Good Practices on Maternal & Child Health in ASEAN

Confidential Enquiry into Maternal Deaths in Malaysia: reviewing maternal deaths to make motherhood safer

**Executive Summary**

Confidential Enquiry into Maternal Deaths (CEMD) is a systematic, multidisciplinary, anonymous investigation of all pregnancy-related deaths, which identifies the numbers, causes and avoidable or remediable factors associated with them. It was introduced in Malaysia in 1991 under the purview of Family Health Development Division. Reports from pregnancy-related deaths are reviewed and audited at national level by the CEMD committee, comprised of personnel from relevant expertise such as Public Health, Obstetrics and Gynecology, Family Medicine, Internal Medicine, Forensic and Nursing. The committee is chaired by the National Head of O&G Services and co-chaired by the Director of Family Health Development Division. A systematic workflow of identifying and investigating pregnancy-related deaths at multiple levels using the “road to death” model allows a timely report submission to be made. Recommendations made by the CEMD committee are followed through by Family Health Development Division for implementation at various levels including policy changes, resource allocation, work process improvement, capacity building, upgrading facilities and equipment. Since the introduction of CEMD, maternal mortality ratio (MMR) has decreased from 44 per 100,000 live births in 1991 to a steady decline in early 2000 with the lowest MMR so far was 26.1 in 2011. The enquiry has enabled Malaysia to consolidate the database for pregnancy-related deaths, identify gaps for appropriate channelling of resources and ultimately improve the quality of maternal health services.

1. **Introduction**

Confidential Enquiry into Maternal Deaths (CEMD) is defined as a systematic multidisciplinary anonymous investigation of all or a representative sample of maternal deaths occurring at an area, region (state) or national level, which identifies the numbers, causes and avoidable or remediable factors, associated with them. Maternal deaths are investigated using the “road to death” model.

The CEMD was introduced in Malaysia in 1991, based on the England and Wales system. It is a review or audit process or enquiry by a committee that identifies factors that contributed to each reported maternal death and enables the providers to carry out remedial actions.

The Committee is known as the National Technical CEMD Committee. It was established by the Ministry of Health under the purview of Family Health Development Division. The committee comprised of personnel from relevant expertise such as Public Health, Obstetrics and Gynaecology, Family Medicine, Internal Medicine, Forensic and Nursing. The committee is expected to review the deaths, identify contributory factors and recommend measures to overcome the shortfalls.

2. **Specific Problem Addressed**

The principle aim of the enquiry is to identify preventable factors and the constraints in the management of the cases. The integrated approach in the investigation allows for all personnel in various disciplines who were involved in the care of the mothers to justify their management. Shortfalls in quality are identified and remediable actions are taken at various levels by relevant programmes and agencies.

The enquiry also helps to determine the classification of pregnancy related deaths, thus finalise the country’s official data of maternal death.
3. Evidence to support the good practice

Since the introduction of CEMD, the maternal mortality ratio increased slightly in 1991 to 44 per 100,000 live births most probably contributed by the increase in reporting that warranted by CEMD and it continued to decline in mid 90s and started to plateau by early 2000. The lowest maternal mortality ratio by far is 26.1 per 100,000 live births in 2011. The recommendations made in the CEMD Malaysia reports have paved ways in this country’s endeavour to improve maternal health care. The analysis and recommendations derived from the meticulous study of each case at every level have significantly contributed to understand the pitfalls, thus, direct the way to improve the health care system. The detailed assessment done at every stage with emphasis on post mortem analysis has given great insight into the status of maternal health care in Malaysia for the past 20 decades.

Among the benefits of CEMD are:

- **Revision of pregnancy related deaths reporting process** Since the establishment of the CEMD in 1991, work-flow process for notification, investigation and reporting of pregnancy related deaths has improved tremendously. This has contributed to more efficient data collection and analysis leading to timely interventions and evidence based recommendations.

- **Improve health services and accessibility for pregnant women**

  The analysis in CEMD reports has provided good indications and justifications for budget allocations in improving maternity health care. Example: new health facilities, upgrading O&G equipment, training for healthcare workers and maximising access to health care services. The number of government health facilities as of December 2013 are 141 hospitals, 1039 Health Clinics, 212 Mobile Health Clinics (teams), 13 teams of Flying Doctor Services, 254 Malaysia Health Clinics and 1,821 Community Clinics.

