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PRIORITY SETTING FOR UNIVERSAL HEALTH COVERAGE IN THAILAND

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PRIORITY SETTING FOR UNIVERSAL HEALTH COVERAGE IN THAILAND

THE COMPANION BOOK FOR FIELD TRIPS

PRINCE MAHIDOL AWARD CONFERENCE 2016 | PRIORITY SETTING FOR UNIVERSAL HEALTH COVERAGE

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Priority Setting for Universal Health Coverage in Thailand

The companion book for field trips in PMAC 2016

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Priority Setting for Universal Health Coverage (UHC): Case Studies in Thailand

Wilailuk Wisasa

Pianghatai Ingun

"...if services are to be provided for all, not all services can be provided. The most cost-effective services should be provided first."

Gro Harlem Brundtland

The former World Health Organization (WHO) Director-General

The ultimate goal of universal health coverage (UHC) is to achieve accessibility to necessary health services including prevention, promotion, treatment, rehabilitation and palliation to everyone in the country. These health services should not only have sufficient quality and effectiveness but also do not induce financial hardship to the patients and their families. While aiming to promote accessibility to quality health services for everyone, limitation of resources has been a key constraint for countries. The former WHO Director-General, Gro

Harlem Brundtland had stated that "…if services are to be provided for all, not all services can be provided. The most cost-effective services should be provided first."

In Thailand, UHC policy has been implemented nationwide to ensure that every Thai citizen who lives in Thailand can access to necessary health services since 2002 when the National Health Security Act was legislated. The coverage of public health insurance schemes of the Thai citizens has been increased from only 71% when piloting the policy in fiscal year (FY) 2001 to 99.84% in FY2014. The coverage by public health insurance schemes in FY2014 are 16.90% (11.07 million) for private formal employees under the Social Security Scheme (SSS), 7.39% (4.83 million) for civil servants and their dependents under the Civil Servant Medical Benefit Scheme (CSMBS), and 73.80% (48.31 million) for the rest of Thai citizens under the Universal Coverage Scheme (UCS).

To achieve UHC, the countries have to advance in at least three dimensions. Firstly, they have to expand health services to cover more people especially the poor. Secondly, they have to expand health services to cover more cost-effective ones. And the last one is that they have to reduce out-of-pocket payments of people who use necessary health services. For health services included in benefit packages, UCS applies a negative list concept—all diseases and services were covered except a few such as aesthetic surgeries and proven ineffective interventions. Maximum ceiling of financial coverage for

each treatment was not applicable. However a critical point is that how to expand services which we know that they are cost effective.

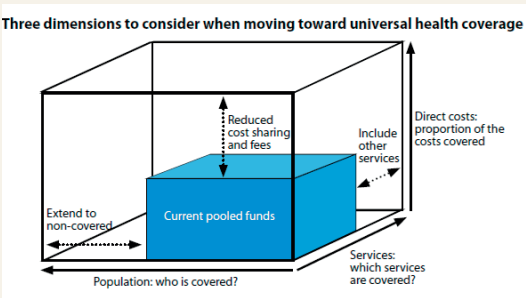


Figure from the World Health Report 2010

Introducing new health services into government benefit packages has been a big issue for every scheme, especially in the UCS. Therefore, priority setting for health services to be introduced to the government benefit packages is an important process among the schemes.

Expanding priority services

Thailand has developed more capacity on health technology assessment (HTA) and inclusion of new interventions into the UCS benefit package is guided by evidence through stringent economic evaluation, budget impact assessment and ethical concerns especially when there are limited supply-side capacities to offer such new services equitably. The Health Intervention and Technology Assessment Programme (HITAP) was established in 2007 as a research organization, contributed studies with major policy impacts, such as the economic evaluation

of cervical cancer screening and human papillomavirus vaccines. One Gross National Income per capita for a quality-adjusted life year was applied as a benchmark for public investment in health.

Renal replacement therapy (RRT) was initially excluded from the UCS benefit package due to its high cost. UCS members faced catastrophic spending, whereas CSMBS and SSS fully covered. RRT was heavily analyzed over several years, including demand estimates, cost-effectiveness analysis, policy analysis and public opinion surveys. Clearly, RRT was not cost-effective and contributed to long-term fiscal burden, especially given an increasing prevalence of diabetes and hypertension. Despite ineffective cost, the government in 2006 decided to include RRT into the UCS benefit package, to prevent catastrophic spending and to ensure equity across all schemes financed by public resources. Peritoneal dialysis (PD) first policy was adopted in view of equitable access by all. Dialysis solution was delivered to PD patient's home by post-office, for patient home dialysis results in minimum travelling cost for them. Banphaeo Hospital is one of pilot area for this policy. A full account of discussion on the outcomes of the PD-first policy was reported.

Expanding access to specialty medicines

Thai Government ensures the universal access of essential health-care services for the country's population of 68 million people. This is achieved via the National List of

Essential Medicines (NLEM), a national drug list that is used as a reference for the pharmaceutical benefit for all public health insurance schemes. All patients who meet the medical criteria are entitled to receive the free medications listed in by clinical experts and public research institutes. This list currently covers more than 800 drug formularies. Since its establishment, the HITAP has played a pivotal role in the development of the NLEM.

The NLEM has been an important part of the Thai national medicines policy since it was first published in 1981. The NLEM is the basis for the mandatory payment of medicine costs as a reference for the pharmaceutical benefit for all public health insurance schemes. Medicines on the NLEM are classified in 6 groups from A to E2. The E2 category includes high risk costly drugs to be used by senior specialists.

As in most countries, high-cost specialty medicines pose a major challenge to the health system in Thailand. The government addressed this challenge in 2008 through a multipronged strategy known as the E2 access programme. The programme initially targeted ten very costly medicines for 21 relatively rare conditions, which require specific diagnostic and treatment monitoring approaches.

E2 programme medicines were listed in the newly created NLEM E2 medicines category, which then mandated

public health insurance schemes to pay for these high cost medicines for patients meeting specific clinical eligibility criteria. However, unlike other medicines in the NLEM, public health insurance schemes were given time to implement E2 medicines to allow them to address the resulting budget impact. The National Health Security Office (NHSO) began covering E2 medicines for UCS patients in January 2009. The NHSO collaborated with the Government Pharmaceutical Organization (GPO) to introduce in central procurement (instead of individual hospital-based procurement) for all E2 products used for UCS patients in hospitals. Pooled procurement resulted in lower prices of medicines, saving the government the equivalent of millions of dollars annually. Operationally, the GPO distributes E2 products for UCS patients directly to hospitals via the so-called vendor-managed inventory (VMI) system. Recently, the list of E2 medicines has been expanded since 2013 to 16 products indicated for 27 conditions.

The E2 strategy illustrates aspects of a system approach to benefit policy design that combines government regulatory, managerial, and economic measures with stakeholder cooperation in order to balance equitable access to and appropriate use of medicines with their affordability along with the development of viable markets for industry. In addition, effects of the programme on the health of individuals who receive E2 category medicines and on the overall population's health are monitored and in evaluation process. Site visit would offer a clear picture of this comprehensive system of the management of medicines listed in the high cost drugs in E2 category.

Priority setting is an essential process

Priority setting to achieve universal coverage is an essential process at all levels of health care services, some examples were selected to be presented, including the university hospital which is a tertiary care center with high expenses and demands and the community health facilities.

At the tertiary care level, Siriraj Hospital, the first and largest university hospital in Thailand (established in 1888 by H.M. King Chulalongkorn), is a good example. The hospital has set the objective to achieve international excellence in patient care, medical education and research. The hospital has its mission to provide high-quality health care for all Thai people. The prioritization of health services for optimizing care and maintaining health equity is implemented and will be presented.

At the community level, the priority setting in Community Health Fund is also discussed. The Community Health Fund is a local health fund for local people, established in 2006, by virtue of the National Health Security Act B.E. 2545. All local governments were invited to participate in the Community Health Fund on a voluntary basis and a matching fund from the local government was required. The NHSO initially earmarked 37.5 baht per capita, and increased it to 45 baht per capita in 2014, while local governments are obliged to pay 10%, 20%, or 50% to the budget according to fiscal capacity. The Community Health Fund is required to be managed by the committees

who are representatives from the NHSO, community, municipality and health centers in the community. Health promotion and disease prevention initiatives run by the community are mainly supported by Community Health Fund. The community is empowered through this participation. Since the problems in the community are complex and resources are limited, priority setting is necessary. Setting priority to these problems and identifying strategies and solutions in the community are managed at two levels including the local government and the community levels. A case study of Suanluang community will be shown in the field trip program.

Policy setting for children eye care was explored through the study entitled Assessing the Accuracy and Feasibility of a Refractive Error Screening Programme Conducted by School Teachers in Pre-Primary and Primary Schools in Thailand.

1

Saving Our Children's Sight: Effective Eye Screening by School Teachers

Kamolrat Turner
Wannaporn Boonpleng

"Of all the senses, sight must be the most delightful."

