



STRENGTHENING HEALTH SYSTEMS AND ACCESS TO CARE

Best Practices in ASEAN

The ASEAN Secretariat
Jakarta

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The individual countries and their contributions embody the vision and mission of the ASEAN Post-2015 Health Development Agenda. We sincerely thank all the authors who took time out of their busy schedules to lend their expertise to this compilation of Best Practices.

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ASEAN: A Community of Opportunities for All

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FOREWORD

The ASEAN Health Cluster 3 “Strengthening health systems and access to care”, aims to strengthen capabilities, capacities and advocacy in health system development in order to increase access to safe, affordable, quality, and holistic care. As a region, ASEAN Member States (AMS) have made major strides in the last decade to achieve this goal. ASEAN has increased its political commitment towards universal health coverage (UHC), which has resulted in marked progress as indicated by preventive and curative healthcare services becoming increasingly available across the region.

Moving forward, we will face new and re-emerging healthcare challenges such as increasing healthcare costs, insufficient or inadequate distribution of healthcare manpower, ageing populations, an ongoing epidemiological transition characterized by increasing burdens of non-communicable diseases, and a persistent threat of infectious diseases. AMS have utilised various innovative methods to tackle some of these challenges. It is important that we continue to learn best practices from each other so that the region can overcome these challenges together.

I would like to express my deepest appreciation to the experts from the respective AMS, who were very forthcoming in contributing their best practices, without which, we would not have been able to compile this publication. I enjoyed reading each AMS contribution and I have learnt much about how every issue addressed was tackled with utmost care and immense consideration for the population. I sincerely hope that this publication is as much a valuable learning experience for readers as it was for me.

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INTRODUCTION

Over the years, a number of ASEAN Member States (AMS) have seen a sharp decline in extreme poverty, while showing a rise in middle class populations, and an increase in healthcare spending. This rise in healthcare expenditure is a direct result of ageing populations, sedentary lifestyles leading to obesity, and other non-communicable diseases, as well as the susceptibility to more persistent and potentially pandemic infectious diseases. This trend is indicative of a rising need for improved healthcare systems in AMS and appropriate strategies have to be in place to ensure increased access to safe, affordable, quality, and holistic care.

The ASEAN Health Cluster 3 aims to strengthen health systems and access to care through three areas of interest; (a) improved access to safe, affordable, and appropriate services, technology, essential drugs and vaccines, traditional and complementary medicine, by developing national policies and regulations for ASEAN people including vulnerable groups; (b) advocating for appropriate levels of health resources including human resources for health (HRH) and health financing; and (c) enhanced communication, knowledge management, and knowledge sharing including Research and Development (R&D) and innovations.

This publication is a compilation of best practices employed by participating countries within various levels of healthcare to provide an insight into the needs and demands of their people, the shortfalls of existing healthcare programmes, the need for new ones, the positive outcomes post-implementation, and the lessons learnt in order to address problems of the future. This publication will focus on three aspects of healthcare systems, namely Health Facilities, Human Resources for Health, and Service Packages.

- **Health facilities** include hospitals, primary healthcare centres, isolation camps, burn patient units, feeding centres, senior care centres, and health-promoting facilities in the community. Such facilities are usually in abundance in high density, metropolitan areas, and less so in the rural areas. There is a need to ensure that the healthcare needs of rural populations with limited access to general and specialised medical services are well taken care of. In addition to access to these medical services, of equal importance are the diagnostic services designed to assist health professionals in making informed decisions in providing the correct course of action for their patients, as such, there is also the need for recognised accreditation and quality control in these diagnostic facilities.
- **Human resources for health** refer to people engaged in actions whose primary intent is to enhance health. These human resources include clinical staff such as physicians, nurses, pharmacists, dentists, as well as management and support staff who do not deliver services directly but are essential to the performance of health systems. Ensuring adequate, equitable, and reliable human resources in healthcare is a challenge for all countries in the region, both in urban and rural areas. With an increase in ageing population in the region, there is a general shortage of health professionals across the board, which is why recruitment and retention of staff is of great importance for the provision of health services. There is also an imbalanced distribution of manpower in rural areas as compared to urban areas. There is also

an onus on health professionals to upskill and future-proof themselves in the face of emerging trends in healthcare delivery.

- **Service packages** refers to delivery systems that provide consumers with convenient integrated health services, as well as an avenue to educate and empower the public to take more responsibility for their health by encouraging independence and proactivity to pursue the best course of action for their health conditions. Examples include healthcare financing schemes and multidisciplinary or technology-based approaches to better provide healthcare services.

The best practices in this publication showcases the innovative ways AMS addresses the different health challenges in facilitating increased access to safe, affordable, quality and holistic care. By sharing and exchanging these best practices, AMS can learn from one another, adopt, and modify the programmes and schemes to strengthen their health systems and access to care.

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HEALTH FACILITIES



Supervised Community Mental Health Assisted Living Unit for Long-Stay Psychiatric Patients

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Brief description of the best practice

This initiative addressing the needs of psychiatric patients commenced in early 2012 and has been successfully implemented in January 2014 with the strong support and commitment from the Ministry of Health.

This project serves as a starting point to achieve long-term goals of improving mental health throughout the population, assuring excellent psychiatric services and providing comprehensive mental health protection to the community. The success of the project has enabled the psychiatric department to raise its profile and the performance of psychiatric services in the country, as well as improving the spirit of the staff to continuously strive to achieve the vision and mission of the department.

Two supervised community Assisted Living Units (ALU) have been set up for the long-term in-patients from two of the district hospitals in the country, namely Raja Isteri Pengiran Anak Saleha (RIPAS) Hospital, and Suri Seri Begawan Hospital psychiatric wards. This enables the discharge of patients into the community, and into a 'home-like' environment. Ideally, separation of male and female units have been considered and consequently established to suit social and cultural appropriateness. The program is called "De-institutionalisation and Community Integration of Long-Term Psychiatric In-Patients". The assisted living allows them to relearn the necessary skills to reintegrate into society and be better able to support and care for themselves.

In October 2012, the female unit was officially opened by the Honourable Minister of Health and named Rumah Sinar Sejahtera. Residents have a regular daily and weekly timetable involving attendance at a nearby psychiatric rehabilitation centre. They are responsible for their activities of daily living, cooking, and cleaning. The unit is provided with staff members working in shifts and is supported by attendants. The nurses provide support to the residents by monitoring their medication, assessing their mental states as needed, as well as assisting with psychoeducation and psychosocial rehabilitation. The residents are regarded as out-patients essentially living in their own home. This pilot project proved successful and a male residents' unit was subsequently officially opened in January 2014 named Rumah Cahaya Sejahtera. The facilities are part of a government estate, consisting of 2 separate bungalows with home environment provisions and settings.

Patient criteria

The criteria for admission into the units are as follows:

- Have chronic mental disorders
- Have been in-patients in hospital psychiatric ward for more than one year
- Are in a stable mental condition

- Require supervision and support of their daily activities and rehabilitation process
- Have sought all other avenues of accommodation without success

Nature of services

The services provided by Assisted Living Unit include:

- Accommodation
- Provision of food and meals
- Developing understanding of and ability to cope with mental illness
- Development of life skills such as:
 - Self-care skills
 - Social and communication skills
 - Community living skills
 - Work habits
 - Domestic skills
 - Group living skills
 - Positive use of leisure time
 - Facilitation of the re-alignment of relationship with family members
 - Preparation for discharge from the Assisted Living Unit

Specific problems addressed

The establishment of the Community Mental Health Assisted Living Unit have resulted in the reduction in the number of chronic patients in the acute care ward in the hospital, therefore allowing more acute patients to be treated effectively. This is a marked improvement from before the establishment of the living units where the capacity of the psychiatric ward exceeded by 40% in some instances.

This establishment also prevented unnecessary patient detention at the hospital for prolonged periods which would not have been conducive for their recovery.

Evidence to support success of best practice

Improvements have been observed in the quality of life of chronic but stable patients. The living units help them to interact and communicate with the community, building their capacity for self-reliance. Patients are also seen to have improved vocation, social, and personal care skills. Since the living units are in close quarters to the rehabilitation centre, patients have increased access to the rehabilitation services. The impact of this establishment has been positive on patients and their families, according to feedback.

This programme has gained much traction and support from external agencies have substantially increased. This Assisted Living Unit project was awarded a Silver Group Prize at the Civil Service Excellence Awards in 2014.

Lessons learnt and the plan forward

Implementation of the Mental Health Order is to be monitored to ensure that patients are protected by it.

Psychiatric services are to be built upon by integrating them into the community by increasing the number of community psychiatrists and psychiatric day care in the health centres, as well as expand home visit services by community psychiatric staff. Services can also be improved upon when treating children and adolescents.

Another important way to improve upon existing psychiatric services is to ensure consistent quality of staff. The psychiatric training program continues to enhance the skills of trainees and nursing staff since its initiation. It is ensured that top quality mental healthcare is delivered at all levels of care, which includes primary, secondary, and tertiary. The importance of mental health should be promoted through public awareness and education programmes.

Periodic evaluations and assessments will be conducted to ensure that effectiveness and efficiency is maintained at the highest level. Conduction and dissemination of the latest research and evidence is essential for maintaining high standards of mental healthcare in Brunei Darussalam.

Health Services Quality Improvement for Health Centres

CAMBODIA

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Brief description of the best practice

The Quality of Care Assessment Tools (Level 2 Assessment Tools) conducted by the Quality Assurance Office, Hospital Services Department, Ministry of Health (MOH) in 1190 health centres in Cambodia, from 2014 to 2016, revealed that there were still many opportunities for improvement (OFIs) at the Health Centre level. Among those OFIs, infection and prevention control was the key issue that needed to be rectified immediately.

The Quality Assurance Office (QAO) of the Hospital Services Department of Cambodia Ministry of Health, under the initiative of the Director General for Health (DGH), organized a consultative workshop on 4th and 5th April 2017 to develop the Quality Improvement (QI) Action Plans. A total of 150 participants attended the workshop which included the directors of 25 Provincial Health Departments (PHD), directors of 100 Operational Districts (OD), and chiefs of 20 Health Centres (HCs) (randomly selected).

As output of the consultative workshop, the QI Action Plans which comprised of 21 OFIs were developed and adopted by MOH. All HCs in Cambodia implemented these approved QI Action Plans, with strict monitoring by OD, PHD, and QAO at MOH; and random spot-checks are conducted at the selected HCs by the DGH.

To evaluate the implementation of this plan, data were collected and analysed by the QAO four times in 2017. The 1st set of data served as the baseline and was collected just after the consultative workshop (April 2017). The 2nd, 3rd, and 4th set of data were collected in July, October and December 2017 respectively.

Specific problem addressed

The 21 OFIs in the QI Action Plans which were implemented by all 1190 HCs in Cambodia, from April – December 2017, were:

1. Appropriate patient triage and taking vital signs
2. Strengthening hand washing or alcohol cleaning before and after seeing the patient
3. Strengthening management of patients, especially patient flow
4. Strengthening medical care such as: taking patient history, physical examination, providing feedback, and counselling to patients
5. No medical waste found within HC premises
6. No normal waste (plastic, paper, etc.) found within HC premises
7. HC premises have at least one clearly visible garbage bin
8. The floors, ceiling, walls, windows, and doors are clean and there is no rubbish on the floor at the outpatient department (OPD), delivery room, and antenatal care (ANC) room
9. Hand washing facilities are available at the OPD, delivery room and ANC room

10. At least two toilets are available in each HC. The toilet has a door and each toilet is lockable from the inside
11. Each toilet has tap water or a container with water with a ladle for flushing the toilet
12. Each toilet has a functioning light (either electric or solar)
13. Each toilet has no visible waste, no flies, and has air fresheners
14. Presence of at least one shower in each HC, with tap water or container with water and ladle (full or at least half full)
15. Shower room is lockable from the inside, and the lock is functional and cannot be locked from the outside. It also has an exhaust fan or ventilation through tiles
16. Delivery room, ANC room, OPD, and immunisation room have rubbish bins available and are not full. Rubbish bins do not contain used syringes or needles. Safety boxes/ sharps containers have to be available
17. Designated staff in place to carry out Medical Waste Management Plan
18. Medical waste is treated separately in marked containers according to guidelines
19. Drug dispensary must be clean
20. Drug management and storage strictly follow the MOH guidelines
21. Management of medical equipment

Evidence to support success of best practice

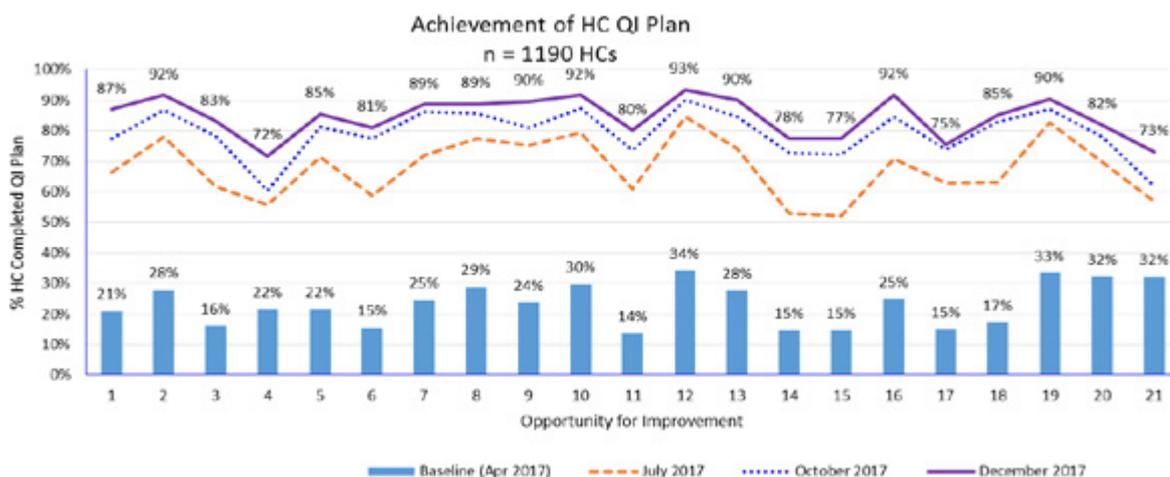


Figure 1. Progress of implementation of the 21 OFIs.

In conclusion, there were improvements in implementing these QI action plans from April to December 2017. As a result, the baseline data showed that 278 HCs (23%) of the total 1190 HCs had completed the QI action plans in April 2017, before this plan started. Three months later, in July 2017, 809 HCs (68%) of the total 1190 HCs had completed the QI action plans. Then in October 2017, 943 HCs (79%) of the total 1190 HCs had completed the QI action plans. Finally, in December 2017, 1006 HCs (85%) of the total 1190 HCs had completed the QI action plans.

Lessons learnt and the plan forward

Commitment and involvement from high ranking officers at MOH with strict monitoring is essential and critical for the success in implementing the QI Action Plan in Cambodia.

Staff dedication at the HCs is the key to success. Managers at all levels from MOH, PHD, OD, and HC have to be involved and take responsibility accordingly. The DGH was committed and followed up with the implementation of this plan strictly.

Data analysis at each phase was submitted to the DGH, then to the Minister of Health for advising any necessary action.

The QI Action Plans need to be developed by all involved stakeholders, using a bottom-up approach, with adoption by MOH management and implementation nationwide. Availability of resources (human and budget) was also very important for implementing this QI Action Plan.

The data collection tool must be simple with detailed guidelines so that the implementers could easily fill and return back to MOH for analysis. Reliability of data is ensured and acknowledge by PHD director, OD director, and HC chief.

In 2018, the remaining HCs that did not complete all 21 OFIs will continue to implement it.

National Collaboration of Emergency Medical Services: Strengthening Health Services

INDONESIA

The Directorate of Referral Healthcare Services, Ministry of Health of the Republic of Indonesia

Brief description of the best practice

In responding to the high rates of traffic accidents and emerging health complications, such as stroke and cardiovascular disease in Indonesia, the Ministry of Health has made a breakthrough by developing an Integrated Emergency Medical Management System (IEMMS), called Emergency Medical Service 119. The system integrates services at the pre-health facility, intra-hospital and between-hospital levels. The aims of the Medical Emergency Service IEMMS are to increase access and improve the quality of emergency health services and speed up the response time to reduce the rate of mortality and disability caused by health emergencies.

By July 2016, National Command Centre (NCC) 119 service was inaugurated and presented by the Ministry of Health of the Republic of Indonesia. The NCC also served as a platform/channel to implement IEMMS. The NCC 119 carries some conveniences as follows: (1) introducing the community a single service number to access a 24-hours medical emergency services through the access code 119 that is free of charge via local or cellular phone; (2) providing free emergency health services, specifically ambulance service; (3) providing information about the availability of hospital bed for intensive healthcare services and (4) providing guidance to the victims'/patient's companion via phone to prevent mishandling that could lead to death or disability.

The concept of NCC 119 as the sole national command centre for emergency medical service in Indonesia, while police, firefighter, National Board for Disaster-Countermeasure and the National Board for Search and Rescue possess their own access numbers. However, the NCC 119 is expected to stimulate the establishment of a Public Safety Centre (PSC) at city/district level by the local government. The PSC is mandated by Presidential Instruction Number 4 Year 2013 on Road Safety Millennial Action Program. The organization of the PSC should involve cross-sectoral collaboration, consisting of some elements in emergency response, including healthcare services. The collaboration between NCC 119 and PSCs is expected to progress smoothly. Therefore, all incoming call can be forwarded quickly and accurately across all regions. By cooperating with health service facilities available in its working area, the respective PSC 119 could minimize travel time in reaching the location where the victims/patients are.

Specific problem addressed

Prior to the establishment of NCC 119, financing and payment plans for pre-health facility emergency services had not been adequately established. Therefore, any services performed by healthcare and ambulance teams arriving at the scene were charged to patients and victims. There was the access code of 188 for ambulance service that was considerably expensive for the poor. Furthermore most of the healthcare facilities had

to wait for patients to arrive because the emergency services were passive, and the ambulance services deployed to the scene were limited.

There were also different contact numbers of emergency service for each region that were challenging to memorize. Frequent mis-communication between primary service and referral happened to respond when an emergency case occurred nearby as well as the health services were unable to attend in a timely fashion that in some cases leading to more fatalities. There was also no initial handling guidance of emergency medical protocols for patients who had not arrived yet at healthcare facilities.

Evidence to support the success of best practices

This national program is built with a system that is electronically well recorded so it can be monitored and evaluated. The NCC and PSC 119 activities are monitored and evaluated by Sub-Directorate of Integrated Emergency Service and can also be monitored directly through a monitoring dashboard at NCC 119. This monitors the integrated PSC 119 and displays the daily call performance data of NCC 119 in real time. Activities are updated daily in the form of a report and sent to program responders on a monthly basis. Evaluation is then conducted at the end of the year in the form of a meeting and is attended by related parties and documented in a report.

The evidence from yearly evaluation reveals some good points as follows:

1. The 119 number is easy to recall and nationally accessible;
2. The community can benefit to a faster and more comfortable emergency medical services by calling 119. Based on data, the total number of incoming calls to NCC from July 2016 to March 2019 is around 7.4 million in which 96.81% of the incoming calls are successfully received;
3. Emergency pre-hospital health services, hospital/healthcare facilities, and intra-hospital services are now an integrated healthcare services encapsulated in the Emergency Medical Service 119 initiative. As of March 2019, there are 188 PSCs established across regions. While as much as 69 PSCs has collaborated with NCC 119 that implement IEMMS 119;
4. In 2019, there are 59,598 referrals of pre-health facilities through Emergency Medical Services 119;
5. The existence of community participation in emergency responses. By calling 119 for help, for example, the community could provide a first aid to the victim or patient with the guidance from the NCC 119 operator or PSC 119, supported by an emergency medical algorithm;
6. The support for activities in the form of regional financing as well as good cooperation with cross-related sectors;
7. The courtesy of good cooperation with police has led the decrease of the mortality due to traffic accident, from 4,393 in 2016 to 3,663 in 2017. It is a synergy under the policy of the road safety map in Indonesia;
8. Local stakeholders, including the Governor, the Regent, the Head of the Regional Planning Agency, and the Head of the District Health Office provide policy and financial support for the Emergency Medical Services, in the form of the establishment of the PSC 119;

9. The emergency response is carried out in collaboration with the police, the firefighter department, the Regional Disaster Management Agency, PT Jasa Raharja (state-owned insurance provider), community organizations and NGOs, including Citizen Band Radio of Indonesia, Indonesian Amateur Radio Organization and Indonesian Red Cross.

Lessons learnt and the plan for the future

It is necessary to build and optimize IEMMS via the NCC 119 through: (1) developing and widening the range of call centre 119 in every area in Indonesia, (2) optimizing the role of PSC 119 in districts with fast and responsive emergency service, (3) equipping the availability of ambulance 119 with standardized human resources and utilities, (4) building and strengthening hospital referral system, (5) developing hospital equipped with the excellent service of trauma centre in traffic accident prone area, (6) promoting safety and healthy culture in the road as well as (7) setting the bar for health standard in driving.

Community participation

With the medical emergency service 119, the community is encouraged to recognize emergency events and to utilize emergency call services wisely to avoid preventing others who were in need of immediate medical emergency assistance.

Cooperation and collaboration

The provision of the Emergency Medical Services 119 as a public service relies heavily on policy supports at the strategic level. Following the Presidential Instruction No. 4 of 2013 on the Millennial of Road Safety Action Program and Regulation of the Minister of Health No. 19 of 2016 on Integrated Emergency Medical Management System, Regulation of the Minister of Health No. 47 of 2018 on Emergency Care, the local government shall each develop local regulation related to the implementation of the Emergency Medical Services program and the establishment of PSC 119. With proper support, it will be easier for regions to allocate a certain amount of budget for the Emergency Medical Services 119 program. Strong commitment and support from the Minister of Health as well as from provincial and regional leaders and regional health officers proved to facilitate the process of implementation and improvement of service.

Since the PSC 119 belongs to each district, it relies on the ability of the respective local government to allocate its budget, meaning that the local government needs to plan it well. While the Ministry of Health could provide some financial assistance, the PSC can also get more financial aid from banks, donors and other unbinding parties. In addition, the socialization of this program to the community is also necessary to increase utilization.

The stakeholders have respective role in supporting each other, these are as follows:

1. Cross-programs of MoH and vertical hospitals play roles in the development of IEMMS and call centre 119's application;
2. The local governments establish PSC 119;
3. Professional Organization provides support in preparing the emergency algorithm;
4. Hospitals, clinics and sub-district health centres are partners of PSC 119 in providing emergency health services. Ambulances from the respective healthcare facilities can be deployed to the scene if necessary;
5. The Police and Jasa Raharja Insurance are partners of PSC 119 for road traffic accident;

6. The Community becomes the first responders;
7. The Sub-Directorate of Integrated Emergency Services, under the Directorate of Referral Health Service is the unit responsible for maintaining the EMS 119 program.

Information Technology

The development of EMS 119 is supported by information technology. The application system in this program is very helpful for the success of the service. For the following year, the Ministry of Health is expected to build its own system, in the form of a call centre and an application which are easily accessible to all communities in Indonesia.

Cluster Hospital Initiative: A Healthcare Transformation Programme

MALAYSIA

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Brief description of the best practice

Cluster Hospital is defined as the grouping of hospitals by geographical locations within a state where the hospitals are aligned in terms of patient flow and services. The Cluster Hospital is one of the high impact initiatives addressing current healthcare issues such as increased demands, needs and expectations of the population, as well as dealing with escalating healthcare costs, rapid advancement of new medical technologies, emergencies and re-emergences of new and previously eradicated diseases, and providing better quality, safe, and patient-oriented healthcare delivery.

Each hospital within a Cluster will share resources, facilities, manpower, and equipment among themselves. A Cluster will provide specialized services as per the Cluster's needs, capacity, and capability to provide for the local population. In a Cluster, the Specialists or State Hospital will serve as the Lead Hospital and other smaller or district hospitals will take the roles as the non-Lead Hospitals.

In 2014, Cluster Hospital pilot projects were officially implemented at three (3) pilot sites i.e. (i) Pahang Tengah Cluster in Pahang State – Sultan Haji Ahmad Shah Hospital (HoSHAS) in Temerloh, Jengka Hospital, and Jerantut Hospital; (ii) Melaka Cluster in Melaka state – Melaka Hospital, Jasin Hospital, and Alor Gajah Hospital, and (iii) Tawau Cluster in Sabah state – Tawau Hospital, Kunak Hospital, and Semporna Hospital.

Specific problem addressed

The main aim of implementing Cluster Hospitals is to improve the health service cost effectively by reducing wastage and optimising existing resources. Through the Cluster Hospital Initiative, congestion in Lead Hospitals and the underutilisation of the non-Lead Hospitals would be addressed. The access to specialised care and patients' needs are improved by redistributing workload and sharing resources such as hospital beds, operating theatres (OTs), staffing, training, facilities, and clinical services between the hospitals.

Selected elective, non-complex procedures and surgeries can be performed in OTs of non-Lead Hospitals while more complex or complicated procedures and surgeries are scheduled at the Lead Hospitals. In addition, the availability of the specialist services at the non-Lead Hospitals is improved by the setting up of specialist outpatient clinics at the non-Lead Hospitals. In short, decentralising the specialist services to the rural area will bring these services closer to home for rural patients.

Evidence of support success of best practice

Three years on, there were a number of achievements recorded by the Cluster Hospital pilot projects.

The bed occupancy rate (BOR) for HoSHAS general medical ward decreased from 115.64% (2012) to 84.74% (2015). The BOR of Jengka and Jerantut Hospitals increased from 73.80% (2012) to 74.98% (2015) and from 44.81% (2012) to 66.96% (2015) respectively.

For General Medicine specialty, the frequency of specialist visits to non-Lead hospitals increased from two times per month in 2012 to three times per month in 2013, and subsequently four times per month from 2014 onwards. The number of patient visits to Specialist Clinics for General Medicine at Jerantut Hospital increased from 346 in 2012 to 576 in 2015, while in Jengka Hospital, the visits increased from 478 in 2012 to 743 in 2015, with an increase of 66.47% and 55.44% respectively.