- **Strengthening or introduction of specific initiatives to improve maternal health**

  Recent developments based on CEMD reports put greater emphasis on Pre Pregnancy Care and effective contraceptive usage among high risk women. The 6 most common causes of maternal deaths in Malaysia from 1991 to 2011 are postpartum hemorrhage, hypertensive disease in pregnancy, obstetrics embolism, associated medical conditions, obstetric trauma and puerperal sepsis. Among these, associated maternal conditions showed an increase in percentage from 1991 (9.4%) to 2011 (16.4%). The 2 most common medical conditions reported were heart disease and renal failure.

- **Improvement of work process based on the shortfalls in care identified during the enquiry**

  Some of these are notification of hospital deliveries to providers at health clinics, guidelines on postnatal care of mothers accompanying child (MAC) in hospitals, conduct of combined inter-disciplinary clinics.

- **Improved integration and cooperation among the different**

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stakeholders, and especially public-private partnership. Private hospitals and General Practitioners involved in the management of pregnant mothers are regularly updated with latest protocols and sharing of best practices with issues in management.

- **Development of Training Manuals, Guidelines and Protocols** Training manuals have been produced to guide health care providers in improving maternal health services such as Training Manual on Hypertensive Disorders, Manual on Management of Heart Diseases in Pregnancy, Training Manual on Management of Postpartum Haemorrhage, Training Manual on Venous Thromboembolism and Perinatal Care Manual.

- **Publication of CEMD reports and dissemination of case illustrations** the reports presents an overview of topics that are major concern in the prevention of maternal deaths. Recommendations have been made to deal with the factors related to these deaths. Apart from that, the CEMD committee also produced “Case Illustrations on Maternal Deaths” which are disseminated to share lessons learned from each case.

4. **Approaches, Strategies and Tools**

CEMD is a national programme which analyses pregnancy-related deaths notified by all providers in the country (public or government). The enquiry meant to be an audit of every maternal death enables the health care providers and managers to draw on the experience of others to improve further the quality in the provision of maternal health care. It is based on final reports submitted by state health offices following a thorough road to death approach investigation of each maternal death.

**The underlying principles in the enquiry are:**
- Confidentiality—refers to the system of enquiry, the team who is performing the clinical audit does not know personal particulars of the patient and persons involved in the care of the patient. Every attempt must be made to maintain confidentiality of the cases at all times and only a minimum number of persons are to be involved in the investigation.
- The system is not a fault finding exercise and no punitive action to be taken.

5. **Resources**

CEMD requires a team of experts in relevant specialties such as Public Health, Obstetrics and Gynaecology, Family Medicine, Internal Medicine, Anaesthesia, Forensic and Nursing. The size of committee depends on the number of pregnancy-related deaths reported. Approximately three meetings are conducted annually in Malaysia to review the cases. The thorough review of each case demands high level of commitment from each member.

6. **Monitoring and Evaluation**

Family Health Development Division follows through recommendations made by the CEMD committee for implementation at various levels. The implementations include policy changes, resource allocation, work process improvement, capacity building, upgrading facilities and equipment.

7. **Lessons Learned/Contributing factors/ elements affecting success of practice**

CEMD has proven to be a very effective audit mechanism that has helped to shape Malaysia’s maternal health care services. There have been tremendous improvements seen since the initiation of CEMD more than 20 years ago. Commitment and dedication towards realizing the recommendations are crucial to improve further the maternal health care service in Malaysia.
The success of this audit heavily depends on the quality and timely submission of the final reports from state health offices to allow in depth analysis, mapping of issues and problems to generate strategic policies and strategies for intervention at the national and operational level. Currently, the reporting and report submission are done manually, but analysed electronically. The Ministry of Health plans to develop a web-based information system to allow rapid submission of data and access by different level of care providers hence reducing workload and delays. The data can be extracted for analysis as well as to monitor the progress on interventions taken towards improving maternal and child health.

