Strengthening Country Capacity on Maternal and Perinatal Death Surveillance and Response

Report of a South-East Asia Regional Meeting 16–18 February 2016, Maldives

World Health Organization
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CONTENTS

ACRONYMS

CAF	Country Accountability Framework	MDG	Millennium Development Goal
CBMDR	Community-based maternal death review	MDR	Maternal death review
CDSR	Child death surveillance and response	MDSR	Maternal death surveillance and response
CEMD	Confidential Enquiry of Maternal Death	MH/RH	Maternal health/reproductive health
CoIA	Commission on Information and Accountability	MMR MNCH	Maternal mortality ratio Maternal, newborn and child health
CRVS	Civil registration and vital statistics	MPA	Maternal and perinatal audit
DoHS EmOC	Department of Health Services Emergency obstetric care	MPDSR	Maternal and perinatal death surveillance and response
FBMDR	Facility-based maternal death review	NMR	Neonatal mortality rate
FHD	Family Health Division	NOR	National obstetric registry
HIS	Health information system	QoC	Quality of care
HMIS	Health management information system	SEAR	South-East Asia Region
ICD	International classification of diseases	SDG	Sustainable Development Goal
ICD-PM	ICD-perinatal mortality	SRH	Sexual and Reproductive Health
MCA	Maternal, child and adolescent	VA	Verbal autopsy
MCH	Maternal and child health	WR	WHO Representative

EXECUTIVE SUMMARY

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Every day, approximately 830 women die from preventable causes related to pregnancy and childbirth; 99% of all maternal deaths occur in developing countries. Between 1990 and 2015, the global maternal mortality ratio (MMR) (the number of maternal deaths per 100 000 live births) declined by only 2.3% per year. Despite significant reduction (of more than 60%) in maternal and child mortality, our Region missed achieving Millennium Development Goals (MDGs) 4 and 5. Further, a relatively slower reduction in neonatal mortality has been of particular concern for the Region. In response, a *Regional flagship* priority has been established for ending preventable maternal and neonatal mortality. To advance the flagship, the *Regional Meeting to Strengthen Capacity on Maternal and Perinatal Death Surveillance and Response* (MPDSR) was held in Maldives on 16–18 February 2016 to fortify the South-East Asia regional capacity and support country-level actions for maternal and perinatal death surveillance and response (MPDSR) to end preventable maternal and perinatal deaths. An MPDSR package was developed and disseminated during the meeting with an aim to have a successful adoption and baseline implementation in five countries with a target of covering all 11 countries by 2020. This was built on the former approach of *maternal death reviews (MDRs)* and *subsequently maternal death surveillance and response (MDSR)* systems, endorsed since 2004 with the launch of 'Beyond the Numbers'.

The Maternal Death Surveillance and Response (MDSR) is a key intervention for reducing maternal mortalities that has been promoted by WHO and partners since 2013; to prevent future maternal deaths and improve the measurement of mortality and response to calls for ending preventable deaths requires better measurement and better information. Country ownership of data in real time connects actions to results and permits true measurement of this intended impact. Successful and complete MPDSR will enable member countries to strengthen national civil registration and vital statistics (CRVS), quality improvement and other health information systems (HIS). Tracking progress on mortality rates is notoriously difficult, and is primarily estimates, given the lack of reliable vital registration. Birth registrations are incomplete and further still, death registration and cause of death assignment is appalling. An overview on the maternal and perinatal health situation in the South-East Asia Region (SEAR) shows that with an estimated *37 million births annually*, the Region still has *61 000 maternal deaths* and *894 000 neonatal deaths.*

Long-term investments in vital registration and national health information at national and subnational level systems increase government accountability. Investing in maternal and child health (MCH) is both a wise health and economic policy decision with triple gains by investing specifically in 'at birth care'. The meeting brought together partners that advocated for better data collection at the regional and national levels beyond retrospective estimates intermittently generated from academia or disjointed projects on routine counting, death investigation and subnational data analysis. MPDSR includes a recurring approach to death identification, reporting, review and response essential to stimulate and guide actions at the local, health-facility and district levels, as well as make maternal and perinatal death visible at both local and national levels. The MPDSR meeting provided an opportunity for all SEAR countries to develop a 5-year term plan, a 3-year term plan and a plan for 2016 for implementing and expanding MPDSR in each country. The key message in expanding MPDSR was: "Think big, start small and grow slowly".

INTRODUCTION

Introduction

The death of a mother is a tragedy that has a huge impact on the overall well-being of the family. Our vision that "no woman should lose her life when giving birth",[1] reflects a basic human rights perspective on maternal mortality. Not only is the survival and growth of her children, particularly infants, severely affected, but also every mother's death lessens society at large. Of the eight United Nations MDGs, the goal of reducing maternal mortality is one that remains the farthest from its target.[2, 3] Nearly all of these deaths are preventable and should be eliminated, as called for by the Commission on the Status of Women.[4] A critical component of any population level mortality reduction strategy is a surveillance system that not only tracks the number of deaths, but provides information about the underlying factors contributing to them, and how they should be tackled. MDSR is a model of such a system.

MDSR is a key intervention for reducing maternal (and newborn) mortalities that has been promoted by WHO and partners since the last few years. In 2010, the Global Strategy for Women's and Children's Health 2010–2015 was launched by the Secretary-General of the United Nations to accelerate progress towards achieving MDGs 4 and 5.[5,6] The Commission on Information and Accountability (CoIA) was established to develop a framework for reporting and accountability for the Global Strategy for Women's and Children's Health; and one of the priority recommendations of the CoIA in 2011 was to take significant steps to establish national systems for registration of vital events, such as births, deaths and causes of death.[4]

The inability to consistently and precisely measure population-level mortality trends adds to a lack of accountability and, in turn, to lack of progress. MDSR systems are not yet reliably operational in all our member countries, but the potential added value for policy-making and accountability demonstrated through the meeting can build on the existing efforts to conduct MDRs, verbal autopsies (VAs) and confidential enquiries, and more importantly introduce perinatal mortality occurring in conjunction as well. There is an increasing recognition of the need to consider maternal and newborn services and care together as a 'package' because we know that many of the same underlying factors lead to both maternal and perinatal deaths; the MPDSR meeting arbitrated by WHO-SEARO was a landmark convening to this end.

Through country presentations on various aspects of MDR/MDSR implementation in five countries –Bangladesh, India, Indonesia, Myanmar and Nepal – it was evident that the momentum is there. Inputs from the United Nations Population Fund (UNFPA), the partner agency in implementing MDSR in countries, and success stories from Maldives, Tamil Nadu and Malaysia, have helped in evaluating the magnitude of maternal and perinatal mortality further to compel policy-makers and decision-makers to give the problem the attention and responses that it deserves. The linkage between MDSR and improving quality of maternal and perinatal care was also delineated. In a roundtable discussion, the different partners provided various aspects of collaboration and future plans in supporting MPDSR implementation in countries. Poster sessions highlighted the MDR/MPDR current implementation status in SEAR countries. The importance of linkages between MDSR/MPDSR and HIS/CRVS vis-à-vis concepts of HIS, CRVS and their linkage with MPDSR were emphasized along with discussions on standards for identifying cause of deaths and the advantages/disadvantages of using technological innovations such as mobile applications for advancing MPDSR and HIS.

The issue of lack of capacity among medical professionals in areas of International classification of diseases (ICD) coding was also highlighted. The need to strengthen collaboration with other relevant sectors for effective integration of national HIS, including CRVS and MDSR, was discussed and emphasized. As few countries have transformed information on maternal and perinatal deaths from paper-based to web-based information; it was noted that it is important to share such experiences with other SEAR countries.

The launch of the MDSR technical guide by WHO and partners (UNFPA, CDC, FIGO, E4A, DFID UK, International Stillbirth Alliance, Canadian Network for Maternal Newborn and Child Health, and ICM) was published in 2013. It evolves from the MDRs that focus more on the methods of death reviews and was promoted since 2004 with the launch of 'Beyond the Numbers'. The MDSR guide contributes to better information for action by promoting routine identification and timely notification of all maternal deaths, review of maternal deaths, implementation of actions based on recommendations of the death reviews and monitoring of actions taken to prevent similar deaths in the future. Currently, the MDSR will be expanded to include reviews of the perinatal period – from MDSR to MPDSR.

OBJECTIVES

Objectives of MPDSR

The overall goal is to eliminate preventable maternal and neonatal mortality in the Region. The primary goal of MDSR was to eliminate preventable maternal mortality by obtaining and using information on each maternal death to guide public health actions and monitor their impact.[6] MPDSR expands on ongoing country efforts to gather information that can be used to develop platforms and evidence-based interventions for reducing maternal and neonatal morbidity and mortality, and improving access to and quality of care (QoC) that women receive during pregnancy, delivery – at the time of birth. Although, the precise nature of this information will vary from country to country, the meeting helped to generate specific recommendations and actions, and improve the evaluation of their effectiveness.

General objectives:

To strengthen regional capacity to support country-level actions for MPDSR to prevent maternal and perinatal deaths.

Specific objectives:

- review progress and challenges in implementation of MDR/MDSR in member countries;
- orient and familiarize programme managers in different aspects of MPDSR;
- discuss plans for implementation of MPDSR at national/subnational levels.

INAUGURATION

Induction of a paradigm shift from MDG to SDG

The inauguration session began with a welcome address by WHO Representative, Maldives, Dr Arvind Mathur, to more than 100 participants (Annex 2). The SEA Region contributed about 30% of the global newborn deaths in 2015, with 75% of the regional newborn deaths occurring in India alone (700 000 per year), while Bangladesh and Indonesia each contributes 74 000 deaths, Myanmar 24 000 deaths and Nepal 12 000 deaths per year. The number of stillbirths is usually similar to the number of newborn deaths. These data clearly reflect the challenging situation. MDSR responded to MDG 5, to reduce the MMR by three quarters, but the Region failed to achieve MDGs 4 and 5, despite significant advances. To accelerate progress, the Secretary-General of the United Nations launched the Global Strategy for Women's and Children's Health in September 2015.[5]

As we transition from the MDGs to the Sustainable Development Goals (SDGs), women's, children's and adolescents' health must be at the centre if we are to finish the MDG agenda and drive the transformative change envisioned by the SDGs. As a first step in the efforts to reduce maternal and perinatal deaths, it was emphasized that it is important to track these deaths with reliable methodology and sources, which is still a great challenge in many SEAR countries. Vital registration as the 'gold standard' of counting deaths is either weak or not in place. As this is crucial for tracking progress towards their reduction, WHO promotes surveillance of these deaths to ensure that the numbers of the reported deaths in countries are as close as possible to realities and timely reported, both deaths in health-care facilities and those that occur in the community. This often requires collaboration with local government and participation of communities using information technology.

Further, knowing the numbers of deaths is not sufficient, as is to understand that underlying factors can provide indications on how to address the causes and determinants that lead to death. Valuable information can be drawn from reviewing death cases in the efforts to design interventions, as responses for getting better results and impact in reducing these deaths and improving QoC. Identification of social determinants of health around these deaths can also provide specific directions on how to collaborate with relevant sectors and

partners locally in any particular issues, as well as how to empower couples, families and communities.

The meeting inaugurated by the Honourable Minister of Maldives marked a historic event as SEAR became the first Region to expand MDSR to MPDSR in an innovative way to cumulate efforts towards the same end goal. In her remarks, the Minister shared the progress report on Maldives, which has achieved MDGs target for maternal and newborn health. “The maternal mortality ratio (MMR) has been reduced from 259 in 1990 to 41 per 100 000 live births in 2014” – she said. “This was the results of, among others, provision of equitable, accessible and acceptable health services across the islands, including the universal health insurance scheme”. Now, the Government places newborn health as a new focus by expanding essential newborn care that is backed up with a newborn intensive care unit in hospitals.

Having more accurate information will help ensure that, first, all deaths are counted, and more important, reviewed to understand how to prevent future deaths, so that actions are taken at all levels to implement the recommendations produced by this comprehensive process.

REGIONAL OVERVIEW

Regional overview on maternal and perinatal health

Chaired by Dr Wame Baravilala, maternal health/reproductive health (MH/RH) Adviser, for UNFPA Asia and Pacific Regional Office (APRO) and Dr Kyoko Shimamoto, Regional Maternal, Newborn and Child Health (MNCH) Specialist, UNICEF, East Asia and Pacific Regional Office, elucidated that the current convergence of miscellaneous factors including political will, technical innovations, human capital mobilization and financial resources provides the perfect opportunity to make a system like MPDSR a reality for SEAR countries.

Dr Neena Raina, Coordinator, Maternal, Child and Adolescent (MCA) Health, WHO-SEAR highlighted the challenges of the Region related to maternal and perinatal health. While the Region contributed to 26% of the world's population, it contributed 36% of the global births (more than 37 million births annually), 61 000 maternal deaths, and 894 000 neonatal deaths and about a similar number of stillbirths.[8] It was noted that those deaths are preventable. Although there has been more than 60% decline in maternal mortality since 1990, it was less than expected to be achieved by 2015.[8] The neonatal mortality rate (NMR) has declined only by 55%, with major causes being prematurity (48%), asphyxia (23%) and sepsis (20%). Stillbirth rates ranged from 4 (Thailand) to 36 (Bangladesh) per 1 000 total births.

There are wide disparities in all countries in maternal and perinatal death figures based on rural- urban dwelling, mother's education and age, as well as wealth quintile that vary among countries.[9] These disparities are also reflected in the coverage of maternal and perinatal health services among and within countries. One of the highest disparities is usually found in the coverage of skilled care at birth. It was emphasized that focusing interventions around childbirth has a triple return: reducing maternal and newborn deaths, as well as stillbirths. It has the highest impact on saving three million lives per year and highly cost-effective with the running cost of only US$ 1.15 per person.[10]

Of newborn deaths, 70% can be prevented by high-quality coverage of essential care and nearly 80% of neonatal deaths are prematurity related, and about 50% depend on maternal care.[8] Besides coverage and equity gaps across the countries, there are quality and accountability gaps. Interventions are often delivered with suboptimal quality and this leads to poor survival rates. Accountability gaps are characterized by weak HIS, incomplete birth and death registration, missing data

on stillbirths and inadequate review of maternal and perinatal deaths, and relevant actions to prevent similar future deaths.

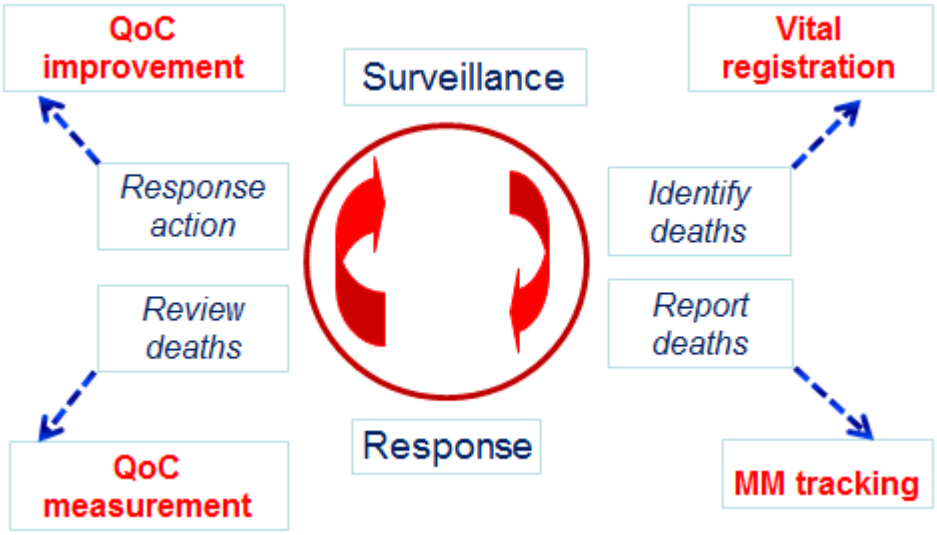
New and exciting opportunities for using numerous mobile and web-based information, and communication technologies have the potential to help countries improve birth and death registration systems.[11] There are regional initiatives, which focus on ending preventable maternal-newborn deaths and stillbirths, such as the establishment of SEAR Technical Advisory Group (SEAR-TAG) on Women's and Children's Health, which issued a 'Joint Statement on Ending Preventable Maternal, Newborn and Child Mortality' signed by representatives from partner agencies. The regional priority actions are i) facility childbirth and immediate postnatal care; ii) facility and home-based care of small and sick newborns; and iii) postnatal care for mothers and newborns. These are operationalized through i) increased service coverage with equity; ii) good QoC at all levels; and iii) improved measurements for monitoring progress and accountability. There are six priority countries in SEAR: Bangladesh, India, Indonesia, Myanmar, Nepal and Timor-Leste.

Dr Matthews Mathai, the Coordinator, Epidemiology, Monitoring and Evaluation, MCA Department, WHO-HQs, shared the technical document on "Maternal Death Surveillance and Response: Global Progress in Scaling-up". In the post-MDGs era in 2000–2015, the SDGs set the target of reducing MMR to less than 70 per 100 000 live births by 2030. To end preventable maternal mortality, there are two requirements:

i. to provide information that effectively guides actions to end preventable maternal mortality at health facilities and in the community; and
ii. to count every maternal death – an assessment of the true magnitude of maternal mortality and the impact of actions taken to reduce it. This is a prelude for explaining the MDSR.

Dr Mathai described MDSR as a form of continuous surveillance linking the HIS and quality improvement processes from local to national levels. It includes the routine identification, notification, quantification and determination of causes and prevention of all maternal deaths, as well as the use of this information to respond with actions that will prevent future deaths. "S" focuses on surveillance for a rare but important problem and "R" focuses on the response – the action portion of surveillance. MDSR builds on MDR and underlines the critical need to respond to every maternal death. It is reflected in the MDSR continuous action cycle, as reflected in Figure 1.

Figure 1. MDSR: A continuous action cycle



This approach amplifies the innovation in statistical reporting, and concurrently improves response mechanisms to evade future deaths. Over the past, many countries including those in SEAR, have introduced this action-oriented review mechanism, often described under several names, such as maternal death enquiry, review or audit. The main advantages are as follows:

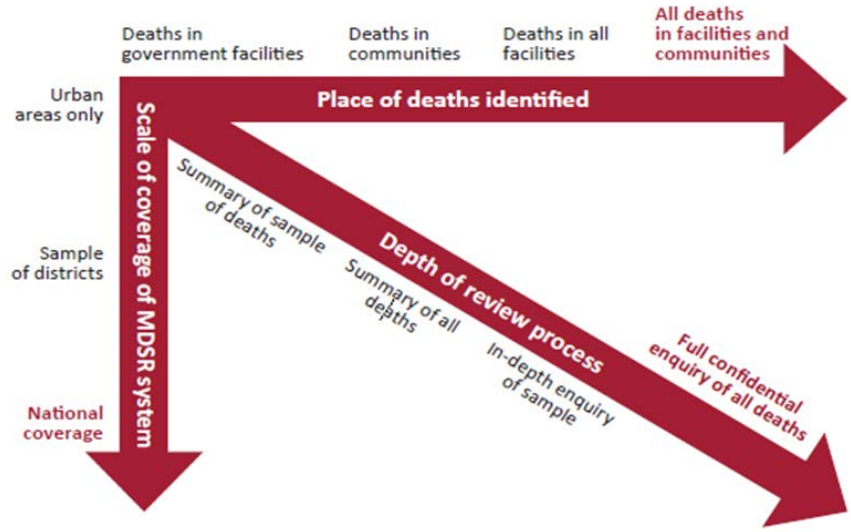
i. ending preventable deaths requires better measurement and better information;
ii. MDSR provides information for action to prevent maternal deaths at local, health facility and district levels;
iii. makes maternal death visible at local and national levels;
iv. sensitizes communities and facility health workers;
v. country ownership of data in real time;
vi. connects actions to results – permits measurement of impact; and
vii. successful MDSR helps strengthen national CRVS, quality improvement and other HIS.

MDSR progress in implementation in high-burden countries in 2012 and through global, regional and subregional orientation workshops for MDR experts in 2012–2014 has been varied so far. It was noted that 34 countries have policy requiring maternal death notification within 24 hours (79% increase) in 2014 and 53 countries have policy requiring all maternal deaths to be reviewed (66% increase). A survey was conducted through sending questionnaires to countries through

WHO and UNFPA regional offices in 2015, including countries in SEAR, with results uploaded by each country profile in the WHO-MDSR website: www.who.int/mdsr.

The importance of linking MDSR and other surveillance programmes, such as integrated disease surveillance reporting, health management information system (HMIS) and civil registration, and vital statistics is key. With better reporting, number of deaths may increase first before it falls. It was noted that most countries are committed to transform MDR into MDSR, by strengthening the "S" part (surveillance to identify, notify and report all maternal deaths) and the "R" part (review of all deaths and carry out actions based on the death reviews as responses). These are great challenges, as they require strengthening of the health system; thus, countries should take a phased approach, as illustrated in Figure 2.

Figure 2. Dimensions for MDSR



There are three dimensions of a phased implementation and scaling-up of MDSR approach: place of death identified; depth of review process; and scale of coverage of MDSR approach. There is another dimension that could be considered, which is the events, e.g. near-miss maternal cases, perinatal deaths and neonatal morbidity. Countries are at different phases in preparing the implementation of MDSR, such as starting to establish required policies and MDSR committees at the national/subnational levels, developing plans for implementation and MDSR guidelines, linking reporting of deaths with HIS and CRVS, and identifying pilot areas.

Dr Ardi Kaptiningsih, Consultant to MCA, WHO-SEARO, presented the "Overview of MDR/MDSR Implementation in South-East Asia Region". She began with highlighting the milestones of MDSR implementation in SEAR from 2003 to 2015. The implementation of MDR, as one of the main components of MDSR, varies among countries. In a way, MDR provides a good ground for establishing the MDSR approach; however, in many countries, quality and timeliness, as well as management of data require strengthening. The link between results of the reviews and actions undertaken are not always clear. Also, the overall management and processes of MDR require improvement. Sri Lanka and Thailand have made efforts from the beginning to link MDR activities with CRVS and HIS.

The MDSR gaps in countries were highlighted based on the WHO-UNFPA global survey on MDSR implementation. The results of the survey show that although most countries have established required structures for starting to implement MDSR, the functioning of the structures require special attention. For instance, despite that 10 out of 11 countries in SEAR have established a national MDR-MDSR Committee, only three countries have a national committee that meets at least twice a year.

MDSR is one of the seven components of the Country Accountability Framework (CAF). It is interlinked with all six other components of CAF, namely: i) CRVS; ii) monitoring of results; iii) innovation and eHealth; iv) monitoring of resources; v) review processes; and vi) advocacy and outreach. Each component has subcomponents that need to be carried out synergistically within and across components. This was highlighted briefly for four SEAR countries (Bangladesh, Democratic People's Republic of Korea, Indonesia and Nepal), showing the importance of coordination and collaboration among relevant health programmes and sectors. Many of the subcomponents in each component in these countries still need strengthening.

It is important to address the challenges and gaps in implementing MDSR by considering a phased approach, as reflected in Figure 2, while adding perinatal death reviews in all countries. The latter would be consistent with the Every Newborn Action Plan developed by countries. Capacity-building in implementing MPDSR through learning by doing and linking each component of MDSR with other programmes and initiatives, including QoC. These require involvement of various stakeholders, including communities. Monitoring, its mechanisms and selection of appropriate indicators are critical in ensuring the success of MDSR implementation.

A rich discussion on country issues ensued. Although Sri Lanka has done well, it requires efforts to sustain the status, which depends on the behaviour and commitment of people, as otherwise, QoC would not be improved. It was noted that to start small is important rather than to start big from the beginning. Every country is unique, as there are countries with very large populations, others with very small populations. Their needs and options are very different; however, sharing of information and experiences among countries can be useful and inspiring. The role of the private sector in a country with a large population is very important; therefore, the private sector should be involved from the beginning. Many aspects of social determinants of health would be revealed while reviewing death cases when the data collected are adequate.