Tawau Hospital, Semporna Hospital, and Kunak Hospital formed the Sabah Cluster Hospital network. Obstetrics and Gynaecology (O&G) was the chosen specialty for the Sabah Cluster due to high levels of workload at the O&G department in Tawau Hospital and underutilised O&G departments in Kunak and Semporna Hospitals. This was evidenced from the O&G BOR Tawau Hospital at 100.8% in 2013 whereas the BOR for Kunak and Semporna Hospitals was 36.00% and 65.78% respectively.

The aim of this study is to compare the BOR, number of procedures, and average length of stay (ALOS) of the pre- and post-implementation of the Cluster Hospital. Secondary data was used in this study. The BOR and number of procedures data for Tawau, Semporna, and Kunak Hospitals for the years 2013/2014, and 2015 were used as the pre- and post-implementation respectively. These indicators were selected to reflect the actual performance of these hospitals. The BOR for the Obstetric Ward Tawau Hospital was 100.08% for year 2013 and decreased to 89.25% in 2015. The number of obstetric procedures performed at Kunak Hospital's OTs increased from 11 cases in 2014 to 118 cases in 2015. ALOS for Kunak Hospital increased from 1.15 days (2013) to 1.24 days (2015). Semporna Hospital's ALOS increased from 0.96 days (2013) to 1.15 days (2015).

Lessons learnt and the plan forward

To date, there are a total of 46 public hospitals throughout Malaysia which have officially implemented the Cluster Hospital Initiative. In the long term, Cluster Hospitals will be rolled out to all 132 public hospitals in Malaysia by 2020. Looking at the achievements of all the existing Clusters, this initiative has the huge potential in transforming the public healthcare delivery system in Malaysia.

Improving Efficiency of the Incident Reporting System in Hospitals and Institutions Using e-Incident Reporting (e-IR)

MALAYSIA

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Patient Safety Unit, Medical Development Division, Ministry of Health, Malaysia

Brief description of the best practice

The Incident Reporting and Learning System was established by Ministry of Health Malaysia (MOH) in 1999. All hospitals and institutions under MOH (there are 143 hospitals and institutions) need to report patient safety incidents to MOH. From 1999 to 2017, there were 29 mandatory reportable incidents for hospitals. However, since 2018, the system has been changed to an 'open' concept whereby the facilities can report any patient safety incidents to MOH. These include hazards, near misses, and any other incidents that were not included in the mandatory list before.

The e-IR is a reporting system form developed using a free online web based survey software (Google Forms) to make incident reporting more efficient and effective. Following a Director General of Health Circular No.2/2016, all MOH hospitals and institutions need to report patient safety incidents via e-IR. The hospitals and institutions will send essential information of the incident using the e-IR system through the Patient Safety Council Malaysia website within five days of the incident. Both the Patient Safety Unit (PSU) at the Ministry level and relevant State Health Department (SHD) will receive this information simultaneously and instantaneously. In order to ensure confidentiality and security of patient and hospital information, a coding system is used for certain variables. The information received from e-IR is:

- Type of incident and brief description of the incident
- Date and time of incident
- Department involved in the incident
- Patient's gender
- Patient's age
- Patient outcome following the incident
- Action taken by the hospital following the incident
- Details of staff reporting the incident – name and designation

Data is downloaded and analysed using Microsoft Excel. A summary of the National Incident Report will be produced regularly and uploaded onto the Patient Safety Council Malaysia website for easy access to relevant stakeholders.

Specific problem addressed

Initially, a three-tier reporting system was used in which incident reports from various hospitals and institutions were sent to the respective SHD for compilation. The SHD would then send a summary of the reports using a matrix form (which included the numbers and types of incidents that occurred in each of the hospitals/institutions) to PSU every three (3) months. The reporting process was complicated and the information received at

the Ministry level was too brief, not timely, incomplete, and labour intensive. Hence, it was difficult for the Ministry to monitor and analyse the hospital incidents at the national level and take appropriate action in a timely manner. Due to resource constraints, it was felt that freely available technology was the solution to overcoming these issues. Therefore, e-IR was developed in June 2015.

Below are the other benefits of using e-IR:

- Ministry receives more meaningful data for further action at the national level
- Direct reporting from hospital to Ministry using technology has minimized reporting error and data discrepancy which was a major problem before
- Ministry receives information on patient safety incidents much faster (i.e. five days instead of three months)
- Ministry monitors incidents centrally and produces national report regularly in a timely fashion
- Reduces the burden on SHD to analyse the Incident Reporting data which allows SHD to concentrate on visiting the hospitals and institutions and assist in risk reduction strategies following an incident in hospital
- Saves costs on designing and installing similar systems in all MOH hospitals and institutions by using a free system

Evidence to support success of best practice

Since the e-IR system was established in June 2015, reporting of incidents has increased tremendously from 1,628 reports in 2014 before implementation of e-IR to 2,769 reports in 2016 and 5,689 reports in 2017 (Refer Figure 1). Easy accessibility of e-IR and user friendly features are the factors which encourage hospitals and institutions to report incidents.

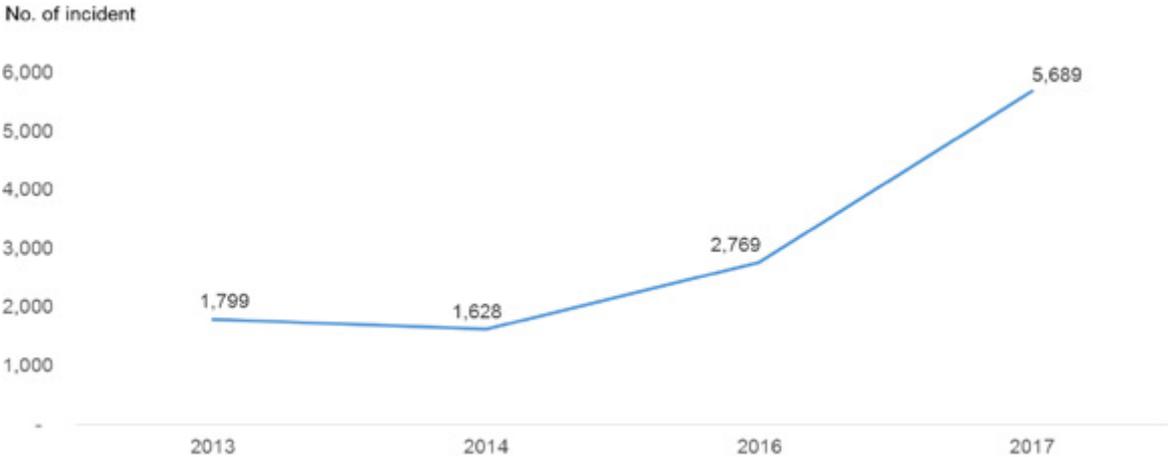


Figure 1: Number of incidents reported to MOH Malaysia before and after implementation of e-IR.

Lessons learnt and the plan forward

As e-IR is an internet based system, efficient, uninterrupted internet connection in the facilities is a prerequisite in order for this system to be effective. This can be a problem especially in rural areas and East Malaysia (Sabah & Sarawak).

Since e-IR uses free web-based survey software, customization of the system according to our needs is limited. Therefore, meticulous data cleaning is required.

Despite these challenges, e-IR has been proven to increase reporting and improve the efficacy of reporting in Ministry of Health's hospitals and institutions.

With the increase in reporting, common and critical patient safety issues are able to be identified. Based on this information, the National Patient Safety Program will be developed to improve the safety of healthcare system. For instance, the Obstetric Related Safety Program will be developed in future.

Due to the success of e-IR, this system will be expanded to include the government health and dental clinics.

National Quality Assurance Programme (NQAP) for Microbiology Module

MALAYSIA

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Brief description of the best practice

The NQAP for microbiology module was established in the early 1990's at the Institute for Medical Research as part of the of Ministry of Health (MOH) Malaysia's initiative to assure that the microbiology diagnostic laboratories are adhering to international standards. It is also to ensure that the microbiology and immunology tests carried out by hospitals in Malaysia are reliable and of the best quality. Quality assurance programs (QAP) assess the total process of laboratory activities which involves pre-examination, examination, and post-examination to make sure the quality of laboratory reports can be guaranteed and contributed in the management of treatment of patients.

Prior to the NQAP microbiology module being coordinated by the Institute for Medical Research (IMR), the laboratories in MOH Malaysia enrolled in the international QAP for inter-laboratory comparison (ILC) as one of the requirements for MS ISO15189 accreditation. However, the international QAP is expensive and a cause of financial burden to the laboratory management.

The NQAP for microbiology module comprises of four modules:

1. NQAP for bacteriology – coordinated by the Bacteriology Unit
2. National External Quality Assurance Scheme (NEQAS) for anti-HIV screening laboratories in the MOH Malaysia – coordinated by the Virology Unit
3. External Quality Assessment Scheme (EQAS) for Molecular Detection of Influenza Viruses and MERS-CoV – coordinated by the Virology Unit
4. NQAP for anti-nuclear antibody (ANA) - coordinated by the Autoimmune Unit

This quality programme is provided for hospitals, public health laboratories in MOH Malaysia, as well as universities and private laboratories. The programme involves testing a panel of known samples and distributed to the participating laboratories in the Ministry of Health two (2) cycles per year.

NQAP for bacteriology

The IMR Culture Collection laboratory at the Bacteriology Unit is responsible for the management of the program in Malaysia. There are 70 microbiology diagnostic laboratories participating in this program. The program is conducted twice yearly, each batch consists of identifying four bacterial isolates and performing analyses of antimicrobial resistance patterns. All participating laboratories are expected to submit the results within three weeks. This program monitors the percentage of accuracy of the test results from participating laboratories as shown in Figure 1.

NEQAS for anti-HIV screening laboratories

The National AIDS Reference Laboratory (NARL) in Virology Unit conducts NEQAS for anti-HIV screening laboratories. Currently, a total of 73 laboratories participate in this module. NARL prepares four different panels and each panel consists of five sera. All participating laboratories are expected to return the results within two weeks upon receipt of panel. This program monitors laboratory turnaround time and accuracy of the test results from participating laboratories as shown in Figure 2.

EQAS for Molecular Detection of Influenza Viruses and MERS-CoV

The WHO National Influenza Centre (NIC) in Virology Unit is responsible for coordinating EQAS for Molecular Detection of Influenza Viruses and MERS-CoV for 18 laboratories. Each panel consists of ten to 12 inactivated genomic materials of Influenza viruses and MERS-CoV. All participating laboratories are expected to submit the results within two (2) weeks. This program monitors laboratory turnaround time and accuracy of the test results from participating laboratories as shown in Figure 2.

NQAP for Anti-Nuclear Antibody (ANA)

The Autoimmune Unit conducts NQAP for ANA for 28 laboratories. Each panel consists of six (6) sera. All participating laboratories are expected to submit the results within three (3) weeks. The program monitors accuracy of test results in terms of positivity and ANA patterns as shown in Figure 3.

Specific problems addressed

The NQAP for microbiology module was initiated to ensure:

1. Tests performed met the acceptable international standards
2. Competency of laboratory personnel in performing the tests
3. Accuracy of test results
4. Timeliness in reporting of laboratory test results
5. The availability of cost-effective quality assurance programs (waived ILC fee for MOH laboratories)

Evidence to support success of best practice

Ever since the establishment of the NQAP for microbiology module, the number of microbiology laboratories involved has increased over the years. This shows the importance of NQAP for microbiology modules in Malaysia and how it has assisted Malaysian's health diagnostic system. Overall performance of the participating laboratories in the NQAP for microbiology module has achieved more than 80% accuracy (Figure 1 – 3).

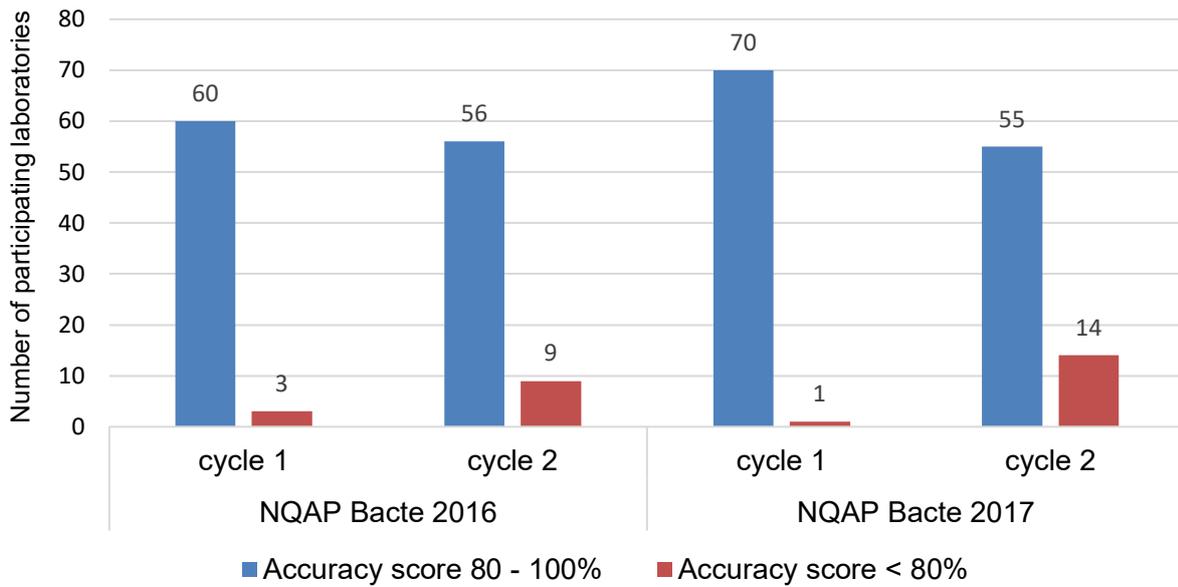


Figure 1: Test Performance of the Participating Laboratories in NQAP for Bacteriology

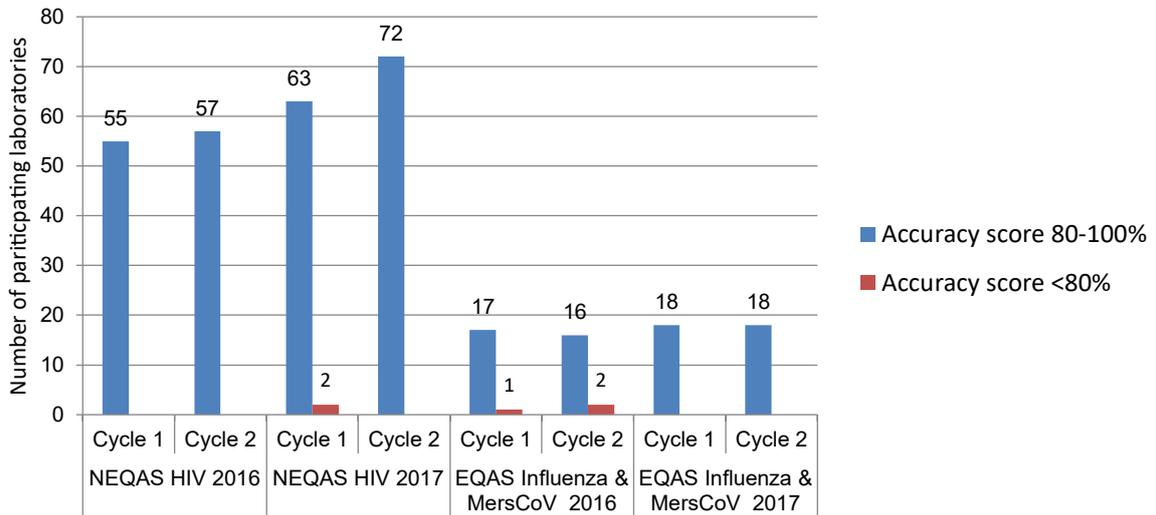


Figure 2: Test Performance of the Participating Laboratories in NEQAS for anti-HIV screening laboratories and EQAS for Molecular Detection of Influenza Viruses and MERS-CoV in the MOH Malaysia

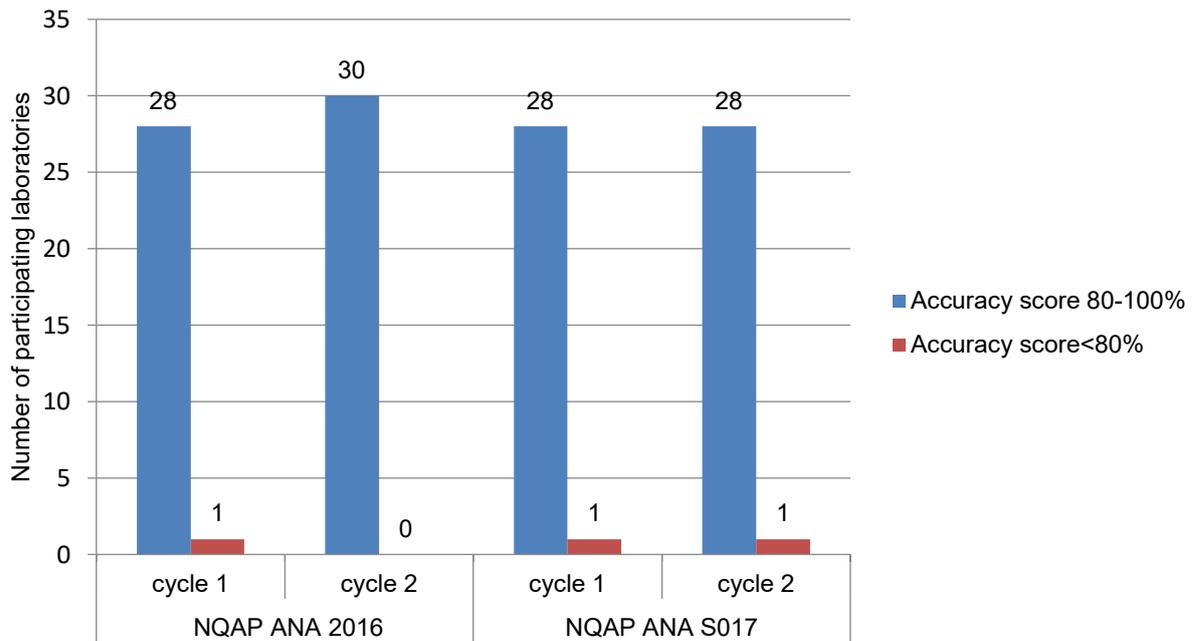


Figure 3: Test Performance of the Participating Laboratories in NQAP for ANA

Lessons learnt and the plan forward

Implementing the best practice of NQAP for microbiology module requires a substantial budget, human resources, and related training in the field. The NQAP provides laboratories involved to assess the overall quality of testing process. Hence, it may eliminate human errors, achieve targeted laboratory turnaround time, and provide excellent service. The program will provide opportunity for training and future expansion of modules to other disciplines or tests.

Reference

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Expanding Diagnostic Imaging to the Grassroots via Distributed Radiology

PHILIPPINES

Carl Nicholas Ng

Lifetrack Medical Systems, Philippines

Brief description of the best practice

Lifetrack Medical Systems, a private enterprise in the Philippines, exemplifies a Distributed Radiology model that can extend high-quality diagnostic imaging coverage to underserved areas. It has developed and deployed the first scalable, distributed medical imaging software designed for affordable adoption in emerging markets. The LifeSys™ platform allows for rapid transmission, aggregation, and access of medical images for both simple X-rays and complex CT scans through the cloud from multiple sites, even in remote areas, using off-the-shelf consumer hardware and software, and a DSL modem or 4G broadband network. This is more affordable and efficient in comparison to the traditional radiology software that requires expensive server hardware, workstations, and high-speed bandwidth available in the developed world.

Lifetrack supports using off-the-shelf consumer hardware such as standard LCD monitors and computers for easy set up and diagnostic use, offering up to ten times savings in upfront setup costs for medical imaging facilities. In resource-constrained markets, this allows healthcare providers operating in the affordable segment of the market to upgrade their medical imaging to a fully digital workflow. Cost savings are harvested by removing X-ray film production, getting more productivity out of their radiologists, expanding to more areas, and enhancing access to high-quality medical imaging.

One other emerging property of LifeSys™ is its ability to create a “marketplace” between healthcare providers in need of radiology services, versus healthcare providers or radiologist groups who can provide those services. A hospital in Manila can contract with a provincial hospital to receive patient cases using the same platform.

Delivering a distributed radiology model using LifeSys™ also requires healthcare providers to look at radiologist staffing, incentives and compensation; patient turnaround times and facility coverage hours; centralized case allocation, and a quality assurance program. For instance, at one LifeSys™ partner hospital with a heavy imaging workload, there are at least three radiologists on duty each day who may opt to practice remotely from the site. The agreed turnaround times for urgent cases are typically 2-4 hours, while non-urgent cases are typically between 24-48 hours. An assigned team leader periodically checks the number of cases read by each team member to ensure cases are distributed according to skill.

Specific problem addressed

Emerging markets have a shortage of trained radiologists. Countries like Viet Nam, Indonesia, and the Philippines have only 0.8 to 1 radiologists per hundred thousand people, versus 5 to 8 radiologists per hundred thousand people in advanced markets like the UK, Australia, and the US. The shortage is even more acute in areas outside the

major metropolitan areas of Southeast Asia. The shortage compounds itself, as trained radiologists are only able to train a few fellows at a time, using the typical apprentice-master model used in medicine.

In addition, radiologists are clustered in major urban centres and work at the best tertiary care institutions with the latest diagnostic imaging equipment and software. Outside of these environments, the quality of diagnostic interpretation is variable and the availability of radiologists for diagnosis is undependable. This imbalance results in large segments of countries not having access to vital diagnostic imaging interpretation for urgent cases such as strokes or treatable illnesses such as tuberculosis.

Evidence to support success of practice

Since adopting LifeSys™ in 2016, FamilyDOC, a chain of community-based primary care clinics serving lower middle-class semi-urban areas in the Philippines, now provides radiologic diagnosis within 30 minutes of an X-ray to 99% of their patients. This is a radical improvement on typical waiting times for X-rays in the Philippines of two to five days, saving a working-class patient from missing an extra day's wages to receive his diagnosis.

FamilyDOC is able to do this with zero radiologists physically present in their clinics; their diagnostic imaging is done by radiology technicians on-site, who upload the X-rays to the secure LifeSys™ cloud server using consumer DSL. A radiologist working at a central hub or at home is then able to conveniently and securely access patient x-rays on the LifeSys™ cloud server in real-time by logging on to Google Chrome, a free web browser. This has allowed FamilyDOC to rapidly scale from an initial three clinics in 2016 to nearly seventy clinics by mid-2019, all connected to the LifeSys™ platform.

The Philippine Tuberculosis Society (PTBS) set up a tuberculosis screening clinic on the island of Leyte, which had been ravaged by Typhoon Haiyan a few years previously. The typhoon destroyed basic medical care on the island, with most specialists leaving soon after, resulting in a massive rise in disease rates. The typhoon also swept away most electrical and telecommunication infrastructures. The Society approached Lifetrack to connect their digital X-rays to a radiologist in the capital, Manila, using a 4G connection. The clinic is now able to upload diagnostic grade X-rays using 4G to the LifeSys™ cloud server where a radiologist 900 km away is able to access it within five minutes, offering rapid screening and diagnosis of tuberculosis in a remote, underserved area.

Lessons learnt and the plan forward

Creating a Distributed Radiology model through the LifeSys™ platform has proven to be effective in providing underserved populations in an ASEAN context with medical imaging diagnosis using basic telecommunications infrastructures. Scaling this impact is already emerging through the expansion of FamilyDOC and continuing digitisation of other PTBS screening clinics. Improved turnaround times for patient diagnosis is also achieved, without the barrier of waiting for a radiologist to be physically on-site.

Investing the time and energy in changing clinical workflows and operational processes to adopt a Distributed Radiology model has enabled both FamilyDOC and PTBS to reap the benefits from LifeSys™. As Lifetrack expands with more partners in the Philippines and ASEAN, the willingness of FamilyDOC and PTBS to abandon traditional models of on-site radiologist staffing, upskilling radiology technicians to handle remote sending and coordination, and moving towards more efficient operations by aiming for a fully digital workflow, are what has allowed both organizations to leapfrog into the 21st century.

LifeSys™ is already being used in multiple ASEAN countries such as Indonesia, the Philippines, Viet Nam, Thailand and Singapore, with ongoing plans of launching in Malaysia in the very near future. Apart from ASEAN countries, Lifetrack is operating worldwide in the United States, United Kingdom, Nigeria, India, and Bangladesh.

Lifetrack's mission is to create simple, elegant, powerful and intuitive software platforms for the entire healthcare ecosystem, starting with medical imaging in emerging markets where the needs are greatest and the resources are scarcest, connecting healthcare institutions, medical professionals, and patients from Manila to Marrakech to Medellin.

Lifetrack has enabled healthcare providers diagnose over a million patients since launching LifeSys™ in 2016. Over the next decades, Lifetrack aspires to have helped diagnose tens of millions of patients, a sizeable number of which would not have been able to access medical imaging if not for our technology. This access to medical imaging becomes key in improving overall health outcomes for populations in the developing world, leading to earlier screening of cancer, less invasive procedures later on, and savings for the healthcare system as well as longer, healthier lives for people.

Prevention of Healthcare Associated Infections: Surgical Site Infection and Ventilator-Associated Pneumonia

PHILIPPINES

Cynthia S. Fabregas

Department of Health, Philippines

Background

The Department of Health through the Health Facility Development Bureau (HFDB) developed a strategic map in 2016 that aimed for a culture of safety in healthcare facilities, and envisioned an impact of Better Health Outcome by 2030 as aligned with the World Health Organization's Patient Safety 2030 goal (Health Beat, 2017).

The National Patient Safety Day is celebrated every 25th of June to further promote the objectives of patient safety. In 2017, between 19th and 23rd of June, a week-long celebration on patient safety was organized with the theme "Medicine Safety and the Culture of Safety," and with the objectives of first, officially introducing the "Culture of Safety;" second, showcasing best practices on the culture of safety among DOH-retained hospitals; and third, engaging communities to elicit public interest on the culture of safety. Certificates and tokens were handed to the winning entries for contests on research papers on the culture of safety and design for the Culture of Safety logo.

The WHO Country Representative, with the support of the HFDB Director led the awards of the following contest winners:

Best Research Papers on the Culture of Safety

- First Place: Southern Philippines Medical Centre for "*Surgical Site Infection Prevention and Ventilator-Associated Pneumonia Prevention Projects*".
- Second Place: Dr. Jose N. Rodriguez Memorial Hospital for "*A Five-Year Retrospective Study of Needle Stick and Sharps Injuries*".
- Third Place: National Kidney and Transplant Institute for "*Perspectives on Patient Safety Culture among the Workforce of the Ambulatory*".

