed to do so during the lunch hour period.

The lunch break was 1 hour taking place at noon.

After lunch rather than implement the exercises from the "Pain Away" program, we decided to assess the locals' method for addressing shoulder and back pain. Two students played the roles of patient and doctor, the one complaining of musculoskeletal pain and the other turning to the group and asking them their responses to the same patient of the sort. Responses indicated that initially the participants would recommend massage performed by a close friend or family member. If this proved unsuccessful then Thai massage was an option (although there was no trained masseuse in the local area). Exercise was also recommended. When these means were exhausted, patients could take Paracetamol or Fenac for pain relief. We also asked them about other traditional healing methods employed in the community. Answers included coin rubbing (with a medical student identifying himself, amongst several others, as knowledgable on the application), acupressure, moxibustion/cupping, and 'skin pulling'. These weren't always preferred to allopathic therapy but were mentioned as resources sometimes used by inhabitants.

The NDC component of the workshop was heavily reformatted from the previous community. The students presented a scenario of a doctor interviewing a patient. The patient presented with the 5 key symptoms of diabetes with the doctor prompting responses from the group at the mention of each symptom. The participants correctly identified diabetes as the diagnosis by the 4th symptom. The students continued with the case by then asking about what to advise this patient and how to manage. The participants correctly identified the dietary and lifestyle changes that should be encouraged to the patient. Their responses included the following: eat meals on time, avoid MSG, avoid fats/oils, exercise more, eat more vegetables, avoid sweet fruits, quit smoking, and quit alcohol. The following complications were also elicited by the group: 'stomach inflammation' (described as bloating and indigestion), blurry vision, foot ulcer, numbness, heart attack, and stroke.

Dr. Intralawan heavily reviewed each component with the group at the end, summarizing the key points and asking each member to contribute answers. The same was done for a case of hypertension. Dr. Morikawa asked the group why we should screen for these diseases. Some answers included: "For the health of the villagers", "so people can get the appropriate treatment", "so people don't have to go far for treatment" and to avoid complications. He also asked why

they thought these diseases were increasing in the country. Responses were: "Because of our way of eating and way of life is different than it used to be", "meat has hormone injections to increase growth", "chemicals in our foods", "fried foods", "not wanting to do exercise", and "field work equals exercise and this is less frequent".

This NCD discussion was much more participatory than the previous community. We found that our case scenarios and questions were engaging and participants were eager and willing to participate. There was still a small component of distraction and silence by some members in comparison to the first aid sessions. We believe this may have been due to the nature of the material and the time of the discussion (taking place in the afternoon after lunch).

The day ended by the 5 stone evaluation of our teaching. Each participant was given 5 different color stickers. They could then place these stickers on a large poster that listed each instructional piece. Each choice represented either 'useful', 'not useful', 'clear', 'not clear', and 'would like more on the topic'. The participants selected 'useful' and 'clear' for all topics with only one selection to know more about DM & HTN. This likely represents a misunderstanding of the process of evaluation or an unwillingness to criticize the workshop. This may have to do with the reverential nature of Thai people and a culture of deep respect for instructors and a taboo to criticize one's teachers.