PROGRESS & CHALLENGES

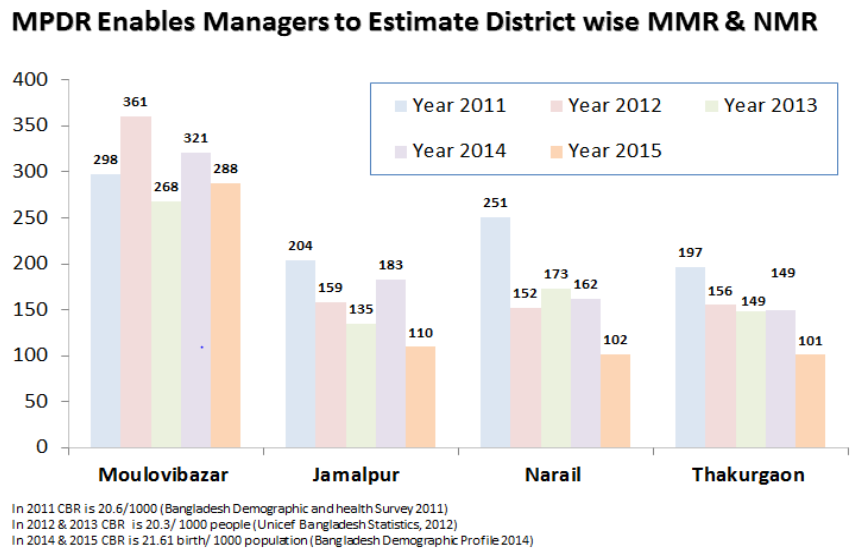
Implementing MDR/MDSR in SEAR countries: progress and challenges

Bangladesh

Dr Altaf Hussain, National IMCI Coordinator, talked about "Scaling-up of MPDR and Learning from CRVS Piloting" with a highlight on MNCH status of the country with almost 160 million inhabitants. In 2014, the MMR was 176 per 100 000 live births (5 200 deaths per year), NMR 28 per 1000 live births (76 000 per year) and stillbirth rate was 36 per total births (114 000 per year). There are wide disparities among districts in Bangladesh. Facility and community-based MPDR was initiated in one district in 2010 with UNICEF support, which was then expanded to 13 districts and another district supported by Save the Children. It was planned that country-wide expansion will take place gradually during 2016–2021.

The key findings show that the number of neonatal deaths and/or stillbirths can be more than 15 times higher than maternal deaths, as reflected in Graph 1, but MPDR enables managers to manage data on MMR and NMR. There are variations on the number of deaths among the four districts, which depend on the size of the population, as well as the rate of deaths in each district. MPDR provides data that are critical to policy, such as timing of maternal deaths in 10 districts in 2013–2015; reviews of 1309 maternal deaths showed that almost half died within six hours after delivery. This was a call for policy shift to 100% facility delivery.

Graph: 1. Reported deaths in four districts, Bangladesh, 2011–2015



Facility delivery alone is not sufficient. It has to be provided with good QoC. From the death reviews, it was found that of 1560 cases, 38% occurred in health facilities. The analysis of 1811 neonatal deaths from 10 districts showed that 40.5% of deaths occurred in health facilities. Also, of the newborns that died, 39% were born at health facilities.

The facility-based reviews are linked to quality improvement, while VA supports analysis on the medical and non-medical causes of deaths and 'social autopsy' with community groups triggers community actions. The overall MPDR activities facilitate health system response. Death mapping is also carried out to identify areas with a high incidence, which triggers health system response and improves health managers' accountability. The scaling-up of MPDR can also replace costly maternal mortality survey, especially when health managers gradually become confident to report all maternal and perinatal deaths. Local actions based on MPDR recommendations and mapping of deaths can cut down significant maternal and perinatal deaths. Such success stories are documented in the MPDR Newsletter and also published in a scientific online website.

In Bangladesh, to scale up and maintain sustainability, the following actions are taken: i) simplification of VA tool and integration with HIS; ii) development of MPDR guideline; iii) training of MPDR; iv) establishment of Regional Medical College Hospital as resource hub; v) strengthening collaboration with partners: UNICEF, WHO, Safe the Children, KOICA, USAID and BMGF; and vi) strategic linkage with CRVS – still on pilot bases in two districts – on checking the numbers and causes of death.

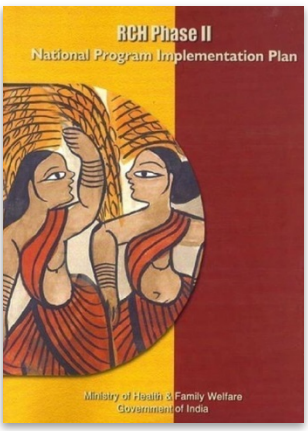
It was reported that the challenges faced by Bangladesh, among others, are in capturing 100% deaths, identifying stillbirths and newborn deaths, establishing an immediate death notification system and motivation of health staff in hard-to-reach areas. To strengthen linkage with CRVS, it was recommended to establish a registrar general, develop shared data and citizens' ID, improve coordination across agencies and reform laws as appropriate.

India

MDR and response in India is included in the national RCH II Programme. It includes conducting maternal death audit at hospital and community levels, and development of tools for audit and reporting. There was a fragmented approach to MDR in states, such as in Tamil Nadu, Kerala, Gujarat and three UNICEF-supported states – Madya Pradesh, Rajasthan and Odisha. A national workshop was conducted in 2009 to share experiences. This was then followed by the development of operational framework for MDR and MDR guidelines and tools, which was distributed in 2010.

Of the 44 000 estimated number of maternal deaths in India in 2014–2015, 18 445 were reported (42%); however, there was a wide variation across states, e.g. ranging from 5% (Bihar) to 96% (Haryana). Of the reported deaths, 64% came from facilities and the rest came from communities. The number of maternal deaths reviewed were 14 120 (77% of the reported deaths), which also varied across states. Based on analysis of reviews of 2021 deaths from eight states using MDR software, the majority of deaths (62%) occurred in health facilities.

The guidance note for programme managers was developed and shared with states in 2012. Sources of maternal death data are state monthly reports, HMIS, mother and child tracking systems and MDR software in 10 states. Some states have well-established processes for conducting MDR, such as in Kerala and Tamil Nadu, which use confidential enquiry method. Maternal near-miss review is also conducted in states with a small number of maternal deaths. Operational guidelines for introduction of such approaches were developed and disseminated.



The issues and challenges faced by India, among others, are irregular and underreporting, lack of consistency across different reports, multiple systems of reporting, poor data quality, weak community-based maternal death review (CBMDR), lack of focus on system gaps and non-medical causes in facility-based MDR while most causes categorized as 'others', and states' capacity to convert findings into action requires strengthening. Recent reviews supported by WHO in five states revealed that deaths occurred in urban areas and private facilities, and deaths among migrant populations were frequently missed. Also, women were

referred to higher facilities in critical conditions, leading to deaths during transit. Poor patient records often hampered the review process, while MDR software requires modifications to make it more user-friendly. The MDR meetings at state/district level were infrequent and superficial in many cases.

The current initiatives on MDR include revision of guidelines and reporting structure, streamlined and integrated. Facility-based MDR are strengthened by inclusion of confidential enquiry and causal analysis, while CBMDR will also be improved. Monitoring and supervision are being improved and national and state MDSR monitoring teams are to be established, as well as MDSR Task Force. A study on linking MDR and CRVS will be carried out.

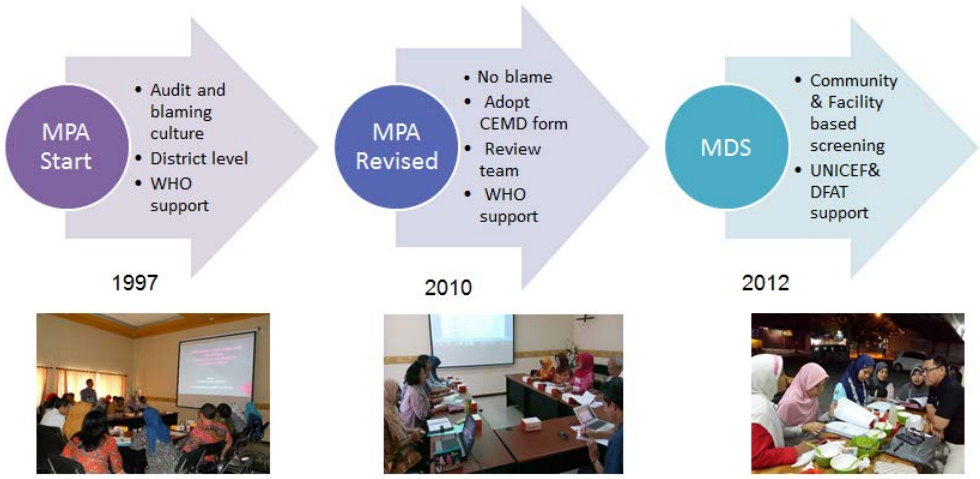
Indonesia

Dr Imran Pambudi, Chief, MH Section, MoH, highlighted the maternal-perinatal health situation of the country with 255.1 million populations. In 2012, the MMR was 359 per 100 000 live births, and NMR 19 per 1000 live births (95 300 per year), and stillbirths were 62 300 in 2009. There has been some progress on key indicators; however, when the data are disaggregated by social stratifies, there are inequities among districts. MDSR is included in the Operational Strategy of Maternal Health National Work Plan 2016–2030. There are initiatives that have been implemented in various provinces and can be transformed into MDSR, such as maternal death surveillance (MDS), MCH local area monitoring, maternal and perinatal audit (MPA), district team problem solving and supportive supervision.

The MPA activities started in 1997 and the guideline was revised in 2010 to ensure non-punitive approach and improve forms (see Figure 3). MDS was then piloted to capture all maternal deaths, causes, characteristics and trends. The MPA cycle and MPA data flow were highlighted, although no data on the results of MPA were shared.

The mechanism of reporting in MDS and the form used, as well as recording and reporting in MCH programme was shared. Steps in the development of CRVS that is targeted to achieve a full vital registration in 2024 and its data flow were outlined.

Figure: 3. Progress of MPA in Indonesia, 1997–2012



The challenges, among others, are i) levels of implementation vary between areas as well as lack of report and documentation; ii) impunities and confidentiality require strengthening; iii) poor selection of cases to be reviewed; therefore, the recommendations might not touch the key issues in the area. At the end of the presentation, the way forward was outlined: i) review of the existing recording and reporting of maternal death towards MPDSR implementation that linked to CRVS; ii) strengthen the capacity of the reviewer team in province and district levels, using ICD coding for cause of death; and iii) policy analysis and formulation of MPDSR framework, including establishment of a national MPDSR Committee.

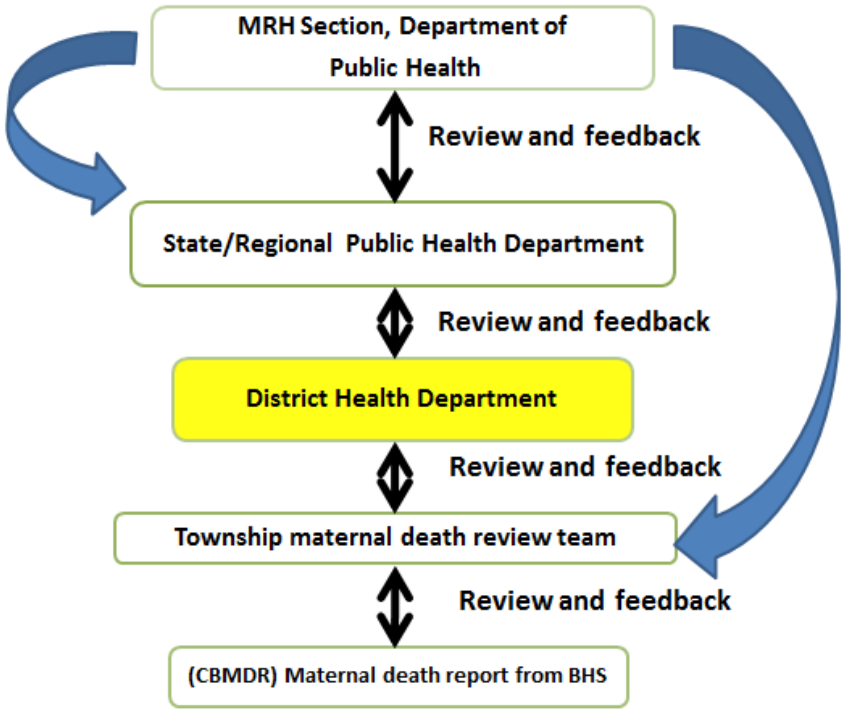
Myanmar

Dr Phyu Phyu Aye, Deputy Director, MCH Department, MoPH, started her presentation on "Progress and lessons learned from MPDR" with a true story of a maternal death with a high blood pressure in Delta Region who died at home. The sad story has ignited community actions to raise funds for referral. This highlighted the importance of involving communities. She then highlighted the reduction of MMR from 453 in 1990 to 178 per 100 000 live births in 2015; however, there are wide disparities across townships with a total maternal deaths of 2797 in 2014. The main causes of death were then elaborated. CBMDR was initiated in 2005 in five townships, while facility-based MDR in teaching hospitals was started in 2012. Guidelines and forms were developed with support from WHO, UNFPA and UNICEF. Technical guide and training manual have been developed also for child death surveillance and response (CDSR). The current reporting system of MDR and CDSR was then explained.

The strengths of the MCH programme were outlined, which include initiation of RMNCAH as a comprehensive and harmonized approach with dedicated staff at all levels. Capacity for monitoring programme is strengthened, while health budget is increasing gradually for development of infra-structure, including labour rooms at rural health centres. Funds for MDR and CDSR have been made available since 2015. These activities are carried out in collaboration with a professional organization.

The weaknesses faced in implementing MDR are lack of regular monitoring and feedback mechanism from central to district, insufficient health human resources at every level, delayed reporting, lengthy forms, uncertain activities for VA at community level, causes of deaths are not clearly stated and limited review on stillbirth. There are also geographically hard-to-reach areas and hard-to-reach populations, such as dwellers of periurban slums. There are limitations on transport and communication systems and health literacy of community.

Current Reporting System of MDR



The way forward includes advocacy at various levels, coordination with CDSR activities and related sectors, establishment of committees, development of

national guidelines and formats for MDSR, publication of annual MDSR report, conducting training workshops for MDSR and strengthening monitoring capacity. Also, community meetings at rural health centres for notification of every maternal and newborn death will be carried out and integrated in routine surveillance reporting system. Recognition of best practices is an important aspect to be promoted.

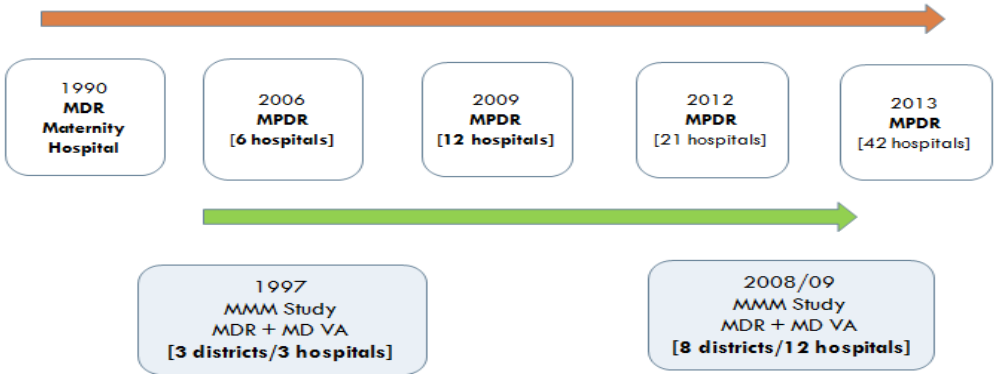
Nepal

Dr RP Bichha, Director, Family Health Division (FHD), Department of Health Services (DoHS), talked about "Implementation and Scale up of MPDSR" by highlighting the country background and policies and strategies to improve MH. Nepal is one of the countries in the Region that met the MDG 5 goal of reducing the MMR by one fourth by 2015. The country has a declining MMR (190 per 100 000 live births in 2014) with increasing the coverage of institutional delivery (55% in 2014).

It was noted that there has been a shift in the place of death during the period of 1998 to 2008/2009, e.g. from 67% at home to 40%, and from 21% at a health facility to 41%. There has been a move from MDR to MPDR as illustrated in Figure 4. Hospital-based MDR process was outlined, which includes MDR Committee meeting within 72 hours to identify causes of death and avoidable factors, and make recommendations for corrective actions as a response. These are then to be followed up at the facility level. Also, data entry into a web-based system is carried out and analysed by FHD, MoH, as aggregate data, which are then sent to facilities as feedback and disseminated to national and international forum. A national MDR Committee meeting provides feedback to policy, strategy and programmes. The results of the analysis are highlighted in Table 3.

Gradually, MPDR moved to MPDSR in five districts in 2015. It was explained that during 2016–2020, there will be gradual expansion of MPDSR across the country. The whole process of MPDSR was then shared (Figure 5). It was expected that in 2018–2019, the maternal mortality and morbidity survey can be replaced by data from strengthened MPDSR activities.

Figure: 4. Move from MDR to MPDR in Nepal



The WHO recommended VA tool has been customized and tested in two districts in 2015. It was noted that the result showed a good consistency between the causes of maternal death identified from the VA tool and from the hospital MDR form. The VA tool has been finalized and MPDR forms have been revised. National MPDSR implementation plan and guidelines have been developed, and the National MPDSR Committee and Technical Working Committees have been formed. Training of trainers has been completed for national-, regional- and district-level managers and clinical persons, and the district VA team has been trained.

During the discussion, the following issues were raised by the participants:

- India expanded MDR to community-based review from facility-based review to identify the underlying causes of deaths and accompanying challenges that lead to death of women and newborns, such as sociocultural and economic factors. The involvement of the private sector in India was started by reporting maternal deaths from private health facilities and promoting actions to support prevention of deaths at the community level.
- In Indonesia, with a wide area spread over many islands, the role of the community in the prevention of death among women to help them get to a health facility or skilled birth attendant becomes critical.
- Bangladesh started perinatal death reviews with about 10% newborn deaths and stillbirths.

SCALING UP AND SUSTAINING MDSR

Scaling up and sustaining MDSR

UNFPA

With the new SDGs with Sexual and Reproductive Health (SRH) Framework that promotes equity/equality, QoC and accountability, UNFPA Framework 2015–2030 for the Asia-Pacific Region recognizes the importance of strengthening the health system. Integration of services to ensure continuum of care during life-cycle continues to have special attention. Also, vulnerable groups remain as important targets for improving RH in countries.

In 2014, UNFPA-APRO conducted a multi-country workshop on MDSR in collaboration with WHO, which was attended by five countries from South Asia Region. In 2015, two countries were supported in rolling out MDSR. The results of the joint WHO-UNFPA global survey on MDSR implementation in SEAR countries were then shared. It was noted that a robust and well-resourced health system seems to be a marker for a more rigorous national MDSR system. Countries with persisting high MMRs are deficient in MDSR; therefore, there is a need for a high-level advocacy.

The challenges in MDSR as viewed by UNFPA in their work were as follows:

i) reporting of maternal deaths needs to be more comprehensive, accountable and carried out with adequate expertise and communication channels;
ii) national versus subnational committees: concentrated or diverse expertise base;
iii) recognition or incentives for a good leadership and committed individuals;
iv) inclusion of perinatal deaths has been long overdue; however, it needs coordination and phased approach in its implementation.

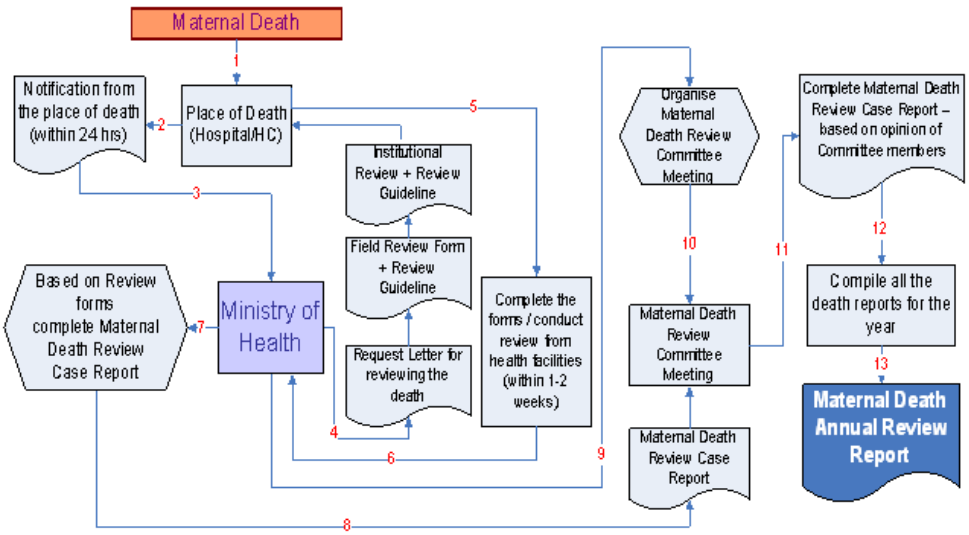
The progress in reducing maternal mortality in SEAR was then shared. Bhutan, Maldives and Nepal had achieved MDG 5 by 2014. Bangladesh and India had the greatest decline in numbers of maternal deaths. The coverage of deliveries assisted by skilled birth attendants in South Asia increased from 36.2% in 2000 to 49.8% in 2010, although South Asia still lags behind other regions. Dr Baravilala emphasized the importance of drivers for improving MH. At the household level, women's education is a strong predictor of maternal mortality, besides household income, male participation in MRH services and information campaign.

At the maternal health programme level, emergency obstetric care (EmOC) is strongly associated with maternal mortality reduction, such as in Bangladesh, India and Nepal. Also increased uptake of facility delivery contributed to the low MMR, such as in Sri Lanka and Tamil Nadu. Availability of skilled birth attendant for safe delivery is also linked to reduced maternal mortality, such as in Bangladesh and Bhutan. Health sector drivers include a health financing initiative that would improve MRH services, such as the case in Bangladesh, with its Demand-Side Financing; India with Janani Suraksha Yojana; and Nepal with Safe Delivery Incentives Programme and Aama Surakchhya Programme.

Maldives

The country, with 344 023 inhabitants, has achieved a significant reduction of MMR (from 259 in 1997 to 41 per 100 000 live births in 2014) and NMR (from 34 in 1990 to 5 per 1000 live births in 2014) and hence the MDGs. The coverage of MH services is more than 90%. There are around 7000 deliveries per annum, among which 98% are conducted in health facilities.

MDR has been conducted since 1997. The National Maternal Death Review Committee was established in 2001, and since then, maternal deaths are reviewed on occurrence. MDR process was assessed in 2007 and the national committee was renamed and strengthened as the Maternal and Perinatal Morbidity and Mortality Committee (MPMMRC) with modifications on its functions. The aim is to collect and analyse all the factors surrounding maternal deaths and to make recommendations to the MoH on how to prevent future maternal and perinatal deaths.