Brief description of the best practice

Studies show that the risk of developing surgical site infections in developing countries is significantly higher than in developed countries with rates ranging between 19% to 31% across different hospitals and countries (Southern Philippines Medical Centre Quality Assurance and Improvement Section, 2015) and Ventilator Assisted Pneumonia (VAP) a subset of Hospital Acquired Pneumonia (HAP) is considered an important cause of morbidity and mortality around the world where the economic impact of both VAP and HAP is significant which may be attributed to increased lengths of stay in the hospital (Canadian Journal of Infectious Diseases and Medical Microbiology, 2008).

The Quality Assurance and Improvement Section of the Southern Philippines Medical Centre embarked on a project to address the two most common Healthcare Associated Infections in their institution which are the Surgical Site Infection (SSI) and the Ventilator Associated Pneumonia (VAP). The study was done from May to November 2015 where the bundles of care of interventions for SSI like standard hand hygiene, standard wound care, antibiotic compliance, standard tissue handling and the principles of aseptic technique were applied whereas for VAP the following bundles of care of interventions were applied: standard hand hygiene, standard suctioning, standard oral hygiene, nutrition monitoring, crowd control and antibiotic compliance. A checklist was used to determine the compliance rate of the bundles of care applied to each of the study participants. In order to determine the efficiency of return of investments the following parameters were determined: average length of stay with or without infection, average total bill with or without infection, excess room days, incremental revenue per room per day, target reduction in infection (cases prevented) in 6 months, number of rooms freed up, total revenues from the project, total cost of intervention and the cost of averting one infection by computing cost effectiveness (R/O and the net benefit (Q-R) and the return of investment (ROI) for SSI and VAP respectively. For actual estimated costs of supplies the following were computed: SSI wound kit care, paper towel, hand swabbing (culture) and information and education materials.

Specific problem addressed

There was a reported decrease in the incidence of SSI from baseline incidence of 9.2% to 2.75%. There was also a decrease of VAP rates from 28% to 5.7% (SPMCQAIS, 2015).

Evidence to support success of best practice

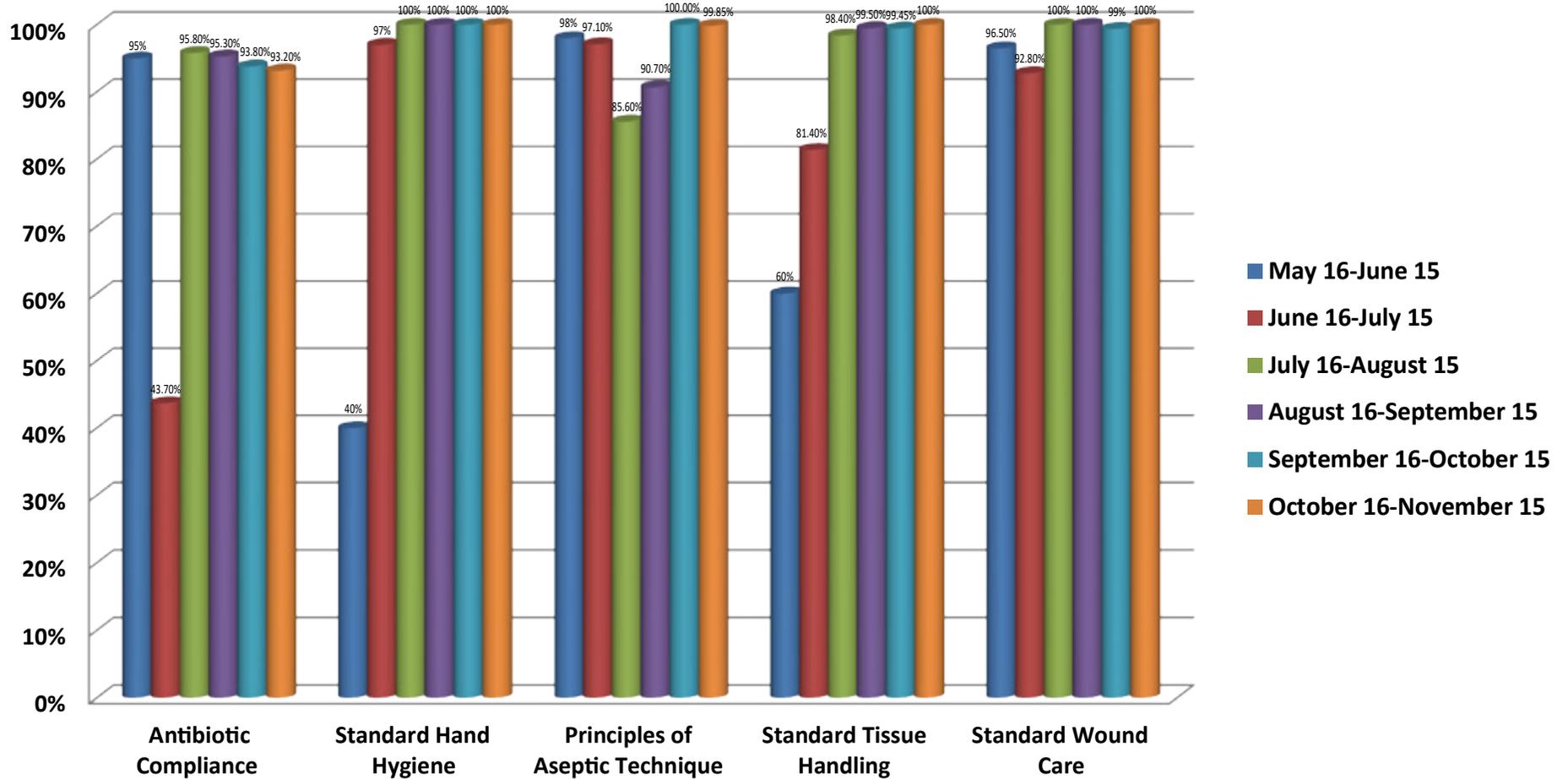


Figure 1. Comparative compliance rate for the SSI bundles of interventions in percent (May 15 to November 15, 2015). Reprinted from Surgical Site Infection (SSI) Prevention Project Ventilator-Associated Pneumonia (VAP) Prevention Project, by Southern Philippines Medical Centre Quality Assurance and Improvement Section, November 2015.

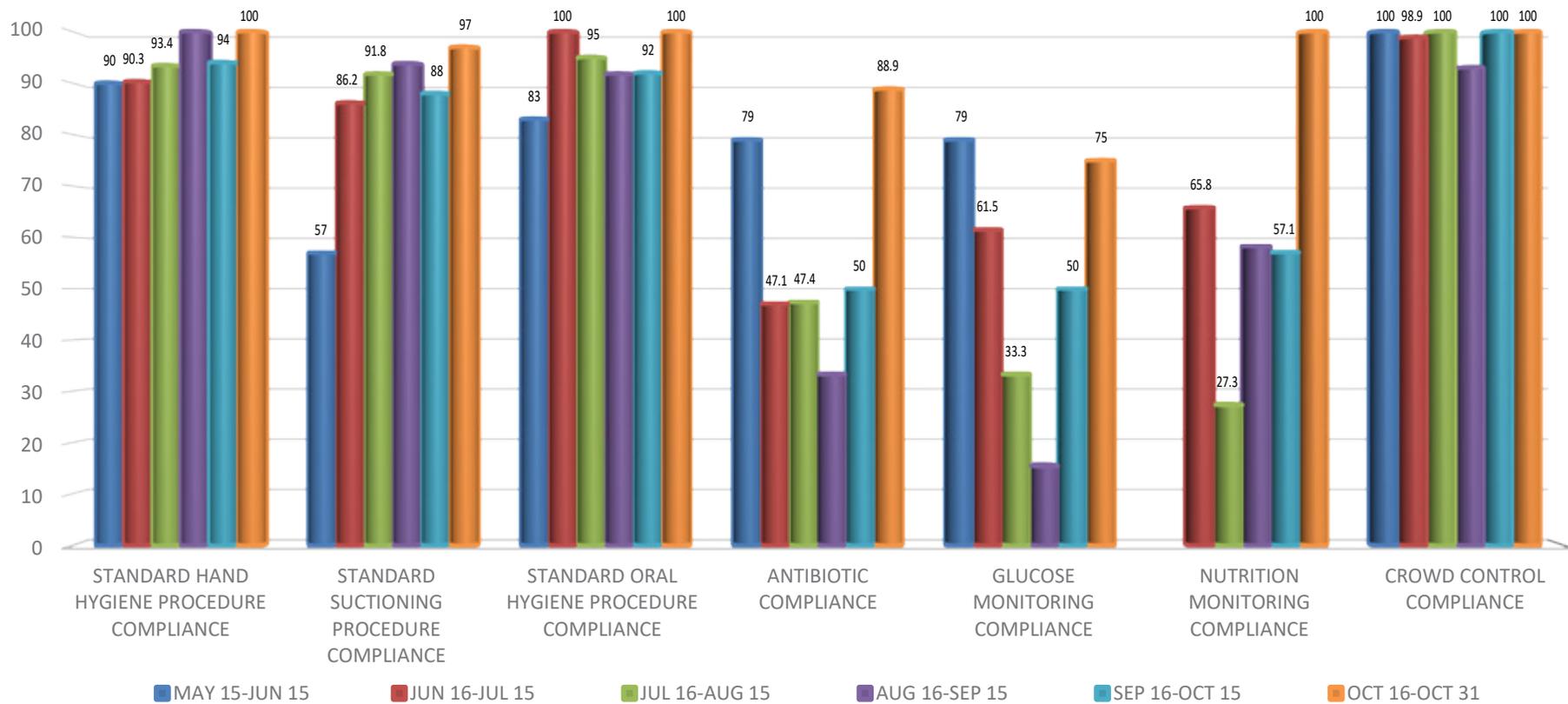


Figure 2. Comparative compliance rate for the VAP bundles of interventions in percent (May to October, 2015). Reprinted from *Surgical Site Infection (SSI) Prevention Project Ventilator-Associated Pneumonia (VAP) Prevention Project*, by Southern Philippines Medical Centre Quality Assurance and Improvement Section, November 2015.

*Remark: No data for period August 16-September 15 2015, the monitoring had not started yet since the status of the patients had to be established. The following activities had to be secured first such as: 1) Get Body Mass Index (BMI) of newly-admitted patients in the ICU; 2) Get the sugar level, lipid profile, albumin, CBC of patients who are greater or equal to 40 years old; 3) Refer to the nutrition specialist for nutritional requirements; 4) Coordinate with the dietary department for the dietary supplies, 5) Repeat laboratories as needed; and 6) Refer to nutrition specialist for any revision of nutritional requirement. This monitoring started from May 1, 2015 to November 30, 2015.

Table 2.1

Project Return of Investment for SSI.

A	Average length of stay without infection	3
B	Average length of stay with infection	5
C	Excess room days (B minus A)	2
M	Average total bill size non infected	27,470
X	Daily average bill size non infected (M/A)	9,157
N	Average bill size infected	31,228
Y	Daily average bill size infected (N/B)	6,246
Z	Incremental revenue/room/day (X-Y)	2,911
O	Target reduction in infection (cases prevented) in 6 months	33
P	Number of rooms days freed up (O x C)	66
Q	Total revenues due to project (P x Z)	192,126
R	Total cost of intervention	28,675

Note. Reprinted from *Surgical Site Infection (SSI) Prevention Project Ventilator-Associated Pneumonia (VAP) Prevention Project*, by Southern Philippines Medical Centre Quality Assurance and Improvement Section, November 2015.

Table 2.2

Project Return of Investment for SSI.

The cost of averting one infection is:	
Cost Effectiveness (R/O)	868.93
Net benefit (Q-R)	163,451
For every peso invested, the hospital will get	
ROI (Net benefit / cost of intervention)	5.70

Note. Reprinted from *Surgical Site Infection (SSI) Prevention Project Ventilator-Associated Pneumonia (VAP) Prevention Project*, by Southern Philippines Medical Centre Quality Assurance and Improvement Section, November 2015.

Table 3.1

Project Return of Investment for VAP.

A	Average length of stay without infection	8
B	Average length of stay with infection	14
C	Excess room days (B minus A)	6
M	Average total bill size non infected	163,366.34
X	Daily average bill size non infected (M/A)	20,420.79
N	Average bill size infected	125,804.35
Y	Daily average bill size infected (N/B)	8,986.03
Z	Incremental revenue/room/day (X-Y)	11,434.77
O	Target reduction in infection (cases prevented) in 6 months	16
P	Number of rooms days freed up (O x C)	96
Q	Total revenues due to project (P x Z)	1,097,737.68
R	Total cost of intervention	180,465

Note. Reprinted from *Surgical Site Infection (SSI) Prevention Project Ventilator-Associated Pneumonia (VAP) Prevention Project*, by Southern Philippines Medical Centre Quality Assurance and Improvement Section, November 2015.

Table 3.2

Project Return of Investment for VAP.

The cost of averting one infection is:

Cost Effectiveness (R/O)	11,279.08
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Net benefit (Q-R)	917,272.48
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For every peso invested, the hospital will get

ROI (Net benefit / cost of intervention)	5.08
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Note. Reprinted from *Surgical Site Infection (SSI) Prevention Project Ventilator-Associated Pneumonia (VAP) Prevention Project*, by Southern Philippines Medical Centre Quality Assurance and Improvement Section, November 2015.

Table 4

Actual Estimated Cost of Supplies

ACTUAL ESTIMATED COST	COST	QTY.	TOTAL COST
SSI WOUNDKIT CARE (DAILY)	153.5	836	128,623.00
PAPER TOWEL	68.05	103	7,009.15
HAND SWABBING (CULTURE)	810	31	25,110.00
IEC MATERIALS	115	9	1,035.00
TOTAL			161,777.15

Note. Reprinted from *Surgical Site Infection (SSI) Prevention Project Ventilator-Associated Pneumonia (VAP) Prevention Project*, by Southern Philippines Medical Centre Quality Assurance and Improvement Section, November 2015.

Table 5

Surgical Site Infection Wound Care Kit

SUPPLIES	AP (MINIMUM OF 3 DAYS STAY)			FOR 3 DAYS
	UNIT	QTY	AMOUNT	
OPERATING SPONGE	PACK X 2'S	1	14.00	42.00
ALCOHOL 500ML	BOT	1	18.00	18.00
STERILE GLOVES	PAIR	1	17.60	52.80
HYPOALLERGENIC PLASTER	ROLL	1	13.86	13.86
POVIDONE IODINE WL 5 COTTON BALLS	PACK	1	1.83	5.48
STERILE CUP	PC	1	7.12	21.36
				153.50

Note. Reprinted from *Surgical Site Infection (SSI) Prevention Project Ventilator-Associated Pneumonia (VAP) Prevention Project*, by Southern Philippines Medical Centre Quality Assurance and Improvement Section, November 2015.

Lessons learnt and the plan forward

- Standard protocol on the prevention of SSI and VAP should be in place in healthcare facilities with monitoring and evaluation of the implementation of the protocol for planning and further improvement purposes.
- Ensure the availability of medical supplies and maintenance of equipment related to the procedure
- Capability building of healthcare workers in all settings of care
- Building a culture of open communication and teamwork in the workplace
- Patient engagement



Figure 3. Former Health Secretary Paulyn Jean B Rosell -Ubial, delivering her inspirational message.

Source: National Patient Safety Day Week-long Celebration, Health Beat, 2017.



Figure 4. Photo opportunity with the winners of Best Research Paper, left to right are the following: Ms. Josephine Ramirez, team leader for Quality Assurance and Improvement Section of SPMC; Representatives from National Kidney and Transplant Institute (NKTI); Dr. Criselda Abesamis, HFDB Director; Ms. Carmela Barcelona, WHO Representative; Dr. Herminigildo Valle, Undersecretary of Health for Office for Field Implementation and Management; Representatives from Southern Philippines Medical Center (SPMC) Not included in the picture are representatives from Dr. Jose N. Rodriguez Memorial Hospital who were not able to attend the event.

Source: National Patient Safety Day Week-long Celebration, Health Beat, 2017.



Figure 5. Awarding of winners for logo making contest. (Left to Right) Dr. Cynthia Fabregas (Patient Safety Program Manager), Representatives from Schistosomiasis Hospital (3rd Placer), Usec. Hermiginildo Valle (OFIM), Representative from Philippine Heart Centre (1st Placer), Ms. Carmela Barcelona (WHO), and Director Criselda G. Abesamis (HFDB).

Source: National Patient Safety Day Week-long Celebration, Health Beat, 2017.

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2. Rotstein, C., Evans, G., Born, A., Grossman, R., Light, B. R., Magder, S.Zhanel, G. (2008). Clinical practice guidelines for hospital-acquired pneumonia and ventilator-associated pneumonia in adults. Canadian Journal of Infectious Diseases and Medical Microbiology, 19(1), 19-53.
3. Southern Philippines Medical Centre Quality Assurance and Improvement Section. (November 2015). Surgical Site Infection (SSI) Prevention Project Ventilator-Associated Pneumonia (VAP) Prevention Project.

Acknowledgement

The author acknowledges Ms. Josephine Dacanay-Ramirez, RN, MAN who leads the team of Quality Assurance and Improvement Section of SPMC for embarking on a project to address the two most common Healthcare Associated Infections in their institution which are Surgical Site Infection and Ventilator Associated Pneumonia.

Creating Health-Promoting Environments to Prevent and Manage Non-Communicable Diseases

SINGAPORE

Dr Chew Ling and Ms Vasuki Ultravathy

Strategic Planning and Collaborations, Health Promotion Board

The Global Burden of Disease Study 2017 showed that non-communicable diseases (NCDs) in Singapore accounted for more than 80% of the local disease burden, of which 20% was attributed to ischaemic heart disease, diabetes, and stroke. Coupled with a rapidly ageing population, it is inevitable that the burden of disease due to NCDs will continue to grow in the future. One key area of concern is the rise in prevalence of diabetes. Today, over 400,000 Singaporeans are living with the disease and the number is projected to reach one million, or one in three people by 2050, if the trend continues.

Brief description of the best practice

Fortunately, many of the NCDs have common lifestyle risk factors such as unhealthy diet, high sedentary levels and cigarette smoking, which can be rectified. In 2016, the Minister of Health launched the War on Diabetes to rally a nation-wide effort to accelerate the prevention and control of the disease, with an emphasis on preventive health.

Specific problem addressed

Since healthy behaviours is complex and highly dependent on the social and environmental context, it is critical to adopt a multi-sectoral approach. A key strategy of the Health Promotion Board (HPB), Singapore, the national driver for health promotion and disease prevention, is to mobilise the 3P (Public, Private and People) sectors to change the social and physical environments, making healthy living easy and natural.

To achieve this, multiple prongs of action are taken, including initiatives to increase physical activity and healthier eating choices.

Evidence to support success of best practice

Increase physical activity for all ages across settings

HPB sought to infuse physical activity as part of daily living. Using insights from past experiments, HPB implemented Singapore's first broad-based nation-wide steps movement, the National Steps Challenge™ (Figure 1) in 2015. Employing "smart" wearable technology and a progressive rewards scheme, NSC issued free steps trackers to participating Singaporeans to get them to "move more and sit less". Data from the third season showed that four in five participants who were previously inactive became sufficiently active after joining the Challenge. Since the start of the National Steps Challenge™ in 2015, there have been more than 1 million sign-ups over four seasons of the Challenge.

In addition, HPB continued to increase the pervasiveness of physical activity programmes, particularly in public spaces, to provide opportunities for residents to maintain an active lifestyle and to normalise physical activity among residents. Currently, there are over 1,000 workout sessions held per week in various public locations such as malls, business clusters and community spaces across Singapore. One example is Sundays @ the Park (SATP) (Figure 2), a community physical activity programme initiated by HPB and Sport Singapore (SportSG) held in neighbourhood Parks on Sundays at no cost to participants. Workout sessions and popular exercises including Zumba, KpopX, Piloxing, Kickboxing and Masala Bhangra are brought to the community by qualified trainers.



Figure 1. Promotional poster for Season 3 of the National Steps Challenge™
Source: Health Hub Singapore



Figure 2. Promotional poster for Sundays @ The Park programme
Source: National Parks Board Singapore

Increase accessibility to healthier food options

There have been efforts to increase consumer choice by improving availability of healthier food options. Through the Healthier Choice Symbol (HCS) programme (Figure 3), a voluntary positive labelling initiative, HPB supported food manufacturers and retailers to increase the supply of and demand for healthier packaged food products. The market share of HCS products has grown from 15% in 2012 to 26% as of March 2018, and the share of lower-sugar beverages (i.e. 6% and below) has increased from 30% in 2012 to 44% within the same period. HPB is continuously reviewing and revising the guidelines to stay relevant and to address national nutritional gaps in Singaporeans' diets.



Figure 3. The Healthier Choice Symbol can be found on over 3500 products over 100 food and drinks categories. Source: Health Promotion Board Singapore

In 2017, Singaporeans eat out an average of six times a week. As an eat-out meal usually contains an average of 700-800 calories, it is easy for Singaporeans to exceed their recommended daily energy intake. The Healthier Dining Programme (HDP) was introduced in 2014, to make it easier for Singaporeans to adopt a healthier diet when they are dining out. Food and Beverage (F&B) partners such as restaurants, cafes, food centres, and caterers participating in the programme offer lower-calorie options (<500 calories), dishes that use healthier ingredients such as wholegrains, healthier cooking oils, fruits and vegetables and lower-sugar beverages, as part of their permanent core menus. Upstream, the Healthier Ingredient Development Scheme (HIDS) provides grant support for food

manufacturers to research and develop healthier ingredients suitable for the local food service market and market them. The combined impact of these efforts seek to make healthier choices more widely available for Singaporeans. The number of healthier meals sold in Singapore increased rapidly from 31 million in 2014 to 383 million as of March 2019.

Lessons learnt and the plan forward

These efforts have resulted in retarding the growth in the prevalence of obesity among Singapore residents aged 18 to 69 years, at 8.7% in 2017 from 8.6% in 2013. However, childhood obesity remains a concern, especially as it persists throughout life. HPB has adopted a multi-pronged approach to go upstream to influence adoption of good nutrition and lay the foundation for lifelong health in early life. A multi-media, multi-year public education campaign raised awareness of the importance of early nutrition and the nutritional requirements of young children. This includes the benefits of breastfeeding in the first year of the child's life, and the need to create a supportive environment for breastfeeding in workplaces and the community.

In 2018, HPB launched a public education campaign to increase parents' knowledge on the importance of appropriate weaning foods, including nutritional sufficiency of full cream cow's milk for toddlers one year after birth. A 2018 survey by HPB showed that these promotion efforts have contributed to twice as many mothers (45% vs 20% in 2017) being aware that the appropriate age to introduce solid foods to their child is around 4

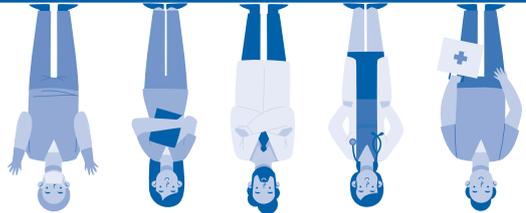
to 6 months. Support from stakeholders such as local agencies and industry partners, as well as the participation of the community, were critical factors in the success of these health promoting efforts.

Singapore continues to introduce innovative and accessible programmes for Singaporeans to drive sustainable behavioural change and ultimately foster a community that embraces healthy living.

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HUMAN RESOURCES FOR HEALTH



Training of Doctors in Primary Healthcare

BRUNEI DARUSSALAM

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Brief description of the best practice

Primary Healthcare is essential for a nation according to The Declaration of Alma-Ata in 1978. A strong primary healthcare system is essential towards achieving Universal Health Coverage. Brunei Darussalam also recognized that primary healthcare is an integral part of our national healthcare system. Strengthening the primary healthcare in the country is a very important strategic priority for the nation, as is the importance of investing in the health workforce and in strengthening the human resource.

Hence in the year 2000, the Ministry of Health of Brunei Darussalam approved the start of postgraduate training of doctors in the country, specifically in Primary Healthcare. The Department of Health Services of the Ministry of Health collaborated closely with the Pengiran Anak Puteri Rashidah Saadatul Bolkiah Institute of Health Sciences, Universiti Brunei Darussalam in the setting up of a training programme for doctors. The Basic Specialty Training in Primary Healthcare in Brunei Darussalam comprises of the Masters in Primary Healthcare and three years of clinical training. During the clinical training, the doctors spend 2 years in the hospital services and a year in the primary healthcare facilities. The program has evolved over the last eighteen years and as at September 2017, a total of 85 doctors have completed the program.

Specific problem addressed

Although the number of doctors trained for the Basic Specialty Training in Primary Healthcare is comparatively small, it is one of the efforts of the Ministry of Health of Brunei towards investing in the health workforce, as we know that primary healthcare is holistic care versus treating the specific diseases or conditions.

Evidence to support success of best practice

As primary healthcare is usually the first point of contact for the people in a healthcare system, Brunei Darussalam realized the importance of the provision of a comprehensive, accessible, community-based care that meets the health needs of individuals throughout their life. This also includes a wide spectrum of services from prevention to management of chronic diseases. Evidence also shows that primary healthcare services can meet 80-90% of an individual's health needs over the course of their life. Hence a strong primary healthcare system can deliver better health outcomes, efficiency, and improved quality of care compared to other models of healthcare systems.

A strong primary care service can be achieved by ensuring that the primary healthcare doctors have adequate and discipline-appropriate training, specifically in primary healthcare that is appropriate to their expected roles. Hence the recognition of Primary Healthcare as a specialty in its own right has been addressed by the introduction of the training in Brunei Darussalam and at the same time tries to address the recruitment of new trainees to join the service. The training program has contributed positively towards the shortage of appropriately trained primary healthcare doctors in the country.

Additionally, the issue of evidence-based practice with patients' safety was tackled in the Department of Health Services, where the graduates of the training program are now leading many health centres as well as improving the quality of care of primary care generally. This best practice for human resource training for primary care doctors has been applied to the whole country where the trained doctors are based in the health centres and the aim is to improve the general health and well-being of the population. Accessibility to the whole population of Brunei Darussalam improved over the last 18 years due to the decentralization of the primary care services to the community. New health centres were set up and built in different areas from the year 2000 to cater to the primary healthcare needs of the nation.