Helen Keller*

*American educator Helen Keller overcame the adversity of being blind and deaf to become one of the 20th century's leading humanitarians, as well as co-founder of the ACLU (American Civil Liberties Union).[1]

Refractive error is the main cause of visual impairment and blindness around the world. Like many other countries, Thailand faces this problem, especially among young school children. Access to refractive error screening and treatment has been limited due to lack of awareness of their parents or guardians and national policy on screening and correcting refractive errors in children. Aiming at mitigating refractive disorder and its consequences, a research study to determine the accuracy and feasibility of a refractive error screening program by teachers in pre-primary and primary schools, as well as formulate the referral system for further diagnosis and treatment was conducted in 2011 by the Health Intervention and Technology Assessment Program (HITAP), in collaboration with the Royal College

of Ophthalmologists, Queen Sirikit National Institute of Child Health, and hospitals under the Ministry of Public Health, Thailand. A visual acuity screening manual was developed. The screening workshop and tools were provided to teachers in the target schools. It was found that refractive error screening by school teachers was accurate and feasible in four study provinces. The results revealed that 4% of screened children had refractive error and needed spectacles[2] and most of them had never realized they had a problem prior to screening. This evidence was considered by the Subcommittee for Development of the Benefit Package and Service Delivery (SCBP) — the coverage decision authority of the Universal Coverage (UC) Scheme. Subsequently, the National Health Security Office (NHSO) has introduced a pilot project in 10 provinces since 2014, aiming to assess the feasibility of implementing a system for the screening of refractive error by school teachers in order to formulate a national policy.

Sight is critical for life and learning

Sight is one of the most important senses of human beings, as it is essential in performing daily life activities. For children, sight is very important for their learning, personality development and career opportunities. Unfortunately, a child who has refractive error, and their parents, would not have noticed this obstacle during early life. The first six years of life is critical for development of the visual portion of the brain because it is dependent on good visual input. When one or both eyes send a blurred image to the brain during the early years of a child's life, amblyopia or lazy eye will develop as the brain does not

learn to see clearly. Hence, refractive error in childhood is the major cause of amblyopia and if this condition is not treated in a timely fashion, visual impairment may extend into adulthood. Visual screening and appropriate treatment in children is therefore helpful in saving their sight.

Pre-school children

Children in a classroom

A nine-year old boy, a student at Anuban Wat Phichai Songkram School, never knew that he had a visual problem until he became involved in this research study and he had his eyes screened. Actually, he had worn a pair of glasses for a few years in order to protect his eyes from dust because he had an allergy. He said “this new pair of glasses makes me see better. I can see letters on board much clearer than before.”

Good eyesight is very meaningful for school children’s lives. A 10-year old boy, one of the participants of the screening program, said “Without eyeglasses, I had difficulties reading the board in the classroom and this made me feel miserable in coping with schoolwork”. At the age of eight years old, his visual problem was detected and he had started to wear spectacles.

Eyeglasses have become a vital part of his school life and valued by his parents. One day he was hit on the face by a ball during a school physical activity class. He was very frightened and worried, as he said “I got hurt but the most worrisome thing was that my glasses were broken. I was afraid my mom would be angry and punish me because the eyeglasses were expensive”. This project gave him a new pair of eyeglasses for which he could choose the frame by himself. He was very happy with it. With his new eyeglasses, he can see things around him clearer.

School children who have detected for RE and got free glasses.

Many children at this school have been detected for abnormal visual acuity and they have been referred to ophthalmologists for further diagnosis and proper treatment. Imagine what would happen if these children did not have eye screening and their eye problems were neither found nor treated?

Refractive error: A hidden problem in children

In Thailand, visual acuity testing for children was rarely done due to the lack of trained health care professionals and low awareness among children and their caregivers.

Refractive error has been a hidden problem of Thai children because most of them do not receive a vision examination nor proper treatment. As a result, the problems of visual impairment and blindness exacerbate. Under the current health care system, the health benefit package of the Universal Coverage (UC) Scheme does not cover spectacles. Many children with refractive error do not get appropriate management especially children from low income families who are unable to afford proper eyeglasses. Some parents bought spectacles for their children from supermarkets and elsewhere without an accurate prescription. In this manner, the visual problem may not be corrected and could deteriorate.

“Some of my students come from low income families. Their parents were separated. They stay with their grandparents. Though the grandparents know that the children have eye problems, they could not afford proper treatment”, said a teacher from Anuban Wat Phichai Songkram School.

It is difficult for the teachers to manage the classrooms with students who have problems with their sight. As one of the teachers said, “I need to ask students who have near-sighted problems to sit where they can see the board and concentrate with the classroom activities. It is difficult for me because I have fifty students in a small room. I have a hard time to move students around. In many instances, it disturbed their classmates because some students with sight problems are taller than their friends”.

Classroom atmosphere

Without proper screening, some children do not realize that they have vision problems. They may be able to see close objects very well but distant objects are blurred. They usually think that it is normal and their problems will never get fixed.

Dr. Kanlaya Teerawattananon, an ophthalmologist from Samutprakan Hospital, pointed out that the children with refractive errors are not able to see distant or near objects clearly. Blurred vision disturbs their concentration on the task leading to poor performance in the classroom. This made their teachers misinterpret their children for being stupid or stubborn. When their refractive errors were corrected, the students could concentrate more in the learning activities.

Early detection and treatment can save children sight

Uncorrected refractive error in children can cause amblyopia, resulting in permanent visual impairment. “Many patients with sight problems come to see doctors when it was too late to manage. All refractive errors can be solved by wearing eyeglasses. It is important for children to solve refractive errors at an early age to avoid

serious complications such as amblyopia", said Dr. Choosak Ruangjutipopan, an ophthalmologist and deputy director of Samutprakan Hospital. As eye problems yield both short and long term impacts on children, all respective parties need to be involved to solve this problem.

Involvement of school teachers with refractive error screening

As most children spend significant time at school, their teachers can notice all the problems they have. Therefore, a school teacher can play an important role in ensuring children's health especially with regard to eye screening. Besides teachers' professional skill in approaching children, their love and care for and close relationship with students are comparative advantages for their involvement as providers of visual screening services, especially when dealing with young children. Teachers' involvement helps all students to receive regular visual screening and relevant treatment in positive cases.

As mentioned earlier, the refractive error screening program was initially conducted in 17 schools in 4 provinces, representing 4 geographic regions in Thailand, with participation of 5,303 children and 226 teachers[2].

The study involved a comprehensive approach to school-based and school-linked eye services, combining eye screening in classrooms and effective coordination for further treatment services in hospitals. It was found that well-trained teachers played an important role in conducting visual acuity testing. Before providing the screening to children at schools, the teachers of each

classroom from the selected schools were invited to attend a one-day workshop conducted by ophthalmologists and ophthalmic nurses regarding how to perform the visual acuity test. The screening manual and tools were provided to the teachers during the training.

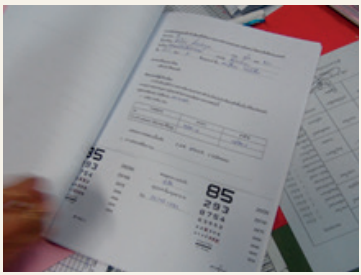
Visual acuity screening in pre-primary school students by their teachers.

The trained teachers then performed vision screening for the students in their classrooms. In positive cases, their parents will be informed about the test results and sought permission to bring the students to receive a full eye examination and treatment at the provincial hospital.

Decent system link between schools and hospitals yields desirable outcomes

A referral system linking schools and hospitals was set to provide diagnosis and treatment to positive screened children. The children with positive screening were referred to get an eye examination by an ophthalmologist in a provincial hospital. The examination dates were set in an agreement between the hospital and school. Teachers brought the positive screened children to the hospitals. The ophthalmologists made diagnoses and provide treatments which includes prescribing spectacles, if

needed, without charge and teaching the children to perform eye exercises. The children could choose the eyeglass frames they liked.



Student vision screening record

Eye clinic, Samutprakan Hospital

Frames for children

In this project, the accuracy of school teachers' screening ability was comparable to the screening conducted by health professionals. The teachers were proud that they could help their students. Though eye screening required new skills of the teachers, regular training once a year made them feel confident to perform the procedures. Informing the parents about their children's eye problems was also difficult. Some parents had a misconception about the use of spectacles. They believed that the more children wore glasses the more their eye problems are exacerbated. Thus, they did not want their children to wear spectacles. Time was required to correct this

misconception. However, the majority of the parents cooperated very well and were happy that their children's eye sight problems were fixed.

This research project suggested that 6.6% of students in pre-primary and primary schools had refractive errors, 4.1% needed to wear spectacles, and 0.7% of screened students had lazy eye. Moreover, others eye problems such as squint and ptosis were also detected. 26 % of children who had refractive error and needed spectacles had worn spectacles before screening, with only 6% having the correct spectacles. A total of 226 children received spectacles from the research project.[2]

Key success factors

The coordination between education and health care sectors is the most important factor for success. The project involved a comprehensive approach to school-based and school-linked eye services, combining visual acuity testing at school and effective coordination of eye services for children at provincial hospitals. Children received early detection for eye problems and got accurate spectacles if needed.

Ways forward from research to policy

Government decisions about allocation of healthcare resources are increasingly being driven by evidence in order to make best use of its limited resources. Their actions relate to priority setting. The research of assessing the accuracy and feasibility of a refractive error screening program is an example of evidence-informed policy making. Using evidence from research and pilot projects, the

Thai government decided to implement a public health program to address refractive error in children nationally on the 9th of January, 2016. Under this policy, all children from first grade of primary school will receive refractive error screening by teachers. Children who have refractive error will receive early diagnosis and proper treatment from an ophthalmologist. Treatment includes providing eyeglasses and exercises to improve convergence insufficiency free-of-charge.

In addition, to address the problem of uncorrected refractive error in children, sharing responsibility for improving children's eyesight is also important. "Parents and other child caregivers need to be involved. Parents need to share responsibility for observing children's eye problems. Caregivers can be trained in observing visual behaviors in children to detect visual problems. Moreover, it is important to keep children's records of eye examination for long term follow up and evaluation of the program. Children should have a book of recording their health information during childhood period, specially continued treatments and essential interventions", said Dr. Kwanjai Wongkittirux, an ophthalmologist of Queen Sirikit National Institute of Child Health.