8. Links to Resources

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WORKFLOW

on reporting of maternal deaths until submission of final reports to the CEMD committee

Maternal Death

Notification to District Health Office, State Health Office and Headquarters

Investigation conducted by District Health Office

Review and discuss the case during District Technical Committee

Submission of final report (using a specific format) to State Health Office

Review and discuss the case during State Technical Committee for Maternal Death Review Meeting

Submission of final report (using a specific format) to Headquarters

Review and discuss each case during National Technical CEMD Committee Meeting

The committee studies the adequacy of investigation and the clinical administrative circumstances of every maternal death in detail while reviewing the reports submitted by the state. The conclusion of the meeting should include:

- Cause of Death according to ICD 10
- Classification of Death – Direct/indirect/fortuitous
- Preventable/Non-preventable
- Contributing factors
- Substandard care
- Remedial measures

- Recommendations are taken up for actions
- National data analysis
- CEMD report writing & Publication triennially

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Executive Summary

Starting 2010, the implementation of 1Malaysia Clinics (1MCs) managed to revolutionize the traditional way of setting up a health facility in Malaysia towards improving access to primary health care among lower income communities in urban areas. Through the concept of 1Malaysia, "People First, Performance Now", these clinics provide basic healthcare needs for the urban poor, closer to home, with shorter waiting time, at convenient operational hours, meeting the people's demands. They were established in a shorter period of time, an average set-up time of about 6 months, their materialization achieved with multi-agency commitment and working together cutting through bureaucratic red tapes to fulfil the government's social responsibility of delivering equitable healthcare to every Malaysian.

1. Introduction

The Prime Minister of Malaysia initiated the concept of 1Malaysia "People First, Performance Now" emphasizing ethnic harmony, national unity, and efficient governance, when he took office in 2008. In 2009, during the 2010 Malaysian Budget Speech announcement, he introduced another product of the 1Malaysia concept, the 1Malaysia Clinics (1MC).

It was intended to improve the quality of life for low-income households, targeting the urban poor whose expenditure capacity was further worsened by high cost of living in urban settings. They are individuals who may put seeking health care as the least priority. Delay in seeking care
can potentially cause more outcomes that are deleterious and ensuing costly interventions. Without cheap public health facilities to cater for their needs, these communities face limited choices. 1MC, with a fixed user fee of RM1 (USD 0.30), was meant to provide for this segment of the population.

In the past, Malaysia had been focusing on bridging the rural-urban divide, improving access to healthcare especially for the rural population or people living in remote areas. A network of health and community clinics, as well as mobile clinics, was extensively developed to reach populations residing in remote areas in Malaysia. With the changing population dynamics of rural-urban migration, the low-income households in urban areas are now considered a marginalized group as they have difficulties in access to government health clinics during their working hours and cannot afford services from private clinics.

2. Initiative
The implementation of 1MCs is revolutionary as it utilized readily available premises in residential areas, closer to home, and aimed to provide simple, but in demand services, and at longer operational hours.

Task shifting
The concept of utilizing primary care facilities manned by paramedics; i.e. assistant medical officers (formerly known as medical assistants) and staff nurses; was adopted from the successful rural health services delivery model and applied in the urban setting. The paramedics are working under the supervision of a doctor stationed in a nearby bigger primary care clinic. The doctor is responsible to ensure the care delivered by the paramedics is in accordance with good medical practice.

A study in 2009 by the Family Health Development Division, Ministry of Health, Malaysia, on the case-mix in primary care found that 22% of cases in government health clinics were self-limiting illnesses or minor ailments. Therefore, services provided by 1MCs were primarily to treat minor ailments and injuries; stable chronic cases as Diabetes and Hypertension; minor procedures like wound dressing and removing sutures.

The paramedics are experienced health providers and capable to detect clinical conditions which require urgent referrals to either doctor or hospital.
facilitates the task shifting from doctors to the paramedics for managing minor ailments and procedures in the 1MCs become feasible and acceptable.

Infrastructure development

In Malaysia, public primary healthcare is provided by the government via static health facilities called “Klinik Kesihatan” or Health Clinics. The development process often takes much longer time from planning to operationalization, as the land procurement and building construction alone take almost two years. On the other hand, 1MCs are set up by renting and renovating readily available premises such as commercial shop lots, which make the process much faster. Most 1MCs take less than a year to set up.

3. Success factors

Intra-agency and interagency collaboration

The establishment of 1MCs takes collaborative effort from multiple agencies. Various stakeholders have different roles and a conscious agreement to work simultaneously and in synchrony to facilitate the process, is key in implementing the best practice.

The Family Health Development Division in the Ministry of Health developed the Operational Policy for 1MCs, which included the tasks of the staffs operating the clinics, scope and standards of services, medical equipment and medications required.

The Administrative Services Division in the Ministry of Health developed the guidelines for premise rental. The Finance Division ensured the allocations were spent in accordance with financial procedures.