Culturally, the increasing number of locally trained doctors produced an impact to the general care of the patients in the country, as the doctors understand the social and cultural aspects of the population as well reducing the language barriers.

Lessons learnt and the plan forward

From the 18 years of experience in the training of doctors in the primary healthcare, we have faced and handled several teething and ongoing issues. One of the main challenges was the recruitment of young doctors to join the primary healthcare services and to train in this specialty as there is constant competition with other clinical specialties.

What is essential to the success of the program is the recognition of the program as a requirement of training for the junior doctors. This is one factor that may play a role in the retention of doctors. Other factors such as family and work-life balance have to be considered for the doctors too.

In relation to the training, one of the lessons learnt was also the availability of trainers and supervisors for the junior doctors. The lack of trainers may cause a major problem; hence this has to be planned well in advance.

The Ministry of Health is constantly reviewing the training of doctors to serve the population of Brunei especially in primary healthcare. The issue of recruiting enough doctors to join the training program for primary healthcare while at the same time ensuring that there are sufficient doctors providing secondary care had to be considered.

The Ministry of Health of Brunei Darussalam is planning to strengthen human resources and consider the factors for retention of the trained doctors in order to ensure safe clinical practice, and ease and accessibility of services to the population of Brunei Darussalam and to ensure universal health coverage to all.

From this program, the Ministry of Health is in the process of adapting this best practice in stages to other healthcare settings, such as secondary care in hospitals in order to tackle the issue of human resource shortage.

Mandatory Employment for Specialist Doctors (MESD) Programme

INDONESIA

Centre for Planning and Deployment of Human Resources for Health, the Ministry of Health of the Republic of Indonesia

Brief description of best practice

The MESD program is an initiative that Indonesia is pursuing to deal with the disparity in the distribution of medical specialists. This Program was started in 2017 to implement of President Regulation Number 4 Year 2017 on Mandatory MESD. The MESD program aims to increase access and quality of specialist health services in referral hospitals. The health personnel, which include obstetric gynecologist, pediatrician, surgeon, internist and anesthetist are assigned to government hospitals throughout Indonesia based on prioritised areas such as to border and underdeveloped areas, as well as remote islands.

The program is led by the Ministry of Health, with the support of Committee of Medical Doctor Specialist Assignment. The committee consists of various stakeholders, such as the Indonesian Medical Association, Collegium of five (5) respective specialists, Ministry of Research and Higher Education, Ministry of Internal Affairs and Indonesian Medical Council.

The period of this assignment is one year at a minimum. By February 2019, 2,298 specialists have been placed in government hospitals all over Indonesia.

Specific problem addressed

There is an apparent disparity in the distribution of specialist doctors in the districts in Indonesia. Specialists are mostly concentrated in big cities such as Jakarta, Yogyakarta and Bali, while in border and underdeveloped areas, as well as remote islands, the number of specialists is insufficient.

Evidence to show success of best practice

Table 1. Lack of Specialist Doctors in Government Hospitals

Category	Year	Pediatrician	Obstetric gynecologist	Surgeon	Internist	Anesthetist
Border, underdeveloped areas as well as remote islands	2016	50	46	49	48	13
	2018	34	28	28	32	32*
Non-Border and underdeveloped areas, as well as remote islands	2016	447	326	365	526	162
	2018	375	270	272	475	240

* Anesthetist, at least 1 person is placed in Class D Hospital

The MESD has been operationalised for only 2 years, therefore the success of the program could not be concluded yet. However, based on data in 2016 and 2018, there has been an improvement in the four (4) types of specialists that were originally lacking in number (Pediatrician, Obstetric gynecologist, Surgeon, and Internist) in Government Hospital in Indonesia. This can be more or less be interpreted as an improvement in the specialist doctors deployed through the MESD program.

Lessons learnt and the plan for the future

This program has been implemented since 2017, and it is planned to be followed by several improvements in the placement mechanism in order to improve access and quality of specialist health services to the community, especially at the border and underdeveloped areas, as well as remote islands.

Voluntarily *Nusantara Sehat* (Healthy Archipelago) Programme for the Improvement of Health Worker Distribution

INDONESIA

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Ministry of Health, Republic of Indonesia*

Brief description of best practice

Indonesia covers an area of nearly two billion square kilometers and consists of more than seventeen and half thousand (17,500) islands. Many of Indonesia's islands are isolated and have a challenging topography. Due to the geographic landscape of the country, the retention of health personnel, the variety of local government fiscal capacity, the variety of number and type of health personnel production capacity, there is a disparity of health personnel in distribution across regions, particularly at underserved and border areas, as well as remote islands.

The Ministry of Health launched the *Nusantara Sehat* Program in 2015 and deployed health personnel based on team that consists of minimum of 5 (five) to 9 (nine) types of health personnel, namely doctor, dentist, nurse, midwife, public health worker, environmental health worker, medical laboratory technologist, nutritionist and pharmacist. Participants who pass the selection process are those who demonstrate adequate social skills, communication skills, good initiative, decision-making skills, and committed to the job. Further, the team are trained in organization and management, as well as problem-solving analysis according to the current practice. The team-based approach of the *Nusantara Sehat* programme was conceived after the results of a study on the distribution of health personnel, conducted by the Ministry of Health in 2012. The result showed that the placement of health personnel for certain regions is better through a team-based approach.

To fulfil of particular health personnel purpose, the individual deployment of *Nusantara Sehat* was started in 2017, in addition to the team-based placement.

From 2015 to 2019, a total of 3,380 health personnel placed in teams from *Nusantara Sehat* were assigned to 599 Public Health Centers (PHC) in 330 districts in 29 provinces. For the individual-based placement, from 2017 to 2018, there were 3,997 health personnel assigned to 1,250 PHC in 224 districts in 29 provinces.

Specific problem addressed

This program aims to tackle strategic health issues, such as maternal and infant mortality, malnutrition, sanitation and other health issues that are determined and addressed mainly by the quality of primary healthcare services. It is paramount that promotive and preventive health efforts are presented to the community to increase the health status of the people.

Evidence to support the success of best practices

Since the launching of *Nusantara Sehat* in 2015, the program has shown a positive impact on the targeted areas in public health. For example, the number of diarrhea cases fell by up to 80% in some areas of West Kalimantan and increased case finding and increased adherence to drugs consumption by as much as 89.47% in some areas in Maluku. Another interesting finding is that during the first two (2) years, the team successfully identified the specific health problems in each region and strengthened the health personnel in the local Primary Health Centre (Puskesmas), so that they could handle the health needs of the community.

Program coverage increased up to 80% and many programs that have not been implemented for a long time such as 'prolanis' (chronic disease management program), were implemented again. In the revitalization of Puskesmas, Puskesmas has been running well and the service quality has increased.

Lessons learnt and the plan for the future

The *Nusantara Sehat* program is a voluntary health personnel deployment program that contributes significantly to the development of the priorities areas, namely the underserved and border areas, as well as remote islands. The deployment of health personnel in teams is considered effective in handling community health problems, comprehensively. While individual-based deployment is useful in fulfilling the deficiencies of certain types of health personnel needed by Puskesmas.

The hard, smart and sincere work of the member of *Nusantara Sehat* in reducing infant and maternal mortality as well as promote a healthy lifestyle in the problematic areas of Indonesia has gotten the attention of all parties. The *Nusantara Sehat* program continues to serve the community. The health personnel of *Nusantara Sehat* are rewarded by a decent salary. Included in the National Social Health Insurance, opportunity to join special assignment in PHC as individual-based *Nusantara Sehat*, specialist scholarship opportunities (for doctors and dentists) from the MoH, opportunities to work abroad through Government to Government cooperation, and obtain more points in the Government Employee recruitment.

Know Your Medicines Programme

MALAYSIA

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Brief description of the best practice

In 2007, the Malaysian National Medicines Policy (MNMP) was established. Quality use of medicines was the fourth component of the policy. It aims to ensure medicines are used judiciously, appropriately, safely, and cost effectively towards promoting better health outcomes. The initiatives of the component include the following; to enhance the quality use of medicines by consumers, to empower community leaders on the quality use of medicines and to provide timely and accurate information on medicines to consumers and to engage NGOs/professional societies towards quality use of medicines and consumer protection.

In tandem with MNMP, The Know Your Medicines (KYM) campaign was launched with the main strategy to promote pharmacists and other health professionals roles in contributing towards quality, safety, and efficacy of healthcare treatments. Various activities revolving around patients' education had been instituted. These activities include public talks, seminars, exhibitions, workshops, and conventions which involve both public and healthcare professionals.

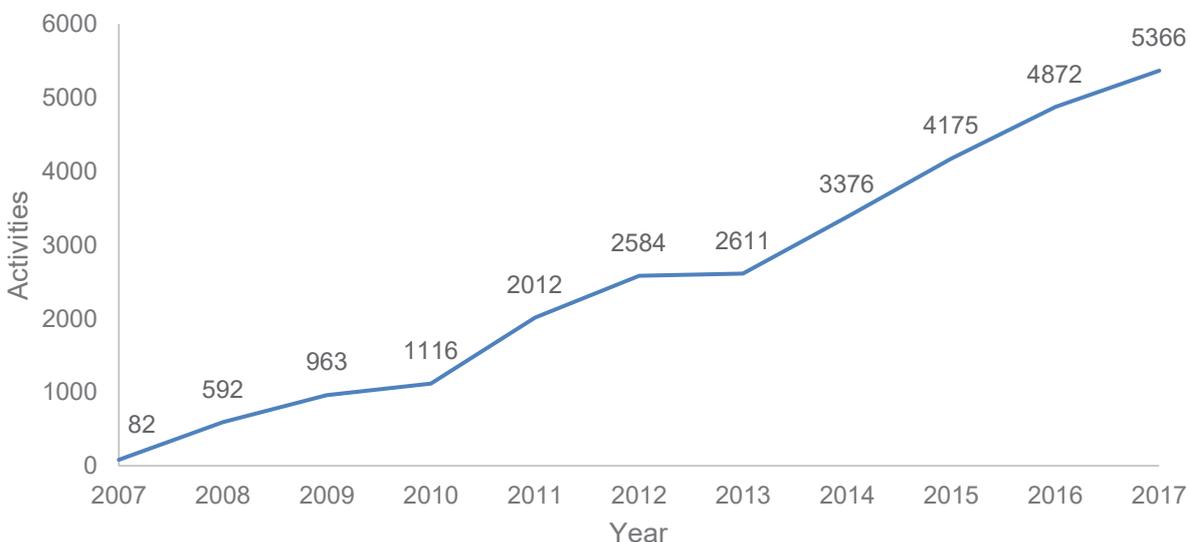


Figure 1: Number of Know Your Medicines Programme Activities (2007 – 2017)

To better increase the impact of the KYM Campaign, the KYM Ambassadors Programme was introduced. The KYM Ambassadors Programme introduces the concept of community empowerment. Community empowerment is not just community involvement, it is also the participation and engagement of communities. The KYM ambassadors, or Duta Kenali Ubat Anda, are selected based on recommendation. These individuals may also volunteer to become an ambassador. A structured programme was implemented to educate the ambassadors on basic medicine-related information. These included modules covering

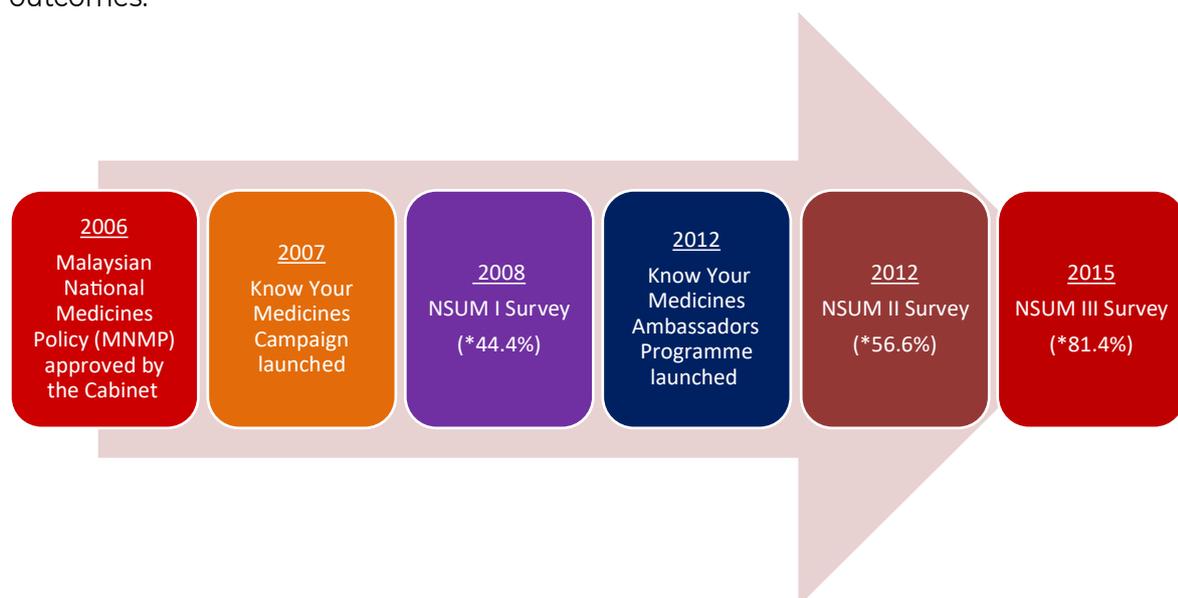
Know Your Medicines, registered products, the proper administration of medicines, the proper storage of medicines, and the roles of KYM Ambassadors. The KYM Ambassadors programme utilises peer education and behavioural change approach in ensuring effective dissemination of information to the community.

Once training is complete, the ambassadors will be able to understand and deliver basic information on medications to the community together with the pharmacist. They may channel the information either formally or informally through exhibitions, talks and seminars organised by ministries or organizations, religious talks in between prayers for Muslims, in Friday Prayer sermon, Sunday Schools, at coffee shops, at the gym, or during any convenient events deemed suitable. There are a total of 976 KYM ambassadors to date, who were trained through 2760 activities conducted nationwide.

Specific problem addressed

In 2015, the Malaysian population had surpassed 30 million people and there has been a steady increase of public attendance in healthcare facilities. With such an increase, adherence to prescription instructions and the proper methods of medicine storage have become major issues with prescription medication. Consumer education and health literacy, which concerns both healthy and sick individuals, may be neglected in populations who seldom seek medical treatment. In addition to the increasing trend of chronic illness, Malaysian markets witnessed an increase in availability of unregistered products adulterated with controlled medicines and prohibited substances. Patients with chronic illnesses stopped taking their prescribed medicines after believing in the unrealistic claims of recovery perpetrated by sellers peddling the unregistered products.

The Know Your Medicines Programme emphasises on methods to differentiate registered and unregistered products. The programme also educates the public on the side effects and dangers of using such products. Through the programme, the public is better equipped with the knowledge to protect themselves from being misguided. Besides, the Know Your Medicines programme also promotes proper medicines management to ensure that the public benefits from the treatment received. Improved knowledge and understanding towards medicines management may help them in gaining better health outcomes.



*percentage of consumers who understand proper use of medicines

Figure 5: Milestones of Know Your Medicines Programme

Evidence to support success of best practice

A National Survey on the Use of Medicines (NSUM) By Malaysian Consumers conducted in 2008 showed that only 44.4% of Malaysian consumers know the proper use of medications. This survey serves as the baseline data to measure the level of Malaysian consumers' knowledge on medication. Through this initial survey, more Know Your Medicines activities were conducted in the hopes of filling the gaps in knowledge. The NSUM was conducted in three phases. The second phase, which was conducted in 2012, showed that 56.6% of consumers understand the proper use of medicines. The third survey conducted in 2015 showed a vast improvement, as 81.4% of consumers understood the proper use of medicines. The study also showed that the awareness of Know Your Medicines programme has increased from 47.5% (2012) to 51.9% (2015).

The NSUMs however, are cross sectional surveys and only knowledge on proper medicines use are evaluated. It is essential for more studies on current community practice in medicine-taking behaviour to be conducted. Behavioural changes, which is the ultimate goal of the community empowerment program, has yet to be assessed.

Lessons learnt and the plan forward

Moving forward, the Know Your Medicine Programme will continue with more alternatives in public engagement to ensure the successful dissemination of information across the nation. From the implementation of the KYM programme throughout the years, we learned to understand the perspective of consumers in consuming or managing medicines. In addition, we recognised that public engagement requires commitment, hard work, passion, cooperation and understanding from pharmacists as well as the community. The Know Your Medicines Ambassadors Programme will organise more activities targeted to narrow the gaps between healthcare professionals and the public. It is hoped that the programme can help the public to eventually be able to evaluate and validate medical information autonomously.

In the future, the Know Your Medicines programme will also cover the vulnerable community such as those with hearing, sight, and communication impairment. This group of people are also in need of information on medicines. Extending the programme towards the group will allow them to benefit from the activities conducted. Behavioural changes in health will take time and effort but with excellent collaboration between all stakeholders involved, it can be achieved.

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Maintaining Competencies of Pharmacists through Continuing Professional Development (CPD)

MALAYSIA

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Brief description of the best practice

CPD for pharmacists is the systematic maintenance, improvement, and broadening of knowledge and skills, as well as the development of personal qualities necessary for the execution of professional duties throughout the individual's working life. CPD can involve any relevant learning activities, whether formal and structured, or informal and self-directed. With rapid advancements in medicine as well as pharmaceutical care services, it is imperative that healthcare professionals continue to keep themselves abreast with new developments that would provide better care and treatment outcomes for their patients.

Pharmacists in the Ministry of Health Malaysia (MOH) are required to achieve a minimum of 40 CPD points in every calendar year starting from January to December. Under the MOH CPD Credit Point System, CPD activities are divided into two (2) broad segments, which are the functional, and generic segments. The functional segment refers to CPD activities related to professional tasks while the latter refers to self-development activities such as leadership, management, IT, secretariat innovation, arts, music, languages, teamwork, etc.

Specific problem addressed

Successful professionals especially in healthcare, including pharmacists, have long realized the importance of gaining new knowledge, improving skills, and developing personal qualities through CPD. In essence, CPD is simply considered a part of any good professional practice.

The CPD Credit Point System is developed to demonstrate the competencies of the healthcare professionals that can be used indirectly as a competency measurement. For example, it helps to identify pharmacists with competency problems, who usually have low CPD points. Therefore, supervisors can assign pharmacists with low CPD points to attend relevant learning activities accordingly.

CPD activities of pharmacists and other health professionals in the MOH are monitored through the Online Monitoring of Continuing Professional Development (MyCPD) system. The system helps to maintain competency records of pharmacists, where their activities and achievements are stored and are available for retrieval when necessary. This system enables pharmacists to access their records from previous years, while updating them with new ones.

According to Campbell C. et al:

“Competence is traditionally viewed as the attainment of a static set of attributes rather than a dynamic process in which physicians continuously use their practice experiences to “progress in competence” toward the attainment of expertise. A competency-based CPD model is premised on a set of learning competencies that includes the ability to (a) use practice information to identify learning priorities and to develop and monitor CPD plans; (b) access information sources for innovations in development and new evidence that may potentially be integrated into practice; (c) establish a personal knowledge management system to store and retrieve evidence, and to select and manage learning projects; (d) construct questions, search for evidence, and record and track conclusions for practice; and (e) use tools and processes to measure competence and performance, and develop action plans to enhance practice.”

Evidence to support success of best practice

The CPD Credit Point System for MOH pharmacists was introduced in 2007. Since then, many measures have been taken to ensure that pharmacists are able to comply with the CPD requirements. Figure 1 demonstrated that more than 99% of the pharmacists (approximately 7,000 pharmacists in MOH) managed to achieve 40 CPD points per year from 2013 to 2017.

Since the competency framework contains both functional and generic segments, pharmacists will receive sufficient training to help them carry out their tasks. It is observed that with suitable CPD activities, pharmacists are able to help their departments with producing better outputs.

Lessons learnt and the plan forward

When the CPD system for pharmacists was introduced, the CPD point requirement was initially taken for granted as there was no penalty for those who did not achieve the minimum CPD points. Nevertheless, with commitments from MOH to acknowledge the importance of CPD for healthcare professionals and improved awareness among the pharmacists, the achievement of CPD points has improved over time.

The CPD points achievement among pharmacists who work in rural area or facilities with insufficient staff members are relatively lower. In the future, there will be more CPD activities that are planned specifically to cater to these pharmacists. In addition, the minimum set CPD points system should also be encouraged among the pharmacists in the private sector.

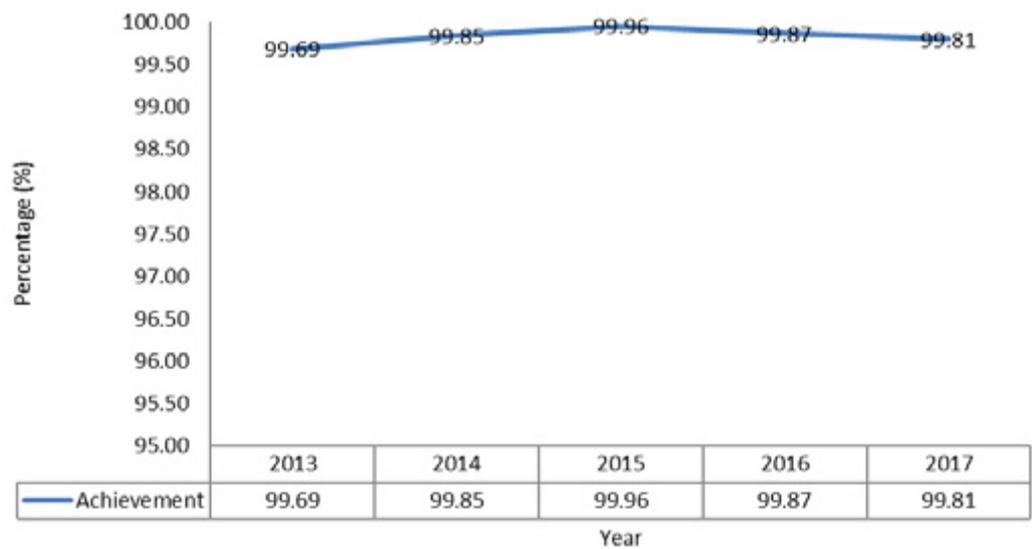


Figure 1: The percentage of pharmacists in MOH achieved 40 CPD points (2013-2017)

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Transforming Great Potentials of Healthcare Professionals through Talent Grooming Programme

MALAYSIA

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Brief description of the best practices

The Talent Grooming Programme (TGP) for Technical Healthcare Professionals is a systematic and dynamic talent management programme for technical healthcare professionals to become future leaders within the Ministry of Health, Malaysia.

Realizing the importance and relevance of talent management in this vast organization, the Director General of Health mooted the idea to develop this programme with the aim of harnessing the potential in healthcare professionals. It was established in June 2014, after ten months of extensive and comprehensive literature review and planning, brainstorming, and constructing the framework and processes with various leaders, experts, and professionals from different divisions, institutions, and technical fields. Institute for Health Management (IHM) was given a mandate to become the Secretariat which monitors, coordinates, and runs the programme.

Specific problem addressed

With the establishment of TGP, the Ministry has addressed a lot of issues regarding talent management, leadership development, and succession planning. Previously, the talent grooming activities were initiatives of the Head of Department or Head of Division. Different methods and approaches for training of the talents were carried out, depending on the knowledge and experience of the Division or Department. Furthermore, there was no database on the pool of potential talents for the different technical programmes which necessitates a centralised and standardised talent development programme within the Ministry. TGP has closed these gaps and issues. Through this programme, the Ministry is also able to address the lack of training and preparation of the technical healthcare professionals for managerial and governance skills when they hold higher positions or lead the organisation.

Evidence to support success of best practice

Until 2018, TGP has recruited 164 talents through a total of nine cohorts. 33 of these talents have now completed the programme. The selection process of the talents is conducted in a systematic manner whereby the members of the Selection Panel appointed by their respective Head of Programmes will select and assess the applicants based on the set criteria and their professional and personal performance and achievements. For those selected, they will undergo ten compulsory in-house training and professional development classes in IHM, Bangsar. The TGP professional development for each Talent is based on the principles of five competency domains which are leadership, communication and relationship skills, organisational governance, professional values, and personal values to complement their technical competency. Complementary to the formal courses, TGP also emphasises and supports informal learning especially with the active involvement of their

supervisors at their workplace. During this programme, the Talent also will plan, conduct and complete a research project related to their field. This encourages evidence-based decision making as each Talent will use their project to solve issues in their organization. To complete this programme, Talent will present and share the findings of the project to the Assessment Panel and publish their report. The TGP Inspirational Leadership Podium, similar to the TED Talk series, is a platform for the Ministry healthcare professionals to learn from and aspire to well-known and prominent public figures with great achievements and experiences.

TGP is a long-term investment by the Ministry to achieve the aim of improving health system performance and the health status of the population through effective leadership. The impact of this programme will also contribute to the succession planning of the Ministry in the long run with more well-equipped and skilled healthcare professionals to lead the organization. The Director General of Health has also urged all healthcare professionals to proactively upgrade their knowledge and communication skills to become leaders at every level of the Ministry including hospitals and district health offices. TGP has also enhanced networking and knowledge sharing between the talents from various fields and programmes which is fertile ground for buds of new collaborations and to nurture cooperation between the technical programmes.

TGP is also proud to be one of the initiatives listed under Thrust 1: Harnessing Talent for Transformation Plan for Public Service in 2015. This validates that the programme is valued as good and significant to manage and groom talent. Recently, TGP was also one of the Finalists in the Prime Minister Innovation Award 2017 as one of eight Ministry innovations. Over the years, more smart partnerships have been built with local agencies, institutes, and international organisations such as Razak School of Government, National Institute of Public Administration (INTAN), Royal College of Physicians (London, UK), and NHS Leadership (UK). TGP is looking forward to more partnerships to widen the horizon of knowledge sharing and transfer, especially in terms of leadership and diplomacy.