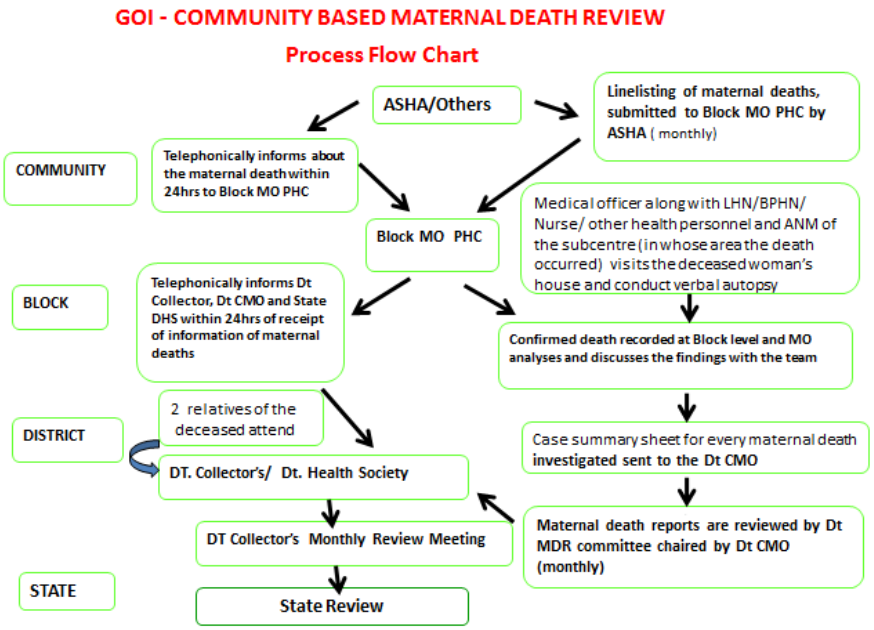
Reporting of maternal deaths is carried out by a health facility using a death notification form to the MoH. The Committee would check the completeness and accuracy of the maternal death report and request additional information, if needed. Based on the reviews, the Committee would determine cause of death, identify preventable areas and associated factors, and suggest interventions for the future to be disseminated to all health facilities. A similar approach is implemented for perinatal death reviews – although less regular – with the presence of both obstetricians and paediatricians.

Based on information obtained from the death reviews, the Committee would make recommendations to prevent such deaths in the future. These may include community- or facility-based interventions, guideline development and introduction, improving access to services or health system reform. Usually the recommendations will be tailored to the specific location and appropriate for different stakeholders depending on where decisions and action can be realistically taken. The Committee makes specific recommendations that affect the community, healthcare policy-makers and managers, and healthcare providers and links them with avoidable factors. For example, between 2009 and 2012, there were three key recommendations that were adopted: i) ensure that every pregnant woman has a birth plan; ii) ensure improved knowledge and skills of health-care providers in recognizing and managing obstetric emergencies and in using partograms; and iii) ensure better communication and referral through the use of relevant forms.

Tamil Nadu, India

India, to a great degree, has shaped the global MDGs 4 and 5 targets, owing to its large share of global burden of neonatal (23%) and maternal mortality (19%); also, it is critical to understand that the 15 most populous states (Including Tamil Nadu), which account for 95% of India's population, have made variable progress on infant and/or maternal mortality reduction efforts.[14] A state-wise analysis of MMR/IMR decline gives us the opportunity to learn which strategies did work and which did not. The state profile of Tamil Nadu shows 72.1 million populations and MMR of 79 per 100 000 live births in 2013 (India: 167 per 100 000 live births).

The facility-based maternal death review (FBMDR) started in 1996 and is now implemented in all the 20 governmental medical college hospitals and 32 district hospitals. The first step was to establish a facility-level committee and to choose a nodal officer for each facility. Recording and notification of all maternal deaths (including those from other departments/wards) within 24 hours is sent to district and state nodal officers by a facility nodal officer. Clinical audit is then carried out by the FBMDR committee headed by a hospital superintendent. The FBMDR sometimes needs to be carried out through a videoconference involving all the concerned facilities.



By discussing maternal deaths among facilities, any deficiency in the management is brought out, and ways to avoid such instances in the future will be suggested. A

uniform protocol for obstetric care is evolved for use in medical colleges and the staff is trained to use them, which leads to adherence to evidence-based interventions and standard uniform care at all facilities. The challenges in implementing FBMDR include time constraint, bringing disinterested groups into active participation, poor quality of documentation (particularly in smaller hospitals), irrational cause of death, hiding facts and self-protective interest, resistance to change and blaming others. The form has been reduced from 40 to 15, but finally to 8 pages.

CBMDR started in 2000 for all maternal deaths occurring in the community. The forms used for this approach help to find out medical causes, as well as personal, family or community factors that may have contributed to death. The steps of implementing CBMDR were then outlined. Health cadre/ASHA informed a maternal death within 24 hours to block a medical officer at a primary health centre, who would inform a district collector, medical officer and state DoHS within 24 hours of receipt of information. The medical officer along with other health personnel of the subcentres (in whose area the death occurred) visit the deceased woman's house and conduct VA within three weeks after notification. All newly appointed medical officers/paramedical staff are trained in the CBMDR process.

All maternal deaths are reviewed by the District Collector along with the medical and paramedical staff concerned, public health officials, obstetrician from the nearby medical college or district hospital and the relatives of the deceased. Positive outcomes of CBMDR are as follows:

i) service providers are sensitized to minimize delays and greater accountability of service providers;
ii) advance information to the referral centres that leads to better coordination between referring and referral institutions.

There is a special MDR that is requested by the Director of Health Services for special cases that should be completed within 72 hours. Each district forms a panel of an obstetrician and anaesthesiologist. Any maternal deaths occurring both at the public and private facilities are immediately reported to the Deputy Director of Health Services, who in turn informs the specialist panel. On receipt of intimation, the experts start investigating death from the place of death and travel to relevant facilities up to the house of the deceased.

Malaysia

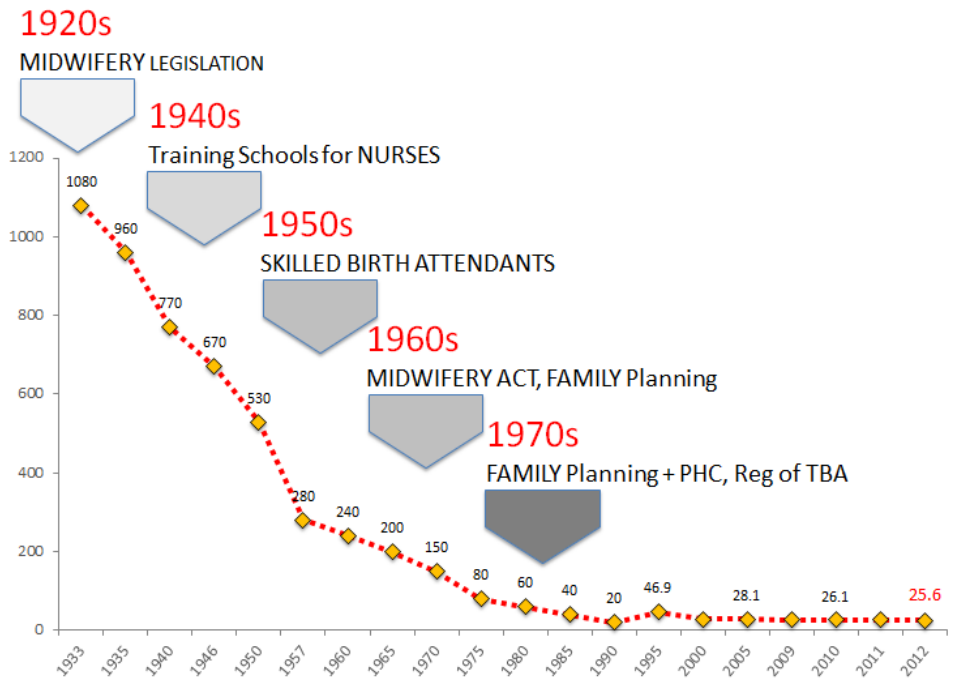
Dr J Ravichandran, Chairman of Confidential Enquiry of Maternal Death (CEMD), Department of Obstetrics and Gynaecology, Hospital Sultanah Aminah, Johor Bahru, Malaysia, presented on "MDSR: Ensuring Quality and Sustainability in Malaysia". At the outset, he highlighted the steep decline of MMR before 1960. Between 1970 and 1980, MMR was further reduced from 141 to 56 per 100 000 live births (40% decline). In 1990, it reached 19 per 100 000 live births. This was a reflection of the national commitment to improve MH.

He then elaborated on MoH key interventions between 1930 and 1970, as reflected in Figure 6, which focused on midwifery, skilled birth attendants, family planning, primary health care and regulations of traditional birth attendants. These were followed by implementing CEMD in the 1990s, coupled with the establishment of birthing centres and the introduction of partograms.

In the 2000s, the country further improved the quality of MH services through development of training manuals on postpartum haemorrhage, hypertensive disorders in pregnant women and heart disease – all the main causes of maternal deaths. Midwives were given the authority to provide intramuscular MgSO4 for eclampsia. The HMIS was revised to ensure accurate and timely reporting of maternal deaths.

The MDSR implementation started in 2011, which was built on the existing CEMD. The members of MDSR Committee are expanded to include representatives from the Ministry of Defence and the Ministry of Education, as well as from professional organizations, Academy of Medicine and co-opted members, e.g. relevant sectors. It was noted that there are 'required recipes' for a successful and sustainable MDSR, which include i) commitment of government, stakeholders and NGOs; ii) clear direction; iii) good tools; iv) capacity, both personal (training of sufficient number of staff) and system for reporting (snail, electronic and digital); v) data analysis that requires good quality, accuracy, honesty and representation; vi) reports that ensure timeliness, accessibility, honesty and provide feedback; vii) recommendations that are achievable, easily implemented and not too lofty; viii) audits to assess the recommendations that are shared in national obstetric registry (NOR) web application); and ix) peer and international recognition. Figure 7 shows the causes of death in 2003–2012.

Figure: 6. Key interventions to reduce MMR over decades, 1930–1970



It was noted that MDSR drives changes and provides opportunity to learn about maternal deaths at the local level, while at the national level, it drives policy changes inside and outside the health system. Figure 8 highlights a summary of the CEMD Report in 2012 on contributory factors based on preventable deaths. There are three categories of contributory factors: i) clinical factors; ii) non-clinical factors (e.g. human resources and infrastructure issues, transport, etc.); and iii) patient factors (e.g. poor compliance to therapy, advise or admission). Of the three contributory factors, clinical factors have the highest proportion (41%). Among the clinical factors, inadequate/inappropriate/delayed therapy and failure to appreciate severity, as well as failure to diagnose contribute to almost half the cases of clinical factors. It shows that QoC is still a challenge in such a well-developed setting.

In Malaysia, MDSR is included in the pre-service training of the Advanced Diploma in Midwifery, medical school and post-graduate training, and in training of house officers. The training, among others, emphasizes that there are recommendations at the microeconomic level, such as those related to clinics and communities, protocol and behavioural changes that can be mostly managed at the local level; and at macroeconomic level, such as system gaps, deficient in infrastructures, logistics, health insurance, policies and laws. The latter requires high-level decision

and collaboration with other ministries, such as Home, Women's, Social Welfare ministries and Police Department. Among the achievements of MDSR are the Medical Act, collaboration among ministries for improving MH, consensus statement on strategic issues, such as the no-use of misoprostol for induction of labour, management of placenta accreta, development of quality guidelines, availability of drugs, etc. Finally, the presentation was ended by highlighting key points of implementing MDSR.

Improving QoC: linkages with MPDSR

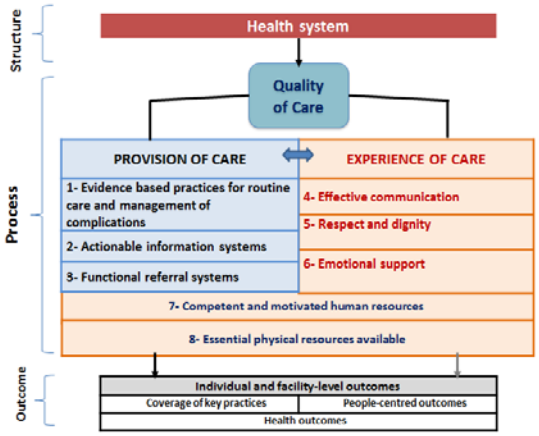
Dr Rajesh Mehta, from WHO-SEARO, emphasized that coverage of contact with health services would be effective only when the contact provides quality health care. For example, although the coverage of institutional deliveries has increased significantly, there is always the question of 'whether the interventions are delivered in a desired manner'. It was then noted that from a quality assessment of normal delivery care in Indonesia, the main weakness at three levels of care are almost the same, e.g. poor utilization of partographs, lack of competency of health providers, poor infection control and incomplete medical record. He emphasized that reducing mortality means increased coverage and QoC.

The need to have coverage of health services with quality was illustrated in critical pathways for reducing mortality that includes, among others, community actions, financial protection, facility preparedness, human resource plan, supplies' monitoring and accountability. As explained earlier in Session 1, MPDSR is very much related to QoC, HIS and CRVS. QoC is defined as the extent to which health services – provided to individuals and populations – improved as desired health outcomes. In order to achieve this, health care needs to be *safe, effective, timely, efficient, equitable and people-centred.*

Based on this framework, QoC for mothers and newborns in facilities requires competent and motivated human resources and the availability of essential physical resources. Also, evidence-based practices for routine and emergency care, actionable information systems where record keeping enables review and audit mechanisms, and functional referral systems between levels of care should be in place. Experience of care includes i) effective communication: a client understands what is happening, what to expect and knows her rights; ii) receives care with respect and dignity, and iii) access to emotional support of her choice. WHO-SEARO has recently published the Regional Framework for Improving Quality of Care for RMNCAH and Assessment Tool for Hospital Care.

Figure 9 illustrates the framework of QoC for maternal and newborn health that assesses, monitors and improves care within the context of the health system. The health systems create structures that enable access to quality care and allow for the process of care to occur along with two important and interlinked dimensions: provision and experience of care.

Figure: 9. Framework of QoC for maternal and newborn health



Improving QoC would save lives, increase cost-effectiveness and confidence among clients. It was also emphasized that in the Joint Statement on Ending Preventable Maternal, Newborn and Child Mortality among H4+ partners in 2015 urges Member States to prioritize universal coverage of essential interventions and *high-quality care urgently around the time of childbirth and the first days of life*. It was also noted that the regional flagship on Ending Preventable Maternal, Newborn and Child Mortality provides support to countries on the following:

i) national adaptation of Regional Framework for Improving Quality of Care;
ii) strengthening MPDSR (Maldives);
iii) bbuilding capacity of country teams to improve the quality of health care for mothers and newborns provided around the time of childbirth.

All deaths are captured from both public and private hospitals. Regarding QoC, issues about accreditation and other strict monitoring tools were discussed to improve maternal and newborn care. It was also noted that different countries are at different levels of implementation of MPDSR and requires an individual approach.

MOVING FROM MDSR TO MPDSR

Moving from MDSR to MPDSR

Upon reviewing stillbirths and neonatal death guidance and implementation, the goal of the global *Every Newborn Action Plan* of national NMR of less than 12 in 2030 and less than 10 in 2035, and the global average of 9 per 1000 live births by 2030 first comes to mind. The target for stillbirth rate is 12 or fewer per 1000 total births in 2030 or from 2.6 to 1.1 million stillbirths globally. At least 56 countries, particularly in Africa and in conflict-affected areas, will have to at least double their present pace of progress to reach this target.

It was noted that there is a growing interest in stillbirths and newborn deaths and in increasing facility births, while there are challenges in reviewing these deaths because of their huge numbers and recording, as well as their definitions. It was proposed that intrapartum stillbirth rate is included as a core indicator for QoC. The perinatal death review tool/guideline, which is currently being developed, aims to guide countries in designing response to end preventable mortalities. It is a collaborative work among partners and uses the new ICD-perinatal mortality classification (ICD-PM).

In implementing perinatal death reviews, there are difficult questions such as i) terminologies, e.g. 'perinatal' or 'stillbirth and neonatal'; 'audit' or 'review'; 'count'; ii) community: how to emphasize the importance of community level information without expanding to full community surveillance and VA?; iii) linkages: how do we link to CRVS and HMIS while keeping the focus on QoC?; iv) legal framework: what are the best ways to create a confidential system in a no-fault, supportive, enabling environment?; v) balance: how to make a tool useful for settings with paper-based systems with limited investigative capacity and high resource settings?

The draft guide is currently under review by the core group. The pilot implementation of the guide will be carried out in February 2016 in Moldova, Jordan, Nigeria and Uganda. The guide will be finalized in April 2016, followed by publication, translation and dissemination. WHO in collaboration with partners will provide technical support to the MoH in countries for the implementation of perinatal death reviews. Dr Mathai ended his presentation with a message of "Think big, but start small and grow slowly", as the case of his message regarding MDSR.

Sri Lanka

Dr Kapila Jayaratne, Consultant Community Physician, Family Health Bureau, MoH, Sri Lanka, presented "Maternal and Perinatal Death Surveillance in Sri Lanka", highlighting the status of maternal care service provision of 350 000 live births per year with 99.9% delivered in health facility and 94% delivered in specialized hospitals. The MMR was 30 per 100 000 live births in 2015.

Sri Lanka has made maternal death as a notifiable event since 1985 using a notification format – submitted within two days – as a single nation-wide surveillance system. An investigation format is then used for confirmation of a maternal death carried out within a week by a team. Surveillance system of maternal deaths involves the systematic collection, collation, analysis, interpretation and dissemination of all information related to maternal death. The coverage of data includes field and hospital (government and private) data sources, field antenatal care (more than 99%) with 90% pregnancy registration before 8 weeks, hospital deliveries (99.9%) and postpartum domiciliary care (more than 85%), linked with RHIMS and quarterly zero reporting. In a legal framework, it is compulsory to perform a post-mortem examination for all maternal deaths.

A guideline on MDSR has been developed that was built on the existing system. Capacity-building on MDSR is carried out through training of medical undergraduates, post-graduate training in medical administration, obstetrics and gynaecology, community medicine and family medicine, as well as in-service training of field health-care managers. Available resource material can be accessed through the following link: http://fhb.health.gov.lk under 'Resources'. It was noted that preventing preventable maternal deaths is challenging all over. This was reflected in the results of preventability assessment of 112 maternal deaths in 2014, of which 70 of them (62%) were preventable, 29 deaths were inconclusive (27%) and 13 deaths were not preventable (11%). A multidisciplinary approach is applied in treating critically-ill pregnant mother.

In Sri Lanka, a WHO multi-country survey was carried out in 2012 that involved 18 129 deliveries from 14 health facilities in three provinces. It was estimated that the number of maternal near-misses was 1430 per year, while the number of maternal deaths was 134. It was then estimated that for each maternal death, there are 11 cases of near-misses, with the main diagnosis as haemorrhage (68.5%), hypertensive disorders (15.1%) and anaemia (16.4%). Dissemination of the death reviews is considered very important and this is carried out through workshops for

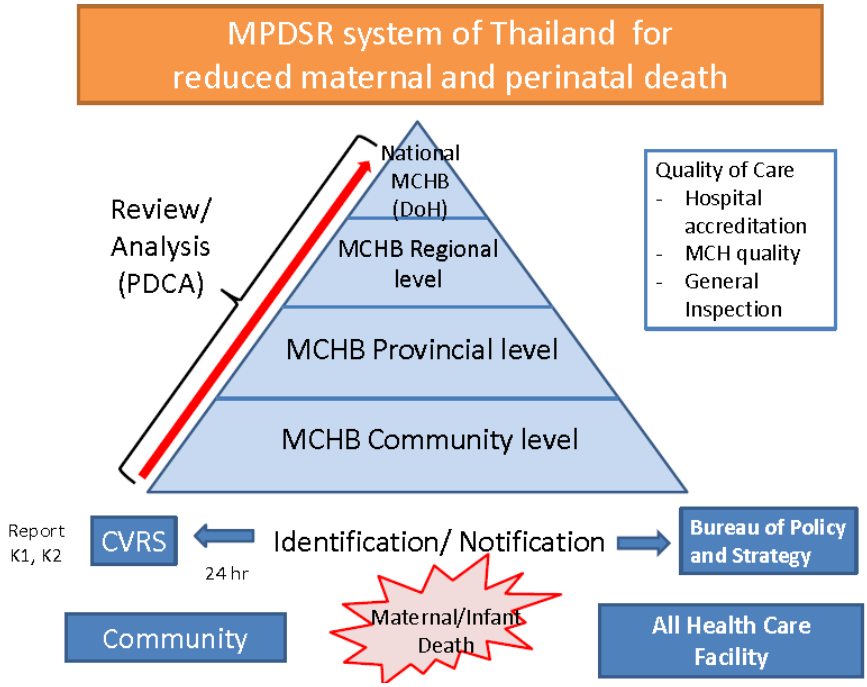
stakeholders and media. Communities are involved at field MDRs and through media networks. Data sharing with CRVS is carried out regularly to check accuracy and to avoid double reporting. Sharing of experiences at international forum is also carried out. For example, there is a policy to refer all pregnant and post-partum women with fever to inward care on day 1 of the illness, because there are many maternal deaths due to pneumonia, dengue and other febrile illnesses in pregnancy. The mechanisms for translating lessons learnt into programmes, policies and practice are carried out through meetings of the National Committee on Family Health, Advisory Committee on Maternal Health and Family Planning, Technical Advisory Committee on Newborn and Child Health, hospital directors' meeting and monthly Family Health Bureau Review Meeting with the Director General of Health Services.

Thailand

Dr Sarawut Boonsuk, Chief of MCH, Department of Health, Thailand, presented "Maternal and Perinatal Death Surveillance and Response System: Thailand Experience". He started with highlighting the maternal and perinatal health situation of the country with 67.1 million populations. In 2015, the number of live births was 754 000, while fertility rate was 1.8, MMR was 20 per 100 000 live births, NMR was 7 per 1000 live births and facility delivery was 99.6%. He then explained the MPDSR system implemented in Thailand, as reflected in Figure 13. All maternal and infant deaths from community and health facilities are identified and notified within 24 hours to CRVS and Bureau of Policy and Strategy. These are then reviewed at all levels, from

community, provincial, regional and national levels by the MCH Board. The MPDSR is closely linked with QoC activities, such as hospital accreditation, MCH QoC improvement and general inspection. QoC is applied to all MCH services as a continuum of care. With this approach, MMR can be reduced from 31 in 2012 to 20 per 100 000 live births in 2015.

Figure: 13. MPDSR systems in Thailand



It was stated that the main key success factors in reducing MMR are i) availability of a national policy to notify and review all maternal deaths, while MCH services are free of charge; ii) availability of MCH Board at all levels; iii) effective monitoring and evaluation system; iv) highly-effective risk management through strengthening zoning specialist and referral system; v) community and stakeholder involvement; and vi) maternal death compensation. Finally, it was noted that there are still challenges, such as maternal deaths that occur in the community, teenage pregnancy, increased indirect causes of maternal deaths, unsafe abortion, limited NICU in public health facilities and increased sue cases.

During the discussion, the following key issues raised by the participants were around the definitions of perinatal and stillbirth. It was then noted that as per WHO definition, stillbirth is fetal death that occurred after 22 weeks of pregnancy or if the fetal weight is more than 500 mg. The definition of stillbirth varies among countries based on each country's situation. It was stated that the protocol of stillbirth and neonatal audit will be available soon for field testing. The postmortem forensic investigation for maternal death is mandatory in Sri Lanka and the death certificate of mothers is shared with CRVS. The members of MCH Board at all levels in Thailand are senior obstetricians.

A. Collaboration and future plans of partners in supporting MPDSR in countries

The forum structured as roundtable discussions among groups of obstetrics-gynaecology societies, UN agencies, donor agencies, WHO collaborating centres, bilateral agencies and other partners was moderated by Dr Mathai who posed a question to all: "What are the key factors to strengthen MDSR implementation in countries?" There have been lively discussions across all roundtables. The following are key issues that were raised among others.

Data sources should come from government and private sectors, as well as communities. In India, it can be started from government facilities from the state to national levels. While implementing MDSR, health facilities can involve students. There is a need to strengthen community-based data.

It was also noted that collaboration among partners (e.g. H4+, South to South forum), in supporting government is very important, while government should remain ready to take the lead. Each agency has its own comparative advantage and this should be considered on the platform of working together. USAID through MCHP Programme assists India, Indonesia, Myanmar, Nepal and Bangladesh. Each country has funding for activities; donor agencies just contribute to the initiative for ending preventable maternal and perinatal deaths.