Upon development of a new 1MC, the State Health Departments and District Health Offices will identify and propose the locations of 1MCs depending on the population needs. The District Health Offices did negotiations with the owners of the premises and documentation preparation for rental and renovation.

The other stakeholders involved included local community leaders, private practitioners, owners of premises, Ministry of Rural and Regional Development, Valuation & Property Services Department (JPPH), Central Government Safety/Security Office (KPKK), Department of Lands & Mines (JKPTG), Fire & Rescue Department of Malaysia, Ministry of Finance and Property Management Division (BPH).

Value for money

Setting up 1Malaysia Clinics require multiple resources but these are generally cheaper than setting up a standard health clinic. Allocation of about RM 250,000 (USD 50,000) is needed to set up each 1MCs. The fund is used for renovation works and procurement of medical and non-medical equipment.

Two Assistant Medical Officers, two Staff Nurses and two Health Attendants operate each 1Malaysia Clinic. They work in rotation from 10 am until 10 pm daily including weekends and public holidays. The emolument cost is RM 120,000 (USD 24,000) annually. Other operational costs include rental, utility bills, drugs and consumables, with total of RM 50,000 (USD 10,000) to RM 70,000 (USD 14,000) for each 1MC annually.

4. Overcoming challenges

Ensuring clinical quality

1MCs are within the networking of public primary care facility and doctors in the neighbouring government health clinic supervise the quality of care provided by 1MCs. A referral system is established for patients who require further management or expert
The performance of 1Malaysia Clinic is monitored weekly via email and the indicators are patient attendance and demography, the disease burden (diagnosis of cases seen), procedures and tests done; and number of case referrals. The findings of monitoring and achievement are discussed at national level in Family Health Technical Meeting twice a year. This achievement is benchmark against other 1Malaysia Clinics nationwide. A web based patient registration system is developed to improve data collection for better monitoring of 1MCs performance.

5. Monitoring and evaluation
- The performance of 1Malaysia Clinic is monitored weekly via email and the indicators are patient attendance and demography, the disease burden (diagnosis of cases seen), procedures and tests done; and number of case referrals. The findings of monitoring and achievement are discussed at national level in Family Health Technical Meeting twice a year. This achievement is benchmark against other 1Malaysia Clinics nationwide. A web based patient registration system is developed to improve data collection for better monitoring of 1MCs performance.
- Institutes of Health System Research (IHSR) studied effectiveness of 1MCs in 2013. The evaluation report also includes analysis of utilization rate and gauging patients' satisfaction via customer satisfaction survey.
- The growing numbers and demand for these clinics also demonstrates its success story. Fifty-three 1MCs were set-up throughout 2010, 33 in 2011, 78 in 2012, 80 in 2013 and 51 in 2014. In total, there are 307 1MCs nationwide including nine in Urban Transformation Centres, UTC and another 6 in Rural Transformation Centres, RTC. From January 2010 until December 2014, a cumulative attendance of more than 15 million patients was recorded.
- The scope of health services has also expanded with placement of medical officers in 1MCs and provision of additional care for Maternal and Child, Chronic Illnesses and Dental services. As such, the quality of service is comparable to the regular government clinics.
- The Implementation and Coordinating Unit of the Prime Minister's Department is carrying out outcome monitoring of development projects. To date, 1MCs in states like Kelantan and Federal Territory of Kuala Lumpur have been evaluated. The results show that the services in 1MCs are given in shorter waiting time and have met clients' expectations.

6. Conclusion
The World Health Organisation often cites Malaysia as having one of the best rural healthcare services, with strategically located rural clinics making quality healthcare accessible. The government in the spirit of inclusiveness and equity has developed the 1Malaysia clinics at reasonable cost with strategically located in residential areas and operating long hours, including after the usual office hours for convenience of the targeted clientele. This to cater to the plight and specific health needs of the urban poor, many of whom face various socio-economic problems, including access to quality healthcare. Facility development was accelerated by enhancing intra-agency and interagency collaboration, achieving the objective in record time and making quality healthcare accessible to those most in need. Its acceptance is attested by the increasing utilisation and requests for new 1Malaysia clinics.

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ASEAN WORLD AIDS DAY MESSAGES 2015

“The world has delivered on halting and reversing the AIDS epidemic. Now we must commit to ending the AIDS epidemic by 2030 as part of the Sustainable Development Goals.”