As previously mentioned, TGP is dynamic especially in terms of the processes which encourages feedback from the stakeholders, panels, and Talents themselves. The ongoing monitoring not only involves the performance and achievement of talents and alumni, but the Secretariat also actively engages with the TGP Steering Committee to get opinions and feedback on the sustainability of this programme. Some issues raised were the constant support for continuous promotion of Head of Department or Division for recruitment of talents, opportunities to attend courses was much higher for Talents from the West Coast of Malaysia which triggered the TGP Secretariat to consider online training modules that could be accessible anywhere and anytime, and also a clear role and responsibility of the Alumni to be visible and contribute back to the Ministry as return of investment of their training with TGP.

Lessons learnt and the plan forward

Zooming in on the sustainability of the talent management like TGP, it must be able to continuously achieve the purpose of the establishment and fulfil the organisation's mission and vision. In any setting, the top management's role and participation is important to manoeuvre and utilise the output of the programme; the Talents. The cooperation and support from the supervisors or facilitators of the talent through relentless mentoring and coaching is the key for grooming talent at the ground level. As for the Talents, giving them higher responsibilities and assignments or projects is essential for building their confidence, negotiating skills, and networking ability. The main essence of TGP is how

much they have grown in the duration of the programme and how prepared they are to take on new and difficult challenges. TGP believes that Talents are diamonds in the rough which can be polished to shine and become valuable. In addition, there should be a team of people, mainly the Secretariat who are dedicated, committed, and driven to run and monitor the programme as their efforts and contributions to the programme are not only significant to the Ministry, but also the nation. As a whole, TGP has successfully achieved their desired goals for the Ministry. They are now looking forward to expanding and growing to become a world-renowned leadership academy by continuously grooming great potentials.

Family Medicine Strategy: International Role Model – Centres of Excellence

PHILIPPINES

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Brief description of the best practice

As part of a longer-term strategy in developing Family Medicine as an enhanced medical specialty in the Philippines, the European Union – Philippine Health Sector Reform Contract appointed foreign experts in Family Medicine to chosen Rural Health Units (RHU). The project aimed to promote medical and clinical leadership in establishing a primary care practice based on the RHU as a centre of excellence (COE), and take the lead in establishing good training practices in the RHU for all the staff and trainees. The aim is that the COE will be established sites where medical students may best be exposed to what the specialty can offer.

The first phase of the project included the development of an educational plan by working with staff and municipal health officers (MHOs) in Bobon, Samar. The educational plan included chosen points by the RHU staff, redesigning the patient journey at the RHU, designing systems of care of clinical management of hypertension, enhancing quality of clinical care, developing the staff's medical teaching, and assessment skills, among others. The educational plan was then implemented in the subsequent phase. The RHU staff was developed clinically, managerially, and academically to create a potential site for medical teaching.

Specific problem addressed

With the need for primary care physicians in rural areas, developing COE addresses the need for early exposure of students to primary care, and allows postgraduate training opportunities in family medicine for practicing physicians in rural areas. It brings the training closer to MHOs who have active posts during the weekdays by improving themselves in the core competencies of a primary care provider through training in family medicine. This assures competency and quality in the clinical care given, continuing medical education, and boosting the confidence and morale of the physicians on the ground. It also allows students to appreciate the need for primary care and expose them to a possible field of training that is geared towards primary care.

Evidence to support success of best practice

The COE allowed the teaching of nine (9) local doctors, seven of whom were active MHOs with a post, for postgraduate education at the Philippine Academy of Family Physicians (PAFP). One of the key successes of the COE at Bobon was the support given to the MHOs' practice-based training to achieve the diplomate qualification for Family Medicine. In addition, a 2-year RHU development plan was established, along with specifications for other COEs and possible RHU managers. Visits are conducted in another region to assess the suitability of replicating this COE in another RHU.

Lessons learnt and the plan forward

It is noted that the COE model is well-understood by the RHU staff and that it is a strong motivator for improving quality of care. It is recommended that some method of nationally accrediting COEs may be integrated into a national Family Medicine strategy. It is also recommended that staff who may be asked to teach in COEs will need further training in the skills of adult education and student assessment. In addition, formal recognition as educators and ongoing professional support for this role is suggested. Intended learning outcomes for medical students are also needed to be prepared in partnership with stakeholding medical schools.

Lastly, it was noted that having COEs have additional pressures placed on them. Given the high demands of the MHO with clinical and administrative work, it is essential that additional staffing resource is offered to MHOs who teach. It was noted that the degree of social commitment by the RHU staff is remarkable but that staff efficiency is held back by the absence of electronic medical records, shortages in medicines and equipment, and understaffing. Hence, these issues may also be addressed to improve the COE.

Sharing of Best Practices on Leadership in District Health Systems: Thailand’s Experience

THAILAND

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Brief description of the best practice

Access to healthcare in rural and remote areas in Thailand is an important element in ensuring that Universal Health Coverage is achieved. The presence of a trained and motivated health workforce in these areas is therefore an important factor for health system development in Thailand. Transformational leadership plays an important role in establishing well-performing health teams. This best practice draws lessons from the Thai experiences and provides evidence on the pivotal role of transformational leadership from the medical doctor, the leader the health team. Three cases from three provinces in the upcountry were performed: (1) Samutsnogkram province, (2) Khon Kaen province, and (3) Tak province. Four components of transformational leadership were described.

The District Health Systems (DHS) is a primary care network in all districts in the country, serving as a firm basis for achieving Universal Health Coverage. The multidisciplinary health team consists of a wide range of health professionals, such as doctors, nurses, pharmacists, other professionals and public health officers. The function of the multidisciplinary health team involves not only facility-based health staff, but also non-professional staff, such as healthcare volunteers, and community residents. In the three settings studied here, health teams with a transformational leader displayed good performance in terms of (a) improving provision of comprehensive health service package and (b) improving well-being beyond health through considerations of sustainable livelihood, wealth and equity through advocating for the marginalized. Commitment and transformational leadership by medical doctors, particularly those in rural areas, are key factors that help the multidisciplinary health team garner support from various stakeholders, such as NGOs and academicians for building up ‘healthy’ communities that go beyond good physical health and support other aspects of ‘well-being’ for everyone on Thai soil.

Specific problem addressed

To demonstrate the importance of health team leadership in improving health service provision and setting up initiatives for better community, three cases were selected across different settings. (see table below).

Table 1 Overview of the three different cases on leadership at the district level and health

	Case 1	Case 2	Case 3
Setting	Ubolrat District, Khon Kaen Province	Amphawa District, Samutsongkram Province	Mae-Ramat, Poppra, Tasongyang and Umphang districts, Tak Province

	Case 1	Case 2	Case 3
Contextual factors	A district in the Northeastern Region of Thailand, the poorest region. Districts in this region are the most disadvantage in term of economic and health workforce shortage and mal-distribution.	This is a well off district which is closed to Bangkok, the capital city. Health workforces, esp Medical Doctor, normally come and go. Turnover rate is high.	These districts are at Thai-Myanmar border. There are huge number of ethnic communities and stateless persons and they are not covered by Thai UHC.
Leadership at DHS	The hospital director committed staying longer term. Paradigm shift from curative to preventive services. The hospital director works beyond the health sector and identifies needs in the community that affect health.	The hospital director has shown high commitment to staying in the DHS and led the team to support health centres.	The hospital directors of the four districts formed a working group to collectively work with NGOs and academia and local government units to set up a 'legal clinic' in the hospitals to support marginalized patients who do not have legal status in Thailand.
Outcomes	Patients had better access to health services, not only curative but also preventive services. The strategies of empowering villagers were applied for improving both the health and economic status of the villages.	The DHS was a part of Thai UHC movement and promotes public health functions. Other health cadres were happy to support health centres and community-based care e.g. rehabilitation at home.	Stateless peoples got support from 'legal clinics' not only for medical treatment but also solving a problem of citizenship.

Evidence to support success of best practice

The thematic analysis of four components of transformational leadership in three case studies is shown in table below.

Table 2 Four components of transformational leadership and the three case studies

Four components of transformational leadership *	Case 1 Ubolrat District	Case 2 Amphawa District	Case 3 Four districts, Tak Province
<p>1. Idealized influence</p> <p>The leader is recognized as a model. The leader's vision is pursued with confidence, determination and focus. Other physicians and healthcare personnel working with leaders with idealized influence respect them and are proud to be associated with them.</p>	<ul style="list-style-type: none"> • The district hospital director was a role model for health staff in the district. • His paradigm shift from curative to health promotion services based on being attuned to community needs through a small scale research study. 	<ul style="list-style-type: none"> • The district hospital director was a role model for health staff in the district. • His vision was to support health centres using multidisciplinary health teams. District hospital and health centres work together for comprehensive health services at health facility settings and community level. 	<ul style="list-style-type: none"> • The directors of four district hospitals combined effort by working together as '4 doctors'. • Their ambitious goal and vision was one of right to health for everybody.

Four components of transformational leadership *	Case 1 Ubolrat District	Case 2 Amphawa District	Case 3 Four districts, Tak Province
<p>2. Inspirational motivation</p> <p>The leader is able to communicate his/her vision, principles and adherence to the healthcare mission effectively. This occurs in written and verbal forms, and through personal behavior as well as specific statements.</p>	<ul style="list-style-type: none"> • An initiative of retailers of medicines and then collective effort to be a co-operative in the village. • An initiative of sustainable agriculture concept, which is beyond the health sector and widespread to over 70 villages in the district. 	<ul style="list-style-type: none"> • During the difficult period of lacking medical doctors at the district, the hospital director remained committed to both the district hospital and health centres. Other health staffs joined him in his efforts. 	<ul style="list-style-type: none"> • Collective effort of establishing 'legal clinic' for stateless people.
<p>3. Intellectual stimulation</p> <p>Leaders exhibiting intellectual stimulation challenge those working under them to question the status quo and to address difficult problems by coming up with new or innovative solutions.</p>	<ul style="list-style-type: none"> • Using evidence at a small scale to prove that the majority of patients did not need curative services and the burden of disease could be alleviated with interventions beyond the health sector. 	<ul style="list-style-type: none"> • Leading the health team to work collaboratively at health centres and communities which provide care in patients' homes e.g. rehabilitation at home which is more convenient for disabled or elderly patients and saves time and money for patients. 	<ul style="list-style-type: none"> • Medical treatment alone cannot solve the root cause of the problem for stateless people. • The legal clinic links a patient to local authorities for solving his/her citizenship problem in parallel with the medical treatment provided.
<p>4. Individualized consideration</p> <p>The leader recognizes the contributions of subordinates for their efforts and accomplishments in pursuit of the healthcare mission.</p>	<ul style="list-style-type: none"> • Capacity building programme for local villagers for rational use of medicine at home and training of more than 60 traditional/herbal healers. • Empowering 'local wisemen'. 	<ul style="list-style-type: none"> • Competency of the physiotherapist to set up a training course for staff of health centres in order to support rehabilitation services. It is empowering for both the physiotherapist and staff of health centres. 	<ul style="list-style-type: none"> • Empowering health staff and a stateless persons to realize and solve the root cause of the problem.

Note: * Four components of transformational leadership is refer to reference "Gabel S. Transformational leadership and healthcare. Journal of International Association of Medicine Educators. 2013; 23(1): 55-60."

Lessons learnt and the plan forward

- Aspects proven to be difficult or essential for success in implementing the best practice.

In periphery of Thailand, it is clear that the establishment of health centres and district hospitals is a key factor to the success of bringing 'health' and 'well-being' to people in marginazlied areas. The DHS, a network of health centres and a district hospital, is an important structure under the concept of promoting primary healthcare as announced by the World Health Organization since 1982. The DHS requires committed health teams to provide comprehensive essential health services (e.g. curative care, rehabilitation,

health promotion, disease prevention, palliative care, long term care etc) to respond to health need of people in communities.

The multidisciplinary health team usually consists of medical doctors, dentists, pharmacists, nurses, health technical officers, physical therapists, Thai traditional medicine practitioners, dental nurses, healthcare workers, pharmaceutical assistants, etc. At the primary care unit, they work together as a multidisciplinary team to provide healthcare services to populations both in the facility setting and at the community level.

In order to achieve the ultimate goal of better health outcomes, stakeholders and communities need to work together to address the social determinants of health that affect marginalized populations, including legal barriers posed to stateless persons that inhibit their access to universal coverage. The role of transformational leadership here is crucial in order to 1) establish a vision, 2) influence others to share and own that vision, 3) provide reasoning for why and how things must improve, and 4) leverage the skills and resources provided by those working alongside the leader.

The Thai leaders showcased in these case studies have shown these skills and have seen success in their respective districts as a result of understanding the unique needs of their populace as well as the assets available in their existing health teams, despite the health workforce shortages challenging rural districts in general. These case studies also show that openness of vision in leaders is important as these leaders had to look beyond the health sector to identify baseline needs of the population and alleviate the burden of disease and improve universal coverage through focusing on economic and legal security. Using multidisciplinary health teams that were sensitized to these social determinants, allowed these leaders to contribute to sustainable development of these communities through various initiatives. Key ingredients in their success in making these initiatives effective was rooted in the leader's ability to work across sectors through their social and intellectual credit, long-term commitment to the work, familiarity with communities, and the ability to motivate allied health professionals.

SERVICE PACKAGES



The Best Breast Care (BBC) Programme

BRUNEI DARUSSALAM

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Brief description of the best practice

The BBC program was developed with the overall aim to streamline and standardise the management of all patients who present to the healthcare system with a breast complaint.

It was initiated with the support and encouragement of the Ministry of Health, following the return of 2 local surgeons who had completed their specialty training in Breast Surgery. The Radiology, Pathology, and Oncology departments, as well as the nursing staff in the outpatient clinics were all involved in ensuring that set targets were met.

Specific problem addressed

Upon auditing breast referrals made in previous years, a large variation in waiting times was found for the initial consultation as well as for diagnosis. The mean waiting time to see a surgeon following referral was 30 days (range 1 – 90 days). The time taken for investigations and patients to be informed of their results, regardless of whether benign or malignant, were similarly widely varied.

Evidence to support success of best practice

The implementation of the Best Breast Care program was divided into different phases, each with the aim of reducing waiting times at each step in the management of a breast complaint. In order to further streamline the referral process, all referrals were categorised as “Urgent” or “Screening”.

Our defined waiting times targets are based upon the targets pledged by the National Health Service (NHS), UK whilst also taking into consideration our local facilities and infrastructure.

Specifically, the NHS constitution measures listed below:

- A maximum two-week wait to see a specialist for all patients referred for investigation of breast symptoms, even if cancer is not initially suspected
- A maximum 31-day wait from the date of decision to treat (DTT) to the first definitive treatment for all cancers
- A maximum 62-day wait for referral from a primary healthcare centre to the first definitive treatment for cancer.

Phases of the BBC

Phase 1:

A maximum of 2 weeks from time of “Urgent” referral to the appointment in surgical clinic.

A maximum of 31 days from time of “Screening” referral to the appointment in surgical clinic.

Phase 2:

A maximum of 2 weeks from initial consultation to review appointment with results of all investigations (i.e. imaging and/or biopsy for symptomatic patients).

A maximum of 31 days from initial consultation to review appointment with results of screening mammograms for asymptomatic patients.

Summary of changes implemented:

- Education of nurses & primary health doctors on the importance of timely referrals & consultation for all new breast complaints
- Increase in the number of breast clinics to ensure available slots for new referrals
- Acquisition of an additional ultrasound machine and increase in the number of mammography slots to facilitate timely imaging

	<i>Pre-BBC (% achieved)</i>		<i>Post-BBC (% achieved)</i>	
	Urgent	Screening	Urgent	Screening
<i>Phase 1 target</i>	5	N/A	95	100
<i>Phase 2 target</i>	44	<10	>90	100

Figure 1: Outcome following the Implementation of the BBC Program

In addition to the improvement in waiting times, another aim of the BBC program is to standardise the diagnosis & treatment of all cancer patients. With this aim, as recommended in the NICE guidelines, a weekly multidisciplinary team meeting to discuss all cancer patients was organised.

The success of this program can mainly be attributed to the cooperation of medical healthcare professionals from all specialties sharing the common goal of improving the country’s Breast Services for the benefit of our patients.

As stated in a report on cancer waiting times by Prof Sir Mike Richards, “Shorter waiting times can lead to earlier diagnosis, quicker treatment, a lower risk of complications, an enhanced patient experience & improved cancer outcomes. Shorter waiting times can also help to ease patient anxiety & improve experience”.

Lessons learnt and the plan forward

Despite our improvement in waiting times, a large number of patients continue to present at an advanced stage. By increasing public education and awareness through talks & workshops, the Unit hopes that these numbers will slowly reduce.

Future plans for the Breast Unit would be the setting up of a One-Stop Breast clinic where patients see a specialist and undergo necessary investigations on the same day.

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National Health Insurance Toward Universal Health Coverage (UHC)

INDONESIA

Centre for Health Insurance and Budgeting, the Ministry of Health

Brief description of best practice

Indonesia adopted the principle of decentralisation in 2000. It means that there was a handover of some of the responsibilities and authorities from the Central Government to the 34 Provinces, 416 Districts and 98 Municipalities. The decentralisation addresses specific health problems, using local contexts. However, the benefits might come with some drawbacks.

A significant step towards UHC has been made through the development of an integrated national health insurance scheme. The national health insurance consolidates pre-existing financial schemes under one scheme and one health financing authority and expands access to voluntary insurance for those who do not have health coverage. This national social health insurance scheme is named 'Jaminan Kesehatan Nasional', or JKN, launched on 1 January 2014. The JKN is expected to improve financial protection, increase access to health services, and improve the quality of healthcare to achieve better health outcomes. It is carried out by focusing on expanding membership and benefits package as well as by keeping costs lower.

Specific problem addressed

The establishment of JKN aims to increase access to quality healthcare services throughout Indonesia. The main challenges faced by the Government of Indonesia are maintaining quality standards of care, particularly in the borders, underdeveloped areas and remote islands. The differences in geographic landscape and culture of regions require increased participation from the local government to ensure the availability of a unified provision of healthcare.

Evidence to support the success of best practices

	2014	2015	2016	2017	2018	2019
Membership (million people)	133.4	156.7	171.9	187.9	195.1	268
Health Provider: Primary healthcare	18,437	19,969	20,708	21,763	21,785	
Health Provider: Referral (secondary and tertiary)	1,681	1,847	2,069	2,292	2,324	
Healthcare utilization (million)	92.3	146.7	192.9	219.6		

Figure 1: Chart showing Indonesia's progress towards UHC since 2014

The achievement of JKN has been encouraging. Based on the data from the Social Health Insurance Administration Organization (Badan Penyelenggara Jaminan Sosial/BPJS Kesehatan) on 1 February 2018, the membership of the insurance program has reached approximately 195.1 million people or approximately 75% of the target in achieving UHC. The development of national health insurance aims to achieve UHC has increased the demand and supply of equally-distributed quality healthcare services throughout Indonesia.

Lessons learnt and the plan for the future

There is a growing number of healthcare facilities, participating in JKN program. Data from BPJS shows that as of 1 February 2018, as much as 21,785 Primary healthcare Centres (PHC) and 2,324 referral healthcare facilities have worked with BPJS to serve JKN members.

While the system is without flaws at this point, it aims to improve healthcare services with the involvement of all stakeholders. In the year 2015, after the launch of JKN, inpatient health services in both government and private hospitals on the concentration curve shifted closer to the line of equity, compared to year 2013, before the era of JKN. This shows the equity of access, especially for the poor.

INDEX EQUITY MEASUREMENTS (CONCENTRATION CURVES):
ACCESS TO HOSPITAL (INPATIENT)

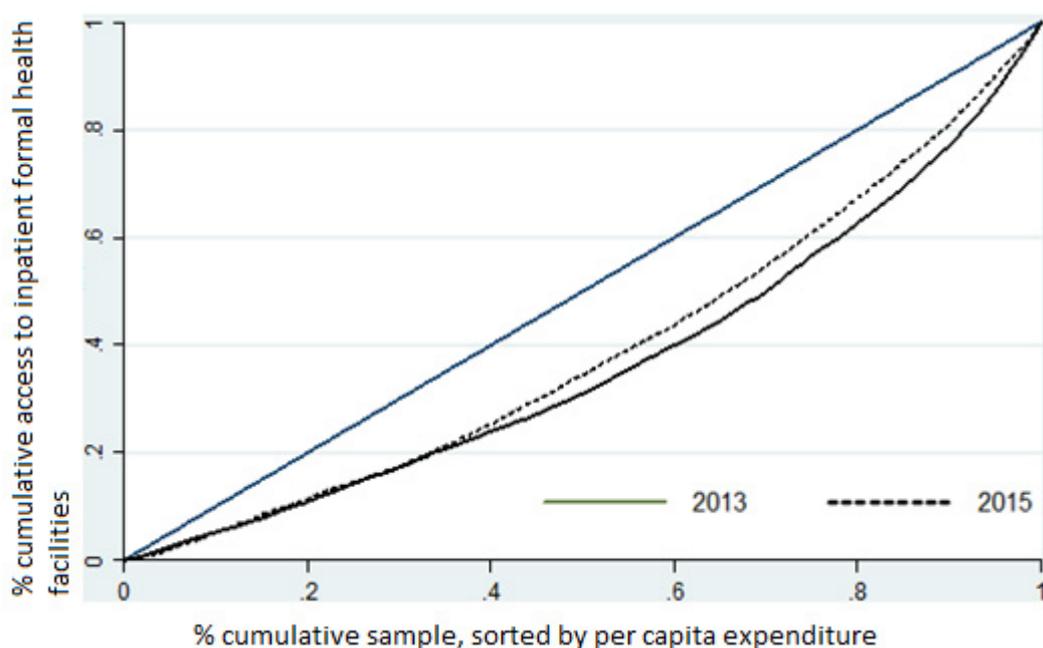


Figure 2. Value of Equity Index before and after implementation of JKN

Along with the effort of increasing people's access to healthcare services, the improvement of healthcare quality is another top priority. The program has policies and strategies to improve quality and control the cost of healthcare, which includes:

- Improving health insurance management through the enhancements and coordination of benefit packages, service provider incentives, quality and cost control that prioritize patient safety, development of health technology assessment and monitoring evaluation;

- Completing payment systems for strengthening PHC, maternal and child health, incentives for health personnel in the borders, underdeveloped areas and remote islands, and enhancement of individual promotive and preventive healthcare;
- Developing regulations, including the standard of healthcare delivery at the primary and hospital level through the development of: (i) Core competencies required for health personnel who work at PHC and the guidelines for referring patients, (ii) National Guidelines for Medical Services, which include the Standard of Operational Procedures and Clinical Practice Guidance in each hospital, according to each type and level, (iii) Clinical Pathways that focus on patient-centred care and (iv) National Formulary on Medicines.

There are main challenges of the implementation of JKN, as follows:

- The condition of imbalance between claims paid to healthcare facilities and the amount of funds received by BPJS. The gap has been growing so much that amount might disrupt the sustainability of JKN. Facing these challenges, the Government together with BPJS and all stakeholders are preparing several policy improvements to ensure the sustainability of JKN;
- The increase of JKN memberships needs to be followed by the fulfilment of the availability of healthcare facilities throughout Indonesia, particularly in borders, underdeveloped areas and remote islands to enable equal access throughout Indonesia. Unfortunately, there are still healthcare facilities that lack health personnel and supporting infrastructure. Therefore, it is necessary to improve the supply side, which includes the construction of healthcare facilities in the disadvantaged areas, the fulfilment of infrastructure and distribution of health personnel, as well as the support of information system;
- The fraud control in the implementation of JKN still needs to be intensified to support the sustainability of the JKN. It is necessary to implement an integrated fraud prevention system in all business process of JKN, such as develop a tool to detect the potency of fraud that integrated into the information system of JKN. In addition, coordination is still needed between the Ministry of Health, Health BPJS, law enforcers and other stakeholders to take action against fraud.
- To achieve UHC in 2019, it is necessary to increase the population's participation, especially by the informal worker sector whose coverage is still very low. An expansion to the informal sector is a challenge because coverage requires extra effort and inter-sectoral collaboration;
- The achievement of the UHC in 2019 would require partnerships and support from all stakeholders, in both the government and private sectors, to provide adequate healthcare and to increase the JKN membership.

Embarking on Lean Healthcare Initiative to Improve Waiting Times in Hospitals

MALAYSIA

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Brief description of the best practice

This initiative was started in 2013 as part of a transformation programme to overcome overcrowding and congestion in public hospitals which can lead to long waiting times. This initiative is part of a quality improvement initiative incorporating lean thinking principles and tools from Toyota Company.

Lean thinking is about optimising work processes by eliminating waste. A team consisting of UniKL MITEC consultants, Malaysia's Performance Management and Delivery Unit (PEMANDU), Institute for Health System Research, and Medical Development Division contributed to the development and enrolment of this initiative. The initiative started in 2013 in Oncology Clinic Hospital Sultan Ismail (HSI) and showed success whereby the waiting times for patients to receive first radical radiotherapy after seen by oncologists were markedly reduced by 50%.

The encouraging success from HSI prompted MOH to implement lean thinking in Hospital Tengku Ampuan Rahimah (HTAR), Klang in the emergency and medical departments. These two departments were picked, being the busiest. Positive improvements were seen, whereby the percentage of patients discharged within 2 hours in ED climbed from 18% to 70%, and the bed occupancy rate in medical wards reduced from 145% to 83%.

This serves as the turning point for the government to enroll this lean initiative to emergency departments and medical wards in other MOH hospitals.

Specific problem addressed

This initiative focuses on reducing waiting times that has been a major concern in MOH hospitals. To tackle this issue, the government needs to improve the efficiency of services delivered. The essence of lean is optimizing work processes by eliminating waste that occurs in the process. By applying lean management tools, work processes were detailed and mapped out using value stream mapping. From this, non-value added activities and waste were identified. The department will form teams to brainstorm factors that lead to the waste and develop countermeasure actions or *kaizen* to eliminate the wastes identified. With the elimination of wastes in work processes, the efficiency of services delivered to the people improved. The improved efficiency of services was translated into reduced waiting times in hospitals.

One example of *kaizen* implemented in emergency departments is by opening surrounding health clinics until 9.00pm. This diversion strategy reduces crowding in emergency departments. The other example is by appointing a bed manager or bed-watching system for easier tracking of bed availability. This *kaizen* helped in reducing bed waiting time for patients in the emergency rooms waiting to be admitted.

Examples of *kaizen* in the medical wards are early discharge planning and checklists which reduces discharge time, and by reducing bed occupancy rates (BOR) in high BOR wards by creating sub-wards.