It is crucial for the government to sensitize all levels on MPDSR. It was emphasized that a blame-game approach would not be a good environment for sustaining MDSR. It is also important to translate theory into practice. The link between MDSR and quality improvement initiative is very clear; for instance, in Bangladesh, MPDSR is regarded as one of the key components of the work of the Quality Committee. Strict monitoring is critical to ensuring successful MDSR implementation. Documentation and dissemination of data, results of the reviews and actions taken as responses are critical for advocacy and further actions and expansion of MPDSR. Dissemination of evidence and case studies to programme managers at the district level is also important for understanding MDSR.

Professional organizations can start their involvement by allocating some time in their annual meeting for discussions on maternal mortality and MDSR. This would provide opportunities for professionals to change their mindset towards public health aspects of maternal and perinatal health. It is important to introduce MDSR

in medical and midwifery schools. Nurse and midwives are often not involved, while they play important roles in maternal and perinatal health services.

At the end of the session, Dr Francis summarized the discussion. He pointed out key discussion points that were raised by various groups of partners. Dr Mathai thanked all the participants for their contribution. All participants from countries were then requested to prepare country contributions in the Poster Session.

B. Linkages of MDSR/MPDSR with HIS

Mr Mark Landry, Regional Advisor, Health Situation and Trend Assessment, WHO-SEARO, shared three key messages, which were reemphasized at the end of the presentation:

i) avoid isolated MPDSR system, as integration with HIS and CRVS systems is essential;

ii) adhere to standards and guidelines to link community-based with facility-based maternal and perinatal death reviews: scalability, sustainability and data reliability depend on it;

iii) learn from the successes and failures of others: use what works and avoid making the same mistakes.

He then explained that data on maternal and perinatal deaths can be captured from HIS, CRVS that include data from health facilities and outside health facilities, besides other sources, such as DHS, SAVVY, SRS, including VA. The challenges in getting data on cause of death from health facilities/hospitals are incomplete registration of deaths, poor certification of the underlying cause of death, poor timeliness and use of data, and poor understanding of the true value of data on cause of death.

There is an international form of medical certificate for ICD-coded cause of death recommended by WHO for country use. The common errors on death certificates were outlined, e.g. i) the mode of death is reported rather than the cause, e.g. respiratory failure instead of the specific disease that caused it; ii) too frequent use of ill-defined disease groups, e.g. ‘others direct’ or ‘others indirect’ cause of maternal death that are unspecified; iii) inverted sequence of events; and iv) only the immediate cause is given, not the underlying.

To improve medical certification on cause of death, it was suggested to i) improve understanding among clinicians of the role of certification in the mortality information system; ii) audit regularly the quality of the information on death certificates; iii) provide short training courses in mortality certification in hospitals or medical association; iv) raise awareness among doctors on the use of information on death certificate. The advantages of ICD classification and the feature of ICD-PM (Tables 5–8) were then elaborated.

Regarding community-based maternal and perinatal death surveillance, it was noted that integrated registries for the RMNCAH continuum of care can help track pregnancies. Also, VA can aid with capturing better data quality on cause of death, while innovation in technology, using mobile applications and services, can accelerate coverage of surveillance. Some examples of eHealth and mHealth were shared, including the geographic system analysis system (GIS) in Bali.

Table 5. ICD-PM antenatal death codes

	ANTENATAL DEATH	ICD-10 codes
A1	Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99
A2	Infection	P35, P37, P39
A3	Acute antepartum event	P20
A4	Other specified antepartum disorder (Including codes specific to the antenatal period from haemorrhagic and haematological disorders of fetus and newborn)	P50, P52, P55, P56, P60, P61
A5	Disorders related to length of gestation and fetal growth	P05, P08
A6	Miscellaneous* *(Including codes specific to the antenatal period from transitory endocrine and metabolic disorders specific to fetus and newborn, digestive system disorders of fetus and newborn, conditions involving the integument and temperature regulation of fetus and newborn, and other disorders originating in the perinatal period)*	P70, P75, P77, P83, P96
A7	Antenatal death of unspecified cause	P95

Table: 6. ICD-PM intrapartum death codes

	INTRAPARTUM DEATH	ICD-10 codes
I1	Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99
I2	Birth trauma	P10-P15
I3	Acute intrapartum event	P20
I4	Infection	P35, P37, P39
I5	Other specified intrapartum disorder *(Including codes specific to the intrapartum period from haemorrhagic and haematological disorders of fetus and newborn)*	P50, P52, P55, P56, P60, P61
I6	Disorders related to length of gestation and fetal growth	P05, P08,P07
I7	Miscellaneous* *(Including codes specific to the intrapartum period from transitory endocrine and metabolic disorders specific to fetus and newborn, and other disorders originating in the perinatal period)*	P70, P96
I8	Intrapartum death of unspecified cause	P95

Table: 7. ICD-PM neonatal death codes

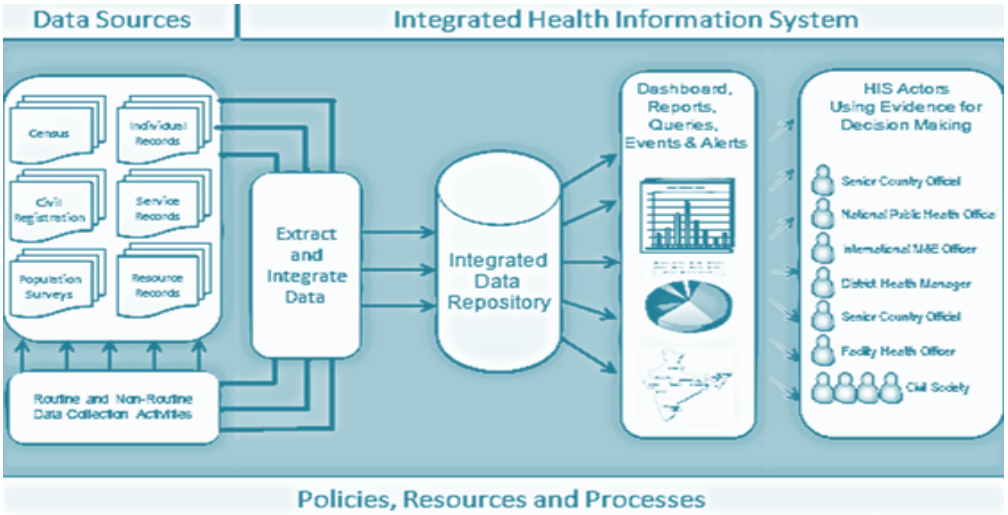
	NEONATAL DEATH	ICD-10 codes
N1	Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99
N2	Birth trauma	P10-P15
N3	Low birth weight and prematurity	P07
N4	Complications of intrapartum events	P20, P21,
N5	Convulsions and disorders of cerebral status	P90, P91
N6	Infection	P35-P39
N7	Respiratory and cardiovascular disorders	P22-P29
N8	Other neonatal conditions *(Including codes specific to the neonatal period from haemorrhagic and haematological disorders of fetus and newborn, transitory endocrine and metabolic disorders specific to fetus and newborn, digestive system disorders of fetus and newborn, conditions involving the integument and temperature regulation of fetus and newborn, other disorders originating in the perinatal period)*	P50-P61, P70-P78, P80-P83, P92-P94
N9	Disorders related to length of gestation and fetal growth	P05, P08
N10	Miscellaneous	*
N11	Neonatal death of unspecified cause	P96

Table: 8. ICD-PM maternal conditions

	MATERNAL CONDITION	ICD-10 codes
M1	Maternal complications of pregnancy	P01
M2	Complications of placenta, cord and membranes	P02
M3	Other complications of labour and delivery	P03
M4	Maternal medical and surgical conditions	P00
M5	Noxious influences transmitted via placenta or breast milk	P04
M6	No maternal condition identified	

Through CRVS, which is a continuous, consistent, complete and accurate reporting of all births and deaths through a registration office, with medical certification of the cause of death, in a defined population MPDSR can be linked. It should be according to international standards, e.g. using ICD rules/procedures to certify, classify and code the cause of death. CRVS also includes 'civil' events such as marriages, divorces, but births and deaths most important for public health policy. The link between civil registration of health-related events and vital statistics, as well as with HIS, was then explained, as highlighted in Figure 14.

Figure 14. Integration of data on maternal and perinatal deaths



Vital statistics provide useful data, such as prevalence and distribution of mortality by sex, age, cause of death and health inequalities. These can be used for establishment of priorities, monitoring of trends and evaluation of impact and effectiveness of health programmes, as well as assessment of health system performance. Also, it can be used for tracking national strategies.

Mr Landry also moderated a panel discussion on "HIS, CRVS and Linkages with MPDSR" and invited representatives from Maldives (Ms Sheeza Ali), Myanmar (Dr Ei Shwe Sin Win), Nepal (Mr Sharad Sharma) and Sri Lanka (Dr Kapila Jayaratne). The panelists shared with the forum on the current situation of MDPSR/MDSR and implementation experiences, specifically in areas of challenges related to data collection, data quality and data exchange. The panelists also informed the floor about their future plans for linking MDPSR/MDSR with HIS and CRVS.

It was evident during the panel discussion that while all four countries have at least a system for notifying maternal deaths, the development and stage of implementation varied in terms of notification processes and legal requirements, coverage, use of technology and integration with other national data systems, among others. The session provided an excellent opportunity for all countries to learn from the experiences of the four countries in their continued efforts to strengthen MPDSR/MDSR in their respective countries. For example, in Maldives, all births and deaths are certified and duplication of reporting is not possible, as the number is small; while in Nepal, some hospitals use MDR forms to record information about maternal deaths. In Myanmar, it is also mostly based on facility-based reporting, although there is community-based reporting that is improving. Sri Lanka has a structured mechanism for both facility and community maternal deaths; however, stillbirth registration in proclaim areas, coverage-wise, is not effective.

It was also noted that in Nepal there was no link between the maternal death data from MPDR with CRVS, although there is some effort to link them. Sri Lanka plans to carry out a triangulation study of maternal deaths in hospitals. The cause of death is decided by a medical doctor, and if it is unsatisfactory, a post-mortem forensic process is required by law. To prevent a double counting of death, it deems necessary to standardize procedures for recording and reporting, and use an identity number.

Some of the key discussion points included the need to strengthen and use the gold standard for identifying cause of deaths, the benefits and disadvantages of using technological innovations, such as mobile applications for advancing MPDSR and HIS, and the lack of capacities among medical doctors in ICD coding. Support for capacity development on this area was expressed. The need to strengthen collaboration with other relevant national sectors for effective integration of national HIS and MDSR was discussed and emphasized. Some SEAR countries have progressed from paper-based to web-based to even individual patient-tracking information system; there is a need to share and learn from experiences of these countries.

Finally, Dr Ardi Kaptiningsih provided a "Guide for Group Work on Plans for MPDSR Implementation at National/Subnational Level". She explained that all country teams are requested to develop country action plans for 5-year (using three dimensions for a phased implementation of MDSR) and 3-year term (focuses on establishing the system) plans, as well as an action plan for 2016. The group work was carried out to help the country plan.

C. Implementing MPDSR at national/subnational Level

This last session was chaired by Dr B S Garg, Head of WHO Collaborating Centre for Research and Training in Community-Based MNCH, Sewagram, Wardha, India, and Dr Deepika Attygalle, Programme Manager CSD and Regional Coordinator South-South, UNICEF, Colombo, Sri Lanka, with Dr Anoma Jayathilaka, Technical Officer, WHO Myanmar Office, as the Rapporteur. The chairs invited representatives of the country teams to present their plans. Annex 4 provides individual country action plans, which are to be further elaborated when the team shares it with relevant parties in their countries. Bangladesh, Bhutan, Myanmar and Timor-Leste have sent the updated versions of the plans.

Dr Neena Raina, in conclusion, made recommendations from the Meeting (see Annex 5). The scope of MPDSR will ultimately depend on the availability of resources. Information about the number of births and deaths, where the women received care, and where the deliveries and deaths occurred will help determine the costs involved; influence, whether all or only a subset of the cases, can be reviewed, and therefore determine where the review should concentrate. Finally, Dr Arvind Mathur, WHO Representative, Maldives along with Dr Raina thanked the Government of Maldives, WHO Maldives Office, all participants and the Secretariat

for their hard work before, during and after the meeting. Dr Raina requested all country participants to continue the work on MPDSR as planned and maintain collaboration among stakeholders.

This linking of mortality surveillance with remedial action is the centrepiece of an accountability framework. MDSR systems have the potential to deliver real-time, frequent monitoring of maternal mortality levels, trends and causes, provided investments are made to assess the completeness of reporting and data accuracy as part of the system. If successful, such systems would be a major step forward in the measurement of maternal mortality. Moreover, they would serve as the basis for a longer-term advancement, namely, strengthening the civil registration and vital statistics system.

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ANNEX

Annex 1. Programme of the Meeting

Regional Meeting to Strengthen Capacity on Maternal and Perinatal Death

Surveillance and Response
16–18 February 2016, Maldives
SEAR/MRH/Meeting 1 February, 2016

PROGRAMME

Day 1		
Tuesday, 16 Feb. 2016	**Subject**	**Speaker/Facilitator**
08:30–09:00	Registration	
09:00–10:00	**Inaugural Session**	
10:00–10:30	**Tea/Coffee Break**	
10:30–12:00	**SESSION 1. Regional Overview on Maternal and Perinatal Health** **Chairs:** Wame Baravilala and Kyoko Shimamoto **Rapporteur:** Rustini Floranita	
10:30–10:50	Regional Overview on Maternal and Perinatal Health	Neena Raina, Coordinator, MCA, WHO-SEARO
10:50–11:10	Maternal Death Surveillance and Response and the Global Progress in Scaling-up	Matthews Mathai, Coordinator, MCA-WHO/HQ
11:10–11:30	Overview of MDR/MDSR Implementation in SEAR Countries	Ardi Kaptiningsih, Consultant to MCA, WHO-SEARO
11:30–12:00	Discussions	All Participants
12:00–13:00	**Lunch**	
13:00–15:00	**SESSION 2. Progress and Challenges in Implementing MDR/MDSR in SEAR Countries** **Chairs:** Donna Vivio and Yoko Masaki **Rapporteur:** Nazira Artykova	
13:00–14:15	Country Presentations for 15 Minutes by Country Participants • **Bangladesh:** Progress in MDSR and Linkages with Civil Registration and Vital Statistics • **India:** MDR/MDSR – Facility and Community Level Implementation and Challenges in Scaling-Up • **Indonesia:** MDR/MDSR Facility and Community Level Implementation and Challenges in Scaling-Up • **Myanmar:** Progress and Lessons Learned from MDR/MDSR • **Nepal:** Implementation and Scaling-up of MDSR	
14:15–15:00	Discussions	
15:00–15:30	**Tea/Coffee Break**	
15:30–17:30	**SESSION 3. Challenges in Scaling-up and Sustaining MDSR** **Chairs:** Unnop Jaisamrarn and Nozer Sheriyar **Rapporteur:** Meera Upadhyay	

15:30–15:45	UNFPA Perspective in MDSR Implementation and Challenges	Wame Baravilala
15:45–16:00	Establishing System for Implementing MDSR in Maldives	Mariyam Jenyfa
16:00–16:15	Sustaining Community- and Facility-based MDSR in Tamil Nadu, India	Rathnakumar
16:15–16:30	Ensuring Quality and Sustainability in Implementing MPDSR in Malaysia	Ravichandran Jeganathan
16:30–16:45	Improving Quality of Maternal and Perinatal Care and Linkages with MDSR	Rajesh Mehta
16:45–17:30	Discussions	All Participants
17:30–18:30	**WHO Staff Meeting**	
19:30 onward	**Reception**	

Day 2		
Wednesday, 17 Feb. 2016	**Subject**	**Speaker/Facilitator**
08:30–10:00	**SESSION 4. Moving from Maternal Death Surveillance and Response to Maternal and Perinatal Death Surveillance and Response (MPDSR)** **Chairs:** Bulbul Sood and Mohammod Shahidullah **Rapporteur:** Mahbuba Khan	
08:30–09:00	The Draft Global Perinatal Death: A Review Guideline and Issues in Implementing PDR	Matthews Mathai
09:00–09:15	Plans for Moving from Maternal and Perinatal Death Reviews to MPDSR in Sri Lanka	Sri Lanka Country Participant
09:15–09:30	Plans for Moving from Maternal and Perinatal Death Reviews to MPDSR in Thailand	Thailand Country Participant
09:30–10:00	Discussions	All Participants
10:00–10:30	**Tea/Coffee Break**	
10:30–12:00	**SESSION 5. Collaboration and Future Plans of Partners in Supporting MPDSR in Countries** **Moderator:** Matthews Mathai **Rapporteur:** Paul Francis	
	Partners Forum for Moving MPDSR Forward	UNFPA, UNICEF, JICA, USAID, JHPIEGO, MCSP, BMGF, DFID, SAFOG, SAPA
12:00– 13:00	**Lunch**	
13:00–14:00	**Poster Session – Gallery Walk (All Participants)**	
14:00–14:30	Feedback on posters	Nathalie Roos
	SESSION 6. Linkages of MDSR/MPDSR with HIS **Chairs**: Ataur Rahman and Ashma Rana **Rapporteur:** Tshering	

	Dhendup	
14:30–15:00	National HIS, CRVS and Linkages with MPDSR	Mark Landry, WHO-SEARO
15:00–15:30	**Tea/Coffee Break**	
15:30–16:15	**Panel discussion:** HIS, CRVS and Linkages with MPDSR with selected country delegates: Maldives Myanmar Nepal and Sri Lanka	Moderator: Mark Landry Maldives: Sheeza Ali Myanmar: Ei Shwe Sin Win Nepal: Sharad Sharma Sri Lanka: Kapila Jayaratne
16:15–16:50	Discussions	All Participants
16:50–17:00	**Guide for Group Work:** Plans for MPDSR Implementation at National/Subnational Level	Ardi Kaptiningsih

Day 3		
Thursday, 18 Feb. 2016	**Subject**	**Speaker/Facilitator**
09:00–15:30	**SESSION 7. Plans for Implementing MPDSR at National/Subnational Level** **Chairs:** B S Garg and Deepika Attygalle **Rapporteur:** Anoma Jayathilaka	
09:00–10:00	Group Work: Plans for MPDSR Implementation at National/Subnational Level	All Participants
10:00–10:30	**Tea/Coffee Break**	
10:30–12:00	Group Work: Plans for MPDSR Implementation at National/Subnational Level (continued)	All Participants
12:00–13:00	**Lunch**	
13:00–14:00	Presentation of Group Work	Country Groups
14:00–15:00	Discussions	
15:00–15:30	Conclusion and Recommendations	Neena Raina, Coordinator, MCA
15:30–16:00	Closing	

Annex 2. List of participants

COUNTRY PARTICIPANTS

Bangladesh

1. Dr Habib Abdullah Sohel
   Director, PHC and LID
   Maternal, Newborn, Child and Adolescent Health
   Director General of Health Services
   Ministry of Health and Family Welfare
   Mohakhali, Dhaka

2. Dr Samir Kanti Sarkar
   Deputy Director, MIS
   Director General of Health Services
   Ministry of Health and Family Welfare
   Mohakhali, Dhaka

3. Dr Md Altaf Hossain
   Program Manager, IMCI
   Director General of Health Services
   Ministry of Health and Family Welfare
   Mohakhali, Dhaka

Bhutan

4. Dr Pandup Tshering
   Director, Department of Public health
   Ministry of Health
   Thimphu
   Email: ptshering@health.gov.bt

5. Mr Lobzang Tshering
   Program Officer, Reproductive Health
   Department of Public Health
   Ministry of Health
   Thimphu
   Email: lobzang604@gmail.com

Democratic People's Republic of Korea

6. Dr Jo Won Ryong
   Chief, Statistics Division
   Ministry of Public Health
   Pyongyang

7. Dr Ri Kwang Chol
   Researcher, Population Centre
   Ministry of Public Health
   Pyongyang

India

8. Dr Arun Kr Singh
   National Advisor
   Rashtriya Bal Swasthya Karyakram
   Ministry of Health and Family Welfare
   New Delhi
   Mobile: +91 9958983344 / 8376079665
   Email: drarunsingh61@yahoo.co.in

9. Dr C R K Nair
   Additional DG (Statistics)
   Ministry of Health
   New Delhi
   Email: crknair@yahoo.com

Indonesia

10. Dr Imran Pambudi
    Head of Section Maternal Health
    Sub directorate of Maternal and Newborn Health
    Directorate of Family Health
    Ministry of Health
    Jakarta
    Email: imranpambudi@gmail.com

11. Dr drh Didik Budijanto
    Head of Data Management and

Information
Center of Data and Information
Ministry of Health
Jakarta
Email: didikb2001@yahoo.com

Maldives

12. Dr Mariyam Jenyfa
Senior Medical Officer
Health Protection Agency
Male
Email: drjenyfa@health.gov.mv

13. Ms Nazeera Najeeb
Public Health Program Coordinator
Health Protection Agency
Male
Email: nazeera@health.gov.mv

14. Dr Hawwa Hana
Consultant in Obstetrics and Gynaecology
Indira Gandhi Memorial Hospital
Male
Email: drhawwahana@gmail.com

15. Dr Ahmed Faisal
Consultant in Paediatrics
Indira Gandhi Memorial Hospital
Male
Email: faizal@hotmail.com

16. Ms Sameera Mohamed
Senior Community Health Officer
HdhKulhudhufushi Regional Hospital
Male
Email: manahnam@gmail.com

17. Mr Ahmed Waheed
Public Health Coordinator
B. Atoll Hospital
Male
Email: baa.hospital@gmail.com

18. Ms Khadheeja Hafsa
Manager, S Hithadhoo Regional Hospital
Male
Email: hafsa@hrh.com.mv
khadheejahafsa@gmail.com

Myanmar

19. Dr Phyu Phyu Aye
Deputy Director,
Maternal/Reproductive Health,
Department of Public Health
Ministry of Health
Naypyitaw
Tel: 09793322792
Email: phyu.dr@gmail.com

20. Dr Chit Htun
Assistant Director
Sagaing Regional Public Health Department
Ministry of Health
Naypyitaw
Tel: 092200379
Email: chithtun27@gmail.com

21. Dr Ei Shwe Sin Win
Assistant Director (HMIS)
Department of Public Health
Ministry of Health
Naypyitaw
Tel: 0943034263
Email: shwesin.ko.zin@gmail.com

22. Dr Myint Myint Than
Director (Child Health Development)
Department of Public Health
Ministry of Health
Naypitaw
Email: dr.myint.m.than@gmail.com

Nepal

23. Dr Pushpa Chaudhary
Officiating Director General
Department of Health Services
Kathmandu

24. Dr RP Bichha
Director, Family Health Division
Department of Health Services
Kathmandu

25. Dr Buddhi Bahadur Thapa
Medical Superintendent
Rampur Hospital, Palpa

26. Mr Sharad Kumar Sharma
Director Statistics (Under Secretary),
Chief Demography Section, Family Health Division
Department of Health Services
Kathmandu

Sri Lanka

27. Dr BVSH Beneragama
Director, Maternal and Child Health
Family Health Bureau, Ministry of Health
Colombo
Tel: +94 11 269 6508
Email: fhb.dmch@gmail.com

28. Dr Kapila Jayaratne
Consultant Community Physician
Maternal and Child Mortality and Morbidity Surveillance
Colombo
Tel: +94 112 692 745
Mobile: +94 777 577 956
Email: kapjay613@gmail.com

29. Dr Dhammica Rowel
Consultant Community Physician
In-Charge
Intranatal and Newborn Care
Colombo
Tel: +94 11 2699149
Mobile: +94 71 8099970
Email:
dhammica.rowel@yahoo.com

Thailand

30. Dr Sarawut Boonsuk
Medical Officer, Senior Professional Level
Chief of Maternal and Child Health Group
Bureau of Health Promotion, DoH
Ministry of Public Health
Bangkok
Tel: (66 2) 590 4418
Fax: (66 2) 590 4427
Email: wutmd39ju@hotmail.com