Dr. Kwanjai, an ophthalmologist from Queen Sirikit National Institute of Child Health

To sum up, refractive error in young children is an important issue. All stakeholders, particularly education and health care sectors, need to be involved. Given an inadequate health workforce, school teachers can play a key role in providing vision screening to their students. Nevertheless, the extended screening provision means increasing need for proper treatment of refractive error cases, thus an efficient referral mechanism and well preparation in healthcare facilities are indispensable. Furthermore, eye examinations for school children should be delivered on a regular basis and also scaled up countrywide. All children whose screening results are positive should receive further diagnosis and treatment. Children's eyesight should be set as a priority in the health benefit package.

Acknowledgement

We would like to express our deepest gratitude to Dr. Kwanjai Wongkittirux, an ophthalmologist of Queen Sirikit National Institute of Child Health, Dr. Choosak Ruangjutipopan, an ophthalmologist and deputy director of Samutprakan Hospital, Dr. Kanlaya Teerawattananon, an ophthalmologist of Samutprakan Hospital, the teachers of Anuban Wat Phichai Songkram School including Mr. Sompan Buasong, a deputy director, Ms. Watcharaporn Pikulnoi and Ms. Kanchana Sonchai for their information. We would also like to extend our appreciation to the Health Intervention and Technology Assessment Program (HITAP) researchers for their information and advice.

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2

Management of High-cost Essential Medicine in the UHC Context

Sunanta Thongpat
Suparpit von Bormann

Ramathibodi Hospital

"Doctor, could you please save my baby?"

"Chon Daen" is one of the districts of Phetchabun province. This name means "reaching the edge of the land". This district is 40 kilometers far from the city of Phetchabun province. There is a family of five members consisting of grandparents, parents and a baby girl whose name is Weeraya. The family earns around 50,000 Bahts (about $1,500) per year from working on their own corn field.

Weeraya and her grandmother

At 9 months old, Weeraya had a big hard mass in her tummy. She could not even sit by herself. The family was so worried. They took Weeraya to a general hospital in Phetchabun hoping that the symptoms would be cured soon. However, after several visits, the doctor said that Weeraya needed to be transferred to a bigger hospital in Bangkok for proper investigation and treatment. Apart from concern regarding Weeraya's symptoms, the cost of travelling to Bangkok which is 350 kilometers away would cost a fortune for them. Normally, when they travelled to the city of Phetchabun, the family had to pay around 1,400 Bahts ($40) round trip per person. Travelling to Bangkok for three persons, the expense would be three-fold of that amount or about 10% of their annual income. For taking Weeraya to the hospital in Bangkok, the family had to make a loan from neighbor and a bank to cover all the expenses. They had to end up with put the only corn field of the family in the mortgage hoping that they could save their little girl's life.

Weeraya's family and her doctor

When the family got to Ramathibodi Hospital in Bangkok, Weeraya had gone through several check-up, finally she was diagnosed with Gaucher disease. The doctor informed the family that there was a medicine that could cure the girl. This good news raised their hope. However, not all went smoothly for Weeraya. The grandmother said "When the doctor said this medicine would cost

millions, I had no idea what to do next. Our hope flew away. It brought so much worry to our family. But the doctor was so kind. She told us that she would try to find a way to help us".

After a while, the doctor told them that Weeraya's medicine bills could be covered by the support of National Health Security Office (NHSO) as it was listed in the National List of Essential Medicines (NLEM). That was so much relief for the family. However, the doctor gave further details that Weeraya needed to come to Ramathibodi Hospital every two weeks to get medicine. Finally, Weeraya had received Imiglucerace, a high cost medicine, for her treatment. She had taken this medicine for one year and ten months. Then, the plan for bone marrow transplantation or stem cell transplantation was set up in March 2015. At that time, bone marrow transplant from complete matched related-donor usually from sibling was included in Universal Health Coverage (UHC) benefit package. However, for Weeraya, the process of bone marrow transplantation was an extraordinary case because she was a single child so the doctor had to use her father who was only half-matched as the donor. In this case the doctors had to find other financial source. It was fortunate that Ramathibodi Hospital agreed to absorb this expense.

The operation went well. Currently, Weeraya has become a talkative girl who can play and do most things like other children in her age. She has also taken immune suppressive medicine to manage bone marrow transplantation. The doctor said that she has to continue taking this medicine for about one more year, then later she can stop it and live a normal life as other kids. Weeraya wishes that she will be able to go to school like other children.

Gaucher: A life threatening disease

Weeraya had suffered from a rare disease that occurs in 1 among 50,000 to 100,000 people in the general population. This disease is called Gaucher, which is a lysosomal storage disorder[1]**.** The disease is caused by deficiency of the lysosomal enzyme glucocerebrosidase[2.] There are 3 major types of Gaucher disease (GD) based on characteristics and symptoms as follows[2]. **Type 1 a non-neuronopathic form** (GD1) is the most common. Low platelet count, anemia, and bone manifestations are the most typical signs of Gaucher disease type 1. **Type 2 an acute neuronopathic form** (GD2) usually causes life-threatening medical problems beginning in infancy and is not treatable. And **Type 3 a chronic neuronopathic form** (GD3) can cause abnormal eye movements, seizures, and brain damage. Those types 2 and 3 are commonly found in Asia. Patient with type 2 or 3 Gaucher disease can be presented in the same symptoms as type 1, with additional symptoms such as liver and spleen enlargement and the nervous disorders. GD type 3 tends to be worsening more slowly than type 2 and it can be treated by one of advanced and expensive medicines, called Imiglucerase but only for prevent damage from some symptoms, except brain damage.

Imiglucerase

Imiglucerase is used as an Enzyme Replacement Therapy (ERT) for such a rare disease that has been adopted since early 1990[1]. Imiglucerase is among most expensive drugs which should be taken for life. Due to the rarity of the disease, this drug has become an orphan drug in many countries, meaning a government accommodates the financial constraints that limit research into drugs. However, when Weeraya became sick, Imiglucerase was already in the NLEM. It was so lucky that she was taken to a tertiary hospital like Ramathibodi Hospital where there are specialists capable of doing the right diagnosis and order this medicine under strict criteria.

Professor Duangrurdee Wattanasirichaigoon, M.D. Chief of Medical Genetics, Department of Pediatrics, Faculty of Medicine Ramathibodi Hospital, Mahidol University

Extremely expensive but possible

Approximately, 5-7 cases of Gaucher disease have been found every year in Thailand. The prevalence is around 1:100,000 populations[3]. Successful treatment was nearly impossible as the treatment for this disease is very expensive. For a patient weight 20 kilograms, it costs around $140,000 annually, plus $30,000 once for bone marrow transplantation. Indeed, the more patient weights, the more money it costs. As a consequence of the disease, the older the patient becomes, the higher the cost. Some countries in Asia had had stopped giving this medicine to new patients after they could not afford the cost. Considering the cost of treatment and all circumstances, Weeraya and other patients with such a

rare disease would not have been cured without the UHC system and tremendous support from a physician team, including Professor Duangrurdee Wattanasirichaigoon, M.D. and Professor Suradej Hongeng, M.D. and their team.

Professor Suradej Hongeng, M.D.
Chief of Pediatric Hematology, Oncology and Bone Marrow Transplantation

Professor Duangrurdee, a medical geneticist in pediatric, is one of 14 genetic specialists in Thailand. She tried all her best to help Weeraya and her family. She finished her board of medicine from the US and learned that this disease is treatable by using Imiglucerase. About 90% of Western patients had mild type of GD. Unfortunately, for Thai and Asian patients, the disease is more severe associated with brain damage which cannot be prevented by medicine. This type of patients will suffer for the rest of their life unless they undergo a bone marrow transplantation.

Therefore, in 2008 the physician team of Ramathibodi Hospital developed an innovative design of treatment called “Bridging therapy”. With this new design, the patients are prescribed ERT for some years. When their health is better and GD cells burden are under control, they can receive bone marrow transplantation. This design of treatment will cut the cost of life-long medication, prevent neurological symptoms and brings back quality of life to the patients. However, for most Thai

patients, it is impossible to afford the cost of this treatment.

Though the cost of treatment was a huge obstacle, it was not big enough to prevent Prof. Daungrurdee to continue her inspiration to help patients. “When the patients were in front of me, I could not ignore them, so I thought that I must do something. Then, I started to write a letter to a pharmaceutical company asking them for donation of the effective medicine”. Fortunately, the company kindly agreed to donate the medicine for 2 cases. Both cases went well with the treatment. However, she thought about other patients who did not have an access to this medicine. She cannot ask for too much from the company. What should she do?

Rare Disease Day

Rare Disease Day activity

She started to raise this problem to people in the policy level. She aimed to drive the medicine to be included in the NLEM. However, after years, success seemed to be far away. She felt exhausted until she consulted with her former teacher, Professor Pattaraporn Isarangkula Na Ayuthaya that she was treating difficult disease, but no medicine was available in Thailand. This is tiring. "If you voice something, but no one hears you, it's because your voice is not loud enough", said the teacher. This sentence unbelievably motivated Professor Duangrurdee to try harder to help her patients to be free from this rare disease. Professor Duangrurdee and her team had organized a Rare Disease Day. They tried to inform the policy level by inviting them to the event. Fortunately, this time she could see the light at the end of the tunnel. She and her team were suggested to write a letter to 20 working groups of National Experts on NLEM selection in order to propose this medicine to be included in the NLEM. Normally, this national expert group would gather information and present to Subcommittee for Development of NLEM, then the research evidence will be done by the Health Economics Working Group through the study of Health Intervention and Technology Assessment Program (HITAP).