Evidence to support best practice

The hospitals were monitored at baseline and at 6 months of lean implementation by using 7 performance metrics which are:

- arrival to consultation time (ATC)
- length of stay (LOS)
- bed waiting time (BWT)
- call not attended (CNA)
- discharge time (DT)
- bed turnaround time (BTT)
- bed occupancy rate (BOR)

The hospitals were categorized into different categories based on the data collected. This method helped the hospitals to focus on which issues they needed to tackle, either downstream or upstream (Figure 1).

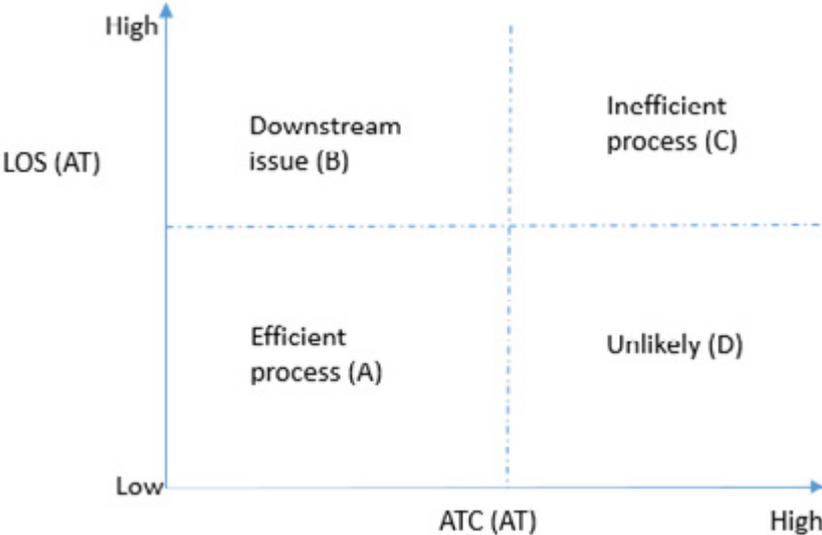


Figure 1. Matrix used to determine efficiency of processes

More data was collected one year after implementation to evaluate the progress of the hospitals. A workshop was held attended by the hospitals' representatives, Institute for Health System Research, and Medical Development Division, MOH, whereby the hospitals presented the A3 report of their lean journey, the waiting times achieved after *kaizen* implementation, challenges/issues faced and the plan forward.

Lessons learnt and the plan forward

The main challenge faced during the lean implementation was breaking the silo mentality, be it within departments or between departments. For example, emergency departments faced challenges in implementing certain *kaizen* that needed help from other departments such as laboratory or radiology due to this silo mentality. Each department works as an autonomous unit although they work in the same organization. The culture of working together for the benefit of the organization is still lacking.

To eliminate this silo mentality, the top management, ideally the heads of departments, and hospital directors need to be committed to addressing this challenge. Effective leadership is essential in handling this challenge.

Apart from leadership, team commitment is also crucial in ensuring the success of this initiative.

To tackle the issue above, competency tools for lean healthcare providers are being developed to evaluate the personnel, to see which areas they require help in order to ensure successful lean implementation; whether it is knowledge, leadership etc. Training or consultancy/advice on the areas they are deficient in will be given to them later.

This year, the lean healthcare initiative is expanding to orthopaedic and ophthalmology clinics. At the same time, other areas like pharmacy, laboratory, and medical records have also embarked on this lean initiative.

Increasing Percentage of Pap Smear Screening among Women in Pontian District, Johor

MALAYSIA

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Brief description of the best practice

Pontian District Health Officers conducted a Quality Assurance (QA) project from January to December 2015 with the aim of increasing the percentage of pap smear screening among women, involving eight health clinics and 33 community clinics in Pontian District. Three strategies have been implemented since then to combat the three main factors causing low percentage of pap smear screening among women; time constraint, shyness, and fear of pain.

Pap smear screening sessions were expanded to the clients' workplace and their residences to overcome the issue of time-constraints among female patients. Additionally, pap smear screening was also done at community clinics and health clinics. A special room was provided at the health clinics to decrease waiting times. The second factor, which was shyness, was overcome by introducing an initiative named "Sisih Malu" (Put the Shy Away) where green crepe paper with an oval opening at the centre is used to expose only the private area during the pap smear. The third factor, which is perception of pap smear as a painful procedure, was tackled by introducing a "Celik Servik" (Getting to Know Your Cervix) Model. The model is a transparent model of a cervix which is economically made from a plastic cup representing a vagina, and an inverted pacifier at the bottom of the plastic cup to resemble a cervix. This model was used to demonstrate the procedure to assure clients that the procedure is not painful.

Women were also afraid to receive the results of their pap smear causing hesitation in undergoing the procedure. Women were informed and reassured that the objective of pap smear screening was for early detection of cervical cancer and that it is treatable. Health staff help to promote pap smear screening when women go to clinics, during home visits, as well as during health camps.

Specific problem addressed

Pap smear data from the Johor Public Health Laboratory shows the percentage of pap smear screening in Pontian District was only 69.4% from 4112 screenings targeted by Johor state Health Department in the year 2014. Cross sectional study was conducted in January 2015 involving 256 women in good reproductive health, aged between 20 and 60 years old using a questionnaire. The study showed that 93.8% of respondents had knowledge about pap smear screening and 72% of respondents agreed to do a pap smear screening. The study showed that 72 respondents did not agree to do a pap smear screening because of time factor (27%), shyness (27%), perception that the procedure is painful (23%), fear of the result (19%), and thought that screening was not important for them (4%). Results showed only 44% of respondents had obtained information about pap smear screening from healthcare providers. Findings also showed that significant factors associated with pap smear screening were age, education status, duration of marriage, and number of children ($p < 0.05$). Results showed that the percentage of pap smear screening was

low among women aged 21 to 30 years old, with high level of education, who have been married less than five years, and have fewer than three children. Based on this project, factors contributed to low percentage of pap smear screening among women were unidentified.

Evidence to support success of the best practice

Evaluation was done one year following the implementation of intervention package strategies in December 2015. Pap smear screening had increased to 4936 (118.9%) from 4152 targeted screenings given for year 2015. Subsequently, in year 2016, the percentage of pap smear screening was 130.5% of the annual target for Pontian District.

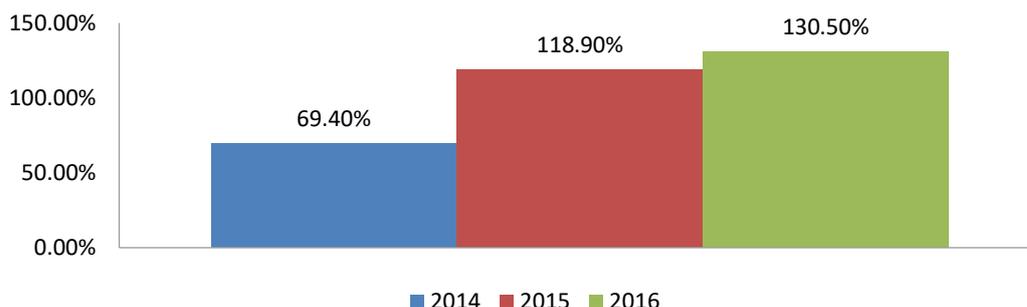


Figure 1. Percentage of pap smear screenings before QA project (year 2014) and after QA project (year 2015 and year 2016)

Detection of cervical cancer at an early stage also had increased with the increasing percentage of pap smear screening. Forty cases were detected in 2015 compared to only 27 cases in 2014 and no late stage cervical cancer was detected in year 2015 through pap smear screening.

A second study was conducted in January 2016 among 99 women by using a similar methodology to evaluate whether the problem still existed. The study also showed that none of the women refused to undergo pap smear screening after the QA study.

Factors	Before QA project (n=257)	After QA project (n=99)
1. Did not agree to undergo pap smear screening	28%	0%
2. No time for pap smear screening	27%	11%
3. Shy to undergo pap smear screening	27%	0%
4. Think pap smear screening is painful	23%	0%

Figure 2: Comparison of factors contributing to pap smear screenings before and after implementation of QA project

Lessons learnt and the plan forward

Simple innovation and strategies are able to overcome the low percentage of pap smears screening among women in Pontian district. This project has been replicated by another Johor district in 2017 and planned for national level replication afterwards.

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Medication Therapy Adherence Clinic

MALAYSIA

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Brief description of the best practice

The World Health Organization (WHO) defines adherence as “the extent to which a person’s behaviour-taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a healthcare provider”. Complexity of prescribed medication regimes can affect one’s adherence. In Malaysia, a cross sectional study conducted by Ramli et al in 2012 showed only 53.4% of patients had good adherence towards hypertensive treatment in primary health clinics. Non-adherence had caused a substantial number of patients to not be able to benefit optimally from the pharmacotherapy resulting in suboptimal treatment outcomes, decreased quality of life, increased morbidity and mortality, as well as increased societal costs. Therefore, Pharmaceutical Services Programme (PSP), Ministry of Health (MOH) Malaysia initiated a service called Medication Therapy Adherence Clinic (MTAC) to improve patients’ adherence.

MTAC is part of the clinical pharmacy services in the ambulatory clinic system which emphasizes medication management to improve quality, safety, and cost-effectiveness of patient care. MTAC is operated by pharmacists and collaborates with other healthcare professionals. The main objective is to maximize the benefit of medications, and reduce adverse effects and complications resulting from multiple drug regimen. It also aims to educate patients on their disease and complications, appropriate self-management, and the use of medications and self-care devices. Medication adherence rates are lower in chronic disease patients who require lifelong commitment to medication, such as diabetes mellitus, hypertension, asthma, chronic obstructive pulmonary disease (COPD), HIV/AIDS, and renal diseases.

In Malaysia, Renal MTAC was the first MTAC introduced in 2004 which focused on renal transplant patients, followed by Diabetes MTAC (DMTAC) in 2006 to help uncontrolled diabetic patients. Currently, there are 15 types of MTAC provided in 357 MOH health facilities (136 hospitals; 221 primary health clinics) throughout the country. Types of MTAC provided include diabetes mellitus, respiratory, warfarin, haemophilia, stroke, rheumatoid arthritis, psoriasis, psychiatric, geriatric, retroviral disease, renal transplant, chronic kidney disease, and dialysis.

Each MTAC has its own protocol which can be reviewed at www.pharmacy.gov.my. These protocols outline the recruitment criteria, workflow procedures, outcome measurements and documentations. Facilities providing MTAC have to adhere to these protocols to ensure uniformity of services. Only trained pharmacists can run MTAC services. Pharmacists need to attend a two-week intensive training at an appointed training centre. The training centre and preceptor criteria were set and controlled by PSP to ensure quality of training. Every MTAC has its own structured training module, involving pre- and post-tests, lectures, case discussions, and hands-on clinical attachment.

During the MTAC clinic, pharmacists will interview the patients and/or their caregivers before the prescribers and assess patients' medication adherence level, identify drug related problems, formulate individual pharmaceutical care plan, and recommend patients' drug therapy based on the assessment done. MTAC patients are regularly monitored every 1 to 2 months, based on patients' needs and disease progress. Details of MTAC workflow is shown in Figure 3.

To facilitate patients' education and empowerment, specific patient teaching modules were developed. For example, in diabetes medication therapy adherence clinic (DMTAC), a structured counselling tool i.e. flipcharts containing four modules; diabetes education and drug management, disease complication, healthy lifestyle, and management of co-morbidity; were developed as a guidance in educating patients. Pamphlets and disease monitoring booklets will also be provided. Average of eight DMTAC visits should be completed by patients before they can be discharged from the MTAC service.

Regarding quality of MTAC services, PSP monitors each facility's performance closely through reports and data analyses every three months. Overall performance will be presented in various meetings at different levels of management to discuss any issues related. Clinical audits are done regularly to ensure that services carried out are according to the protocols, and standardised practise and quality of the service is maintained.

Evidence to support success of best practice

Malaysia has been providing this MTAC service for more than 10 years. Approximately 39,000 patients are recruited with more than 280,000 follow-up visits done every year. Pharmacists are encouraged to conduct research to evaluate the impact of MTAC services. A multi-centre study to determine the effectiveness of MTAC diabetes mellitus where nine hospitals were involved had showed 46.7% DMTAC patients had HbA1c reduction of 1.02% ($p < 0.01$). HbA1c reduction is crucial in reducing the risk of mortality and morbidity among diabetic patients. Another multi-centred prospective study involving 506 patients also demonstrated significant improvement in medication adherence ($p < 0.01$) with 1% reduction in average HbA1c after four MTAC visits.

Another cross sectional multi-centre study was carried out in Warfarin MTAC patients to determine the mean of Time in Therapeutic Range (TTR), influencing factors, and International Normalization Ratio (INR) value which correlated with bleeding and thromboembolic complications. Seventy-five percent 75% of patients had good anticoagulant control, as evidenced by TTR levels of $\geq 70\%$; the mean and median of TTR were 74% (± 20.5) and 77% (IQR 60.5% to 91.0%) respectively. Thromboembolic events were 2.8 times higher in patients with TTR of $< 75\%$ as compared to those with TTR $\geq 75\%$ (95% CI=1.29-5.85, $p = 0.009$).

Retroviral Disease (RVD) MTAC has also been shown to improve medication adherence among paediatric HIV patients in Malaysia. A study carried out in 2015 shown RVD MTAC patients had achieved 98% adherence level, which is higher than the National AIDS Manual, United Kingdom recommendation (95% adherence of the prescribed dose).

Specific problem addressed

Malaysia has 13 states, 2 federal territories, and more than 31 million citizens. There are 144 hospitals and 1,060 health clinics governed by MOH. There might be a slight variation of practice between facilities which may affect patient experience while seeking treatment,

due to culture and language barriers. The high turnover rate of pharmacists, especially in rural areas is one of the contributing factors.

Patient behaviour is one of the biggest challenges in medication adherence. Forgetfulness is a well-known factor that causes non-adherence with medication or clinic appointments. Once patients default an appointment, they may have an insufficient supply of medications and will therefore affect their treatment plan. With MTAC, pharmacists can trace defaulted patients based on scheduled appointment dates and will rearrange new appointments. Pharmacists do follow-up calls or send SMS to patient to remind their appointment dates.

In addition to that, the lack of patient-pharmacist trust also remains a major challenge. Patients need time to build their rapport with the pharmacists and pharmacists have to be able to gain their trust. The structure and regularity of the MTAC sessions help develop trustworthy relationships between pharmacists and patients. The sessions involve shared decision-making activities which indirectly and positively affect medication adherence. The incidence of long-waiting times in pharmacies are also a deterrence for medication adherence, therefore some facilities have taken the initiative to dispense medication at their clinics as a value added service.

Lessons learnt and the plan forward

In conclusion, patients' expectations towards pharmacy services are no longer restricted to clinical skills and knowledge, but there is an increasing demand for mutual respect, clear communication, and behaviour that portrays high standards of professional probity. MTAC provides an opportunity for pharmacists to work with patients and develop effective patient care relationships in resulting in optimal therapeutic outcomes. Motivational interviewing techniques performed during MTAC sessions also help strengthen the relationships between pharmacists and patients and allows the latter to be more receptive to advice and intervention, leading to the increased likelihood of medication adherence.

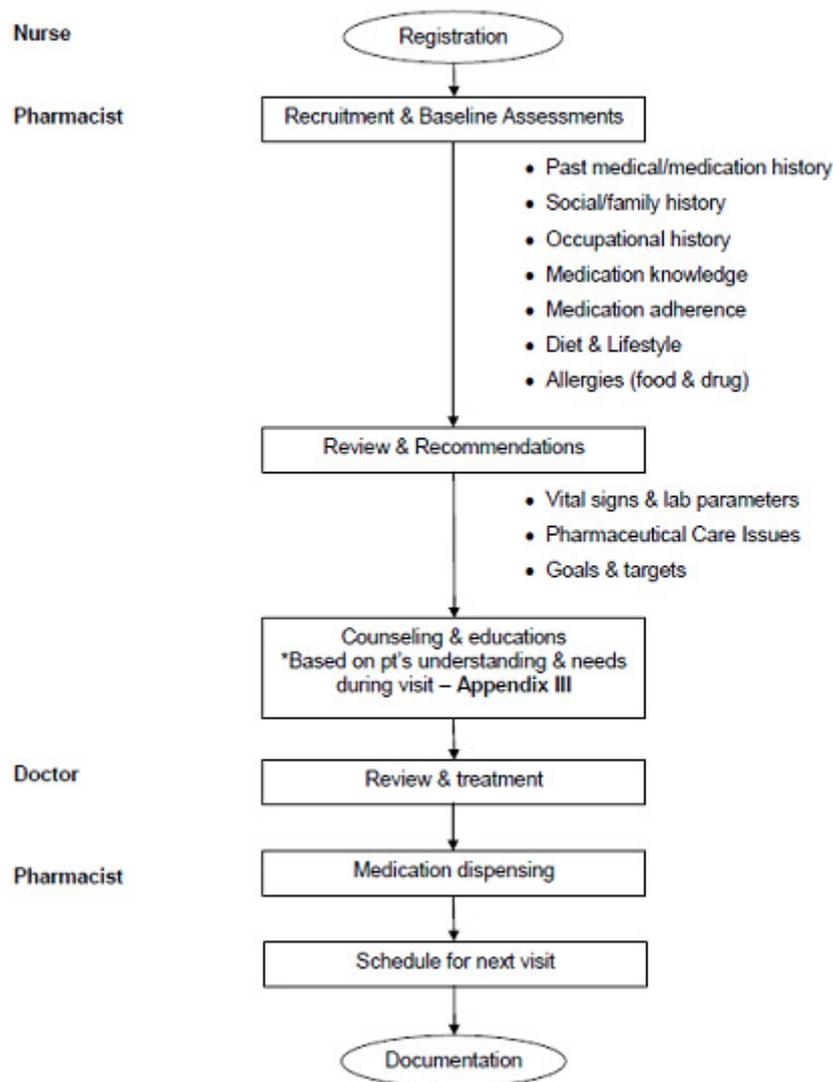


Figure 1: Details of MTAC Work Flow

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Pharmacy Value Added Services

MALAYSIA

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Brief description of the best practice

In Malaysia's public healthcare settings, patients with chronic diseases are scheduled for appointment with their doctors at intervals of 3 to 6 months whereby they will be given prescriptions for the corresponding duration. However, these medicines are only supplied on a monthly basis. This policy, which is practiced in many countries, is implemented to ensure quality use of the medicines, enabling pharmacists to monitor for any side/adverse effects of medicines and also to reduce medicine wastage as a result of improper storage or expiration.

The number of prescriptions received by public health facilities in Malaysia has increased from year to year. Between 2016 and 2017 for example, MOH facilities had to cope with a 12% increase (from 52.2 million to 58.7 million) in total number of prescriptions received for filling. Approximately 30 – 40% of these are repeat prescriptions for patients with chronic illnesses such as diabetes and hypertension. These patients need to make monthly visits to the pharmacy to get their prescription filled. This cause inconveniences and incur additional costs for transportation and meals. These repeated patient visits had also contributed to congestion at health facilities leading to longer waiting times at pharmacy counters and also parking woes. These factors may cause non-compliance among these patients to their medicine regimen, thus resulting in sub-optimal management of their health conditions. Such situations can lead to poor overall health outcomes and escalating healthcare costs both to the individual as well as to the nation. Hence, it is important to ensure that this category of patients have equitable and easy access to their medicines.

The Pharmaceutical Services Programme (PSP), Ministry of Health (MOH) Malaysia has introduced several innovative initiatives since 2004 to enable patients to refill their prescriptions in a much more convenient and hassle free manner. The initiatives include Sistem Pendispensan Ubat Bersepadu (SPUB or Integrated Drug Dispensing System); Pharmacy Appointment System; Drive-Through Pharmacy; Ubat Melalui Pos (UMP or Medicines by Post) and the latest innovation, Locker4u. All of these initiatives are collectively known as Pharmacy Value Added Services (VAS) and each initiative is explained briefly below.

- **Sistem Pembekalan Ubat Bersepadu (SPUB or Integrated Drug Dispensing System)**
 - This is a standard referral system among MOH pharmacies to provide convenience to patients to collect their medicines at any facilities nearer to their homes or work places. Through this system, patients whom consult their doctors or specialists at facilities away from the areas they live or work, can request for their repeat medicines to be collected from a nearby MOH health facility.

- **Pharmacy appointment system (card/telephone/SMS)**
 - o Through this system, patients can set an appointment with the pharmacy for medicines collection via telephone, Short Messaging Service (SMS), e-mail, fax or an appointment card. The medicines are then pre-prepared by the pharmacy prior the agreed appointment date. Using this system, patients do not have to wait long for their medicines to be prepared and had also reduce congestion at pharmacy counters.
- **Drive-Through Pharmacy**
 - o Applying the concept of a fast food drive-through, an area is designated for patients to drive past a pharmacy counter to collect their medicines. This is very convenient for patients as they do not have to park their vehicles. Similar to the appointment system above, collection dates need to be set with the pharmacy for the medicines to be prepared prior to collection time.
- **Ubat Melalui Pos (UMP or Medicines by Post)**
 - o Applying the concept of 'Care Close to Home', medicines are delivered directly to patients' home or office. This service is provided in collaboration with a courier company with minimal delivery charges to patients. Through this service, a sum of 5% of gross profits earned by the courier company through UMP are donated to a cancer trust fund. The funds are used to buy medicines or medical devices needed for the treatment of cancer patients treated in public health facilities.
- **Locker4u**
 - o Using this service, registered patients can collect their prescribed medicines from designated lockers at their own convenient time. These lockers are strategically located for easy access by patients and are secured by key/pin.

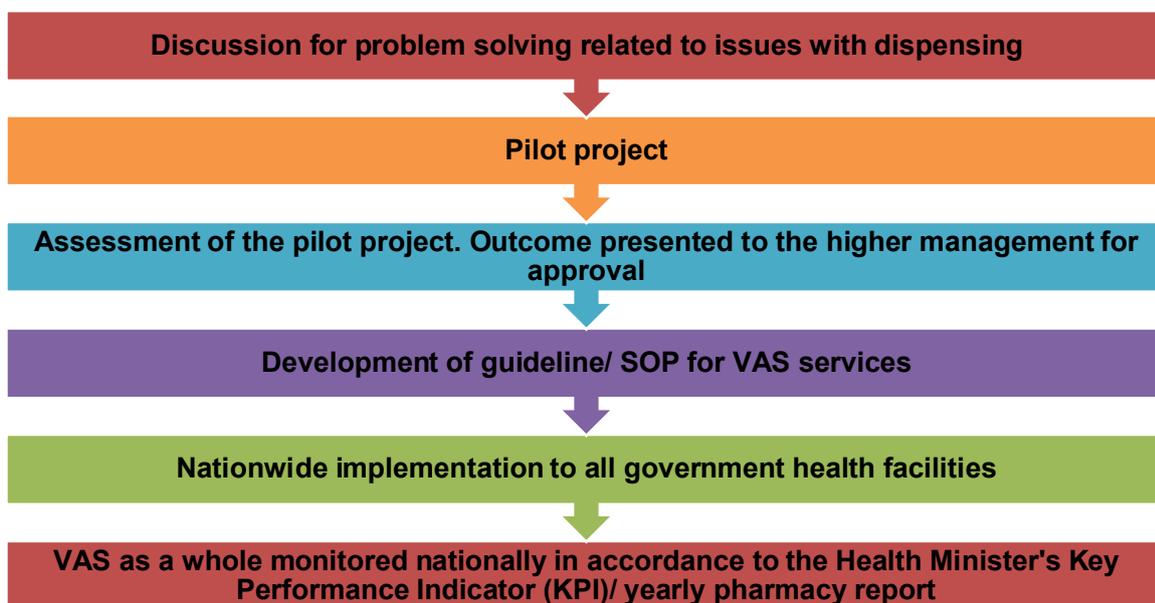


Figure 1: General process for exploring ideas for implementation and expansion of the VAS services

Specific problem addressed

At the beginning of the VAS implementation, there was some resistance seen such as patients' reluctance to sign up, refusals to pay delivery fees as well as some issues with

medicines delivery. However, active measures were taken by PSP, MOH to overcome these through promotions (using TV and radio advertisements, flyers, and posters), seminars or education program for the public, giving detailed explanations to the patients on the benefits they will gain from using the service, as well as having meetings to discuss the progress of VAS services with related stakeholders.

The implementation of VAS, specifically the UMP service, also demonstrated opportunities for the government to engage in smart partnerships with the private sector. It creates a win-win situation for the benefits of the patients towards attaining better health outcomes as well as for the nation. By adopting the National Blue Ocean Strategy (NBOS) in implementing VAS, it can be an example to others when initiating a service to the public with minimal operational costs and with good outcomes in improving patients' satisfaction and health conditions.

Evidence to support success of best practice

To ensure the success and quality of the service provided, VAS was monitored as one of the Key Performance Indicators (KPI) nationally since 2012. In 2015, a new Health Minister's KPI was set to target the setup of *Pusat Pembekalan Ubat Susulan Setempat* (Local Medicines Collection Centre) which applies the concept of VAS for medicines collection and located outside of main MOH hospital/health clinics. This ensures better access for patients to their medicines supply as it is nearer to their home/office and also operates outside of normal working hours.

Since its inception in 2012, patients' usage of VAS has increased year to year (Figure 2).

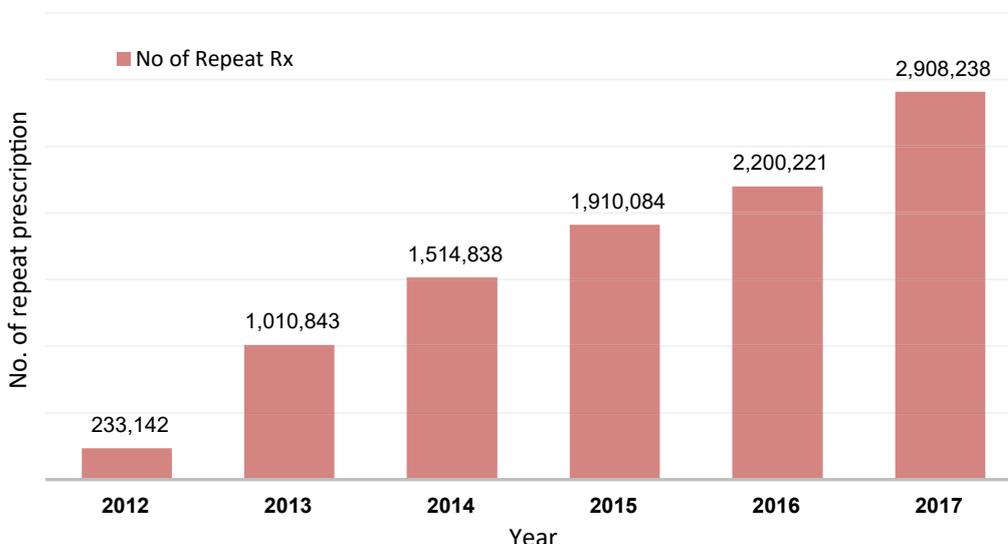


Figure 2: Usage of VAS in dispensing repeat prescriptions

A Patient Satisfaction Survey conducted in 2016 showed that 98% of the respondents were satisfied with the VAS services provided, and 99% respondents agreed that VAS provides convenience in collecting their monthly medicines supply.