31. Dr Manita Phanawadee
Medical Officer, Professional Level
Deputy Director, Bureau of Policy and Strategy
Office of the Permanent Secretary
Ministry of Public Health
Bangkok
Tel: (66 2) 590 1387
Fax: (66 2) 590 1393
Email: manitaphanawadee@gmail.com

Timor-Leste

32. Mr Ivo Cornelio Lopes Guterres
Head of HMIS Department
Ministry of Health
Dili

33. Ms Fatima Isabel da Costa Gusmao
National Officer, General Reproductive Health
Dili

Experts

34. Dr Nozer Sheriar
Past Secretary-General
The Federation of Obstetric and Gynaecological Societies of India (FOGSI)
15, Summer Breeze, 15th Road,
Bandra Mumbai – 400050, India
Email: nsheriar@gmail.com

35. Dr VP Paily
State Coordinator of CRMD,
Vakkanal House
Raveendran Road, Elamkulam,
Ernakulam 20
Kerala, India – 682020
Email: vppaily@gmail.com

36. Dr S Rathnakumar
Retired Professor of Obstetrics and Gynaecology
429/11, Royal Enclave, III Avenue,
Anna Nagar
Chennai – 600 102, India
Email: drrkkgh@hotmail.com
obgynkumar@gmailc.com

37. Dr J Ravichandran Jeganathan
Nation Health of O/G services
Chairman, CEMD
Department of Obstetrics and Gynaecology
Hospital Sultanah Aminah, Johor Bahru
Malaysia
Email: drjravi@gmail.com

38. Dr Hemantha Senanayake
Professor and Head of Obstetrics and Gynaecology, Faculty of Medicine
Kynsey Road, Colombo 8, Sri Lanka
Email: senanayakeh@gmail.com

39. Dr Ardi Kaptiningsih
Consultant to MCA, WHO-SEARO
New Delhi, India
Email: kaptiningsiha@who.int
ardikapti@hotmail.com

WHO Collaborating Centres

40. Professor Alka Kriplani
Professor and Head of the Department of Obstetrics and Gynaecology, All India Institute of Medical Sciences
Ansari Road, New Delhi – 110029, India
Email: kriplanialka@gmail.com

41. Dr BS Garg
Dean, Mahatma Gandhi Institute of Medical Sciences
Head, WHO Collaborating Centre for Research and Training in Community-Based Maternal, Newborn and Child Health,
Sewagram – 442102, Wardha, India
Tel: 07152-284341-55
Email: gargbs@gmail.com, secretary@mgims.ac.in

42. Dr Sanjay Chauhan
Head, Department of Operational Research
and Department of Clinical Research
National Institute for Research in Reproductive Health
Mumbai, India
Email: nirrhdor@yahoo.co.in

43. Dr Surasak Angsuwathana
WHO Collaborating Centre for Research in Human Reproduction,
Siriraj Reproductive Health Research Center, Faculty of Medicine Siriraj Hospital
Mahidol University, Bangkok, Thailand
Email: surasaktose@hotmail.com

44. Dr Unnop Jaisamrarn
Associate Professor in Ob-Gyn,
Department of Obstetrics and Gynaecology; Associate Dean for International Affairs
Faculty of Medicine,
Chulalongkorn University
Bangkok 10330, Thailand
Email: dr.unnop@yahoo.com

PROFESSIONAL ORGANIZATIONS

45. Professor Mohammod Shahidullah
President, The Federation of Asia and Oceania Perinatal Societies (FAOPS), Bangabandhu Medical University
Dhaka, Bangladesh
Email: shahidullahdr@gmail.com

46. Professor Kohinoor Begum
Former President, Obstetrical and Gynaecological Society of Bangladesh; Head, Department of Obstetrics and Gynaecology, Popular Medical College
Dhaka, Bangladesh
Email: k.begum@yahoo.com

47. Dr C P Bansal
President, South Asia Pediatric Association;
Indore, Madhya Pradesh, India
Tel: 09425111777; 09827063677
Email: cpbansal@gmail.com

48. Dr Pratima Mittal
Senior Consultant, Department of Obstetrics and Gynaecology, Safdarjung Hospital
New Delhi, India
Email: drpratima@hotmail.com

49. Dr Subodh Gupta
Professor of Community Medicine
Mahatma Gandhi Institute of Medical
Sciences (MGIMS), Sevagram, Wardha
Maharashtra – 442102, India
Email: subodhsgupta@gmail.com

50. Dr Ajay Gambhir
President, National Neonatology Forum of India, Secretariat: 803, 8th Floor
Northex Tower, Pitampura
New Delhi – 110034, India
Email:
drajaygambhir@rediffmail.com

51. Dr Madhuri Patel
FOGSI Treasurer, The Federation of Obstetric and Gynaecological Societies of India
Mumbai, India
Email:
drmadhuripatel@gmail.com
fogsi2007@gmail.com

52. Dr Hermanto Tri Joewono
Indonesian Ob/Gyn Association (POGI)
Jakarta, Indonesia

53. Dr Emi Nurjasmi
Head, Indonesia Midwifery Association
Jakarta, Indonesia
Email: emitaufik@yahoo.com

54. Dr Asri Adisasmita
MDSR Consultant, Faculty of Public Health
University of Indonesia
Jakarta, Indonesia
Email: aadisasmita@gmail.com

55. Dr Thazin Nyunt
Obstetrician and Gynecologist, OG Society
Yangon, Myanmar
Email: t14nyunt@gmail.com

56. Professor Ms Hla Myat Nwe
Professor, Department of Child Health
University of Medicine
Yangon, Myanmar
Tel: 09 5000126

57. Professor Ashma Rana
President, South Asian Federation of Obstetrics and Gynaecology (SAFOG)

Kathmandu, Nepal
Email:
ashmarana2011@gmail.com
njog63@gmail.com

58. Dr Lata Bajracharya
President, Nepal Society of Obstetricians and Gynaecologists (NESOG)
Thapathali, Kathmandu, Nepal
Tel: 977-1-4252315
Email: nesog2011@gmail.com
latabaj@gmail.com

59. Dr Laxman Shrestha
Professor of Pediatrics,
Department of Pediatrics
Tribhuvan University Teaching Hospital
Maharajgunj – 44600, Kathmandu, Nepal
Email: laxmanshree@yahoo.com

60. Professor Dulani Gunasekera
President, Perinatal Society of Sri Lanka
Colombo, Sri Lanka
Email:
dulaniegunasekera@yahoo.com

61. Dr Ajitha Wijesundara
Senior Obstetrician, Sri Lanka College of Obstetrics and Gynaecology, Colombo, Sri Lanka
Email: ajitapw@hotmail.com

UN AGENCIES

UNICEF

62. Dr Kyoko Shimamoto
Regional Maternal, Newborn and Child Health Specialist
UNICEF, East Asia and Pacific Regional Office
19 Phra Atit Road, Bangkok – 10200, Thailand
Tel: +66-(0)2-356-9420
Mobile: +66-(0)92-275-7767
Email: kshimamoto@unicef.org

63. Dr Asha Pun
Maternal and Neonatal Health Specialist, Health Section
UNICEF-ROSA, Kathmandu, Nepal
Email: apun@unicef.org

64. Dr Riad Mahmud
Health Specialist (Maternal and Newborn Health), Health Section,
UNICEF Bangladesh
BSL Office Complex, 1 Minto Road,
Dhaka 1000, Bangladesh
Tel: (880-2) 8852266 ext. 7146
Cell: 88 01714 088 402
Fax: (880-2) 9335641-2
Email: rmahmud@unicef.org

65. Mr Aishath Shahula Ahmed
Health Specialist, UNICEF Country Office
Male, Maldives

66. Dr Sarabibi Thuzarwin
UNICEF Country Office
Yangon, Myanmar
Email: sthuzarwin@unicef.org

67. Dr Deepika Attygalle
Programme Manager CSD,
Regional Coordinator South-South,
UNICEF, Colombo
Sri Lanka
Email: dattygalle@unicef.org

UNFPA

68. Dr Wame Baravilala
MH/RH Adviser, Asia and Pacific Regional Office (APRO), United Nations Population Fund, 4th Floor United Nations Service Building, Bangkok – 10200, Thailand
Email: baravilala@unfpa.org

69. Dr Daniel Msonda
United Population Fund
Pyongyang, Democratic People's Republic of Korea
Email: msonda@unfpa.org

70. Dr Melania Hidayat
United Population Fund
Jakarta, Indonesia
Email: hidayat@unfpa.org

71. Dr Tin Maung Chit
Programme Analyst (RH), United Population Fund, UN Building, 6 Natmauk Road
PO. Box 650, Yangon, Myanmar
Tel: +95-1-542910-19
Email: chit@unfpa.org

72. Dr Domingas Bernardo
Assistant Representative, United Population Fund, Dili Country Office, UN Agency House
Caicoli Street, Dili, Timor-Leste

USAID

73. Dr Donna Vivio
Senior Newborn Health Advisor
USAID/GH/HIDN/MCH, 1300 Pennsylvania Ave, NW, CP3 – 10054B, Washington, DC – 20523
Mobile: +1-571-225-2019
Email: dvivio@usaid.gov

74. Dr Sabita Tuladhar
AID Development Program Specialist-MNCH
Office of Health and Education
US Agency for International Development
Kathmandu, Nepal
Email: stuladhar@usaid.gov

PARTNERS

75. Mr Pradeep Pudel
M&E Advisor NHSSP, DFID
Kathmandu, Nepal
Email: pradeep@nhssp.org.np

76. Dr Ataur Rahman
Director, IPPF – South Asia Regional Office
New Delhi, India
Email: arahman@ippfsar.org

77. Dr Yoko Masaki
Associate Expert, Human Development Department, Japan International Cooperation Agency (JICA), Tokyo, Japan
Email: Masaki.Yoko@jica.go.jp

78. Mr Saito Hiroshi
Resident Representative, JICA
Male, Maldives
Email: Saito.Hiroshi@jica.go.jp

79. Dr Bulbul Sood
Country Director/India, JHPIEGO
221, Okhla Phase III, New Delhi – 110020, India
Tel: +91 11 49575100
Email: Bulbul.Sood@jhpiego.org

80. Dr Kusum Thapa
MCSP JHPIEGO
49 Dhara, Oasis Building, Patan Dhoka,
Lailtpur, Nepal
Email: Kusum.Thapa@jhpiego.org

WHO-HQ

81. Dr Matthews Mathai
Coordinator, Epidemiology, Monitoring and Evaluation; Focal Point, Maternal and Perinatal Health, Department of Maternal, Newborn, Child and Adolescent Health, World Health Organization
1211 Geneva 27, Switzerland
Tel +41 22 791 3210 (office)
+41 79 203 6719 (mobile)

Fax +41 22 791 4853
Email: mathaim@who.int

82. Dr Nathalie Roos
Technical Officer, Epidemiology, Monitoring and Evaluation; Focal Point, Maternal and Perinatal Health, Department of Maternal, Newborn, Child and Adolescent Health, World Health Organization
1211 Geneva 27, Switzerland
Email: roosn@who.int

WHO COUNTRY OFFICES

83. Dr Arvind Mathur
WHO Representative to Maldives
Roashanee Building, 6th Floor, PO Box 2004
Male' 20184, Republic of Maldives
Email: mathura@who.int

84. Dr Mahbuba Khan
Temporary National Professional, MPS
Dhaka, Bangladesh
Email: khanmah@who.int

85. Mr Tshering Dhendup
National Professional Officer
Thimphu, Bhutan
Email: dhendupt@who.int

86. Dr Nazira Artykova
MCH Technical Officer
WHO Representative's Office
Pyongyang, Democratic People's Republic of Korea
Email: artykovan@who.int

87. Dr Paul Francis
National Professional Officer
WHO Representative's Office
New Delhi, India
Email: paulf@who.int

88. Mrs Rustini Floranita
National Professional Officer
Maternal and Reproductive Health
WHO Representative's Office
Jakarta, Indonesia
Email: floranitar@who.int

89. Dr Chandani Anoma Jayathilaka
Technical Officer
WHO Representative's Office
Yangon, Myanmar
Email: jayathilakac@who.int

90. Ms Hudha Fathimath
National Professional Officer, PPN
Office of the WHO Representative to the Republic of Maldives,
Roashanee Building, 6th Floor, PO Box 2004
Male' 20184, Republic of Maldives
Email: hudhaf@who.int

91. Mr Om Prakash
Administrative Officer
Office of the WHO Representative to the Republic of Maldives,
Roashanee Building, 6th Floor, PO Box 2004
Male' 20184, Republic of Maldives
Email: prakasho@who.int

92. Ms Aminath Razana
Programme Assistant
Office of the WHO Representative to the Republic of Maldives,
Roashanee Building, 6th Floor, PO Box 2004
Male' 20184, Republic of Maldives
Email: razanaa@who.int

93. Ms Aminath Ismail
Executive Assistant
Office of the WHO Representative to the Republic of Maldives,

Roashanee Building, 6th Floor, PO Box 2004, Male' 20184, Republic of Maldives

94. Dr Meera Upadhyay
National Professional Officer - MNCAH
WHO Representative's Office
Kathmandu, Nepal
Email: upadhyaym@who.int

95. Dr Mukta Sharma
Technical Officer, WHO Representative's Office
Bangkok, Thailand
Email: sharmamu@who.int

96. Mr Crispin Araujo
Programme Assistant, Nutrition, Food Safety and RMNCH
WHO Representative's Office, Dili, Timor-Leste
Email: araujocr@who.int

WHO-SEARO

97. Dr Neena Raina
Coordinator, Maternal, Child and Adolescent Health
New Delhi, India
Email: rainan@who.int

98. Mr Mark Landry
Regional Adviser, Health Situation and Trend Assessment
New Delhi, India
Email: landrym@who.int

99. Dr Rajesh Mehta
Medical Officer, Child and Adolescent Health
New Delhi, India
Email: mehtara@who.int

100. Ms Ritu Agarwal
Secretary
New Delhi, India
Email: agarwalr@who.int

101. Ms Ruchika Acharya
Secretary
New Delhi, India
Email: acharyar@who.int

OBSERVERS

102. Ms Maimoona Aboobakuru
Deputy Director General, Health Protection Agency
Male, Maldives
Email: maimoona.aboobakur@gmail.com

103. Ms Moomina Abdulla
Assistant Director, Ministry of Health
Male, Maldives
Email: mouniabdullah@health.gov.mv

104. Ms Faiga Jameel
Inspection Officer, Ministry of Health
Male, Maldives
Email: faiga@health.gov.mv

105. Dr Aseel Jaleel
Head, Obstetrics and Gynaecology
Indira Gandhi Memorial Hospital
Male
Maldives

Annex 3. The Regional Director's message

Address by
Dr Poonam Khetrapal Singh
Regional Director, WHO-SEAR

Distinguished participants, ladies and gentlemen,

The world has made a significant progress in reduction towards maternal mortality and child mortality during the phase of Millennium Development Goals. We note with some satisfaction that worldwide, the maternal mortality ratio (MMR) declined from 400 in 1990 to 216 in 2015, a 44% decline over this period with an annual change of 2.3%. Across all WHO regions, MMR has declined since 1990 with the greatest decline of 69% in the WHO South-East Asia. Similarly, there has been 63% reduction in under-five mortality between 1990 and 2015 in our Region. However, neonatal mortality has declined by 54% for the same period. Despite this significant progress our Region has not been able to achieve MDG 5A and MDG 4.

The South-East Asia Region contributed to about 30% of the global newborn deaths in 2015. The number of stillbirths is usually as high as the number of newborn deaths. The recently launched Lancet series on stillbirths highlight the gaps and challenges in reporting and preventing still births.

Ladies and gentleman,

Tracking of maternal and perinatal deaths requires reliable national and subnational data, which is still a great challenge in many SEAR countries. Vital registration as the "gold standard" of counting deaths is either weak or not in place. The countries that report high maternal, newborn mortalities and stillbirths, and need to accelerate actions, are the countries where reliable data are not available for tracking of these deaths. Further, knowing just the numbers of maternal and perinatal mortality in a country or its region is not sufficient. It is also important to understand the underlying factors that contribute to these deaths. Each death has a story to tell that could provide indications on how to address the causes and determinants that led to the death of the mother or her baby.

During the MDG phase the Commission on Information and Accountability (CoIA) was established to support the implementation of the Global Strategy for Women's and Children's Health 2010–2015. The Commission strongly recommended tracking progress in results and resources for women's and children's health towards fulfilment of national commitments to reduce maternal and child mortality.

Within the CoIA framework WHO has promoted maternal deaths surveillance and response (MDSR) to ensure that the reporting of maternal deaths is as complete as possible in SEAR member countries. This emphasizes the importance of identifying and timely reporting of maternal deaths that occur in healthcare facilities, as well as in the community. This often requires collaboration with local government and participation of communities using information technology.

Maternal Death Surveillance and Response (MDSR) is actually an evolution over the maternal death reviews (MDR) that has been used extensively earlier. MDSR lays emphasis on timely reporting of most maternal deaths, if not all – through active surveillance followed by a review of these deaths for understanding the modifiable factors or determinants that contributed to maternal deaths and respond by taking actions to prevent such deaths in the future. Valuable information can be drawn from reviewing the deaths in terms of gaps or lapses in timely health-care seeking, health system's response and several social factors that may have acted as barriers to provision of and access to life-saving interventions. Such analysis helps in designing appropriate responses within the health system for getting better results and improving quality of care to prevent deaths in future. Identification of social determinants of health around these deaths can also provide specific directions on how to empower couples, families and communities, as well as, how to collaborate with relevant sectors and partners locally.

Ladies and gentleman,

'Maternal Death Surveillance and Response (MDSR)' is an approach that needs to be integrated into a country model that builds on existing health system framework to improve on quality of care for maternal and perinatal health. As you would agree, there is a strong linkage between the implementation of MDSR and the national civil registration and vital statistics (CRVS) system that records all births and deaths. While countries move forward to progressively strengthen the national CRVS system which takes a long time in developing countries MDSR has been used as a strategic approach to reduce maternal deaths and to improve quality of care. Presently, there is an increased concern globally that perinatal deaths, including newborn deaths and stillbirths, have not received sufficient attention during MDG phase despite the fact that the number of perinatal deaths could be 10 times or more than the number of maternal deaths. With increasingly successful scaling-up of MDSR in the countries the next step is to focus on perinatal death reviews. For this purpose WHO and partners have drafted guidelines on surveillance and response on stillbirths and newborn deaths, which will be discussed during this meeting.

In South-East Asia Region countries have gained a significant experience in MDSR. Several countries have also implemented review of neonatal, infant and child deaths at a variable scale. The South-East Asia Regional Technical Advisory Group on women's and children's

health, in a meeting convened in December last year, has recommended scaling-up of MDSR in the countries and include the component of perinatal death review. We understand that countries would need technical support to build national capacities to undertake this onerous task.

It is really an opportune time following recent launch of Global Strategy for Women's, Children's and Adolescents' Health and the Sustainable Development Goals (SDGs). These global initiatives provide new opportunities to undertake more strident actions towards ending preventable stillbirth, newborn, child and maternal mortality and to empower national governments to strengthen their leadership and assume accountability for ensuring adequate resources and achieving results.

We also have better understanding of evidence on interventions and approaches to prevent mortality that has been presented in the global Every Newborn Action Plan (ENAP) Framework and Strategies for Ending Preventable Maternal Mortality (EPMM). We know that two thirds of newborn mortality is preventable. Based on these opportunities, we all will need to work together towards achieving the new targets for a newborn mortality rate of at least 12 per 1000 live births and a maternal mortality ratio of at least 70 per 100 000 live births by 2030 in each country of our Region.

I am pleased that WHO-SEARO has organized this meeting on the important subject of maternal and perinatal death surveillance and response that will contribute towards the Regional Flagship on ending preventable neonatal, child and maternal deaths. I understand that programme managers from our Member States and representatives from UN H4+ agencies and other development partners, as well as the academia from WHO Collaborating Centres, national institutions and professional associations are attending this meeting. I am sure all of you together will be able to deliberate on critical issues and chalk out a realistic way forward for strengthen the capacity in implementing maternal, perinatal death surveillance and response.

I express special thanks and appreciation to the Government of Maldives for hosting this important regional meeting in this beautiful island. I would like to acknowledge strong support from WHO-Maldives Office towards organization of the meeting.

I offer my best wishes for successful deliberations in this meeting and appeal you all for effective follow-up actions in your countries during the coming years to make the difference based on agreed upon actions. I take this opportunity to express our full support to Member States of the Region.

Thank you.

Country Annex: 4. Country action plans for the implementation of MPDSR

Bangladesh

Table: 1. Plan for implementing MPDSR 2016–2020, Bangladesh

No	Dimension/scope		2016	2017	2018	2019	2020
1	Place of death identified	Maternal	Facility and Community	Facility and Community	Facility and Community	Facility and Community	Facility and Community
		Perinatal	Facility and Community	Facility and Community	Facility and Community	Facility and Community	Facility and Community
2	Scale of coverage of MDSR system	Maternal	14 districts	25 districts	40 districts	64 districts	64 districts
		Perinatal	14 districts	25 districts	40 districts	64 districts	64 districts
3	Depth of review process* (notification, VA, SA, FBDR)	Maternal	14 districts	25 districts	40 districts	64 districts	64 districts
		Perinatal	14 districts	25 districts	40 districts	64 districts	64 districts
4	Addition of near-miss, neonatal morbidity		0	5 MCH, 1 DH	10 MCH, 5 DH, MCHCT-1	31 MCH, 15 DH	31 MCH, 62 DH/GH

Note: VA: verbal autopsy; SA: social autopsy; FBDR: facility-based death review.