Based a study of HITAP and NHSO[4], reasons for approval of Imiglucerase in the E2 category of NLEM were that it is used for rare disease with health economic evaluation study estimated that there would be no more than 5 patients who require treatment per year. In addition, the disease can be curable by bone marrow transplantation after treating with medicine for one to two years. Bone marrow transplantation at that time had been in the UHC. Therefore, Imiglucerase was added in the list to increase equity for everyone.

When asked about the comment from her teacher who inspired her, Prof. Duangrurdee smiled with tears in her eyes. “My teacher said that I have done a great job, she’s proud of me”

High-cost essential medicine management in Ramathibodi Hospital

Ramathibodi Hospital, Mahidol University, is a super tertiary care hospital, where many patients are waiting to get a better chance for treatment. This hospital has adopted the goal of health care services of Thailand by providing equitable access to health care services and essential treatments to patients. However, management of high-cost treatment has become the challenge for the hospitals. Although the procedure for using high-cost medicine (HCM) has been established, physicians have faced the challenge of prescription.

In the past, the complicated procedure for approval of HCM had caused difficulties for physicians in completing several documents. In addition, the approval process was too long. In order to facilitate physicians to prescribe HCM, medical teams, specialists from all departments as well as the pharmacist team of Ramathibodi Hospital has re-considered about this procedure. The approval form for doctors was finally reduced to one page covering only essential information of patients and clear exclusion criteria. Research evidence was conducted to support decision making through the changing process. Therefore, nowadays, the process of approval for HCM has brought the possibility of equity for health care services for more patients.

Pharmacy Department in Ramathibodi Hospital

Ramathibodi Hospital has highlighted an effective strategy to overcome the barriers of HCM under the context of Thailand by integrating knowledge and research to minimize barriers and to support policy for high cost treatment as in the example case of Weeraya. Professor Suradej addressed that **"**Thailand has many great physicians who have been well trained from overseas. However, the knowledge from their learning is not always applicable for every situation. Applying research evidence and introducing innovation of treatment which is appropriate to Thai context will help our country to decrease burden from HCM and save lives of patients without country bankruptcy"

Looking forward

To sustain the management system for HCM, it is important to effectively monitor the use of HCM-using in Thailand, such as using scientific-based evidence and expert groups. These expert groups would act as consultants supporting necessary information for physicians all over the country. In turn, data collected from physicians will be valuable evidences for the country. Hopefully, the innovation of management strategies for HCM will be developed more appropriately to reduce cost in health care system. In addition, the most important aspect is to make HCM 'best fit' to local context of Thailand and to ensure the

sustainability of the UHC for the better lives of Thai people.

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3

Ensuring Universal Access to High-Cost Treatment: Evidence Generation to Support the Off-Label Use of Bevacizumab in Thailand

Pornruedee Nitirat
Orarat Wangpradit

"If you spend a lot of money on a few patients, you will have less to spend on many patients with cost-effective treatments so it is actually morally appropriate to look at cost effectiveness in order to provide the best quality of care for all of people"

Sir Michael David Rawlins

Former Chairman, National Institute for Health and Care Excellence (NICE), UK & Prince Mahidol Award Laureate 2012

At the dawn of a special day, a 68-year old man got up earlier than usual and in 30 minutes later, he was ready to leave his house in Ratchaburi province for a particular appointment with his ophthalmologist. Without any hesitation, he slowly and carefully drove his car heading to Nakhon Pathom province where Mettapracharak hospital, his destination, was located. The only reason to leave home very early was to obtain the early queue of the clinic to ensure his early return in the afternoon. Although it was only 42 kilometers (26 miles), it was quite difficult for him to arrive at the hospital due to the limitation of his eye vision. However, he has never complained and still made strong effort not to miss his appointment.

"I am scheduled to meet with my doctor once a month or every 2 months. The appointment is my priority because it means the opportunity to gain my eyesight back. I am fine to drive this far to this hospital. I trust my doctor and really like the warm service mind of all staffs. Also, coming here, I don't have to worry about the cost" said the 68-year old man.

Located in Nakhon Pathom province only 40 kilometers (25 miles) away from Bangkok, Mettapracharak Hospital or generally called "Wat Rai Khing" Hospital is a 150-bed eye-specialist hospital under a light of Thai health care system. Uniquely, this hospital provides specialized care for eye diseases. With its long history and specialization, the hospital becomes famous for patients with eye problems. Every weekday, the eye clinic with approximately 10 ophthalmologists is open to serve hundreds of patients from all regions of Thailand.

Mettapracharak Hospital

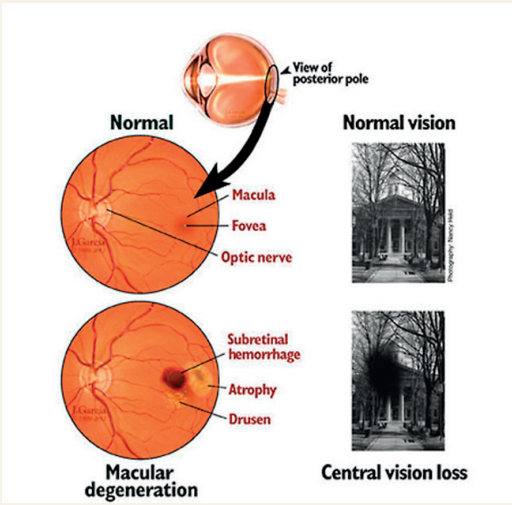
Screening for macular degeneration at Mettapracharak Hospital

Truly, Mettapracharak Hospital is the hope of those who is fighting with ophthalmological disorders. The effective treatment is provided at low cost under the universal coverage scheme (UCS). Patients perceive that it is at least a luck they have during their illness suffering.

> "I am so glad that the government pays for us. I pay only 30 baht (0.8 USD) to my original affiliation hospital each time I was referred to receive my eyes injected here. I heard that if without the UCS, I have to pay at least 3,000 baht (97 USD) each time which is a lot of money for me. It's impossible to afford it. If I had to pay that much, it would be necessary to leave my eyes that way and I would accept to become a blind in one day" said another male patient.
>
> "I am only 37 years old but have both diabetes and hypertension. A couple of years ago, I had blurred vision but I didn't care much because I had to work hard to take care of my children. My eyesight got worse and my left eye became blind before I came here. My neighbor told me to seek a treatment here. My eyes got better after receiving eye injections and I didn't have to pay thousands baht for it. If I had to pay that huge money, I would let my life in a hand of destiny. I had to trade off between the survival of my family and my eyesight. Surely, I must choose my family rather than myself" said a female patient.

Returning back to the year before 2012, many patients at that time might not be as hopeful as those in this era when bevacizumab was listed in the National List of

Essential Medicines (NLEM) for age-related macular degeneration (AMD) and diabetic macular edema (DME).



Macular degeneration
(picture from http://www.hopkinsmedicine.org/wilmer/conditions/mac_degen.html)

In Thailand, thousands of elderly persons are suffered from visual impairment, especially AMD, and DME, each year. Without timely treatment, these eye diseases can ultimately lead to blindness.

Laser photocoagulation and medicinal treatment with anti-vascular endothelial growth factor (anti-VEGF) are currently two standard treatments for AMD and DME. Unlike laser treatment, injection of anti-VEGF not only decelerates disease progression but also improves the eye vision. Ranibizumab is a US FDA-approved anti-VEGF indicated for the treatment of macular diseases. However, its high cost per dose (approximately 1,700 USD per dose) has limited access to the treatment in majority of patients.

To find more affordable medication, the Health Intervention and Technology Assessment Program (HITAP) under the Bureau of Policy and Strategy, Ministry of Public Health together with the Royal College of Ophthalmologists of Thailand conducted a systemic review and meta-analysis of bevacizumab, an alternative anti-VEGF for the treatment of AMD and DME[1]. The findings in this study revealed that the efficacy of bevacizumab is not significantly different from ranibizumab for the treatment of AMD and DME[1,2].

Although bevacizumab was originally registered as an anticancer drug, but its off-label indication for AMD and DME has been applied in many countries since the first report in 2005[3-5]. In Thailand, the average reference price of bevacizumab was approximately 40 times lower than the price of ranibizumab in 2012.

> "Bevacizumab is not the only off-label drug we use to prevent patients from blindness. In my opinion, if off-label drugs are as efficacious as the on-label, safe, and not expensive, we should consider using it" said Dr. Paisan Ruamviboonsuk, the president of the Royal College of Ophthalmologists of Thailand.

This concept is in accordance with the NLEM sub-committee, thus Bevacizumab has been listed in the NLEM since 2012 for the treatment of AMD and DME.

> "We choose drugs to be listed on NLEM based on the reason that they provide maximum benefit including quality, efficacy, and accessibility for general population. If the on-label drug was affordable for all people, we would not list bevacizumab in the NLEM" said

Dr. Suwit Wibulpolprasert, the former chair of NLEM sub-committee.

Dr. Paisan Ruamviboonsuk, the president of the Royal College of Ophthalmologists of Thailand.

Dr. Suwit Wibulpolprasert, the former chair of NLEM sub-committee.

As bevacizumab has been listed as an essential drug in Thailand for treatment of AMD and DME, its expense is covered by 1) Civil Servant Medical Benefit Scheme, 2) Social Security Scheme, and 3) Universal Coverage Scheme.

In addition, bevacizumab has been recently listed in the WHO Model List of Essential Medicines for ophthalmological treatment due to its efficacy, safety and cost-effectiveness since April 2013[6]. However, it is recommended to use in specialized diagnostic or monitoring facilities with specialist medical care.

Although bevacizumab is currently an option for the patients who could not afford the on-label but ranibizumab is still encouraged for the treatment of macular diseases in patients with high incomes.