UN Secretary General, Ban Ki-Moon (UNGA 2015)

The global AIDS epidemic has been halted and reversed however AIDS is not over.

AIDS is an unfinished business. Big challenges remain to end the epidemic at the global level and this is true also for ASEAN Member States. Improving progress has been made in ASEAN Member States in the region; there is an overall downward trend in HIV prevalence among the key populations groups. However, some ASEAN Member States report increasing HIV prevalence among Men who have Sex with Men (MSM). Some ASEAN Member States also continue to report high HIV prevalence among female Commercial Sex Workers (CSW). The scaling up of anti-retroviral therapy (ART) has been remarkable in most of ASEAN Member States. However, there is much more to be done to increase access to treatment and to reduce the treatment gap in the region.

Currently domestic funding for HIV is below the threshold of 50% in 5 out of 9 ASEAN Member States reporting. Only approximately 30% of prevention expenditures are spent on key populations for the epidemic. We must Fast-Track the AIDS response within the framework of the Sustainable Development Goals (SDG) to end the epidemic as a global health threat by 2030. This means reaching UNAIDS 90-90-90 Fast-Track Targets by 2020;

- 90% of key populations for the HIV epidemic have access to combination prevention services;
- 90% of people living with HIV know their HIV status;
- 90% of people who know their HIV-positive status are on antiretroviral treatment and

- 90% of people on treatment have suppressed viral loads, ensuring they remain healthy and reduce the risk of HIV transmission; and
- 90% of people living with and affected by HIV report no discrimination, especially in the health education and workplace settings.

The next five years will require;

- Front loading investment and increasing the diversity of investment (both domestic and international) to ensure transitions towards sustainable HIV responses. It will be important to invest more on HIV Prevention, Testing and Monitoring of HIV treatment, viral suppression;
- “Investing for impact”: Focusing on areas, populations and programs with high potential for impact and strong value for money and addressing discrimination and gender inequalities. High burden cities should strive to provide model HIV services;
- HIV service delivery in the intensity and quality needed to reach the ambitious targets within the short time frame of the next five years;
- Innovative delivery mechanisms and partnerships to ensure no one is left behind, guaranteeing in particular HIV services for key populations; decentralizing and integrating services will make them more accessible and will support integral treatment, including Sexually transmitted infections, Tuberculosis, and Hepatitis;
- Ensuring commodity security at the correct price to sustain the AIDS response; and
- People centred, zero discrimination: Building solid political commitment for ambitious HIV prevention, treatment and human rights targets for 2020 and beyond.

The Heads of State and Government and High Representatives met at the United Nations Headquarters in New York from 25-27 September 2015 and adopted the Health and Development agenda for the period 2016-2030. The 17 Sustainable Development Goals (SDG) and 169 targets seek to build on the Millennium Development Goals (MDG) and complete what these did not achieve. The AIDS response is fully embedded in the new Sustainable Development Agenda, through clear linkages with the SDGs and the target to end AIDS by 2030. The epidemic cannot be ended without addressing the determinants of health, vulnerability and needs of people at risk and living with HIV.

The upcoming WHO Global Health Sector Strategy and the new UNAIDS 2016-2021 Strategy are fully aligned with the vision of Zero new infections, Zero aids related deaths and Zero discrimination. Both strategies have the goal of ending AIDS by 2030 with strategic milestones of <500 new infections, <500 aids related deaths and zero discrimination by 2020.

In a changing world, the next five years present a window of opportunity for us to leverage collectively our capacity to meet the challenges presented by HIV.

The June 2016, High Level Meeting on HIV will be an opportunity to showcase the progress made, discuss remaining challenges and demonstrate our collective solidarity to achieve the Goal of Ending AIDS by 2030. It will require the highest attendance of ASEAN Member States.

In this World AIDS Day, ASEAN Member States are paying tribute to the millions who have lost their lives and are acknowledging the great contribution of People Living with HIV and working on HIV around the world.

By ASEAN Task Force on AIDS 2015
This Logo was created by ASEAN Task Force on AIDS (ATFOA) focal points of Malaysia for the ASEAN Cities Getting To Zero Project that operationalises the ASEAN Declaration of Commitment: Getting to Zero New HIV Infection, Zero Discrimination, Zero AIDS-Related Deaths at the community level. This Declaration was adopted by the ASEAN Leaders at the 19th ASEAN Summit held in November 2011 in Bali, Indonesia.