Table: 2. Plan for implementing MPDSR 2016–2018, Bangladesh

No	MDSR component to be developed/strengthened	2016	2017	2018
A. Structures (policy/strategy, SOP) required for implementing MPDSR				
1	National policy to notify all maternal deaths	- National guideline - Communicate with CRVS for policy change to 'notify all maternal deaths'	Continue advocacy with CRVS	Continue advocacy with CRVS
2	National policy to review all maternal deaths	- National guideline - Communicate with CRVS for policy change	Continue advocacy with CRVS	Continue advocacy with CRVS
3	Establishment/functioning of national MPDSR Committee	Finalize TOR and ensure regular meeting	Regular meeting and documentation	Regular meeting and documentation
4	Establishment/functioning of subnational MPDSR Committee (% districts)	14	25	40
B. Implementation of MPDSR system				
1	Capability to identify and confirm suspected MP deaths (% deaths, % districts)	100% maternal death and 10% neonatal death in 22% districts (Out of 64)	100% maternal death and 10% neonatal death in 40% districts (out of 64); 10% SB in 22% districts	100% maternal death and 10% neonatal death in 65% districts (out of 64); 10% SB in 40% districts
2	Notification of MP deaths and incorporation in **notifiable disease reporting** system (% deaths notified and incorporate-rated in the system)	Review existing disease/mortality-ty surveillance system and discuss ways to include MP death	MP death included in existing Regular Surveillance template and initiate reporting	MP death weekly reported through Regular Surveillance reporting
3	Notification carried out within 24 hours for deaths in health facility and 48 hours for deaths in community, and include zero reporting (% districts)	Facility Notification: by 48 Hours and Community Notification: 7–14 days in targeted districts	Following National Guideline: Facility Notification: by 48 Hours and Community Notification: 7–14 days in targeted districts	National Guideline: Facility Notification: by 48 Hours and Community Notification: 7–14 days in targeted districts

4	Confirmation of suspected maternal deaths and triangulation of data sources to avoid duplicate notification (% districts)	14 districts	25 districts	40 districts
5	MPDR: qualitative, in-depth investigations of the causes of and circumstances surrounding maternal deaths (% districts)	Verbal and Social Autopsy and Facility-Based Death Review in 22%	VA, Social Autopsy and Facility-Based Death Review in 40%	VA and Facility-Based Death Review in 65%
6	Analysis and interpretation of aggregated findings (% districts)	VA and Facility-Based Death Review in 22%	VA and Facility-Based Death Review in 40%	VA and Facility-Based Death Review in 65%
7	Immediate actions taken based on findings from death reviews as indicated in the recommendations of reviews (% districts carried out priority actions)	22% (Death mapping, district plan, clinical meeting, health coordination meeting, Community Group meeting)	40% (monthly and quarterly Health coordination meeting, Community Group meeting)	65% (monthly and quarterly Health coordination meeting, Community Group meeting)
8	A plan for disseminating MPDSR results, recommendations and responses (% districts have the plan)	22% (Weekly Facility-Based Clinical Meeting, monthly Health coordination meeting and Community meeting)	40% (Clinical Meeting, monthly Health coordination and Community meeting)	65% (Clinical Meeting, monthly Health coordination and Community meeting)
C.	**Monitoring of MPDSR implementation**			
1	Agreement on indicators to be used for monitoring and mechanisms for monitoring progress	• One Indicator included in Result Framework (RFW) of fourth Health SWAP • Agreement made on additional indicators for operational plans	Indicators included in RFW of SWAP and regularly monitored	Indicators included in RFW of SWAP and regularly monitored
2	for monitoring MPDSR implementation: prove timeliness, quality and teness of information; ii) to ensure that steps are functioning adequately and ing over time	• Develop robust M&E plan for MPDSR (Data quality, Linkage with HMIS, CRVS, Monitoring % of VA against notification, follow-up actions identified) • Activation of MPDSR Committee at different level	Regular MPDSR coordination Committee meeting held	Regular MPDSR coordination Committee meeting held

Table: 3. Plan for implementing MPDSR in 2016, Bangladesh

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Time-frame
A. Establishment/strengthening of structures required for implementing MPDSR						
1	Finalization of Committee members, TOR for MPDSR committees at National/Subnational Levels	To create a coordination platform	DGHS, MOH and FW	DGFP, UNICEF, WHO, UNFPA, OGSB, BNF	National MPDSR Guide, 4th Health SWAP's RFW	Jun. 2016
2	Merge MPDSR Committee with Quality Improvement Committees	Synergy and linkage with QI	DGHS, HEU, MOH and FW		National QI strategy and National MPDSR GL	Dec. 2016
3	Activation of MPDSR subcommittee under QI Committee at different level					
B. Ensuring notification of MP deaths and incorporation in the notifiable disease reporting system						
1	Workshops to review existing Regular Disease Surveillance System to integrate MP Death notifications	Institutionalizing Immediate Death Notification System	HMIS and EPI, IEDCR, DGHS	DGFP, WHO, UNICEF, UNFPA	EPI, AFP and other disease surveillance platform	Dec. 2016
2	Agreement made and MP Death Notification included in Regular Surveillance Report					
C. Ensuring quality of MPDSR processes, adequacy of recommendations and actions taken						
1	**Capacity-Building** of Providers, Statisticians and Managers in 14 districts	**Ensuring quality of MPDR**	DGHS	DGFP, OGSB, BNF, UNICEF, WHO, UNFPA, SC	National GL, 4th SWAP	Dec. 2016
2	Update existing Monitoring tool for MPDSR					
3	Undertake **joint Govt-PB-DP visit** to ensure quality, validation of notification and follow-up of identified actions					
D. Mechanism of aggregate data analysis of MPDSR						
1	Include VA tool in DHIS2	Establish MPDSR Data	HMIS, DGHS	DGFP, OGSB, BNF,	National GL, 4th	Dec.

2	Data entry in DHIS2	Analysis System		UNICEF, WHO, UNFPA	SWAP	2016
3	Assign cause of deaths by Peripheral Medical College Hospitals and Validation by National Committee					
E. Facilitating subnational programme managers for MDSR implementation						
1	Send Official Order to carry out MPDSR activities in targeted districts	To ensure technical and management capacity to roll out MPDSR	DGHS, DGFP	UNICEF, WHO, UNFPA	Existing MNCH initiatives, National GL	Apr. 2016
2	Capacity-Building of Local Health Managers on MPDSR in 14 districts					Jun. 2016
3	Supply of Resources for MPDSR (forms/tools/ additional funds)		DGHS			
F. Monitoring MDSR implementation						
1	Develop comprehensive M&E for MPDSR (data quality, link-age with HMIS, CRVS, Monitoring % of VA against notification, F/up of actions identified)	To ensure regular monitoring and supervision of MDSR	HMIS, DGHS	UNICEF, WHO, UNFPA, OGSB, BNF	DHIS2, Monthly Coordination meeting, Monitoring visit	Oct. 2016
2	Activation of MPDSR Committee at different level					
3	Undertake two joint Monitoring visit on MPDSR					Dec. 2016

Support required:

i) technical assistance at national/subnational level by UNICEF, WHO and professional bodies;

ii) Financial support at national level by UNICEF, WHO in 2016–2017 and Pool Fund/SWAP in 2017–2021.

Bhutan

Table: 1. Plan for implementing MPDSR 2016–2020, Bhutan

No	Dimension/Scope		2016	2017	2018	2019	2020
1	Place of death identified	Maternal	• **100% facilities** (31 hospitals+186 BHUs) • **All 20 districts at community levels** • Urban areas of 16 districts	• 100% facilities • All 20 districts • Urban areas of 18 districts	• 100% facilities • All 20 districts • Urban areas of 19 districts	• 100% facilities • All 20 districts • Urban areas of 20 districts	• 100% facilities • All 20 districts • Urban areas of 20 districts
		Perinatal	• 100% facilities • All 20 districts • Urban areas of 16 districts	• 100% facilities • All 20 districts • Urban areas of 18 districts	• 100% facilities • All 20 districts • Urban areas of 19 districts	• 100% facilities • All 20 districts • Urban areas of 20 districts	• 100% facilities • All 20 districts • Urban areas of 20 districts
2	Scale of cover-age of MDSR system	Maternal	• 100% facilities • All 20 districts • Urban areas of 16 districts	• 100% facilities • All 20 districts • Urban areas of 18 districts	• 100% facilities • All 20 districts • Urban areas of 19 districts	• 100% facilities • All 20 districts • Urban areas of 20 districts	• 100% facilities • All 20 districts • Urban areas of 20 districts
		Perinatal	• 100% facilities • All 20 districts • Urban areas of 16 districts	• 100% facilities • All 20 districts • Urban areas of 18 districts	• 100% facilities • All 20 districts • Urban areas of 19 districts	• 100% facilities • All 20 districts • Urban areas of 20 districts	• 100% facilities • All 20 districts • Urban areas of 20 districts
3	Depth of review process	Maternal	Summary of all deaths	In depth inquiry of sample deaths	Full confidential-al inquiry of all deaths in 100% health facilities	Full confidential inquiry of all deaths in communities of all 20 districts	Full confidential inquiry of all deaths (all health facilities and all 20 districts)
		Perinatal	Summary of sample of deaths	Summary of all deaths	In depth inquiry of sample deaths, in 100% health facilities	Full confidential inquiry of all deaths in communities of all 20 districts	Full confidential inquiry of all deaths (All health facilities and all 20 districts)

4	Additional type of adverse events (e.g. maternal near-miss or neonatal morbidity)	Develop protocol and tools for near-miss and neonatal morbidity	Summary of sample of near-miss and neonatal morbidity, 100%	Summary of sample of near-miss and neo-natal morbidity in communities of all 20 districts	Full confidential inquiry of near-miss and national aggregate of neo-natal morbidity in all facilities	Full confidential in-quiry of near-miss and national agree-gate of neonatal morbidity in communities of all 20 districts

Table: 2. Plan for implementing MPDSR 2016–2018, Bhutan

No	MNDSR component to be developed/strengthened	2016	2017	2018
A.	**Structures required for implementing MNDSR**			
1	National policy to notify all maternal deaths	Process initiated	National policy in place	Review and strengthen existing national policy
2	National policy to review all maternal deaths	Process initiated	National policy in place	Review and strengthen existing national policy
3	Establishment/functioning of national MNDSR Committee	Functional national MNDSR Committee in place	Review and strengthen national MNDSR Committee	Functional national MNDSR Committee in place
4	Establishment/functioning of subnational MNDSR Committee (100% in all 20 districts)	Functional subnational MNDSR Committee in place	Review and streng-then subnational MNDSR Committee	Functional subnational MNDSR Committee in place
B.	**Implementation of MNDSR system**			
1	Capability to identify suspected mater-nal deaths by assessing all deaths in women of reproductive age and identify those occurred while a woman was pregnant or within 42 days of the end of a pregnancy (100% 20 districts)	Review and strengthen Protocols; conduct capacity development	Refresher trainings conducted	Review and strengthen protocols/tools
2	Notification of all maternal deaths and incorporation in the notifiable disease reporting system (100% deaths notified and incorporated in the notifiable disease reporting system)	Review existing notifiable mechanism policy; executive order for MD as notifiable events; sensitization of maternal death notification	Consultative meetings to integrate maternal death (MD) with HMIS and others	Fully-functioning notification and integrated reporting system in place
3	Notification carried out within 24 hours for deaths	Sensitization of all relevant	MD reported within the	MD reported within the

	in health facility and 48 hours for deaths in community, and include zero reporting (100%, 20 districts)	stakeholders on reporting modalities for MD	stipulated time at least from all health facilities	stipulated time from all health facili-ties and communities
4	Confirmation of suspected maternal deaths and triangulation of data sources to avoid duplicate notification (100%, 20 districts)	Cross-check sample of MD deaths reported from all health facilities	Cross-check sample of MD deaths reported from all facilities and communities	Publish and disseminate MD reports to all health facilities and communities
5	MDRs: qualitative, in-depth investigations of the causes of and circumstances surrounding maternal deaths (100%, 20 districts)	100% of district and national review Committee members trained	Institute monitoring and evaluation mechanism for death review processes	Produce annual reports and put in place methods of dissemination
6	Analysis and interpretation of aggregated-ted findings from reviews to identify causes of death, groups at highest risk, contributing factors and emerging data patterns (100%, 20 districts)	100% of team members involved for data analysis trained	National aggregate generated and disseminated annually	National and district level aggregate generated and disseminated annually
7	Immediate actions taken based on findings from reviews as indicated in recommendations of reviews (100%, 20 districts carried out priority actions)	Develop a system of generating quarterly report from all health facilities	Monitor quarterly reporting system	Analyse and produce report on response actions at the district and national levels
8	A plan for disseminating MNDSR results, recommendations and responses (100%, 20 districts have the plan)	Ensure that national guide-lines include protocol and tools for disseminating re-sults, actions and responses	All the recommendations are put into actions by all the 20 districts and responses	Monitor and feedback on all the recommendations, actions and responses
C.	**Monitoring of MNDSR implementation**			
1	Agreement on indicators to be used for monitoring and mechanisms for monitoring progress	Consultative meeting with stakeholders and agree on a set of monitoring and evaluation indicators/targets	Put in place monitoring and evaluation plan	Review of indicators and targets
2	A plan for monitoring MNDSR implementation: — To improve timeliness, quality and completeness of information — To ensure that major steps are functioning adequately and improving over time	Develop and put in place M&E framework and implement	Conduct periodic monitoring as per the M&E framework	Conduct evaluation study, produce report and disseminate the findings

Table: 3. Plan for implementing MPDSR/MNDSR in 2016, Bhutan

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Time-frame
A.	**Establishment/strengthening of structures required for implementing MNDSR**					
1	Review/consultative meeting on draft national MNDSR guideline	To ensure that key elements of MNDSR/MPDSR are reflected in the guideline	RHP, DoPH, MoH	Medical professionals, committee leaders, district H administrators, NGOs, legal and Programme Officers	Incorporation of standard operating procedures and M&E framework	Apr. 2016 2nd quarter
2	Review of ToRs and capacity develop-ment of Review Committee members	To strengthen the members of review Committee at all levels	RHP, DoPH, MoH	Committee members of national and district	Incorporation with national MNDSR guideline	Jun. 2016 2nd quarter
B.	**Ensuring notification of all maternal deaths and incorporation in the notifiable disease reporting system**					
1	High-level advocacy	To sensitize high-level policy-makers on the importance of making MD a notifiable event	RHP, DoPH, MoH	Policy-makers and district/community leaders	Sensitization can be conducted with other programmes such as TB/HIV/AIDS	Apr. 2016 2nd quarter
2	Sensitization and capacity development	To strengthen timely notification and reporting of maternal and perinatal deaths	RHP, DoPH, MoH	Relevant departments/units within MoH and districts/health workers	Sensitization can be integrated with other programme activities	Jun. 2016 2nd quarter
3	Consultative meeting with HIMS and others	To integrate existing MD reporting system with HMIS	RHP, DoPH, MoH	Relevant departments/ units within MoH	Interdepartmental collaboration	May 2016 3rd quarter
4	Strengthen reporting system	To develop web-based MCH tracking system	RHP, DoPH, MoH	Relevant departments/units within MoH and WHO/UNICEF/UNFPA	In-cooperation with MCH tracking system	Sept. 2016 3rd quarter
C.	**Ensuring quality of MNDR processes, adequacy of recommendations and actions taken**					
1	Indicators for quality and review process	To strengthen review process and data quality	RHP, DoPH, MoH	NSB, Research, HMIS	Interdepartmental collaboration	Jul. 2016 3rd quarter
2	Field visits	To strengthen the MPDR	RHP,	National and district MNDR	Can club and conduct with	Aug. 2016

		process	DoPH, MoH	Committee members	other programme	3rd quarter
D.	**Mechanism of aggregate data analysis of MNDR cases**					
1	Standard Operating Procedures	To develop SOPs for data aggregation and analysis at various levels	RHP, DoPH, MoH	National MNDSR Committee, NSB, Health Research Unit	Incorporation with national MNDSR guideline	Sept. 2016 3rd quarter
2	Triangulation of date sources	To strengthen data quality and avoid duplication/under reporting	RHP, DoPH, MoH	National Review Committee, NSB, Research Unit	–	Dec. 2016 4th quarter
E.	**Facilitating subnational programme managers for MNDSR implementation**					
1	Training on MNDSR	To train and sensitize MNDSR Committee members on MNDSR	RHP, DoPH, MoH	National and district MNDSR Committee members	Training on MNDSR can be club with other programme training	Aug. 2016 3rd quarter
2	Sensitization on MNDSR	To sensitize community leaders on MNDSR	RHP, DoPH, MoH	DT/GT members	Sensitize DT/GT member during GT/DT session	May 2016 2nd quarter
F.	**Monitoring MDSR implementation**					
1	M&E framework	To develop M&E framework with agreed sets of indicators	RHP, DoPH, MoH	National MNDR Committee	Incorporation with national MNDSR guideline	Sept. 2016 3rd quarter
2	Periodic monitoring	To strengthen MPDSR processes	RHP, DoPH, MoH	National MNDR Committee and district Committee members	Monitoring can be done with other programme (IMNCI)	Nov. 2016 4th quarter
3	Annual report	To develop a system of generating and disseminating annual report	RHP, DoPH, MoH	National MNDR Committee and district Committee members	Produce report annually; printed hard copy every 3 years	Dec. 2016 4th quarter

Support needed: technical and financial support from WHO and other UN and international agencies is expected.

Democratic People's Republic of Korea

Table: 1. Plan for implementing MPDSR 2016–2020, Democratic People's Republic of Korea

No	Dimension/Scope		2016	2017	2018	2019	2020
1	Place of death identified	Maternal	All deaths in facilities and communities	All deaths in facilities and communities	All deaths in facilities and communities	All deaths in facilities and communities	All deaths in facilities and communities
		Perinatal	Preparing to include both (FB and CB)	Applying in facilities	Applying in both	All deaths in facilities and communities	All deaths in facilities and communities
2	Scale of coverage of MDSR system	Maternal	National coverage	National coverage	National coverage	National coverage	National coverage
		Perinatal	Preparation to introduce in one province	Application in one province	National coverage	National coverage	National coverage
3	Depth of review process	Maternal	Expansion to two provinces (inclusive previous piloted)	Implementing in three provinces	Expansion to 7 provinces (cumulative)	Implementing in 7 provinces	Full confident-ial enquiry of all deaths
		Perinatal	Expansion to two provinces	Summary of samples of deaths	Summary of samples of deaths	Summary of samples of deaths	Summary of all deaths
4	Addition of near-miss, neonatal morbidity	Maternal-perinatal	Preparation to add maternal near-miss and neonatal morbidity	Introduction in one province	Introduction in one province	Expansion to three provinces	Expansion to three provinces

Table: 2. Plan for implementing MPDSR 2016–2018, Democratic People's Republic of Korea

No	MDSR component to be developed/strengthened	2016	2017	2018
A.	**Structures required for implementing MPDSR**			
1	National policy to notify all maternal deaths	Already in place	Already in place	Already in place
2	National policy to review all maternal deaths	Already in place, need updating	Updated	–
3	Establishment/functioning of national MPDSR Committee	Incorporating P in the Committee	Functioning	Functioning
4	Establishment/functioning of subnational MPDSR Committee (% districts)	30% of MDSR	30% of MPDSR	70% of MPDSR
B.	**Implementation of MPDSR system**			
1	Capability to identify and confirm suspected MP deaths (% deaths, % districts)	40% of deaths, 30% of provinces	40% of deaths, 30% of provinces	80% of deaths, 70% of provinces
2	Notification of MP deaths and incorporation in notifiable disease reporting system (% deaths notified and incorporated in the system)	40% of deaths	40% of deaths	80% of deaths
3	Notification carried out within 24 hours for deaths in health facility and 48 hours for deaths in community, and include zero reporting (% districts)	90%	100%	100%
4	Confirmation of suspected maternal deaths and triangulation of data sources to avoid duplicate notification (% districts)	30%	30%	70%
5	MPDR: qualitative, in-depth investigations of the causes of and circumstances surrounding maternal deaths (% districts)	30%	30%	70%
6	Analysis and interpretation of aggregated findings (% districts)	10%	30%	30%
7	Immediate actions taken based on findings from reviews as indicated in the recommendations of the reviews (% districts carried out priority actions)	10%	30%	30%

8	A plan for disseminating MPDSR results, recommendations and responses (% districts have plan)	–	10%	20%
C. Monitoring MDSR implementation				
1	Agreement on indicators to be used for monitoring and mechanisms for monitoring progress	Developing indicators	Introduction in one province	Expansion into two provinces
2	A plan for monitoring MDSR implementation: — To improve timeliness, quality and completeness of information — To ensure that major steps are functioning adequately and improving over time	Developing plan	Introduction in one province	Expansion into two provinces

Table: 3. Plan for implementing MPDSR/MNDSR in 2016, Democratic People's Republic of Korea

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Timeframe
A. Establishment/strengthening of structures required for implementing MPDSR						
1	Updating national policy in consi-deration of international guidelines		MoPH	UNFPA, WHO, UNICEF	Central	During the year
2	Updating TOR of provincial review Committee		MoPH	Health Bureau of provincial level	Three provinces	May
3	Establishment and orientation of provincial review Committee		MoPH	Health Bureau of provincial level	Three provinces	May
4	Development of Protocol and SoPs of review in three provinces		MoPH, Pyong- yang Maternity Hospital	Health Bureau of provincial level, Provincial Maternity Hospital	Three provinces	April
B. Ensuring notification of MP deaths and incorporation in the notifiable disease reporting system						
1	Study for incorporation of MPDSR in HIS and CRVS		MoPH	Pyongyang Maternity Hospital	Central level	December

C. Ensuring quality of MPDR processes, adequacy of recommendations and actions taken						
1	Updating enquiry form		MoPH	Pyongyang MH	Central level	April
2	Piloting and Introduction in three provinces		MoPH	Pyongyang MH	3 provincial levels	Up to December
3	Technical assistance		WHO, UNFPA, MoPH			
4	Study tour		WHO, UNFPA, MoPH			
D. Mechanism of aggregate data analysis of MPDR cases						
1	Analysis by central and provincial staff in piloting provinces		MoPH, Health Bureau of provincial level	Pyongyang MH, Population Centre	Central and provincial level	December
E. Facilitating subnational programme managers for MDSR implementation						
1	Orientation training for programme managers in three provinces		MoPH, Pyong-yang Maternity Hospital		Central level	April–May
F. Monitoring MDSR implementation						
1	Developing M&E Indicators		Pyongyang Ma-ternity Hospital, Population centre	MoPH	Central level	December

Support needed: technical and financial support from MoPH, WHO, UNFPA and UNICEF, etc. is expected.

India

Table: 1. Plan for implementing MPDSR 2016–2020, India

No	Dimension/scope		Current Status	2017	2018	2019	2020
1	Place of death	Maternal	30%	50%	75%		100%
		Perinatal		Prepare guide-lines and software	Both facility and community perinatal deaths (additional: abortions and MTPs)		
2	Scale of coverage of MDSR system	Maternal	National coverage				
		Perinatal			Sample of districts		
3	Depth of review process	Maternal	In-depth enquiry				
		Perinatal	Reporting/MCTS		Full review to be initiated		
4	Addition of near-miss and neonatal morbidity		Guidelines for near-miss (Dec. 2014) and neonatal morbidity	Sample of districts (operational)	Sample of districts		Universal coverage (child death)

Table: 2. Plan for implementing MPDSR 2016–2018, India

No	MDSR component to be developed/strengthened	2016	2017	2018
	A. Structures required for implementing MPDSR			
1	National policy to notify all maternal deaths	Existing		
2	National policy to review all maternal deaths			Yes
3	Establishment/functioning of national MPDSR Committee	Yes	Meetings to be regularized	
4	Establishment/functioning of subnational MPDSR Committee (% districts)	Yes (district level)		

	B. Implementation of MPDSR system			
1	Capability to identify and confirm suspected maternal deaths (% deaths, % districts)	Existing guidelines (based on history)		
2	Notification of maternal deaths and incorporation in notifiable disease reporting system (% deaths notified and incorporated in the notifiable disease reporting system)	30%		Universal
3	Notification carried out within 24 hours for deaths in health facility and 48 hours for deaths in community, and include zero reporting (% districts)	Guidelines available		Universal
4	Confirmation of suspected maternal deaths and triangulation of data sources to avoid duplicate notification (% districts)	Guidelines available	Strengthening required	
5	MDR: qualitative, in-depth investigations of the causes of and circumstances surrounding maternal deaths (% districts)	33%	60%	80%
6	Analysis and interpretation of aggregated findings (% districts)	33%	60%	80%
7	Immediate actions taken based on findings from death reviews as indicated in the recommendations of the reviews (% districts carried out priority actions)	33%	60%	80%
8	A plan for disseminating MDSR results, recommendations and responses (% districts have the plan)	33%	60%	80%
C.	**Monitoring MDSR implementation**			
1	Agreement on indicators to be used for monitoring and mechanisms for monitoring progress including near-misses	Available and monitoring mechanism is in process	10%	50%
2	A plan for monitoring MDSR implementation: — To improve timeliness, quality and completeness of information — To ensure that major steps are functioning adequately and improving over time			

Table: 3. Plan for implementing MPDSR/MNDSR in 2016, India

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Time-frame
A. Establishment/strengthening of structures required for implementing MPDSR						
1	Finalize revised document for maternal death review	To incorporate lessons learnt in MDR	MOHFW, national and state advisory committees	Government at all levels, profession-al bodies,develop-ment partners		2016
2	Initiation of near-miss cases based on national guidelines 2014	Incorporate near-miss review	MOHFW; state and district	Government at all levels, profession-al bodies, medical colleges		2016
3	Preparation of national guidelines for perinatal mortality review		MOHFW, national and state advisory committees	Government at all levels; pro-fessional bodies; development partners		
4	Initiation and scaling-up of perinatal mortality review					2017
5	Scale-up of neonatal death review (national guidelines available)					
B. Ensuring notification of MP deaths and incorporation in the notifiable disease reporting system						
1	Triangulation with MCTS and HMIS	To identify all maternal deaths	National, state and district	All		2017
2	Legal requirement for review of every case (maternal, perinatal)					2017
C. Ensuring quality of MPDR processes, adequacy of recommendations and actions taken						
1	Strengthening capacity at all levels					2017
2	Constitution of national- and state-level monitoring Committee					2016
3	Finalizing of monitoring mechanism					2016
D. Mechanism of aggregate data analysis of MPDR cases						

1	Integration of final format of analysis with web-based portal					2017
E. Facilitating subnational programme managers for MDSR implementation						
1	Training on operational guidelines					2017
2	Documentation and dissemination of best practices and case-studies for review and response (annual)		National and State with development partner			2017
3	Integration of MDR software, all states					
F. Monitoring MDSR implementation						
1	Review of MDR (Two priority districts in each state)		National/State, de-velopment partner			2017
2	Ensure quarterly meeting of state and national level Committee					2016

Support needed: financial and technical support for the following:

i) training pathologists in perinatal autopsy;
ii) development of guidelines;
iii) documentation and dissemination of best practices across states/districts;
iv) monitoring mechanism;
v) improvement of quality of data;
vi) development guidelines for quality labour rooms;
vii) exchange of experts for sharing best practices across countries.