"Listing of bevacizumab in NLEM provides chance for majority of patients to access high cost treatment of macular diseases. Nevertheless, we shall not limit the use of

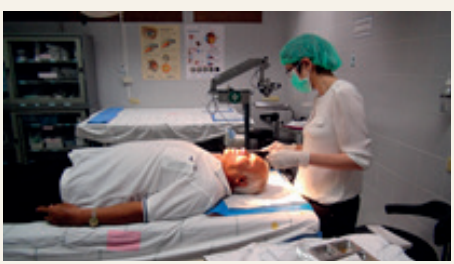
ranibizumab in patients who can afford the expensive on-label drug" said Dr. Paisan Ruamviboonsuk.

It is expected that access to off-label bevacizumab in Thailand and other countries can prevent irreversible loss of vision among large numbers of people. However, the use of this drug for treatment of eye diseases has raised some concerns regarding its safety, especially the repackaging of bevacizumab.

The original package of bevacizumab is 4 mL vial but it has to be divided into 0.05 mL syringe for one dose intravitreal injection. Possibly, the contamination may occur during this process of repackaging. Therefore, pharmacists who are responsible for the repackaging of bevacizumab nationwide are required to be specially trained for this practice.

Repackaging of Bevacizumab in Mettapracharak Hospital

Repackaged Bevacizumab for one dose intravitreal injection



Preparation for intravitreal injection of Bevacizumab for the treatment of AMD and DME

The safety measure for bevacizumab was issued by the NLEM sub-committee that only the regional hospitals or higher level with vitreoretinal specialists can prescribe bevacizumab. In addition, only hospitals with well-equipped facilities and trained pharmacists can perform repackaging of bevacizumab.

"Although, there was an infection case occurring after bevacizumab intravitreal injection in our hospital but it was not likely related to the contamination from prepacked bevacizumab since other patients using the same batch were not affected" said Dr. Wongsiri Taweebanjongsin, vitreoretinal specialist of Mettapracharak hosptial.

"There has been no report of significant adverse drug reaction (ADR) of intravitreal bevacizumab so far. The only side-effect found was temporarily high intraocular pressure which is common for eye injection" said Dr. Warapat Wongsawad, head of retinal division, Mettapracharak Hospital.

Dr. Wongsiri Taweebanjongsin, vitreoretinal specialist of Mettapracharak hosptial

Dr. Warapat Wongsawad, head of retinal division, Mettapracharak Hospital.

However, contamination test of prepacked bevacizumab and monitoring of its effectiveness and ADRs have been generally performed in Mettapracharak Hospital. Furthermore, HITAP has conducted an on-going research of bevacizumab and ranibizumab regarding their effectiveness and safety, both systemic and ocular adverse events.

In sum, bevacizumab has been considered a worth alternative treatment for macular diseases. Unfortunately, its standing as an off-label drug makes it questionable whether it is effective and safe for the treatment of un-indicated diseases. Definitely, an affordable on-label drug rather than an off-label one is ideally needed. Although conceiving an affordable on-label drug is still a global challenge, it should be achieved soon in the future in order to enhance a quality of life of humankind.

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4

Priority Setting in a University Hospital towards Universal Health Coverage: Faculty of Medicine Siriraj Hospital, Bangkok

Thongsouy Sitanon
Achara Suksamran

Siriraj Hospital "The Hospital of The Kingdom"

Priority setting to achieve universal coverage is an essential process at all levels of health care services, but especially at university hospitals that are tertiary care centers with high expenses and demands. Siriraj Hospital, the first and largest university hospital in Thailand (established in 1888 by H.M. King Chulalongkorn), has set the objective to achieve international excellence in patient care, medical education and research. The hospital has its mission to provide high-quality of health care for all Thai people.

With this long-term aim, Siriraj Hospital has a high rate of referral, and is known as "The Hospital of The Kingdom". With 14,000 members of staff, this 2,200-bed hospital has about 80,000 inpatients and over 3 million outpatients annually. However, the cost of care and the level

of government support are mismatched, with more than 15 million USD per year (500 million THB) in excess of normal operating expenses being subsidized by Siriraj Hospital. With this financial burden, prioritization of health services for optimal care and maintaining health equity is challenging.

“Because of the Siriraj’s vow that we hold on for over a hundred years, the hospital of the kingdom, it results in an enormous workload. As being the hospital of the kingdom, Siriraj cannot refer, reject or abandon the patients,” said Associate Professor Cherdchai Nopmaneejumruslers, the Deputy Director of Siriraj Hospital.

Siriraj Technology Assessment (SiTA)

Principles of fairness and equity must be achieved when pursuing universal health coverage (UHC).1 Although Siriraj faces great constraints, the hospital still strives to maintain high quality of services. Siriraj has adopted a process of utilization review to identify inefficient care and reduce waste, in order to improve services efficient and care quality. LEAN1* concept allows them to consider ‘what work we should do, not what work we are doing’.

Continuous quality improvement of units has been based upon evidence generated by the Routine to Research (R2R) Project, which supported studies in terms of funding, research assistance and methodology, to enable hospital staff to transform their unique know-how into scientifically validated practices. However, the assessment of cost-effectiveness of each health intervention technology is also crucial when policy makers make a final decision on technology implementation.

* Lean manufacturing or lean production, often simply "lean", is a systematic method for the elimination of waste within a manufacturing system.[2]

The Siriraj Technology Assessment (SiTA) Committee is run by a multidisciplinary team including physicians and pharmacists, has been operational since 2014 and has worked jointly with Siriraj Health Policy (SiHP) Unit to provide economic evaluations of technologies serving the health services.

Initially, Siriraj Hospital sought to reduce its costs to manage its deficit, but found this affected the quality of care adversely. Instead, it tries to maintain care quality and values through a waste reduction strategy. Identified wastes included repeating mistakes, over production and utilization of medical materials, unnecessary waiting time, over stocked medical materials, poor human resource utilization, and unnecessary working steps. After applying waste reduction instead of cost reduction strategies, Siriraj Hospital found that its cost has been decreasing, the quality of care in the hospital has been maintained and increasing.

SiTA plays an important role in evaluating the cost-effectiveness of the care. The cost and effectiveness data are used to inform decisions which advanced medical technologies and medications should be used within the hospital to maintain care quality. A prominent example at Siriraj Hospital is the Cost utility analysis of erythropoietin for anemia treatment in end-stage renal disease patients using hemodialysis. The results of the study have shown that providing erythropoietin for a hemoglobin level > 10 to 11 g/dL had a cost-effectiveness higher than other levels. The impact of this finding can be enhanced in the policy level of the Nephrology Society of Thailand. SiTA committee directly plays its role in systematically analyzing data to assess whether the new advanced medical

technology or medications should be invested, along with LEAN process administration in order to ensure the cost and effectiveness.

High-Speed Air Ducts System for Blood Transportation

The SiTA actively provides information to increase productivity and reduce waste. For instance, economic evaluation led to the use of an automated blood transport system for outpatient services to shorten patients' waiting times in the outpatient department. Some patients travel a long distance from other provinces, and have to wait many hours for a blood test. After the blood test, clients must wait while the blood tube basket is transported to the laboratory unit and results interpreted. Siriraj Hospital introduced a High-Speed Air Duct System for Blood Transportation to transport the tubes between the Phlebotomy Unit and the Laboratory, at the rate of 7 tubes per second.

The SiTA evaluated the use of the high-speed air duct transport system, finding that this new transport system was cost-effectiveness because of the volume of blood tests undertaken.

"Sometimes, the tubes were sent to the wrong place when using a person to do it. After using this system, much speedier blood test transport, quicker report of the results, and faster treating patients are observed

after utilizing the new system. We may use it for IPD in the future but we must evaluate its cost and effectiveness," said Associate Professor Cherdchai.

The pharmacists provide the ready-to-use injectable medication in Sterile Pharmaceutical Production Room, Pharmacy Department

Another role of SiTA has been to conduct an economic evaluation and analyze the proper budget for the utilization of the ready-to-use injectable medicine at the inpatient service department. With such implementation, nurses no longer have to prepare medication for the patients, since the pharmacists will provide the ready-to-use injectable medication for the inpatient service department. This is done to prevent medication errors, and allow nurses to have more time with patients despite nursing shortages. Moreover, this finding includes the need to hire more pharmacists to prepare the ready-to-use medication. Furthermore, regarding the priorities of care and safety, the high-alert medications are the first set of medications that will be considered for implementation.

Siriraj Medical Simulation Center for Education and Training (SiMSET)

As Siriraj strives for excellence in education and training, it is the commitment, professionalism and dedication of staff that can make the greatest difference in providing high quality services and care for patients and their families. Effective and high quality education and training

must ensure that medical and healthcare professions are available in the right numbers with the right skills, values and competencies to deliver both excellent clinical outcomes together with patient-centred care.

Students and Residency Training at SiMSET

Professor Suwannee Suraseranivongse, Deputy Dean and Director of Siriraj Medicine School, said that "the most important reason for using simulation in medical practice is for patient safety. Some patients may be afraid to receive medical treatment or procedure from medical students. In simulation practice, learners are allowed to fail a procedure and make mistakes, and they can try a procedure repeatedly until they master it. No patients were harmed".

Siriraj Medical Simulation Center for Education and Training (SiMSET) is an important strategic initiative in education and training to improve quality of patient care and increase patient safety for medical and healthcare professions, both undergraduates and postgraduates including national and international training.

This center is well equipped with audiovisual, monitoring and medical equipment including various kinds of high fidelity manikins, part task trainer, computer based trainer

and standardized patients. There are also resuscitation rooms and a simulated medical gas system in this education area. Simulation-based medical education offers both learners and patients a safe environment for students to practice. In a full-environment simulation, learners can obtain not only technical skills, such as emergency situations, cardiopulmonary resuscitation, prevention and management of common or high impact medical errors, but also non-technical skills, such as leadership, team work, communication, situation awareness, decision-making, and awareness of personal limitations.