Lessons learnt and the plan forward

Since it is beneficial for patients and health service providers, steps were taken to expand VAS to more MOH health facilities in Malaysia. To date, there are 762 facilities with pharmacy appointment systems; 52 facilities with drive-through pharmacies; 170 facilities

with UMP services, and 8 facilities with Locker4u while the SPUB service is available in all pharmacy facilities.

VAS services are also replicable and easy to put into practice without involving huge start-up costs. Several community pharmacies and non-MOH hospitals such as the University Hospitals under the Ministry of Education have also adapted one of the VAS services i.e. UMP to send medicines to patients' homes.

All in all, VAS has served to help patients with chronic illnesses to obtain their repeat prescription with ease in a hassle-free manner. This in turn will help to improve patients' compliance towards their medication regimen and ultimately, be better equipped to control their health.

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Post-Natal Nursing Care: Neonatal Jaundice too Crucial to Neglect

MALAYSIA

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Brief description of the best practice

Postpartum healthcare, which is normally offered within the 6-week period after delivery, is essential to the mother's and infant's health and well-being. In the Malaysian context, the post-natal care nursing services provide a total of nine (9) home visits after each delivery (Day 1, 2, 3, 4, 6, 8, 10, 15 and 20). Nurses in Malaysia are dedicated in providing post-natal care seven days a week including off days and public holidays to make sure we achieve our target and coverage.

Nurses enquire about the mother's and baby's health and wellbeing during each post-natal visit. Focus for mothers is on assessment for the presence of normal lochia, symptoms and signs of Deep Vein Thrombosis/Pulmonary Thromboembolism (chest pain), difficulty in breathing, redness or inflammation of lower limbs, calf-swelling or tenderness, examination of vital signs, breast, abdomen and perineum post-natal exercise, contraception, diet, and resumption of sexual activity. Mothers will be asked about the baby's feeding, urinary and bowel opening habits. The assessments carried out for babies are anthropometry measurements, vital signs, eyes, skin and umbilical cord, and early detection of jaundice. Mothers will be also given health education and counselling on baby care and immunisation.

Post-natal nursing care is extended for mothers who are discharged and rooming in together with the babies. Babies who have been discharged while the mother is still hospitalised will also receive neonatal care from the nurses from the Obstetrics and Gynaecology, and Paediatrics departments in accordance with the national policy.

Specific problem addressed

Since the 1980s, neonatal jaundice has been one of the major national focuses on paediatric health. A National Guideline was developed in 1985 and revised accordingly to address the screening and management of neonatal jaundice. A national target was set for severe neonatal jaundice aiming at a rate of <50 per 10,000 live births.

The diagnosis of physiological jaundice is retrospective because sometimes jaundice can start with bilirubin in the physiological range and then escalate or become prolonged. More importantly is the neurotoxicity (acute bilirubin encephalopathy) or death in new-borns and lifelong neurologic sequelae in infants who survive (kernicterus) from the excessive rise of unconjugated bilirubin. For these reasons, new-born infants with jaundice must be identified early and the level of jaundice monitored to identify those who might develop severe jaundice, acute bilirubin encephalopathy, and kernicterus.

Adequate numbers of post-natal visits enable nurses to advise mothers and detect early neonatal jaundice among new-borns. Despite having multiple challenges in managing

parents with their own beliefs and taboos who refuse their new-borns to be referred to hospitals, our nurses are continuously trained to be equipped with adequate knowledge and skills to manage parents who seek alternative treatment for neonatal jaundice. Adequate numbers of post-natal visits enable nurses to advise mothers and detect early neonatal jaundice among new-borns.

Evidence to support success of best practice

2013 and 2014 showed a severe neonatal jaundice rate of >50 per 10,000 live births. However, from 2015 onwards there has been a downward trend to <50 per 10,000 live births, hence meeting the national target for severe neonatal jaundice which is <50 per 10,000 live births.

Statistics, as seen in Figure 1, show that the average number of home visits made by nurses from 2011 to 2015 is 6.8 per year. Only a small percentage of visits are unable to be completed due to reasons such as patients providing the incorrect address, change of home address, moving homes, leaving for hometown, and admission to hospitals. As a result of high commitment and the competency of nurses in Malaysia in carrying out optimal post-natal visits, we are able to detect early neonatal jaundice.

Year	Clinic	New case	Total (New case & Repeat)	Average
2011	Health Clinic	221,391	1,405,524	6.3
	Community Clinic	220,109	1,385,829	6.3
	Total 2011	441,500	2,791,353	6.3
2012	Health Clinic	227,969	1,465,489	6.4
	Community Clinic	225,990	1,442,602	6.4
	Total 2012	453,959	2,908,091	6.4
2013	Health Clinic	238,881	1,698,976	7.1
	Community Clinic	219,661	1,500,347	6.8
	Total 2013	458,542	3,199,323	7.0
2014	Health Clinic	266,942	1,976,989	7.4
	Community Clinic	222,365	1,601,910	7.2
	Total 2014	489,307	3,578,899	7.3
2015	Health Clinic	25,913	173,225	6.7
	Community Clinic	13,321	98,092	7.4
	Total 2015	39,234	271,317	6.9
Total 2011- 2015		1,882,542	12,748,983	6.8

Figure 1: Coverage Home Visit by Nurses at Health Clinic & Community Clinics for Post-Natal Mothers from 2011 – 2015

Figure 2 shows the number of jaundice cases detected during post-natal visits and health clinics, number of cases referred to hospital and number of babies treated under phototherapy.

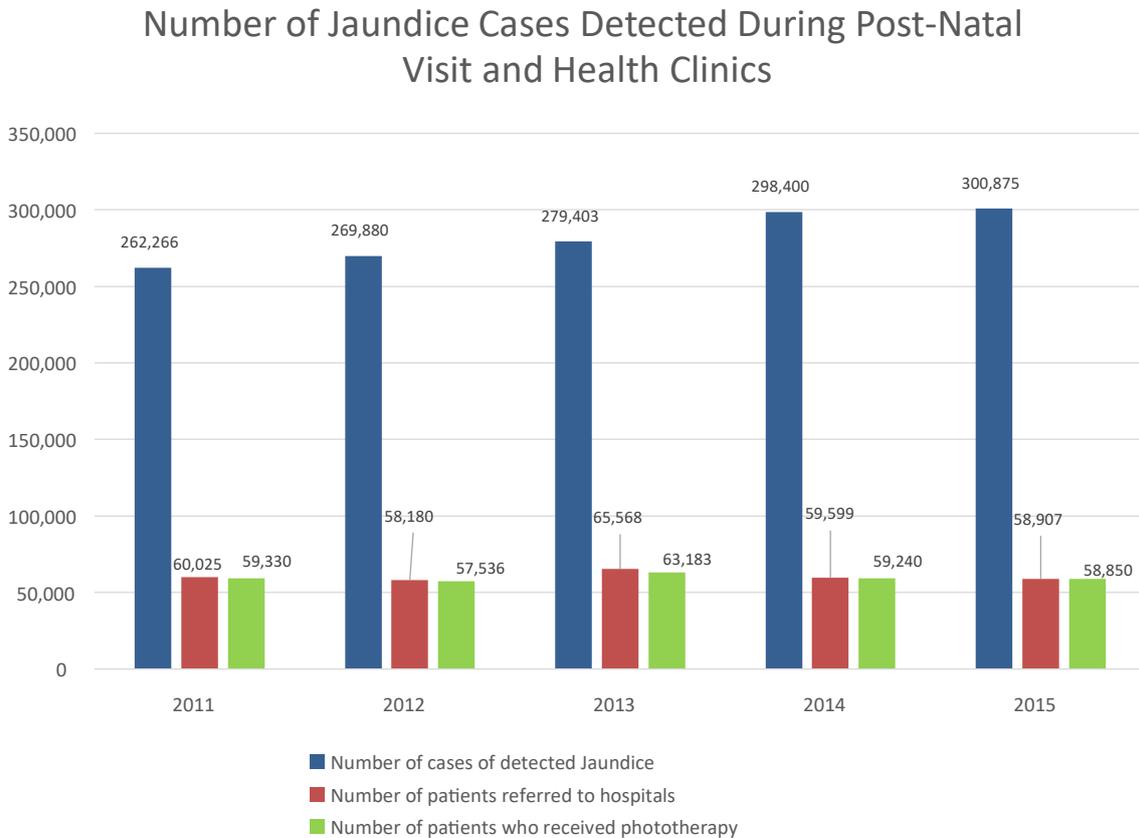


Figure 2: Number of Jaundice Cases Detected During Post Natal Visit and Health Clinics

About 25 – 30% of babies with neonatal jaundice experience jaundice of sufficient severity to warrant referral to hospital for phototherapy or exchange blood transfusion. Severely jaundiced babies without early effective treatment can potentially suffer brain damage or hearing impairment.

Figure 3 shows the number of cases of severe neonatal jaundice which is treated under phototherapy with blood exchange, number of cases of kernicterus, and number of deaths. The number of cases referred to phototherapy with blood exchange has been increasing from 2011 to 2015. However, the number of cases of phototherapy with blood exchange is only 0.02% of the number of cases detected.

Number of treated cases and deaths among patients with severe neonatal jaundice

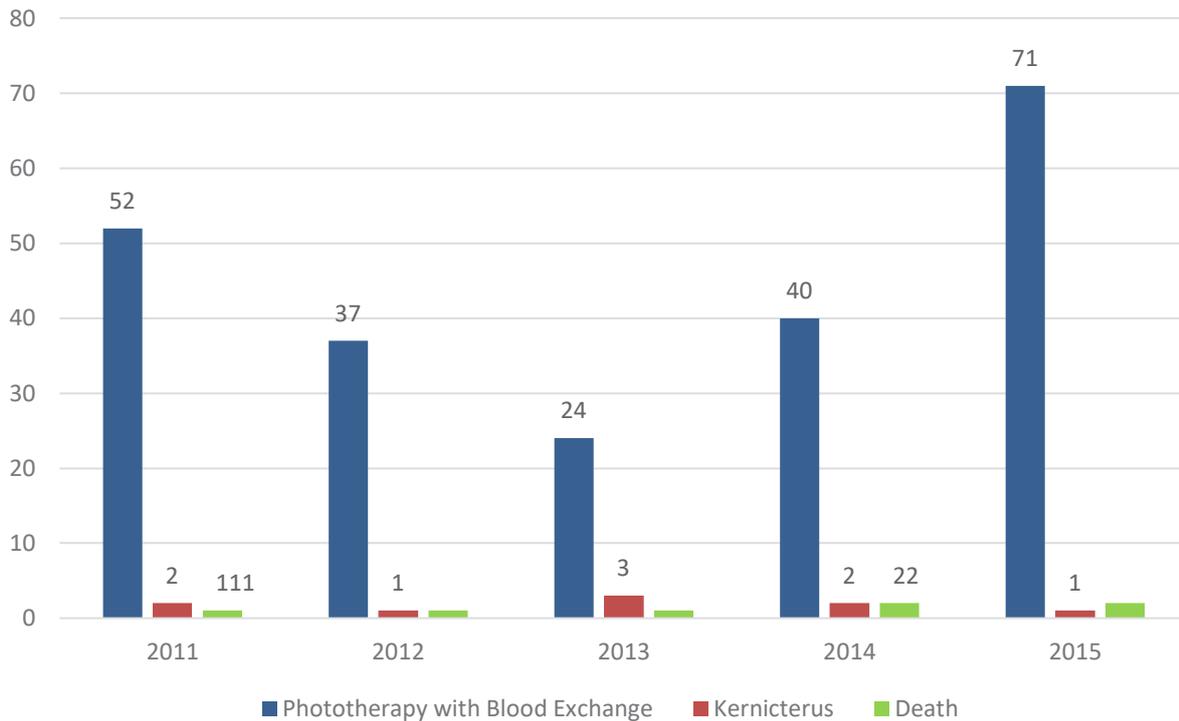


Figure 3: Number of treated cases and deaths among severe neonatal jaundice

Lessons learnt and the plan forward

Regular and intermittent audits are done by the nurse managers to review patients' records to verify and maintain the nurses' performance and competence on aspects of nursing care by using established criteria and the National Nursing Audit for Primary Healthcare checklist. Adequate and vigilant monitoring by the nurses, together with good documentation enables the nurses to detect early neonatal jaundice. If the jaundice is detected, daily visits should be conducted to monitor the severity of jaundice.

Regular review of under-five mortality has helped in the evolution of midwifery and neonatal training. Staffing norms, equipment norms, improved referral systems, better access to neonatal emergency services, and availability of life saving drugs are some of the areas where the impact has been significant.

Nurses relate with the mother throughout the pregnancy and puerperal cycle, and we have an important role in health education programs throughout antenatal care. In this way, we continue to prepare the expectant mother, by giving her easy and smooth guidelines and helping her to develop her knowledge in identifying and breaking the existing taboos. Nurses' assistance is crucial at the beginning, during maintenance, and breastfeeding on demand. However, the breastfeeding concept may be nerve-wracking especially to new mothers who might be constantly worried, wondering if they are doing it the right way.

Lessons learnt and the plan forward

The prevention of neonatal jaundice is enabled by the strengthening of our teaching and nursing assessments during antenatal and post-natal visits. This is to ensure that

the mother's competence in feeding the baby is determined prior to discharge as well as during post-natal visits.

Prevention and early detection of neonatal jaundice can be increased by strengthening the collaboration between nurses from hospitals and public health sectors and vice versa with the care of mother and new-borns through regular teaching and training.

It is recommended that nurses in rural areas be able to detect bilirubin levels with jaundice meters. It is a non-invasive method of bilirubin measurement and is simple enough to be operated with minimal disturbance to the baby. This will help nurses in decision making and suggest appropriate referrals if required.

We continue our march forward to reduce the number of cases of neonatal jaundice by providing the best post-natal nursing care for our mothers and new-borns. We plan forward to educate and train our nurses to become clinical nurse specialists in midwifery and neonates to serve our nation.

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School Dental Services: An Incremental Dental Care Approach

MALAYSIA

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Brief description of the best practice

Schoolchildren below 15 years of age make up 24.5% of the Malaysian population (2016). Oral healthcare for schoolchildren is provided under the School Dental Service (SDS), Ministry of Health Malaysia (MOH) since the 1950s through the Incremental Dental Care (IDC) approach. This approach aims to achieve and maintain orally fit status among schoolchildren. IDC ensures all school-going children aged seven to 17 years old are provided with comprehensive dental care which includes promotive, preventive, and curative components.

The Education Act (Act 550) established in 1996 requires schoolchildren attending government and government-aided schools to be examined by a Dental Officer. Monitoring shall be carried out on a scheduled and regular basis by the State Deputy Director of Health (Oral Health), Senior Dental Officers, Dental Officers, and Dental Nurses. The progress of the planned activities will be monitored through indicators as stipulated in the Quality Assurance Program - National Indicator Approach, Key Performance Indicators, and National Oral Health Plan Goals. The frequency of monitoring can be on a monthly and yearly basis to enable timely intervention to achieve the set annual targets.

Specific problem addressed

Dental caries remains as a major oral health problem affecting 60-90% of schoolchildren. School Dental Service plays an important role in achieving optimal oral health for the maximum number of schoolchildren within a reasonable time frame. On average, 98.0% of government primary schoolchildren and 92.3% of government secondary schoolchildren were covered annually.

The use of school dental clinics, mobile dental teams, and mobile dental clinics has been in practice for decades. Currently, there are 925 school dental clinics, 446 mobile dental teams, and 36 mobile clinics distributed throughout Malaysia. Various modes of transportation such as vans, buses, and boats are used to provide dental services in different geographical locations.

Evidence to support success of best practice

Caries Free Prevalence Among Schoolchildren

There is an improvement in caries-free dentition among 12 year-old schoolchildren from 57.5% (2005) to 67.6% (2016). As for 16 year-olds, the prevalence increased by almost two-fold during the same duration from 30.2% to 56.9% as shown in Figure 1.

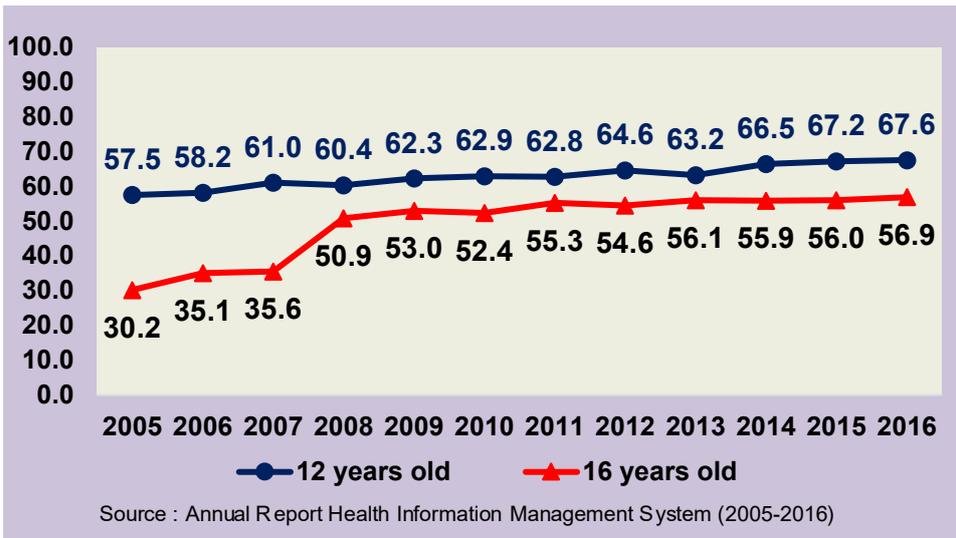


Figure 1: Percentage of caries-free among schoolchildren in Malaysia (2005-2016)

Mean Decayed, Missing or Filled Teeth (DMFT)

The mean number of decayed, missing, or filled permanent teeth (DMFT) in 12 year-olds and 16 year-olds in 2005 was 1.1 and 1.7 respectively. There was a marked decrease in the mean DMFT in 2016 (for those aged 12 is 0.7 and for those aged 16 is 1.0) as illustrated in Figure 2.

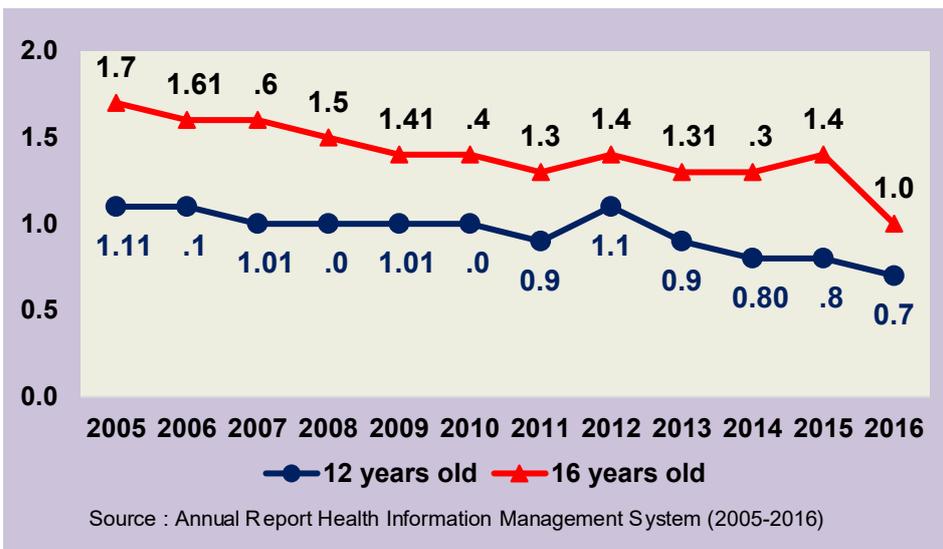


Figure 2: Mean DMFT among schoolchildren in Malaysia (2005-2016)

Findings from National Oral Health Survey of Schoolchildren

Figure 3 shows the findings obtained from the National Oral Health Survey of Schoolchildren (NOHSS) conducted in 1997 and 2007. There has been an increase of 19.4% in the caries-free prevalence among 12 year-olds and 15.9% in 16 year-olds. Mean DMFT in 12 year-olds reduced from 1.9 to 1.1 and in 16 year-olds decreased from 3.3 to 2.1 respectively.

Year	12 years old		16 years old	
	Caries free (%)	Mean DMFT	Caries free (%)	Mean DMFT
1997	39.1	1.9	24.5	3.3
2007	58.5	1.1	40.4	2.1

Figure 3: Caries-free prevalence and mean DMFT among 12 and 16 years old.
Source: National Oral Health Survey of Schoolchildren (NOHSS) 1997 and 2007

The mean DMFT among 12 year olds in Malaysia is higher than Singapore with DMFT 0.42 and Hong Kong with DMFT 0.40. Meanwhile, Thailand has demonstrated an almost similar caries experience among 12 year-olds with DMFT 0.7.

The National Oral Health Plan (NOHP) for Malaysia 2011-2020 has laid out 26 key oral health goals. As of 2016, three key oral health goals related to dental caries has been successfully achieved. The indicators and achievements are stated as below:

- 70% of 12 year-olds are caries free (achievement – **67.6%**)
- DMFT 12 year-olds \leq 1 (achievement – **0.7**)
- 50% of 16 year-olds are caries free (achievement – **56.9%**)
- DMFT 16 year-olds \leq 2 (achievement – **1.0**)

Preventive oral health measures such as community water fluoridation, clinical preventive program, dental health education, improved socioeconomic status, and healthy lifestyles have also contributed towards the improvement of dental caries experience among in schoolchildren.

Lessons learnt and the plan forward

The IDC approach has been successful in maintaining good oral health status among schoolchildren. Health promotion carried out in School Dental Service has helped to create awareness and empower schoolchildren towards self-oral hygiene practices. It needs to be further emphasised since individual behaviour is the biggest contributor in determinants of health.

Caries risk assessment (CRA) among schoolchildren needs to be enhanced as the ability to detect caries at its earliest stages (i.e., white spot lesions) can help to prevent cavitation. Early detection of dental caries should be done by using the Malaysian Modified International Caries Detection and Assessment System (MMI). The MMI facilitates personalised management of the caries process for improved long term health outcomes.

The success of the Incremental Dental Care Program in schoolchildren has triggered the initiatives to adapt the same approach to different priority groups such as pre-schoolers and young adults. Collaborative partnerships with other agencies need to be further explored in order to achieve the desired goal.

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Use of the Integrated Tuberculosis Information System (ITIS) as Primary System in Data Management of TB Cases

PHILIPPINES

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Brief description of the best practice

As front liners in community health, one should be well equipped with proper knowledge, skills, and attitude. They should also be able to maintain a well-organized reporting and recording system of all health indicators and storing of data in the health information system. This will aid in easy tracking of information and will serve as a basis for regular assessment and evaluation of health situation in the area.

The Tipo-Tipo Rural Health Unit, a TB directly observed treatment, short course (TB-DOTS) Accredited Health Facility, headed by the Municipal Health Officer (MHO) together with the Provincial Health Office (PHO) of Basilan, Department of Health Autonomous Region in Muslim Mindanao (DOH-ARMM), and in partnership with the Philippine Business for Social Progress (PBSP), have been using the ITIS for four years (2015-2018) in the data management of TB cases.

The most important factor in the successful implementation of the system in the health facility is the teamwork among health workers, including the barangay (village) health workers, helping one another and knowing each of their roles and responsibilities. Majority of the health staff have undergone enhancement of their skills and knowledge through the roll-out of the Manual of Procedures for TB, and the integration of the Programmatic Management of Drug-resistant TB (PMDT) into the basic health services of the facility conducted by DOH and its partners.

The assigned health staff for TB, the National Tuberculosis Programme (NTP) Coordinator, collects the TB Treatment Card of every diagnosed TB patient per barangay (village) every 1st week of the succeeding month for data quality checks (DQC). Each assigned health staff must see to it that all fields in the treatment card are complete, updated and accurate prior to the DQC.

After checking the treatment cards, the NTP Coordinator then writes down all data in the Drug-Susceptible TB Register. It is then forwarded to the ITIS encoder who is also the TB Co-Coordinator for another round of data checking before encoding it into the ITIS system offline version. A copy of the dispatch file is sent to the central database, while another is sent to the ITIS focal person in the PHO and the MHO for back-up data storage in case of any technological glitch. The encoder also ensures that the data for the month will be sent on or before the 15th of the following month. In the instance where there is poor or no internet connection which is mostly the case in the area, a copy is personally handed to the PHO-focal person stored in the USB.

Specific problem addressed

The use of ITIS has solved various problems in the implementation of the NTP not only with reporting but also with monitoring of each individual patient per barangay. With just

a click, the data needed by the health staff is generated by the system. The ITIS encoder then can remind the medical technologist and assigned health staff of a certain barangay about those who are due for follow-up sputum examination.

With the use of the system, we have eliminated the possibility of human error, and the health team have ample time to do treatment monitoring and be at the community where they are more needed instead of doing time-consuming paper work. Updating, reporting, and error determination were also made easy with the system.

Evidence to support best practice

Even before the advent of ITIS, the Tipo-Tipo RHU is leading the Basilan Province in terms of key TB indicators that include detection and treatment completion rate. However, low cure rate was noted partly due to human error in updating treatment cards. Likewise, the NTP coordinator was overwhelmed with paper work and the reporting was not at par with staff efforts. There were also errors noted which were attributed to overworked health workers.