Indonesia

Table: 1. Plan for implementing MPDSR 2016–2020, Indonesia

No	Dimension/scope		2016	2017	2018	2019	2020
1	Place of death identified	Maternal	In facilities and communities: 3 provinces, 19 districts	In facilities and communities: 6 provinces, 38 districts	In facilities and communities: 9 provinces, 64 districts	In facilities and communities: 9 provinces, 150 districts	In facilities and communities: 20 provinces, 300 districts
		Perinatal	Government facilities: 3 provinces, 9 districts	Government facilities: 3 provinces, 18 districts	Government facilities: 6 provinces, 36 districts	In facilities and communities: 9 provinces, 80 districts	In facilities and communities: 15 provinces, 160 district
2	Scale of coverage of MDSR system	Maternal	Sample of districts: 3 provinces, 19 districts	Sample of districts: 6 provinces, 38 districts	Sample of districts: 9 provinces, 64 districts	Sample of districts: 9 provinces, 150 districts	Sample of districts: 20 provinces, 300 districts
		Perinatal	Sample of districts: 3 provinces, 9 districts	Sample of districts: 3 provinces, 18 districts	Sample of districts: 6 provinces, 36 districts	Sample of districts: 9 provinces, 80 districts	Sample of districts: 15 provinces, 160 districts
3	Depth of review process	Mater-nal	Summary of all deaths: 3 provinces, 9 districts	In depth enquiry: 3 provinces, 9 districts	In depth enquiry: 3 provinces, 19 districts	In depth enquiry: 6 provinces, 38 districts	In-depth enquiry: 9 provinces, 64 districts
		Perinatal	Sample of neonatal deaths: 3 provinces, 9 districts	Sample of neonatal deaths: 3 provinces, 9 districts	Sample of neo-natal deaths: 3 provinces, 19 districts	Sample of peri-natal deaths: 6 provinces, 38 districts	Sample of peri-natal deaths: 9 provinces, 64 districts

4	Addition of near-miss, neonatal morbidity		3 provinces, 3 districts	3 provinces, 6 districts	3 provinces, 10 districts	6 provinces, 20 districts	6 provinces, 40 districts

Table: 2. Plan for implementing MPDSR 2016–2018, Indonesia

No	MPDSR component to be developed/strengthened	2016	2017	2018
A.	**Structures required for implementing MPDSR**			
1	National policy to notify all maternal deaths	Available by Law #23/2014		
2	National policy to review all maternal deaths	• Expert review meeting • Policy brief • Policy on government regulation to review all maternal deaths developed	• Policy on govern-ment regulation to review all maternal deaths endorsed • Socialization of new regulation to related stakeholders	Monitoring of the policy implementation in all districts and provinces, with special focus in 9 provinces, 64 districts
3	Establishment/functioning of national MPDSR Committee	• Expert review meeting • National Committee established • Adaptation of MPDSR tools	• Provincial Committee of MPDSR established in selected 3 provinces • Annual report published	•Provincial Committee of MPDSR established in 6 provinces •Annual report published
4	Establishment/functioning of subnational MPDSR Committee (% districts)	MPDSR Committee established in 3 provinces, 19 districts	MPDSR Committee established in 6 provinces, 38 districts	MPDSR Commit-tee established in 9 provinces, 64 districts
B. Implementation of MPDSR system				
1	Capability to identify and confirm suspected MP deaths (% deaths, % districts)	M: 3 provinces, 19 districts % deaths: 70%	M: 6 provinces, 38 districts % deaths: 80%	M: 9 provinces, 64 districts

2	Notification of MP deaths and incorporation in notifi-able disease reporting system (% deaths notified and incorporated in the notifiable disease reporting system)	P (Neonatal): 3 provinces, 9 districts, % deaths: 50%	P (Neonatal): 3 provinces, 18 districts, % deaths: 60%	% deaths: 90% P (Neonatal): 6 provinces, 36 districts, % deaths: 70%
3	Notification carried out within 24 hours for deaths in health facility and 48 hours for deaths in community, and include zero reporting (% districts)			
4	Confirmation of suspected maternal deaths and triangulation of data sources to avoid duplicate notification (% districts)			
5	MPDR: qualitative, in-depth investigations of the causes of and circumstances surrounding maternal deaths (% districts)	M: sum of all deaths in 3 provinces, 9 districts P: sample of neonatal deaths in 3 provinces, 9 districts	M: in-depth enquiry in 3 provinces, 9 districts P: sample of neonatal deaths in 3 provinces, 9 districts	M: in-depth enquiry in 3 provinces, 19 districts P: sample of neonatal deaths in 3 provinces, 19 districts
6	Analysis and interpretation of aggregated findings (% districts)			
7	Immediate actions taken based on findings from death reviews as indicated in the recommendations of the reviews (% districts carried out priority actions)			
8	A plan for disseminating MPDSR results, recommendations and responses (% districts have the plan)			
C. Monitoring MDSR implementation				
1	Agreement on indicators to be used for monitoring and mechanisms for monitoring progress	Identify list of indicators and agreement by all partners	Monitoring Evaluation System developed	Periodic evaluat-ion conducted in selected districts
2	A plan for monitoring MDSR implementation: — To improve timeliness, quality and completeness of information — To ensure that major steps are functioning adequately and improving over time	Identify list of indicators and agreement by all partners	Monitoring Evaluation System developed	Periodic evaluation conducted in selected districts

Table: 3. Plan for implementing MPDSR/MNDSR in 2016, Indonesia

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Time-frame
A. Establishment/strengthening of structures required for implementing MPDSR						
1	Expert review meeting	• To develop MDSR Framework • To establish national MPDSR Committee • Adaptation of MPDSR tools	Family Health Directorate, MoH	DIC, POGI, IDAI, IBI, IDI, PPNI, WHO, UNFPA, Academician, MOHA, NIHRD, BKKBN, CDC Surveillance Unit, DG of Health Services, KPPA, PMK, MORA, civil society	National	Apr.–Sept.
2	Development of national policy to review all maternal deaths	• Policy to review all maternal deaths available	Family Health Directorate, MoH	HUKOR, POGI, IBI, IDAI, IDI, PPNI, WHO, UNFPA, DIC, DG Health Services, NIHRD, CDC Surveillance Unit, MOHA, Academician	National	Jul.–Dec.
B. Ensuring notification of MP deaths and incorporation in the notifiable disease reporting system						
1	Health Information/ Health System Review	To review existing MCH LAMAT	DIC	Family Health, Surveillance, Health Service, NIHRD, MOHA, POGI, IBI, IDI, IDAI, PPNI	National	Apr.–Sept.
2	MPDSR integrated with CR/VS	To agree on death notification mechanism			National	Jul.–Dec.
C. Ensuring quality of MPDSR processes, adequacy of recommendations and actions taken						
1	ToT of MPDSR for Provincial Team	MPDSR trainer avail-able at province level	Family Health	DIC, Health Service, Surveillance, POGI, IBI, IDI, IDAI, PPNI	National	Oct.–Dec.
2	Training for MPDSR reviewer	MPDSR reviewer available		POGI, IDAI, IBI, IDI, PPNI, Academician	National	Oct.–Dec.
D. Mechanism of aggregate data analysis of MPDR cases						
1.	Development of me-chanism to integrate aggregate data analysis of	Mechanism of data analysis available	DIC	NIHRD, Surveillance, Health Service, MOHA	National	Apr.–Sept.

	MPDSR cases into the existing health system					
E. Facilitating subnational programme managers for MDSR implementation						
1	Facilitative supervision on MPDR from Nation-al/Province to District	To review MPDR processes at district level and maternal	Family Health, MoH	DIC, Surveillance, Health Service, POGI, IBI, IDI, IDAI	District levels	Jul.–Dec.
F. Monitoring MDSR implementation						
1	Identify a list of indicators and agreement by all partners in all levels	List of indicators agreed and M&E mechanism	Family Health, MoH	DIC, Surveillance, Health Service, POGI, IBI, IDI, IDAI	National	Sept.–Dec.

Support needed: technical assistance from UN H4+ team on the establishment of MPDSR system.

Maldives

Table: 1. Plan for implementing MPDSR 2016–2020, Maldives

No	Dimension/scope		2016	2017	2018	2019	2020
1	Place of death identified	Maternal	All deaths in communities and facilities				
		Perinatal	All deaths in communities and facilities				
2	Scale of coverage of MDSR system	Maternal	National coverage				
		Perinatal	Capital (but inconsistent), 2 tertiary level hospitals	Consistent review at capit-al level, 2 tertiary hospitals	Full national coverage		
3	Depth of review process	Maternal	Full confidential enquiry of all deaths				

		Perinatal	Summary of all deaths	In-depth enquiry of sample	Full confident-ial enquiry of all deaths		
4	Addition of near-miss, neonatal morbidity		Started but now discontinued, planned to restart this year				

Table: 2. Plan for implementing MPDSR 2016–2018, Maldives

No	MDSR component to be developed/strengthened	2016	2017	2018
A.	**Structures required for implementing MPDSR**			
1	National policy to notify all maternal deaths	Yes		
2	National policy to review all maternal deaths	Yes		
3	Establishment/functioning of national MPDSR Committee	Yes		
4	Establishment/functioning of subnational MPDSR Committee (% districts)		Subnational (regional hospital)	
B.	**Implementation of MPDSR system**			
1	Capability to identify and confirm suspected MP deaths (% deaths, % districts)	100%		
2	Notification of MP deaths and incorporation in notifiable disease reporting system (% deaths notified and incorporated in the notifiable disease reporting system)	100%		
3	Notification carried out within 24 hours for deaths in health facility and 48 hours for deaths in community, and include zero reporting (% districts)	100% in 24 hours		
4	Confirmation of suspected maternal deaths and triangulation of data sources to avoid duplicate notification (% districts)	100% (VRS vs MD notifications)		
5	MPDR: qualitative, in-depth investigations of the causes of and circumstances surrounding maternal deaths (% districts)	100%		

6	Analysis and interpretation of aggregated findings (% districts)	100% (annual and once in 3 years)		
7	Immediate actions taken based on findings from death reviews as indicated in the recommendations of the reviews (% districts carried out priority actions)	100%		
8	A plan for disseminating MPDSR results, recommendations and responses (% districts have the plan)	100% (published and annual report to Min		
C. Monitoring MDSR implementation				
1	Agreement on indicators to be used for monitoring and mechanisms for monitoring progress	Yes		
2	A plan for monitoring MDSR implementation: — To improve timeliness, quality and completeness of information — To ensure that major steps are functioning adequately and improving over time	External review once in 2 years		

Table: 3. Plan for implementing MPDSR/MNDSR in 2016, Maldives

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Time-frame
A. Establishment/strengthening of structures required for implementing MPDSR						
1	Review and revise of TOR of MPMMRC Committee	To strengthen regular functioning specially perinatal mortalities	RH unit, HPA	Atoll health service division, QID, HPA, health facilities	Nation wide	Mar.– Apr.
2	Start regular meetings	• Consistent perinatal review • Review near-misses	MPMMRC	Committee members Secretariat		Apr.
B. Ensuring notification of MP deaths and incorporation in the notifiable disease reporting system						
1	Zero reporting	Ensure reporting of all cases	Health facilities	MoH, HPA, WHO health facilities	Nation wide	Mar. – Dec.
C. Ensuring quality of MPDR processes, adequacy of recommendations and actions taken						

1	Forming response committee	Ensure that recommendations are implemented	HPA	QA, Atoll health services, Finance, Training, HR, PPD, member of MPMMRC, HPA	National	Jun.–Dec
2	Develop and endorse a protocol for DSS	Debriefing and staff support	MPMMRC	MoH, Security Services		Jun.–Dec.
D. Mechanism of aggregate data analysis of MDR cases						
1	Training in epidemiology and data analysis	Quality and accurate timely data	MoH	Supporting UN agencies		
E. Facilitating subnational programme managers for MDSR implementation						
1	Identification, sensitization and training of focal points	Effective implementation	HPA	Health facilities		
F. Monitoring MDSR implementation						
1	Develop and finalize the framework	Monitoring	HPA			

Myanmar

Table: 1. Plan for implementing MPDSR 2016–2020, Myanmar

No	Dimension/scope		2016	2017	2018	2019	2020
1	Place of death identify-ed	Maternal	Government Health Facilities and Community, Initiation of Private Hospitals	Government Health Facilities, Community, Private Hospitals and Initiation of Military Hospitals	Government Health Facilities, Community, Private Hospitals and Military Hospitals	Government Health Facilities, Community, Private Hospitals and Military Hospitals	Government Health Facilities, Community, Private Hospitals and Military Hospitals

		Perinatal and Child	Government Health Facilities and Community	Government Health Facilities and Community Introduction of death notification in Private Hospitals	Government Health Facilities, Community, Private Hospitals and Initiation of Military Hospitals	Government Facilities, Com-munity, Private Hospitals and Military Hospitals	Government Health Facilities, Community, Private Hospitals and Military Hospitals
2	Scale of cover-age of MPDSR system	Maternal	30 Townships (Go-vernment Health Facilities and Community)	105 Townships	180 Townships	255 Townships	All 330 Townships
		Perinatal and Child	30 Townships (Government Health Facilities and Community)	105 Townships	180 Townships	255 Townships	All 330 Townships
3	Depth of review process	Maternal	Summary of all deaths	Summary of all deaths	In-depth enquiry of sample	In-depth enquiry of sample	In-depth enquiry of sample
		Perinatal and Child	In-depth enquiry of sample (District Level); summary of all deaths (Township Level)	In-depth enquiry of sample (District Level); summary of all deaths (Township Level)	In-depth enquiry of sample (District Level); summary of all deaths (Township Level)	In-depth enquiry of sample (District Level); summary of all deaths (Town-ship Level)	In-depth enquiry of sample (District Level); summary of all deaths (Township Level)
4	Addition of near-miss, neonatal morbidity	Maternal	Preparation of guideline	2 Teaching Hospitals (UM1 Yangon and UM MDY)	5 States and Regional Hospitals with highest MMR	10 States and Regional Hospitals with highest MMR	All States and Regional Hospitals
		Neonatal Morbidity	8 Tertiary Hospitals (Neonatal and Perinatal Database)	10 Hospitals	12 Hospitals	14 Hospitals	16 Hospitals

Table: 2. Plan for implementing MPDSR 2016–2018, Myanmar

No	MDSR component to be developed/strengthened		2016	2017	2018
A.	**Structures required for implementing MPDSR**				
1	National policy to notify all maternal, perinatal and child deaths		Yes, Strategic Direction to be sent	Yes	Yes
2	National policy to review all maternal deaths		Yes	Yes	Yes
	National policy to review all perinatal, newborn and child deaths		Initiation phase	Well established	Well established
3	Establishment/functioning of national MDSR Committee		Yes, strengthening	Yes	Yes
	Establishment/functioning of national PCDSR Committee		Initiation phase	Well established	Well established
4	Establishment/functioning of subnational MPDSR Committee (% districts)		Need strengthening, MDR to MDSR, all 74 districts	Regular functioning	Regular functioning
B.	**Implementation of MPDSR system**				
1	Capability to identify and confirm suspected maternal deaths (% deaths, % districts)		100% (74 districts)	100%	100%
2	Notification of maternal, perinatal, newborn and child deaths and incorporation in notifiable disease reporting system (% deaths notified and incorporated in the notifiable disease reporting system)		100%	100%	100%
3	Notification carried out within 24 hours for maternal, perinatal, newborn and child deaths in health facility and 48 hours for deaths in community, and include zero reporting (% districts)		3%	65%	100%
4	Confirmation of suspected maternal deaths and triangulation of data sources to avoid duplicate notification (% districts)	Maternal	30%	65%	100%
	Triangulation of data sources to avoid duplicate notification (% districts)	Perinatal, newborn and child	30%	65%	100%
5	MPDR: qualitative, in-depth investigations of the causes of and circumstances surrounding maternal deaths (% districts)		50%	75%	100%
6	Analysis and interpretation of aggregated findings (% districts)		50%	75%	100%

7	Immediate actions taken based on findings from death reviews as indicated in the recommendations of reviews (% districts carried out priority actions)	30%	65%	100%
8	A plan for disseminating MPDSR results, recommendations and responses (% districts have the plan)	30%	65%	100%
C. Monitoring MDSR implementation				
1	Agreement on indicators to be used for monitoring and mechanisms for monitoring progress	Identify indicators	Functioning monitoring system	Functioning monitoring system
2	A plan for monitoring MDSR implementation: —To improve timeliness, quality and completeness of information —To ensure that major steps are functioning adequately and improving over time	Develop an imple-mentation plan, incl M-E	Implement the plan	Implement the plan

Table: 3. Plan for implementing MDSR in 2016, Myanmar

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Time-frame
A. Establishment/strengthening of structures required for implementing MPDSR						
1	Development of MDSR guideline and package for advocacy	To internalize MDSR	MRH, DoPH	DoPH, DMS, DoHRM, DMR, WHO, UNFPA, IPS, professional societies	To define methodology of MDSR system	Apr.
2	Advocacy at all levels	To internalize MDSR	MRH, DoPH	DoPH, DMS, DoHRM, DMR, WHO, UNFPA, IPS, professional societies	To commit and lead country's MDSR system	Jun.–Jul.
3	Restructure Review and Response Committee with ToR	To include multisectoral	MOH	Ministry of Home Af-fairs, MoH, Education, General Attorney's Office, Telecom	Ensure review and response at respective levels	Jun.–Jul.
4	Develop costed MDSR implementation plan, including monitoring	To ensure effective implementation	MRH	WHO/UNFPA		Sept.–Dec.

5	Assign focal person at central, S/R, district and township for MDSR	To ensure functioning monitoring mechanism in regular basis	MOH	WHO/UNFPA	Regular monitoring of MDSR and report	Apr.–May
B. Ensuring notification of all maternal deaths and incorporation in the notifiable disease reporting system						
1	Develop notification crite-ria, time, frequency and mechanism, including zero reporting	To identify all maternal deaths	MRH/DoPH	DoPH and DMS, Professional Society WHO and UNFPA	To cover notification of all pregnancy-related deaths	Mar.–Apr.
C. Ensuring quality of MDR processes, adequacy of recommendations and actions taken						
1	Revise formats on FBMDR/CBMDR	To be simplified and informative	MRH/DoPH	WHO/UNFPA	To get information from hospitals and community	Mar.
2	Trial and develop updated formats	To ensure feasibility and acceptability	MRH/DoPH	WHO/UNFPA	To make more user-friendly	Apr.–May
3	Develop MDSR guideline	To align with Global MDSR guideline	MRH/DoPH	DoPH and DMS Professional Society WHO and UNFPA	To standardize the process	May–Jun.
4	Develop Training Manual on MDSR	To standardize mechanism	MRH/DoPH	DoPH and DMS; Pro-fessional Society; WHO and UNFPA	To adhere to guideline	Jun.–Jul.
5	Conduct training on MDSR to healthcare providers	To build capacity	MRH/DoPH	DoPH and DMS WHO/UNFPA	To adhere to guideline	Aug.–Dec.
6	Observational Study tour	To observe the best practices	MRH	WHO/UNFPA	To improve methodo-logy and response	Jul.–Aug
D. Mechanism of aggregate data analysis of MDR cases						
1	Integrate in all existing reporting mechanism of data (maternal notification, disease notification system, HMIS, VRS)	To identify maternal death from different sources	MOH Department of Population, CSO	WHO, UNFPA, UNICEF	To triangulate data	Oct.–Dec.
E. Facilitating subnational programme managers for MDSR implementation						
1	Training on M&E on MDSR	To understand the process	MRH, DOPH	WHO/UNFPA	Established M&E mechanism	Aug.–Sept.

F. Monitoring MDSR implementation						
1	Identify monitoring indicators, process and plan (as a section of costed implementation plan)	To achieve targets	MRH, DOPH	WHO/UNFPA	Improve quality of system	Jul.–Sept.

Table: 4. Plan for implementing PNC (perinatal, newborn and child) DSR in 2016, Myanmar

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Time-frame
A. Establishment/strengthening of structures required for implementing MPDSR						
1	Formation of PCDSR Committee at all levels aligned with MDSR	Conduct analysis, detect trends and outliers; assess response and ensure accountability on these responses; conduct meeting; write comprehensive repost and discuss at national workshop	CHD, MOH	Related ministries and departments, UNs, INGOs, CSO, donors, professional association, private sector, communities	Policy and strategic direction based on findings and recommendation (response)	Mar.–May 2016
2	Advocacy meeting	To get commitment from decision makers and stakeholders	CHD, MOH	Related ministries and departments, UNs, INGOs, CSO, donors, professional association, private sector, communities	Commitment, direction and implementation	Mar.–May 2016
B. Ensuring notification of P deaths and incorporation in the notifiable disease reporting system						
1	Discuss and negotiate to incorporate into HMIS	Coordinate with HMIS to ensure reporting of PCDSR into HMIS	CHD and HMIS, MOH	Related department under MOH, UNs, INGOs, donors	To report perinatal, newborn and child deaths from different levels to HMIS	Jun. 2016
C. Ensuring quality of MPDR processes, adequacy of recommendations and actions taken						
1	TOT	To train health staff To implement PCDSR	CHD and HMIS, MOH	Responsible person from implemented areas	Summary report of all deaths and in-depth review of sample deaths	Jun. on-wards

2	Review Meeting	To know the progress of implementation and to take necessary actions accordingly	CHD, MOH	Related department under MOH, UNs, INGOs, donors		Dec. (Central) Quarter-ly (districts)
3	Supportive Supervision	To observe the function of review teams; to provide necessary guidance	Supervisors from central, S/R , district and Tsp level	Responsible person from implemented areas, academia		At least 1 visit/tsp in a year by DPHO
D. Mechanism of aggregate data analysis of MPDR cases						
1	Identification of data analysts at different levels	To compile and data entry and analysis	S/R		30 Townships	Jul. 2016
2	Orientation on how to analyse PCDSR cases	To train data analysts	S/R		30 Townships	Jul. 2016
E. Facilitating subnational programme managers for MDSR implementation						
1	Multiplier training	To train health staff To implement PCDSR	CHD and HMIS, MOH	Responsible person from implemented areas	Summary report of all deaths and in-depth review of sample deaths	Jun. on-wards
2	Provision of necessary support to undertake supervision and review meeting	To ensure rolling out of PCDSR implementation	CHD and HMIS, MOH	Related department under MOH, UNs, INGOs, donors		Jun. 2016
F. Monitoring MDSR implementation						
1	Development of M&E plan	To ensure that the steps in the system are functioning adequately and improving with time and that information is adequate and timely	CHD and HMIS, S/R	Related department under MOH, UNs, INGOs, donors	Calculation of monitoring indicators and feedback	Jun. 2016

Support needed: M&E plan development (UNICEF, WHO), incorporation into HMIS (WHO); technical/financial assistance for development of guides, training manuals, costed implementation plan and observational study tour.