Training programs for prevention and management of common or high impact medical errors

"There are different types of simulators. It is not necessary to use the most expensive one. The trainer should select a simulator that can provide better learning outcome for a specific objective," said Professor Suwannee.

Table 1 Simulators Selection

Learning Objective	Electronic Patient	Part Task Trainer	Computer Based Simulation	Standardized Patient
Rote Knowledge	-	+	+++	+
Techniques & Procedures	+	+++	++	+
Hx, PE Counseling	+	-	+	+++
Clinical Reasoning, Patient Management	+++	-	++	+++
Teamwork And Crisis Management	+++	-	++	+
Ethics And Beliefs	+	+	+	+++

Since various types of cases or clinical situations can be used for simulation training, learners can experience important or unusual cases.

The simulation learning strategies emphasize learners' active participation and reflection including trainers' facilitation and debriefing in safe environment. These techniques promote competency assessment and preparation of learners before real patient hands-on practice, which foster patient and learner safety outcomes.

Center of Applied Thai Traditional Medicine

Thai Traditional Medicine (TTM) has long been a part of Thailand's healing culture. It had gone through an age of blossoming as well as an age of withering. In earlier

times, when Siriraj Hospital, the first hospital and medical school of the kingdom, was established in 1888, TTM was integrated in its services and subjects of TTM were included in the medical curriculum. However, 25 years later, TTM was removed from the curriculum. Since then, services and teaching in most hospitals and medical schools founded afterwards including Siriraj became western style. Hence, TTM had been out of the government circle and support for nearly a hundred years.

In 1982, a traditional medical school with a new philosophy was founded by Professor Dr. Ouay Ketusingh, a renowned professor from the Siriraj Hospital, with the aims to conserve TTM by producing a new generation of practitioners who would be not only competent in TTM but also in basic medical sciences knowledge. In the belief that TTM could be further developed and slowly regain life through this approach. This philosophical approach is called Applied TTM to differentiate it from conventional TTM. In 2003, the school was incorporated into the Faculty's administrative structure and became a department known as the "Center of Applied Thai Traditional Medicine".

The center aims to revive traditional wisdom to provide an alternative or adjunctive therapy for many conditions and also the survival for the country. However, as Thai traditional medicine has been forbidden from healthcare system for a hundred years, it is important to prioritize strategic initiatives. TTM needs to gain wider public trust as a legitimate alternative to modern medicine. "Although building new knowledge through the research

is needed, gaining public trust towards TTM and developing human resource to provide effective TTM services are the most important steps. It is not a rosy path," said Associate Professor Tawee Laohapand, Chairman of the Center of Applied Thai Traditional Medicine.

Applied Thai Traditional Medicine services

In order to produce TTM personnel to serve the society, the center has implemented a Bachelor of Applied Thai Traditional Medicine program. At the same time, the center of Applied Thai Traditional Medicine has been established as a training center and also health care service setting. In the past decade, Siriraj has produced a number of TTM personnel to work in different part of Thailand.

"We hope that after the students graduate they will continue their work providing effective care to preserve Thai traditional medicine. Then, they can develop new knowledge," said Associate Professor Tawee.

To bring back TTM in health care system, Siriaj has integrated TTM with modern medicine at its primary care unit, to offer TTM services throughout the community. The center has all produced herbal medicines under the guideline of good manufacturing practice (GMP). The TTM services include treatment, home health care, a mobile clinic, Thai massage, and Thai herbs.

During the past decade, TTM has gained increased attention and support from the government. Civil servant positions have been added, so TTM practitioners can be recruited into the health care system. The Ministry of Public Health encourages people to access TTM services provided by the hospitals including health centers under its supervision when need health services. Moreover, 74 recipes of herbal medicines have been added to the National Lists of Essential Medicines of Thailand.

With some progresses on the establishment of education and services, the center will focus and concentrate more on research to further explaining TTM with scientific knowledge and producing evidence-based practices. This will help to promote understanding among health professionals and make integration sustainable in the health care system.

These efforts by Siriraj, as a University Hospital, support the value of TTM and its role in the comprehensive health care

services of Thailand, and its potential to help solving the problems of health inequity and the work of Universal Health Coverage.

In summary

High quality of health services is required to improve comprehensive health and quality of life. Receiving health care from Siriraj Hospital, The Hospital of The Kingdom, is always preferred as the hospital offers the high-quality tertiary care with advanced medical technology. However, the hospital also has limited medical resources to equally deliver health care for everyone at the same time. Therefore, the hospital utilizes a strategy to prioritize the health problems to achieve universal coverage that is the essential process at the tertiary care centers with high expenses and burdens. Its success may be credited to the SiTA Committee, SiMSET, and the Center of Applied Thai Traditional Medicine.

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5

Increasing Access to Essential Renal Dialysis through "PD-first" Policy

Boontuan Wattanakul
Laiad Jamjan

Several countries have established "PD*-first" policy or "PD-favored" policy for renal dialysis while home dialysis-first policy has been established as complimentary strategy in some other countries. PD-first policy, PD is used as the first treatment modality for appropriate ESRD † patients. PD-favored policy, the government policy on dialysis encourages the use of PD as treatment choice while removing any existing disincentives. Hong Kong and Thailand are successfully implemented the PD-First policy among the ESRD patients who required dialysis.

In Thailand, there are 3 choices for ESRD patients; PD, HD ‡ and kidney transplantation.

† ESRD means End Stage Renal Disease
‡ HD means Haemodialysis

Why Peritoneal Dialysis First Policy

In Thailand, over the past decade, the ESRD was low accessibility to dialysis since there are limited supplies of HD. While kidney transplantation was very high cost of treatment and access to this service was relatively small percentage of people. Patients with low income were hopeless to survive because they could not access to renal dialysis service. Many of patients had paid out-of-pocket for haemodialysis service but it was so expensive that they need help to pay for them. Some of patients became bankrupt from high cost of HD.

All treatment modalities for ESRD are covered by CSMBS * and SSS † but it was not included in the benefit package of UCS ‡. This is reasonably for the National Health Security Office (NHSO) to offer an equitable access to dialysis for UC beneficiaries.[1] Although ESRD treatments are major economic and political challenge in term of cost-effectiveness, the study suggests policymakers that offering the "PD first" is a better option.[2] Because the average incremental cost-effectiveness ratios (ICER) of "PD first" (672,000 Baht per QALY ξ (52,000 PPP € US$/QALY)) and HD (806,000 Baht per QALY (63,000 PPP US$/QALY) are higher than a ceiling value in Thailand of 270,000 Baht per QALY.[2]

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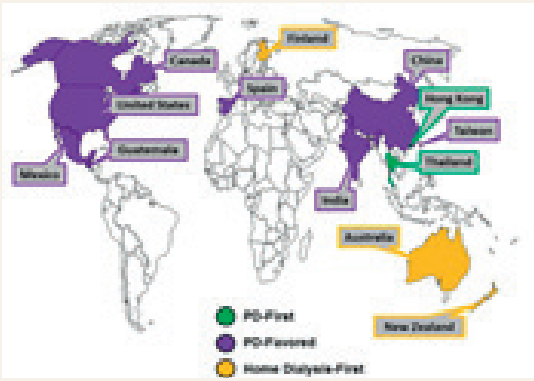
* CSMBS abbreviation stands for Civil Servant Medical Benefit Scheme

† SSS abbreviation stands for Social Security Scheme

‡ UCS abbreviation stands for *Universal Coverage Scheme*

ξ QALY abbreviation stands for quality-adjusted life-year

€ PPP abbreviation stands for Purchasing Power Parity



Geographic summary of country-specific policy types.

In 2002, the Universal Coverage Scheme (UCS) was launched to offer comprehensive health benefit package; however, it did not cover high technology and high cost services, namely renal replacement, HD as initial treatment modality. Some studies showed that infection-related complications appeared to be increasing in HD patients, but it was steadily declining in PD patients.[3] Moreover, mortality rates were equal or higher in HD when compared to PD.[4] Survival advantage is noted in ESRD patients treated with PD. That's why PD should be the first choice for these patients.

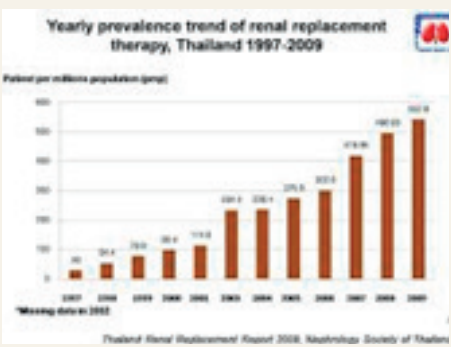
In 2007, the "PD first" policy was introduced as pilot project in Khon Khean, Songkla, and Samutsakorn provinces. Appealing reasons could be better survival of PD patients when compared with HD patients. Favor in the PD first approach could bring the lower healthcare cost, convenience of home-based therapy, a flexible schedule, and could increase freedom of patients' view. In addition, over 30,000 patients with ESRD had reached to renal

replacement program through universal health coverage, and family financial status is no longer a barrier of ESRD anymore.

"PD-first" Policy in Thailand

Although most nephrologists preferred HD to PD, the haemodialysis machines, nephrologists and dialysis nurses with highly skill were concentrated only in Bangkok and big cities. Patients living in suburb and rural areas were unable to access to haemodialysis. This made the UC benefit package inaccessible for all Thai population.