The impact of technology like ITIS in healthcare as applied in the data management system has been proven effective in the implementation of the NTP in Tipo-Tipo. Due to the automatic generation of reports, the NTP coordinator submits the quarterly report and any other TB-related reports on time. TB cases encoded in the system are easily tracked and updated. With the system's feature on automatic computation on drug schedule intake for the whole six months of treatment, the encoder can immediately see the end of 2nd, 5th and 6th month of treatment even without manually counting the days per month thus

with the collaborative effort of the health staff they were able to assure that bacteriologically confirmed TB patients have completed follow-up sputum exams which helped the cure rate increase from 20% in 2015 to 53% in 2016.



Figure 1. Tipo-Tipo Rural Health Unit staff validating the data encoded in the ITIS with the data written in the TB Register to ensure accuracy and completeness of data.

Lessons learnt and the plan forward

ITIS as the data management system is a successful due to the collaborative work of the Tipo-Tipo health staff under the supervision of the MHO and the support from the PHO, DOH-ARMM, assistance from the Local Government Unit of Tipo-Tipo and PBSP. One cannot function without the others' help. Even when the NTP coordinator and co-coordinator were the only trained personnel on how to use the system, communication is also an important factor, re-echoing or orienting the health staff on the importance of using the ITIS helped them understand that using the system is an advantage and can reduce work load since everything works in just a click or is generated automatically provided that the data encoded is correct.

ITIS has reformed the Tipo-Tipo RHU in the implementation of NTP from manual workloads to automated paperless reports. The use of this technology has helped in tracking TB

patients easily, monitoring their follow-up sputum examinations and schedules of drug intake per phase. Now that the RHU is also providing integrated TB services and rapid TB diagnostic laboratory (RTDL), RHU is looking forward to using the ITIS to its full function in support of the National Tuberculosis Program.

Team-Based Approach in Primary Care

SINGAPORE

Grace Wong

Primary & Community Care Division, Ministry of Health

Primary care is the foundation of Singapore's healthcare system. As the first and continuous line of care in the community, our primary care providers are often the first point of contact for the patients. In Singapore, primary care is provided by government polyclinics and clinics run by private general practitioners (GPs). Polyclinics in the Singaporean context are made up of services including, but not limited to treatment for acute conditions, management of chronic diseases, health screening, laboratory services, and vaccinations, thereby serving as a one-stop health centre for the community. Currently, GP clinics constitute about 80% of the total primary care market share, with the remainder by polyclinics.

Brief description of the best practice

The Primary Care Networks (PCN) Scheme was launched in January 2018 and was designed with GPs to better support them to manage chronic diseases more holistically in the community. Through the scheme, participating GPs can tap on funding and administrative support to implement team-based chronic care. Examples of government support include funding for nurse counsellors and primary care coordinators for the provision of ancillary services such as diabetic eye and foot screening, as well as support to establish chronic disease registries. The scheme also provides a platform for cross-sharing of best practices to encourage a culture of quality improvement among GPs.

Specific problem addressed

With an ageing population, chronic disease prevalence and complex care needs will continue to rise. This would lead to increasing demand for primary care services. In addition, the onset of chronic conditions (such as diabetes and hypertension) are often silent and patients may present at a much later stage with complications, which can greatly affect the quality of life and be financially draining for affected individuals and his/her family members. The Ministry of Health (MOH) recognises the importance of a strong primary care system which enables good preventive care and chronic disease management in the community. Hence, MOH has been working closely with our GPs, to better support them in providing more holistic and integrated care in a team-based manner in the community.

Evidence to support success of the best practice

Team-based care practice has been associated with higher rates of measures of quality of care, lower rates of acute care utilisation and lower actual payments received by the delivery system. In addition, appropriately and safely delegating certain tasks to non-clinician team members can help increase capacity, as well as lead to satisfaction among both patients and employees.

Case Study on Frontier PCN

Frontier PCN was a ground-up initiative that started as a pilot in 2012. Currently, it comprises of about 40 GP clinics in its network. The PCN is led by a family physician. The GPs in this network are supported by a shared team of nurse counsellors and primary care coordinators.

This enables the doctor to have more time to focus on the patient's medical issues. The nurse counsellors conduct health education and counselling sessions to enable patients to understand their chronic conditions better, co-develop individualised care targets to achieve and empower them to better manage their chronic conditions. They provide advice on adherence to treatment regimens and lifestyle intervention, such as dietary modifications, exercise, and smoking cessation. They also help to teach and assess patients' insulin injection techniques, as well as self-monitoring skills such as home glucose monitoring. The primary care coordinators coordinate scheduling of the patients' appointment for ancillary services (such as diabetic foot and eye screening services) and help doctors track the progress of patients' chronic conditions through the set-up and maintenance of a chronic disease registry (Figure 1).

This enables reflective care for the individual GP to understand the care outcomes of his regular patients, and through peer sharing of best practices, to consider what quality improvement measures to take to improve care outcomes sustainably for patients in the PCN.

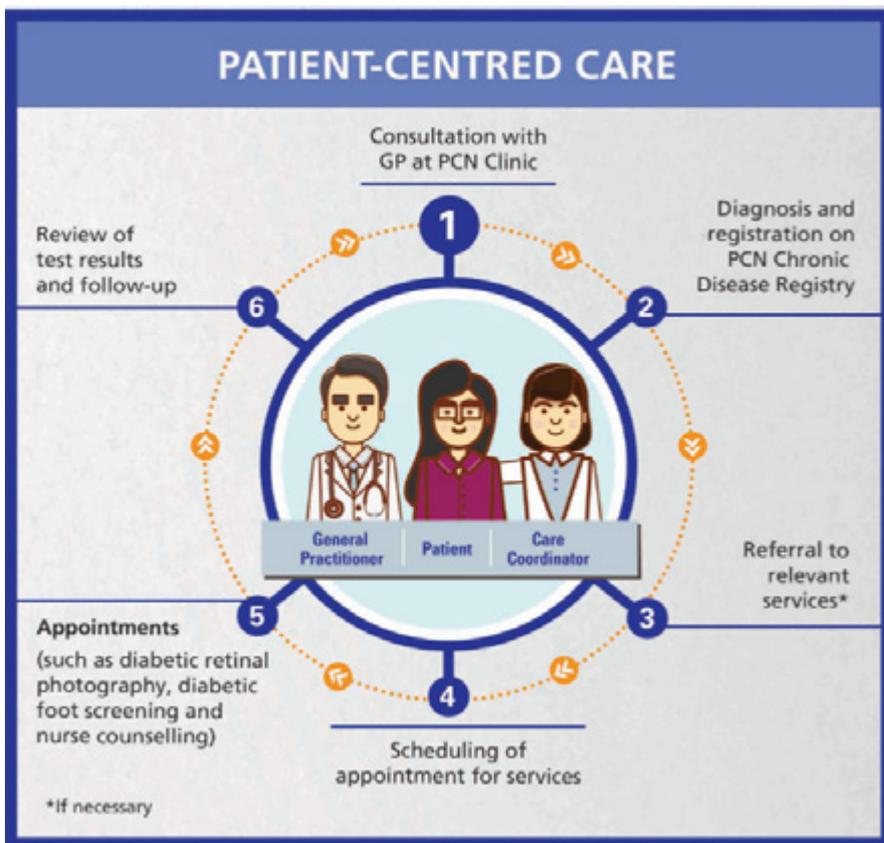


Figure 1. Patient-centred care within the Primary Care Network

Lessons learnt and the plan forward

Taking into consideration the key learning points and encouraging improvements in care results from Frontier PCN, MOH launched the PCN scheme to include more GPs. Today, there are 10 PCNs with more than 340 GP clinics on the PCN scheme. The PCNs are part of MOH's strategy to shift care beyond the hospitals and into communities, so that patients can receive effective care closer to homes, while at the same time allowing economies of scale of shared network resources required for comprehensive chronic disease management. As such, the ministry has committed a budget of \$45 million per year to support the PCN scheme over the next five years.

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Vaccine Supply Chain Management and Logistics

THAILAND

Yothin Thanormwat

Bureau of Vaccine Policy Development, National Vaccine Bureau

Brief description of the best practice

Vaccines and immunisation are the most cost-effective public health interventions and used worldwide in prevention and control of Vaccine Preventable Diseases (VPDs). However, maintaining the pharmaceutical integrity of vaccines from manufacturers or suppliers to the end recipient is still challenging in both underdeveloped and developing countries. In fact, improper storage and transportation could directly affect vaccines in terms of quality and efficacy. These defects can result in lower protective immune response after getting vaccinated and may not be sufficient in protection against specific VPDs. Moreover, deteriorated vaccines are most likely to cause Adverse Events Following Immunisation (AEFI) which may vary from mild to severe forms.

After 2010, Thailand saw a marked improvement in vaccine supply chain management and logistics. From the implementation of the Expanded Programme on Immunisation (EPI) in 1977 to the year 2008, vaccine procurement and distribution was operated by the Bureau of General Communicable Diseases underneath the Department of Disease Control (DDC), Ministry of Public Health, as a national EPI manager. The DDC took on the role of maintaining EPI vaccine financing and budget requests till 2001. The National Health Security Office (NHSO) established under the National Health Act of 2002 took over this role from 2002 till present day, based on capitation payment for Universal Health Coverage (UHC) scheme.

A conventional vaccine supply chain management and logistics initiative was implemented by the DDC. Vaccines were delivered from manufacturers or suppliers to the national warehouse situated in the DDC. The vaccines were then transported to 12 regional warehouses in the disease prevention and control offices, 76 provincial warehouses in provincial health offices, local warehouses in district health offices or district hospitals, and healthcare centres as the end user, respectively. Vaccine cold chain transportation in the conventional system was strictly controlled and a monthly request form for vaccine demands arranged by the end users was submitted to the higher levels of the distribution chain for dispensing.

In 2009, the NHSO, in close cooperation with the DDC, conducted a demonstration project on a new system for vaccine supply chain management and logistics named Vendor-Managed Inventory (VMI) in some provinces, which aimed to streamline vaccine supply chain management and logistics. In this case, the Government Pharmaceutical Organization (GPO) has been outsourcing and in the meantime introducing a VMI system for vaccine supply chain management and logistics. A private logistics company has also been subcontracting by the GPO for vaccine distribution. Regarding the VMI utilization, all vaccines procured by the DDC were stored at the GPO warehouse (national warehouse) and then distributed to district hospitals and healthcare centres respectively.

In late 2010, the VMI system was expanded to cover the whole country. The NHSO has been in charge of EPI vaccine financing management and budget requests by

outsourcing certain functions of vaccine procurement and distribution to the GPO since 2010. Comparison of conventional and VMI systems implementation pertinent to vaccine supply chain management and logistics in two-time intervals is illustrated in Figures 1 and 2 respectively.

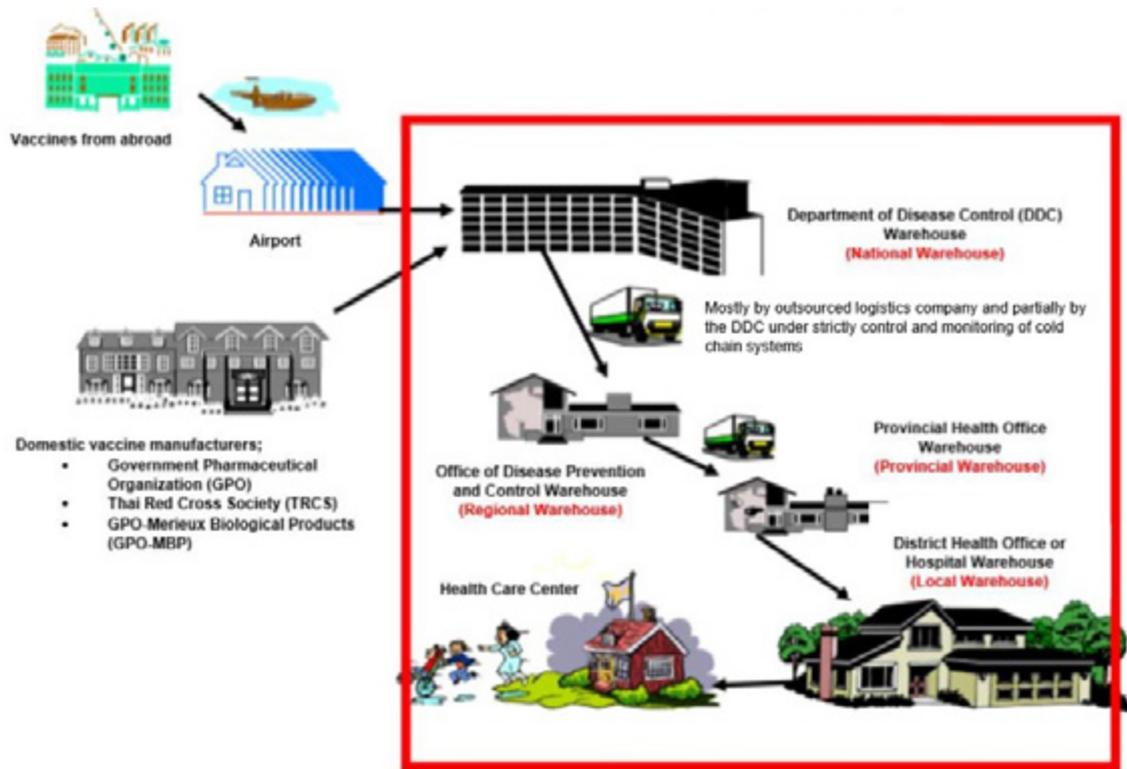


Figure 1. Conventional system for vaccine supply chain management and logistics before 2010

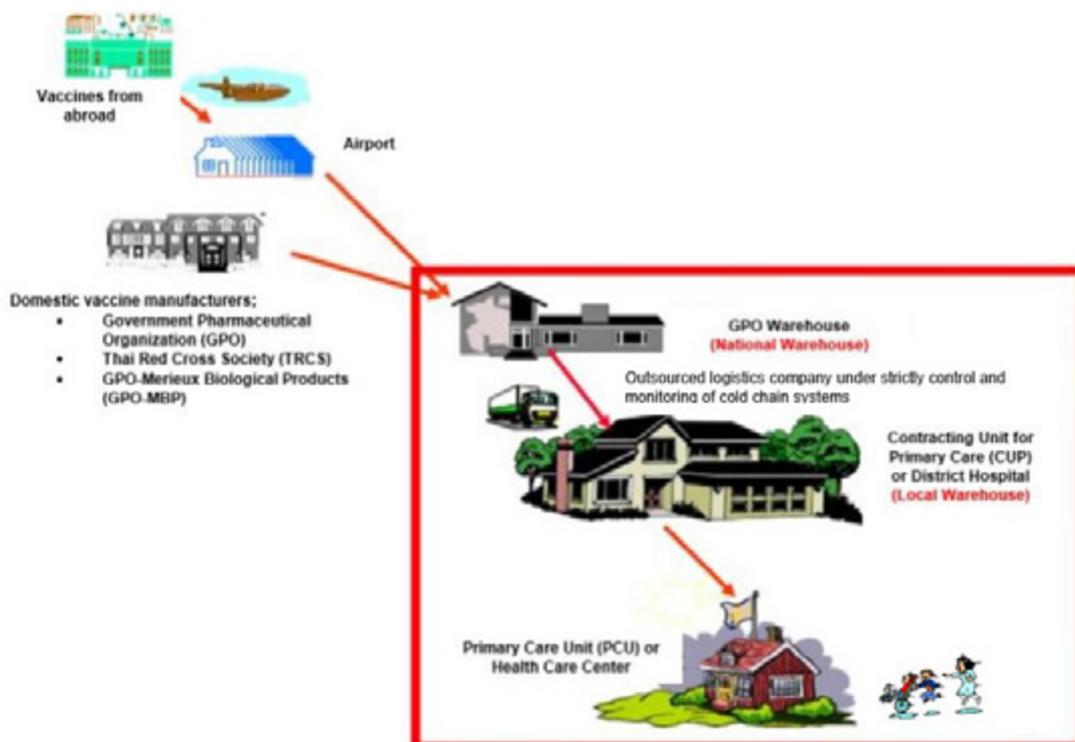


Figure 2. VMI system for vaccine supply chain management and logistics after 2010 to present

Specific problem addressed

With reference to the conventional system, vaccine distribution and storage occurred at the national, regional, provincial, and local (district) levels before arriving at peripheral healthcare centres. Those levels proved to be redundant and also increased the risks of vaccine wastage, expiration, and excess stock due to the extended timelines. This multi-level system of storage and distribution has actually reduced the shelf-life of the vaccines. Due to the absence of a reporting system, there was also a lack of inventory (residual vaccines, safety stock levels, vaccine product presentation and specifications, lot numbers and expiration dates, etc.) control and monitoring, therefore vaccine wastage was untraceable. Importantly, the persistence of cold chain facilities and equipment installed in several levels of warehouse has resulted in higher costs of maintenance and replacement.

The problems mentioned above led to the demonstration on vaccine supply chain management and logistics using the novel VMI system in 2009. This project aimed to streamline the vaccine supply chain management and logistics, and to improve information flow and accuracy among different levels of the process for generating replenishment orders instead of sending vaccine request forms. Effective information flow and accuracy also benefits the process of decision-making on relevant issues based upon tangible evidences. The success of introducing the VMI system compared to the conventional system is addressed in the following.

Evidence to support success of best practice

After establishment of the VMI system in late 2010, the process of vaccine distribution and storage points have been shortened from 4 to 2 levels. In brief, vaccines will be transported directly from the national warehouse (GPO) to the local warehouse (district hospital) and then delivered to the healthcare centre for vaccination services. Many programs and activities related to vaccine management have benefited from this system described as follows:

- Reduced logistics costs compared to the conventional system
- Reduced annual purchasing budget for routine EPI vaccines from 657 Million Baht in 2010 to 429 Million Baht in 2013
- Decreased number of broken Oral Polio Vaccine (OPV) vials by GPO's logistics from 4.27% in August 2010 to 0.00% in February 2011 (approximately 20,000 – 30,000 vial/month transported)
- Reduced number of expired vaccines and excess stock
- Decreased levels of waste of (Measles, Mumps, and Rubella) MMR vaccine from 37.00% in 2010 to 3.00% in 2003 after changing packaging size
- Mitigate distribution problems by hospitals from 5.67% in August 2010 to 0.00% in September 2011 (sampling from 1,000 – 1,500 transactions/month)
- Decreased total logistics costs
- Improved temperature control during the VMI system's transportation (ranging from 2 – 8°C)

Lessons learnt and the plan forward

The transition from the convention vaccine supply chain management and logistics to the VMI system in Thailand credits various factors for its success. These factors include lessons learnt from the existing VMI system used for HIV drug delivery, the presence of viable healthcare infrastructures and IT platforms (e.g. strong internet connections, a well-designed system, making certain levels redundant and outsourcing to a third-party logistics company, proper software and IT systems, well-trained staff, clear communication channels, etc.), strong political will to address the problem as well as the commitment to see it through, well-defined roles and responsibilities, including improved information flow and accuracy among key stakeholders (e.g. NHSO, DDC, GPO, etc.), and an effective technical support system for providing assistance.

While the VMI system has proven to be a vast improvement from the conventional method, there is always room for improvement such as extending the VMI system to sub-district healthcare centres to facilitate control and monitoring in real time so as to prevent incidences of vaccine shortage, allowing district and sub-district warehouses to access inventory data of the GPO warehouse to assist with decision-making on vaccine stock management, and continuously supervising all levels of distribution in districts and sub-districts uninterruptedly to enhance learning, develop standard practices, and identify gaps in knowledge.

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Expanding Health Service Coverage

VIET NAM

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Brief description of the best practice

The reform increased the number of individuals covered, the depth of coverage in terms of the benefit package and the level of financial protection.

The organisations, departments, or stakeholders who contributed include: whole-government and whole-society approach with key stakeholders including Ministry of Health (MOH), Ministry of Finance (MOF), Ministry of Planning and Investment (MPI), Viet Nam Social Security (VSS), development partners, and the private sector.

Specific problem addressed

To better meet healthcare needs of people by increasing the quality, availability and utilisation of grassroots health services, and increase service accessibility, especially in hard to reach areas.

Evidence to support success of best practice

Key reform elements

Viet Nam's healthcare system has been substantially reshaped in the last three decades. Since the initiation of the major politico-economic reform at the end of the 1980s, known as *Doi Moi*, the country has had to adapt to a considerable amount of new realities as the state began its move from a centrally planned economy towards a free-market economy with socialist orientation, as well as formulating and implementing a series of decentralization and administrative reforms. Multiple reforms have been taking place to expand health service coverage as follows:

- Strengthening of the Primary Health Care (PHC) network: Viet Nam has an extensive grassroots healthcare network that is arranged nationwide with a Commune Health Stations (CHS) in 100% of communes, with easy access to the people. All provinces have set up district health centres. The facilities, human resources, and financing have improved. Health service delivery has expanded.
- Development and implementation of basic health service packages: Standardisation of basic health service packages at grassroots level of care and capacity building for human resources at grassroots level to be able to deliver the standard package.
- Introduction of user fees and health insurance schemes in 1992 which made a transition from a tax-based system to a system with multiple sources of financing, and the legalization of private medical practices in 1989. Social health insurance coverage expanded rapidly and now reached 87% of the population; out-of-pocket expenditure on health reduced from 67% in 2005 to about 40% now.
- Government budget subsidy is used to enroll the poor and vulnerable population into social health insurance from early stage of health insurance establishment: Viet Nam's government strongly emphasised the importance of equity in health with a series of

pro-poor health policies, seeking to achieve small gaps in health outcomes between the poor and better off. Since 1995, the poor have been receiving free healthcare cards, which was later officially realized by establishing a healthcare fund for the poor in 2002. Since 2009, when the Health Insurance Law took effect, all the poor, children under 6, elderly from 85 years and above, and people classified as being in need have received free health insurance cards with the same benefit package as all other groups.

Results and outcomes

The health service coverage index in 2015 was 73% using the WHO approach to monitoring the universal health coverage target within the sustainable development goals, with the statistical data in 2015 which is regarded as relatively high compared to other countries in the Western Pacific Region.

The health status of people in Viet Nam in recent years has been continuously improving; a number of basic health indicators are higher than that of other countries with similar levels of per capita income. In 2017, the average life expectancy in Viet Nam reached 73.5 years, the maternal mortality ratio was estimated at 49/100,000 live births; the infant mortality rate was 14.35/1,000 live births, the <5 underweight rate in Viet Nam was 13.1%, which are relatively low compared with other developing countries in Asia.

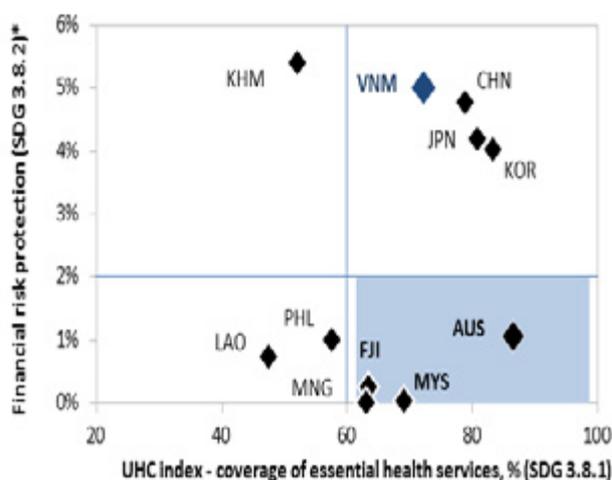


Figure 1. UHC Health Service Coverage Index in WHO WPRO Countries (2015)

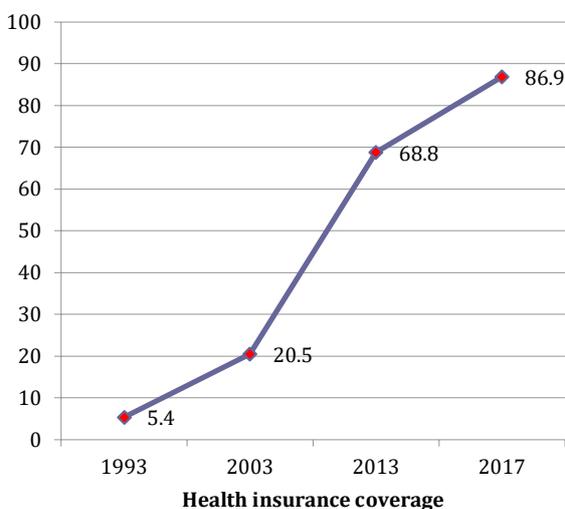


Figure 2. Percentage of Social Health Insurance Coverage in Viet Nam (1993 - 2017)

Lessons learnt and the plan forward

The lesson here is that there is a need to redesign local service delivery systems which can provide coordinated and integrated care, along with financing arrangements to sustain it. Both vertical and horizontal integrations, and two-way referral systems, are important to ensure coordination and continuum among levels and types of care.

Going forward, the areas to be improved upon are as follows: reorienting the model of care, coordinating services, empowering and engaging people, strengthening governance and accountability, and creating an enabling environment.

In order to reorient the model of care, important shifts are required, namely from inpatient to outpatient and ambulatory care; from hospital-based care to primary care; from high-cost brand-name medicines to cost-effective generic medicines, etc. Public funds, especially health insurance funds, need to be rechanneled to focus more on primary care and more cost-effective healthcare interventions and medicines. The PHC network needs to be strengthened as a gate-keeping measure. Current service packages (Expanded Programme on Immunisation, Maternal and Child Health, Family Planning, etc.) can be built upon to incorporate non-communicable diseases and geriatric care. The family medicine model needs to be expanded to include outreach services in hard to reach areas, pre-hospital ambulatory settings, and community-based chronic disease management.

In order to enhance coordination between services, roles and relationships of health providers at different levels are to be defined. Vertical and horizontal integrations, and two-way referral systems, are to be implemented as they are important to ensure coordination and continuum among levels and types of care. Inter-sectoral coordination and private sector engagement also have to be fostered.

Health literacy of the people must be improved, where self-care and management are impressed upon, as well as electronic personal health records are to be implemented to ensure people are empowered and engaged.

To strengthen governance and accountability, clear regulatory framework is to be developed for hospitals to mitigate the risks of increasing hospital autonomy and ensuring greater accountability. Certification criteria, standard clinical guidelines, and performance indicators are to be set.

An enabling environment requires improvement and enhancement to the legislative framework, financial incentives, reorienting workforce, as well as leadership and oversight.





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