The ASEAN Cities Getting to Zero Project was started in 2012 and initially piloted in 13 cities/sites of 8 ASEAN Member States namely:

1. Cambodia: Battambang City
2. Indonesia: Badung, Denpasar and West Jakarta
3. Lao PDR: Hardxayfong District of Vientiane Capital & Saysettha District of Vientiane Capital
4. Malaysia: Historical City of Melaka
5. Myanmar: Mawlamyaing city at Mon State
6. Philippines: Quezon City
7. Thailand: Payao Province & Bangkok
8. Viet Nam: Can Tho City & Danang City

Up to 2015, the project has been expanded to more than 50 areas/cities in ASEAN.

The different parts of the logo signify relevant meanings to the implementation of the Declaration through the Project. These are:

- **RED RIBBON**
  The red ribbon is internationally recognized as a symbol of the struggle around HIV/AIDS. It is a symbol of solidarity and a commitment to the fight against HIV/AIDS. It symbolizes care, concern, hope, and support.

- **‘O’**
  ASEAN CITIES aim to achieve the targets:
  
  **ZERO**
  
  - New HIV Infections
  - AIDS – Related Death
  - Discrimination
During the 28th Meeting of the ASEAN Working Group on Pharmaceutical Development (AWGPD) held last December 11-13, 2012 in Brunei, the ASEAN Member States (AMS) agreed to conduct a situational analysis on the Rational Use of Medicines (RUM), with the Philippines as the lead country.

In January 2013 to obtain comments and ensure that the tool is appropriate to the ASEAN setting. For the ASEAN study, the questionnaire was modified to include a question on why respondents considered the irrational use of medicines as a problem in their respective countries (Question 1.1.235). The questionnaire was finalized in March 2013.

Rational Use of Medicines (RUM) was identified as a priority agenda under the ASEAN work plan on pharmaceutical development 2011-2015. This focus on RUM comes at a time when health systems in the ASEAN region face increasing challenges for high-quality health care because of ageing populations, emerging communicable and non-communicable diseases, increasing population incomes and health literacy and demands for new medicines and other health technologies.

The ASEAN RUM Study is one of the subcomponents of the Work Plan of the AWGPD. The AWGPD is tasked to assess the impact of pharmaceuticals on public health and improving access to quality medicines and healthcare services.

In this study, it was revealed that the ASEAN Member States (AMSs) were consistent in the establishment of national essential medicines lists (EMLs), the selection of medicines for the EMLs through a formal committee, and the processes used (i.e., explicitly documented criteria) in this selection. They were also in agreement with the establishment of legal provisions on the licensing and prescribing practices of prescribers and the mandatory use of international nonproprietary name (INNs) in the public health sector.

Several inconsistencies among AMSs however were identified through the rapid assessment. The identified inconsistencies or gaps pertain to the following policies and practices relevant to RUM:

- Availability of national EMLs to the general public
- Availability of national EMLs in public health facilities
- Bases for inclusion of medicines in national EMLs
- Operational processes of formal EML committees
- Development, alignment, and availability of standard treatment guidelines/clinical practice
guidelines (STGs/CPGs)
- Other national structures/initiatives to promote the rational use of medicines
- Regulations on dispensing by prescribers and pharmaceutical personnel
- Use of INN in the private sector
- Establishment of drug and therapeutics committees (DTCs) in hospitals
- Code of conduct for doctors, nurses, and pharmacists
- Inclusion of RUM components in training curricula
- Mandatory continuing education on pharmaceutical issues
- Information gap in prescribing practices in public health facilities
- Policy on generic substitution
- Dispensing without prescriptions
- Prescribing practices of non-physicians at the primary care level

RUM needs to be in the policy framework of the ASEAN Member States to contribute to the overall goal of improving health and quality health care across the ASEAN. Political will is necessary to implement multiple interventions directed at different stakeholders including prescribers, medicine dispensers as well as patients and consumers. Better use of medicines anchored on well-supported national programmes will not only lead to greater health security amongst AMS but will also gain future economic benefits in terms of savings from reduced out-of-pocket spending and prevention of extra health care costs arising from the harm to patients and health care systems by the irrational use of medicines.

A separate study on antimicrobial resistance (AMR) will be conducted by the Philippines and Malaysia to focus on the regulatory measures to control and monitor sales as well as the use of antimicrobial agents in both human and animals.