"PD-first" policy has been introduced for ESRD patients across Thailand under the UC scheme since 2008 by addressing important elements such as training and reimbursement (100% PD reimbursement). PD will be served for ESRD patients under the UC scheme as an initial treatment with a small additional payment. Changing treatment to haemodialysis or kidney transplantation may be able to apply to PD patients according to their indication identified by doctors.



ESRD patients at Continuous Ambulatory Peritoneal Dialysis (CAPD) clinic in Ban Phaeo Hospital, Samutsakhon.

Holistic Participatory Process Through Chronic Care Management Model

A holistic participatory process is committed by cooperation among health and non-health sectors, government and private organizations, health providers and consumers and their community. Coordination of health system and community resources is to improve outcomes at a cost. The NHSO considered kidney disease as leading to bankruptcy of patient's family, the clinical information system and delivery system were designed for better service of renal replacement. The health system should increase health workforce for PD, induce community engagement in patient's support, improve quality of PD services to preserve renal conditions, and find more renal donors", Mr. Prateep Thanakijchareon, MD, NHSO's Deputy Secretary General said.

Chronic Care Management Model

Synergist for Convergence Target of Better Quality of Life

Mrs. Piyatida Chuengsaman, M.D. and nephrologist, had launched the pilot project of "PD-first" policy at Ban Phaeo Hospital and its branch in Bangkok. Although the NHSO provided enough financial support with PD fluid,

PD workforces were limited. Regarding increase of the ESRD patients, the Thai Red Cross College of Nursing helps produce large amount of the PD nurses; however, the PD nurses are still shortage. Piyathida has transformed the PD nurses to be a manager and has other health professions trained for home-based care team. Beyond system and service management, she considers patient education and PD preparation training as essential self-management support that helps reduce the complications from home-based PD.

Ms. Rungrawee Mahannopkul, MD, nephrologist of Ban Phaeo Hospital at Samutsakhon, affirms that involvement of the community in holistic participatory process contributes to success of home-based care. Community organizations support materials and empower the PD patients that make possible and sustainable PD at home.

Piyatida Chuengsaman, MD and Nephrologist of Ban Phaeo Hospital, Prommitr Branch in Bangkok, Continuous Ambulatory Peritoneal Dialysis Service and Training Center, Thailand.

Kanokphan Sukcharoennukul, M.D. and nephrologist and CAPD Care Team of Ban Phaeo Hospital, Samutsakhon

Rungrawee Mahannopkul, M.D. and nephrologist and CAPD Care Team of Ban Phaeo Hospital, Samutsakhon

Educating/Training patients

A pre-dialysis training organized by multidisciplinary staff including nephrologists, nurses, dieticians, and social workers, can go toward overcoming barriers and preparing the patients for the PD. Educating patients and their relatives is important for a successful PD process and improves health outcomes, particularly lower peritonitis rates, said by Piyathida. She puts the education at high priority for improving health outcomes; therefore, as nephrologist and PD educator, she meets with patients in every visit with special concerns of PD care.

Mrs. Praewrat Jirapipat, a PD Nurse was educating patients at CAPD clinic of Ban Phaeo Hospital, Samutsakhon.

Ms. Praewrat Jirapipat is a PD nurse of Ban Phaeo Hospital at Samutsakhon. She educates all PD patients at hospital and also visits patient's home intermittently. Once the

patients have been diagnosed and qualified for renal replacement therapy (RRT), its preparation process will begin with RRT counseling team, which is a multidisciplinary healthcare team including a nephrologist, a PD nurse, a pharmacist and a dietician. The patients and their families will be educated about the disease, treatment options, reimbursement schemes, self-care and life style modifications. Before starting a surgical procedure, doctor will examine physical and psychological readiness for their safety. A PD nurse arranges a 3-day or more training course for caregivers to ensure that caregiver enable to do PD at home. A PD nurse will visit patient's home to help and give advice about the PD care.

Delivery System Design

Dialysis fluid supply is managed through Vendor-Managed Inventory (VMI) system of the Government Pharmaceutical Organization (GPO). The NHSO not only uses the information to manage the stock of dialysis fluid but also to manage logistic process to delivery the fluid to the patients' home. The efficiency of VMI system in managing fluid stock and delivery processes requires cooperation of third parties i.e., the GPO and Thailand Post Co., Ltd. Such management with data sharing helps improve the efficiency and minimize drawbacks of "PD-first" policy.

Efficient Home-based Care

When patient's home is ready to be home-based care, a PD nurse will visit that patient to confirm the dialysis procedures and provide education for self-management. The PD nurse is always available to be consultant for

patients and their caregivers when they have problems regarding the dialysis.

A PD patient said, “Once I’m not sure, I will call Pee Praewrat to see if it is okay or not.”

Some PD patients with low income could not be able to afford to arrange for home-based PD self-care. PD nurse would ask help from Chief Executive of Subdistrict Administrative Organizations to arrange dialysis room at patient’s home. Such cases, non-health sectors and local organizations participate to support materials needed for dialysis at home.

Satisfaction with Care

Mr. Ekkaluck Yongsripanyarithi was diagnosed with chronic diabetes and hypertension but he did not adhere to drugs. He had become kidney failure and paid for HD treatment 6 years ago. Over 4 years of HD, his family had financial problem since he paid about 1,800 baht per HD visit. His wife met with Praewrat to consult about switching to PD. While he was in surgical procedure, his daughter, Ms. Kusuma was trained for PD caregiver. Ekkaluck said, “Life is more convenient with flexible time for a dialysis. PD is a lot cheaper when compared to HD.” Kusuma said, “Before taking role of caregiver, I spent three days for PD care training during a transferring process at the CAPD clinic of Ban Phaeo Hospital. I feel confident to do the PD process for my Dad”

PD patient is satisfied with outcome of PD treatment. Ekkaluck’s quote “After switching to PD, not only we can save a lot of money, I never feel exacerbate after PD

process, I can work and stay home during dialysis. Comparing to the past, I had to take haemodialysis twice a week, my son drove me to hospital and I always be sick after haemodialysis."

Mr. Ekkaluck Yongsripanyarithi, a transfer HD to PD patient.

Transfer to HD

PD therapy is a suitable RRT not only for the UC scheme but also for ESRD patients since it is a form of self-treatment that needs no machine; the patients can still work during dialysis process. However, nephrologists noted that major cause for the switch from PD to HD is infection-related peritonitis, or volume overload.

Better Quality of Life at a Price

Mrs. Sumonrat Humsook, a PD patient at 38 years old, has been on the peritoneal dialysis for a year. She recalled about her sickness, she had edema, difficult to breathe, and absolutely laid down on bed. She was hopeless until she received dialysis. During the PD process, she could work and performed normal living activities. One year after taking PD treatment, she received a call, which let her know that kidney donor was matched with hers. "PD-first" could preserve kidney function so that patients might have chance for kidney transplantation subsidized by the UC scheme.

Lesson Learned

The experience of Thailand, the government considers intra-country variability in economic and medical resources/infrastructure to increase access to renal replacement therapies. “PD-first” policy could be implemented at national and local level through **systematic holistic stakeholder involvement.** Service management obtains cooperation in the hospital, logistic management of the GPO and Thailand Post Co., Ltd., and self-management support team at patient’s home.

Acknowledgement

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6

Priority Setting for Health Promotion by Community

Sukjai Charoensuk
Sirikul Karuncharernpanit

Suanluang community has a long history over 100 years. Life in the community was ordinary and peaceful. Residents mostly earned their income as farmers and/or gardeners. Phasi Charoen canal, dug to connect Chao Phraya River and Tha Jeen River during the King Rama IV period, is the main water resource in the community. The canal was not only used for agriculture, but also for transportation. Since the beginning of the first National Economic and Social Development Plan in 1961, Thailand promoted the expansion of industry because of the growth-oriented approach of the 1961 plan. Approximately 300 factories have been operating in Suangluang community since 1969. The economic has grown rapidly with many changes in social aspect. Labors from outside the community both Thais and foreigners

entered the community. Life style of people changed from rural to urban atmosphere. These changes brought not only the bright of income growth, but also issues of environmental and health problems to the people in the community.

The beauty of Phasi Charoen canal

Due to these rapid changes on socioeconomic status and environment, the Suanluang community inevitably deals with complex and challenge problems. Nevertheless, resources and budget for solution were limited. Therefore, identifying and prioritizing solutions to these issues are managed via strong community participation.

Setting Priority with Strong Community Participation

Suanluang community residents mostly rooted in the area for generations. The spirit of loving homeland makes many residents united to provide a better life for Suanluang next generation. Since the problems in the community are complex and resources are limited, priority setting is necessary. Setting priority to these problems and identifying strategies and solutions in the Suanluang community were managed at two levels: local government and community levels.

Mr. Nirun Pomnoi, Mayor of Suan Luang Municipality

Health promotion and disease prevention were identified as the first priority of the local government and required an integration of various components such as nutrition, herbal medicine, exercise, and toxic chemical prevention. Mr. Nirun Pomnoi, Mayor of SuanLuang Municipality, Kratumban district, Samutsakhon province, explained the reasons that these activities were prioritized due to limited resources. Waiting until people suffered from disease may be delayed and requires greater cost of care than health promotion and disease prevention. Therefore, health promotion and disease prevention initiatives were outlined in the second strategic plan of Suanluang Municipality. Resources supporting these initiatives were based on an agreement developed by the community participation process.

At the community level, health promotion and disease prevention are also prioritized by three key groups of the community namely Suanluang Community Council, Suanluang Children and Youth Council, and Suanluang Community Herbal Medicine Learning Center. The Community Council and the Children and Youth council were established in 2009 based on the Community Council Act of 2008, which were aimed to strengthen the community participation in solving problems of the

community. The Community Council members comprise of an elected president and four representatives from each village. All of them are voluntary to work for community without any pay. The Children and Youth council members comprise of an elected president and youths aged under 25 years old who are representatives from schools and villages. Lastly, the Community Herbal Medicine Learning Center was founded in 2012 by Mr. Prasart Suechoei who was inspired by the King's Sufficiency Economy Philosophy.

Community Health Fund: Fund for Strengthening Community

The Community Health Fund or Subdistrict Health Security Fund (SHSF) is a local health fund for local people, established in 2006, by virtue of the National Health Security Act B.E. 2545[1]. All local governments were invited to participate in the SHSF on a voluntary basis and a matching fund from the local government was required. The National Health Security Office (NHSO) initially earmarked 37.5 baht per capita, and increases to 45 baht per capita in 2014, while local governments are obliged to pay 10%, 20%, or 50% to the budget according to fiscal capacity[2]. Suanluang Municipality is responsible for about 60,000 residents, and willing to pay at least 50% of the budget received from the NHSO. The SHSF is required to be managed by the committees who are representatives from the NHSO, community, municipality and health centers in the community. Health promotion and disease prevention initiatives run by the community are mainly supported by SHSF. The community is empowered through this participation.

Civil Society Forum: Priority Setting Tool

Problem issues prioritization of Suanluang community is achieved by the civil society forum. The civil society forum or people forum is a participatory learning process of all stakeholders. It is a stage of communication for identifying problems and finding solutions. Strength of the priority setting process of Suanluang community is the use of appropriate community assessment tools such as foot mapping of community done by youths. Criteria for prioritizing issues or community problems include magnitude and severity of these problems, and the effectiveness and feasibility of interventions. The Community Councils and the Herbal Medicine Learning Center arrange these meetings among members to prioritize their problems and select appropriate interventions.

Civil Society Forum

Children are Our Future: Priority Setting by the Youth Council

The Children and Youth Council uses brainstorming and carries out focus group discussions among children from schools and various areas within the Suanluang community. The finding revealed that there were many issues raised by young people such as games and internet addiction,

teenage pregnancy, school absence, home violence, etc. Although various issues were identified, only a few can be selected to solve due to the resource shortage.


The Children and Youth Council meeting

The Youth Council selected game and internet addiction as the first priority issue for children and youth. After that, they had discussed deeply with the target group to identify the exact reasons for this addiction. Specific solutions for this target group were then implemented. Activities to prevent and solve games and internet addiction included: 1) sharing knowledge to children about internet addiction and its negative impacts, 2) distracting children attention from game addiction to playing sports, and 3) understanding and advising children to better cope with their life problems. These activities were supported by the SHSF.

Water is Life: Environmental Issue by the Community Council

Not only the Children and Youth Council has established and worked this way, but the Community Council also has used the civil society forum for prioritizing these problems and identifying solutions. After the Great Floods in 2011, people noticed that water quality in

the Phasi Charoen canal and small canals in Suanluang subdistrict had been terribly changed; fermented and badly smell, black color and extremely toxic. Good water for utilization in the past was gone. The significant evidence supporting its toxicity was a death from infection of a man who swam in this canal. Magnitude and severity of the problem were reanalyzed and found that the scores were high. The "Bring good water back to Phasi Charoen canal" project was initiated. The intention to rescue the canal by the community was strong even though the solutions may be difficult. Ms. Amara Jewjiam, the president and founder of the Community Council said *"there are many challenges for ordinary people like us to fight with factories who drained sewage and wastewater to the canal."*

Lower quality water and waste chemical contamination surrounding factories

Ms. Amara Jewjiam, the president and the founder of Suanluang Community Council

The initiatives by the Community Council focused not only on the quality of water, but also on its effect on the health of people in the community. The first step was measuring the water quality regarding oxygen levels, and then, trying to increase its oxygen levels which required public awareness and strong community participation. Representatives of the Community Council examined the quality of water in 16 canals of the community twice a month. They also investigated waste disposal of factories once a year. Since there are about 300 factories in the community, they have to test water quality just about every day. Furthermore, the Community Council begins to survey health status of the people living around factories with support from community health fund.

Community participation: bringing good water back to Phasi Charoen canal

Mr. Nares Kaewchingduang, the vice president of Suanluang Community Council stated significant health problems related to living in factory areas:

"Interestingly, results from laboratory test showed that heavy metal in serum of people around factory areas were high and require attention. We live here…our hometown so we have to solve the problems even it is less feasible to achieve…just want it not to be worsen."

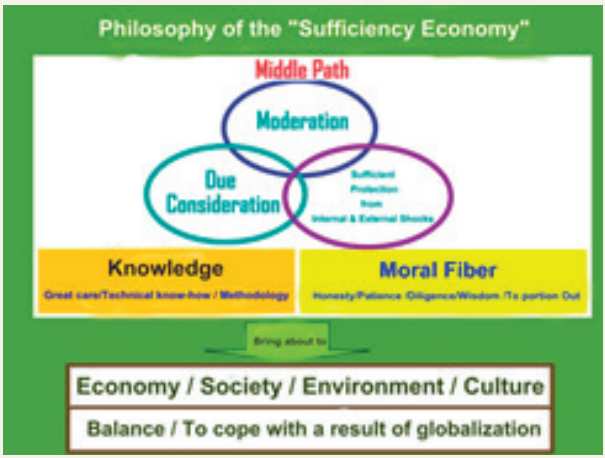
This community watching process can delay the pollutions and their health impacts.

Mr. Nares Kaewchingduang, the vice-president of Suanluang Community Council

Herbal Medicine: Thai Wisdom as Health Complementary

Mr. Prasart Suechoei, the founder of Suanluang Community Herbal Medicine Learning Center said that they decided to start this center because of an altered health from water toxicity, pollutions and health risk behaviors. He mentioned that based on his experiences and studies, integration of the health and socioeconomic issues must be required. This learning center includes sharing knowledge based on philosophy of the "Sufficiency Economy" and herbal medicine for health promotion and disease prevention.

The "Sufficiency Economy" is the philosophy developed by King Bhumibol Adulyadej, which emphasizes the middle path as an overriding principle for appropriate conduct by people at all levels. The philosophy inspires entrepreneurs to produce products with care for others. Therefore, high quality and safety products will be made for community.



The Sufficiency Economy Philosophy developed by King Bhumibol Adulyadej

Mr. Prasart demonstrated the use of herbal medicines as a tool for health promotion and disease prevention. He claimed that Thai traditional medicine, especially herbs are good for health, for example taking Rang-Cheud can remove many types of toxins. However, he also warned that herbal medicine toxicity may occur if taking incorrectly.

Mr. Prasart Suechoei, the founder of Suanluang community herbal medicine learning center

Achievements from Health Promotion and Prevention

The activities initiated by Suangluang community have been supported by various sources with strong community participation. Financial and information support comes from the community health fund, the Ministry of Natural Resources and Environment and educational institute like Kasetsart University. Many achievements from health promotion and disease prevention program emerged from these efforts.

Firstly, strategies used in the health promotion program for preventing children from game addiction, included developing trust and listening to children's problem carefully by leaders of the Children and Youth Council. Later, these groups of people attempted to encourage children to do exercises and sports, such as table tennis and badminton. Without the support from the Suanluang Municipality and the community health fund, to budget for exercise instruments and places for playing sports; they could not help their children out from games addiction. Outcomes of this program were good as Ms. Saifon Auimjamras, the president of the Children and Youth Council, mentioned that

"At least 8 children who have risk on games addiction with physical, psychological and educational problems recovered by reducing time in playing games and playing sports and backing to school instead. Furthermore, other health problems such as aggression, depression also decreased. I hope that they will live well and avoid games addiction in the future."

Ms. Saifon Auimjamras, the president of the Children and Youth Council

Secondly, health promotion and disease prevention program of the Community Council had organized testing toxic agent levels in blood serum of people living in surrounding factory areas. If there were any problems, they would be referred to health care centers for investigating more. For example, if they found elevated lead levels in blood serum higher than standard level, they need to identify the cause. If this phenomenon occurred with many people living around the factory, that factory will be investigated by officers and the Community Council.

They found good impacts on health status of people in their community in terms of early detection and disease origin elimination. Consequently, health status of people in the community was improved over the past 2-3 years. *"Good water and less toxicity returned to Suanluang community, and I believe that at least acidic rain is reduced."* Ms. Amara mentioned.

Thirdly, for the alternative medicines, herb in particular, are continuously used by people in the community. For example, Mr. Pasart said "*Choose to consume organic agriculture or use of Thai herbal medicine which is easily found such as Rang-cheud, basil or ginger, etc. from our garden or kitchen, can help people in community to*

prevent health problems and keep modernized medication away".

Chosen Thai herbal medicine instead of modernized medication

Lesson Learned from Priority Setting with Community Participation

The success of initiatives run by the community comes from a strong commitment and excellent priority setting of problems. The lessons learned are:

Firstly, a spirit of loving homeland inspires people to devote themselves working continuously as Ms. Saifon mentioned:

"Here is my motherland and our hometown, we can't move or escape to the new place, so we need to live here and need to work on it. If pollution in water is high, we can't stay here, so we need to test the quality of water such as oxygen level in water. If we found the oxygen level is lower than usual, a route of water analysis will be undertaken to find causes. Later, community council will report to factory and investigate waste management system."

Secondly, good cooperation among groups of people makes better outcomes and easier tasks. For example, members of the Children and Youth Council help the

Community Council with regard to water quality testing because they can travel through the community easily. Furthermore, if the Community Council finds the water oxygen levels are not good because of agricultural sector, the farmers who joined in the herbal medicine group will organize campaign to reduce their chemical uses.

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"I don't want you to be only a doctor,
but I also want you to be a man."

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