Nepal

Table: 1. Plan for implementing MPDSR 2016–2020, Nepal

No	Dimension/scope		2016	2017	2018	2019	2020
1	Place of death identified	Mater-nal: *facility*	Strengthen MPDSR in 42 hospitals (Government Facility+Medical College) MPDSR in facilities of 5 districts	Strengthen MPDSR in 42 hospitals (Government Facility+Medical College) All facilities of 5 districts	Strengthen MPDSR in 42 hospitals (Government Facility+Medical College) 10–12 districts covering all facilities (previous 5+5–7 new districts)	Strengthen MPDSR in 42 hospitals (Government Facility+Medical College) 15–17 districts covering all facilities (previous 10–12+5–7 new districts)	Will be Covered in all 75 districts; streng-then MPDSR in 42 hospitals (Government Fa-cility+Medical Col-lege), 20 districts covering all facilities (previous 15+5 new districts)
		Maternal: *community*	5 districts (partial)	5 districts (full)	10–12 districts	15–17 districts	20 districts
		Perinatal *(only in health facility)*	42 hospitals (Government Facility+Medical College)+all facilities of 5 districts	42 hospitals (Government Facility+Medical College)	10–12 districts covering all facilities (previous 5+5–7 new districts)	15–17 districts covering all facilities (previous 10–12+5–7 new districts)	20 districts covering all facilities (previous 15+5 new districts)
2	Scale of Coverage of MPDSR system	Mater-nal: *facility*	Strengthen MPDSR in 42 hospitals MPDSR in facilities of 5 districts	Strengthen in 42 hospitals All facilities of 5 districts	Strengthen MPDSR in 42 hospitals, 10–12 districts covering all facilities (previous 5+5–7 new districts)	Strengthen MPDSR in 42 hospitals, 15–17 districts covering all facilities (previous 10–12+5–7 new districts)	Will be covered in all 75 districts; strengthen MPDSR in 42 hospitals, 20 districts covering all facilities (previous 15+5 new districts)
		M: *community*	5 districts (partial)	5 districts (full)	10–12 districts	15–17 districts	20 districts

		Peri-natal *(only in health facility)*	42 hospitals (Government Facility+Medical College)+all facilities of 5 districts	42 hospitals (Government Facility+Medical College)	10–12 districts covering all facilities (previous 5+5–7 new districts)	15–17 districts covering all facilities (previous 10–12+5–7 new districts)	20 districts covering all facilities (previous 15+5 new districts)
3	Depth of review process	Maternal *(facility+community)*	Facility: every death within 72 hours at facility; community: eve-ry death; VA within 2–4 weeks; review and develop response plan within 2 weeks of VA	Facility: every death within 72 hours at facility; community: every death; VA within 2–4 weeks and review and develop response plan within 2 weeks of VA	Facility: every death within 72 hours at facility; community: every death VA within 2–4 weeks and review and develop response plan within 2 weeks of VA	Facility: every death within 72 hours at facility; community: every death VA within 2–4 weeks and review and develop response plan within 2 weeks of VA	Facility: every death within 72 hours at facility; community: every death; VA within 2–4 weeks and review and develop response plan within 2 weeks of VA
		Perinatal *(facility)*	Every month	Every month	Every month	Every month	Every month
4	Addition of near-miss, neonatal morbidity	PDSR	PDSR	PDSR	PDSR	PDSR	PDSR

Table: 2. Plan for implementing MPDSR 2016–2018, Nepal

No	MDSR component to be developed/strengthened	2016	2017	2018
A. Structures required for implementing MPDSR				
1	National policy to notify all maternal deaths	Nepal Health Sector Strategy 2015–2020 says that all maternal deaths will be reviewed; Nepal ENAP is in the process of endorsement at MoH, which also emphasize MPDSR; Nepal is in the process of revision of Safe	Process of Revised Safe Motherhood Policy endorsement	Process of Revised Safe Motherhood Policy endorsement

		Motherhood Policy to include MPDSR; MPDSR guidelines endorsed		
2	National policy to review all maternal deaths	Yes		
3	Establishment/functioning of national MPDSR Committee	Yes		
4	Establishment/functioning of subnational MPDSR Committee (% districts)	No, but we are in the process of forming subnational committee	Yes, in the selected districts	Yes, in the selected districts
B. Implementation of MPDSR system				
1	Capability to identify and confirm suspected MP deaths (% deaths, % districts)	We are implementing in 5–7 districts out of 75 in 2016–2017; so, it will be 7–10% with the plan to capture all maternal deaths within the district	We are implementing in 5–7 districts out of 75 in 2016–2017; so, it will be 14–20% with the plan to capture all maternal deaths within the district	We are implementing in 5–7 districts out of 75 in 2016–2017; so, it will be 28–40% with the plan to capture all maternal deaths within the district
2	Notification of MP deaths and incorporation in notifiable disease reporting system (% deaths notified and incorporated in the notifiable disease reporting system)	NA. Plans to incorporate long term	NA. Plans to incorporate long term	NA. Plans to incorporate long term
3	Notification carried out within 24 hours for deaths in health facility and 48 hours for deaths in community, and include zero reporting (% districts)	Notification – Yes in health facility and community. Zero reporting: yes	Notification – Yes in health facility and community. Zero reporting: yes	Notification – Yes in health facility and community. Zero reporting: yes
4	Confirmation of suspected maternal deaths and triangulation of data sources to avoid duplicate notification (% districts)	Yes, in web based		
5	MPDR: qualitative, in-depth investigations of the causes of and circumstances surrounding maternal deaths (% districts)		Yes	
6	Analysis and interpretation of aggregated findings (% districts)		Yes	

7	Immediate actions taken based on findings from death reviews as indicated in the recommendations of the reviews (% districts carried out priority actions)	Yes		
8	A plan for disseminating MPDSR results, recommend and responses (% districts have the plan)	Yes		
C. Monitoring MDSR implementation				
1	Agreement on indicators to be used for monitoring and mechanisms for monitoring progress	Yes (NHSS)		
2	A plan for monitoring MDSR implementation: — To improve timeliness, quality and completeness of information — To ensure that major steps are functioning adequately and improving over time	Yes (MPDSR IP)		

Table: 3. Plan for implementing MPDSR in 2016, Nepal

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Time-frame
A. Establishment/strengthening of structures required for implementing MPDSR						
1	MPDSR guidelines endorsed		FHD	WHO, UNICEF, USAID, DfID, NEPAS, NESOG, SAFOG and other interested partners		
	Tools finalized		FHD	WHO, UNICEF, USAID, DfID, NEPAS, NESOG, SAFOG and other interested partners		
	National MPRSR Committee and TWC formed		FHD	WHO, UNICEF, USAID, DfID, NEPAS, NESOG, SAFOG and other interested partners		
2	Development of district Training/orientation package		FHD, related division/centre	WHO, UNICEF, USAID, DfID, NEPAS, NESOG, SAFOG and other interested partners		
3	Formation of subnational committees at district level		FHD	WHO, UNICEF, USAID, DfID, NEPAS, NESOG, SAFOG and other interested partners		
4	Training and orientation		FHD, related division/centre	WHO, UNICEF, USAID, DfID, NEPAS, NESOG, SAFOG and other interested partners		

5	Strengthen the Demographic Section at FHD for implementation of MPDSR		FHD			
6	Include MPDSR in existing pre-service and in-service trainings		FHD			
B. Ensuring notification of MP deaths and incorporation in the notifiable disease reporting system						
1	Training to FCHVs, and orientation to Civil Society Organizations (health workers, HFOMCs, medical institutions, RHCC committees and private sector) on notification			WHO, UNICEF, USAID, DfID, NEPAS, NESOG, SAFOG and other interested partners		
C. Ensuring quality of MPDR processes, adequacy of recommendations and actions taken						
1	Quarterly review of data/process from centre and feedback			WHO, UNICEF, USAID, DfID, NEPAS, NESOG, SAFOG and other interested partners		
2	Mentoring to district committees			WHO, UNICEF, USAID, DfID, NEPAS, NESOG, SAFOG and other interested partners		
D. Mechanism of aggregate data analysis of MPDR cases						
1	Develop and strengthen web-based MPDSR reporting system			WHO, UNICEF, USAID, DfID, NEPAS, NESOG, SAFOG and other interested partners		
	Strengthen linkages with HMIs and CRVS			WHO, UNICEF, USAID, DfID, NEPAS, NESOG, SAFOG and other interested partners		
E. Facilitating subnational programme managers for MDSR implementation						
1	Orientation to district/facility managers					
2	Mentoring					
3	Inter-facility/district sharing of learnings					
F. Monitoring MPDSR implementation						
1	Involve professional organizations and academia in MPDSR					
2	MPDSR team and TWG					
3	Data analysis, use and dissemination					

Sri Lanka

Table: 1. Plan for implementing MPDSR 2016–2020, Sri Lanka

No	Dimension/scope		2016	2017	2018	2019	2020
1	Place of death identified	Maternal	Hospital and Field				
		Perinatal	Hospital and Field				
2	Scale of coverage of MDSR system	Maternal	Hospital and Field				
		Perinatal	Hospital (specialized) Field – only notification	Private sector; peripher-al hospitals; Field			
3	Depth of review process	Maternal	In depth (individual case); CEMD	Community representation			
		Perinatal	In depth (individual case)	Strengthen review pro-cess; district review of intrapartum+selected NN deaths	District feto-infant mortality reviews		
4	Addition of near-miss, neonatal morbidity		Maternal near-miss surveillance started (hospital and Field)	Neonatal near-miss enquiry	Review of quality indicators/ adherence to protocols		

Table: 2. Plan for implementing MPDSR 2016–2018, Sri Lanka

No	MDSR component to be developed/strengthened	2016	2017	2018
A.	**Structures required for implementing MPDSR**			
1	National policy to notify all maternal deaths/PND	Done		
2	National policy to review all maternal deaths/PND	Done	PND	
3	Establishment/functioning of national MPDSR Committee	In process		
4	Establishment/functioning of subnational MPDSR Committee (% districts)	inapplicable		
B.	**Implementation of MPDSR system**			
1	Capability to identify and confirm suspected MP deaths (% deaths, % districts)	MD 100% PND 95%	PND 100%	
2	Notification of MP deaths and incorporation in notifiable disease reporting system (% deaths notified and incorporated in the notifiable disease reporting system)	MD 100%; PND 95% (Hospital 95%, Field 100%)	Peripheral Hospital PND 100%	
3	Notification carried out within 24 hours for deaths in health facility and 48 hours for deaths in community, and include zero reporting (% districts)	Notification 100%; zero reporting from hospitals		
4	Confirmation of suspected maternal deaths and triangulation of data sources to avoid duplicate notification (% districts)	RAMOS (100%)		
5	MPDR: qualitative, in-depth investigations of the causes of and circumstances surrounding maternal deaths (% districts)	MD 100% PND Hospital 95%	Improve quality of review – PND	
6	Analysis and interpretation of aggregated findings (% districts)	100%		
7	Immediate actions taken based on findings from death reviews as indicated in the recommendations of the reviews (% districts carried out priority actions)	50%	100%	
8	A plan for disseminating MPDSR results, recommendation and responses (% districts have the plan)	MD 100%; PND: bottle-neck analysis –2014 dissemination	Further strengthen-ing	
C.	**Monitoring MDSR implementation**			

1	Agreement on indicators to be used for monitoring and mechanisms for monitoring progress	Development of quality assessment tools	Assessment of implementation of recommendations	
2	A plan for monitoring MDSR implementation: — To improve timeliness, quality and completeness of information — To ensure that major steps are functioning adequately and improving over time	Available		

Table: 3. Plan for implementing MPDSR in 2016, Sri Lanka

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Time-frame
A. **Establishment/strengthening of structures required for implementing MPDSR**						
1	Launch CEMD	To improve the quality of MDSR	FHB	SLCOG, SLCOA		2016
2	Private sector, peripheral hospitals and field involvement in PND surveillance	To achieve 100% coverage	FHB	SLCOG, SLCP, PSSL, D/PHSD		2017
3	Strengthen PND review process	To improve the quality	FHB	SLCOG, SLCP, PSSL		2017
4	District review of intrapartum+selected NN deaths	To improve intrapartum and early NB care	FHB	SLCOG, SLCP PSSL, D/PHSD		2017
5	Community representation	To improve the quality of MDSR	FHB	Ministry of Public Administration		2017
6	Neonatal near-miss enquiry	To improve perinatal and neonatal outcomes	FHB	SLCOG, SLCOP, PSSL		2016
7	Review of quality indicators/adherence to protocols	To improve maternal, perinatal and neonatal outcomes	FHB	SLCOG, SLCP, PSSL		2017
B. Ensuring notification of MP deaths and incorporation in the notifiable disease reporting system						
1	Include peripheral hospitals in PND surveillance	To achieve 100% coverage	FHB	Hospital administration, SLCOG, PSSL, SLCP		2017

2	Initiate zero reporting from hospitals	To ensure capture of all maternal deaths	FHB	Hospital administration		2016
3	Triangulation of data sources on MD	To identify gaps in data sources	FHB	Hospital administration, SLCOG, Registrar General's D		2016
C. Ensuring quality of MPDR processes, adequacy of recommendations and actions taken						
1	Improve quality of PND review		FHB	SLCOG, SLCP, PSSL, D/PHSD, hospital administration		2016/2017
	Recommendations in PND – Bottle-neck analysis – 2014 dissemination	To ensure translating findings into actions	FHB	Policy-makers, provincial/regional administration SLCOG, SLCP, PSSL		2016/2017
D. Mechanism of aggregate data analysis of MPDR cases						
1	Publication of findings of MDSR and PND	To ensure wider dissemination	FHB	SLCOG, SLCP PSSL, UNICEF, WHO		2016
E. Facilitating subnational programme managers for MDSR implementation						
1	Capacity-building on MPDSR/Near-misses	To improve skills and competencies	FHB			2016/2017
F. Monitoring MDSR implementation						
1	Development of quality assessment tools	To assess implementation of recommendations	FHB	Professional colleges UNICEF, WHO		2016/2017

Thailand

Table: 1. Plan for implementing MPDSR 2016–2020, Thailand

No	Dimension/scope		2016	2017	2018	2019	2020
1	Place of death identified	Maternal	In place				
		Perinatal	In place				
2	Scale of coverage of MDSR system	Maternal	National full coverage				
		Perinatal	National full coverage				
3	Depth of review process	Maternal	Full review by MCH board				
		Perinatal	Full review by MCH board using chart review, VA				
4	Addition of near-miss, neonatal morbidity		Hospital Accreditation Agency requires review of all near-miss cases. In place already				

Table: 2. Plan for implementing MPDSR 2016–2018, Thailand

No	MDSR component to be developed/strengthened	2016	2017	2018
A.	**Structures required for implementing MPDSR**			
1	National policy to notify all maternal deaths	• Work with Civil Registration Bureau (CRVS) and HMIS to ensure accuracy of reporting and cause of death • Link various databases within MoPH and Ministry of Interior using unique ID		
2	National policy to review all maternal deaths			
3	Establishment/functioning of national MPDSR Committee			
4	Establishment/functioning of subnational MPDSR Committee (% districts)			
B.	**Implementation of MPDSR system**			
1	Capability to identify and confirm suspected MP deaths (% deaths, % districts)			

2	Notification of MP deaths and incorporation in notifiable disease reporting system (% deaths notified and incorporated in the notifiable disease reporting system)			
3	Notification carried out within 24 hours for deaths in health facility and 48 hours for deaths in community, and include zero reporting (% districts)	Transition from 'offline' to 'online' recording and reporting, and recommendations		
4	Confirmation of suspected maternal deaths and triangulation of data sources to avoid duplicate notification (% districts)			
5	MPDR: qualitative, in-depth investigations of the causes of and circumstances surrounding maternal deaths (% districts)	In place		
6	Analysis and interpretation of aggregated findings (% districts)	In place		
7	Immediate actions taken based on findings from death reviews as indicated in the recommendations of the reviews (% districts carried out priority actions)	Annual follow-up at national level, and at the regional level monthly follow-up		
8	A plan for disseminating MPDSR results, recommendations and responses (% districts have the plan)			
C.	**Monitoring MDSR implementation**			
1	Agreement on indicators to be used for monitoring and mechanisms for monitoring progress	Template, indicators and definitions are agreed		
2	A plan for monitoring MDSR implementation: — To improve timeliness, quality and completeness of information — To ensure that major steps are functioning adequately, improving over time			

Table: 3. Plan for implementing MPDSR in 2016, Thailand

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Time-frame
A. Establishment/strengthening of structures required for implementing MPDSR						
1	Establish regulation for investigating all non-hospital maternal and perinatal deaths	Strengthen non-hospital maternal death reporting system	DoH	Ministry of Labour, Ministry of Interior, DoMS	Initial discuss-ion	2016

2	Establish regulation for migrant maternal and perinatal deaths	Strengthen migrant mater-nal death reporting system	DoH	Ministry of Labour, Ministry of Interior, DoMS	Initial discuss-ion	2016
B. Ensuring notification of MP deaths and incorporation in the notifiable disease reporting system						
1	Same as A.					
C. Ensuring quality of MPDR processes, adequacy of recommendations and actions taken						
1	Audit system	Improve accuracy important data	DoH	MCH board (all levels), RTCOG, RTCP, Ministry of IT, Ministry of Interior	Implemented	Continuous
2	Training of personal	Ensure capability of the personal for MDR reporting	DoH	MCH board (all levels), RTCOG, RTCP, Ministry of IT, Ministry of Interior	Discuss-ion	2016
D. Mechanism of aggregate data analysis of MPDR cases						
1	To be online/realtime reporting system (transition from offline to online)	Simplify, timely, transparency and improvement system	DoH	MCH board (all levels), RTCOG, RTCP, Bureau of Statistic, Ministry of Interior	Discuss-ion	2016
E. Facilitating subnational programme managers for MDSR implementation						
1	Training at the subnational level	Build capacity for coordination and quality reviews	RegHealth Promotion Centre, MoPH	Provincial Health Office, university and medical schools, Ministry of Interior	Annual training	Sept. 16
F. Monitoring MDSR implementation – General supervision by Health Inspector Office and MCH board, twice a year.						

Timor-Leste

Table: 1. Plan for implementing MPDSR 2016–2020, Timor-Leste

No	Dimension/scope		2016	2017	2018	2019	2020
1	Place of death identified	Maternal	Facility Base in National and 5 Subnational	Facility Base Scalling up to 37	Facility Base Scaling up to 67	All deaths in facilities and communities	All deaths in facilities and communities
		Perinatal	–	Facility base in national hospital	Facility base and scaling up 2 referral hospitals	Facility base and Scaling up to 5 referral hospitals	Facility base in all health facilitiess
2	Scale of coverage of MDSR system	Maternal	National Hospital and 5 Referral hospitals	Scalling up to 37 community health Centres	Scaling up to 67 community health Centres	All health facilitiess in municipalities Including communities	All health facilitiess in municipalities Including communities
		Perinatal	–	National hospital	National hospital	Scaling up to 5 referral hospitals	Scaling up to all health facilities
3	Depth of review process	Maternal	National and 5 Subnational	National and 5 Subnational	National and 5 Subnational	National and 5 Subnational including 35 CHCs	All health faci-lities in munici-palities, Including communities
		Perinatal	–	National hospital	National hospital	Scaling up to 5 referral hospitals	All health facilitiess in municipalities
4	Addition of near-miss, neonatal morbidity		–	National hospital	National hospital	Scaling up to 5 referral hospitals	All health facilities

Table: 2. Plan for implementing MPDSR 2016–2018, Timor-Leste

No	MDSR component to be developed/strengthened	2016	2017	2018
A. Structures required for implementing MPDSR				
1	National policy to notify all maternal deaths	Ministerial circular letter will be approved by mid 2016	Implementation in all health facilities	Implementation in all health facilities
2	National policy to review all maternal deaths			
3	Establishment/functioning of national MPDSR Committee	Will be established and functioning in mid 2016	Fully functioning	Improved functioning
4	Establishment/functioning of subnational MPDSR Committee (% districts)	Will be established in 5 municipalities	Scaling up to 10 municipalities	All municipalities
B. Implementation of MPDSR system				
1	Capability to identify and confirm suspected MP deaths (% deaths, % districts)	2 municipalities	Scaling up 4 municipalities	Scaling up to 6 municipalities
2	Notification of MP deaths and incorporation in notifiable disease reporting system (% deaths notified and incorporated in the notifiable disease reporting system)	20% deaths notified and incorporated	Scaling up to 50% deaths notified and incorporated	Scaling up to 80% deaths notified and incorporated
3	Notification carried out within 24 hours for deaths in health facility and 48 hours for deaths in community, and include zero reporting (% districts)	5 municipalities	Scaling up to 10	All municipalities
4	Confirmation of suspected maternal deaths and triangulation of data sources to avoid duplicate notification (% districts)	5 municipalities	Scaling up to 10	All municipalities
5	MPDR: qualitative, in-depth investigations of the causes of and circumstances surrounding maternal deaths (% districts)	3 municipalities	Scaling up to 5	10 municipalities
6	Analysis and interpretation of aggregated findings (% districts)	2 municipalities	Scaling up to 5	10 municipalities
7	Immediate actions taken based on findings from death reviews as indicated in the recommendations of the reviews (% districts carried out priority actions)	2 municipalities	Scaling up to 5	10 municipalities

8	A plan for disseminating MPDSR results, recommendations and responses (% districts have the plan)	2 municipalities	Scaling up to 10	All municipalities
C. Monitoring MDSR implementation				
1	Agreement on indicators to be used for monitoring and mechanisms for monitoring progress	5 municipalities	Scaling up to 10	All municipalities
2	A plan for monitoring MDSR implementation: — To improve timeliness, quality and completeness of information — To ensure that major steps are functioning adequately and improving over time	5 municipalities	Scaling up to 10	All municipalities

Table: 3. Plan for implementing MPDSR in 2016, Timor-Leste

No	Key activity	Objective	Responsible unit	Stakeholders to be involved	Scope	Time-frame
A. Establishment/strengthening of structures required for implementing MPDSR						
1	Circular letter (Minister for Health)	Coordinate and implement MPDSR	MCH Department	UNFPA, UNICEF and WHO	Nation wide	Q1
2	Establishment of inter-Ministerials Committee	To secure political will and coordinate	MoH (DG)	MoH, MoJ, MoSA,	Nation wide	Q3
3	Establishment of National Technical Committee	To coordinate	MCH Department, HMIS Department, Surveillance Department, MoH	UNFPA, UNICEF and WHO	Nation wide	Q2
4	Focal point to be identified within the MCH department, MoH	Coordinate and implement MPDSR	MCH Department	UNFPA, UNICEF and WHO	Nation wide	Q1
5	Study Tour on MPDRS	Improve skills	MCH Department	UNFPA and WHO	Nation wide	Q4
B. Ensuring notification of MP deaths and incorporation in the notifiable disease reporting system						
1	Establish coordination between Health Facacilities and Surveillance, and HMIS	Improve coordination among relevant departments	MCH Department, HMIS	UNFPA, UNICEF and WHO	Nation wide	Q2-3

2	Training of data management	Improve skills of staffs	MCH Department, HMIS	UNFPA, UNICEF and WHO	Nation wide, subnational	Q3-4
3	Incorperate MP deaths data to DHIS2		MCH Department, HMIS		Nation wide	Q3-4
C. Ensuring quality of MPDR processes, adequacy of recommendations and actions taken						
1	Developed and standardized MP Death investigation tools		MCH Department	UNFPA, UNICEF and WHO	Nation wide	Q3
2	Training health staff on MPDR process	Improve health staff skills	MoH	UNFPA, UNICEF and WHO	Nation wide and Subnational	Q3
3	Comence depth invetigation on maternal death causes	Review	MCH Department	UNFPA, UNICEF and WHO	Nation wide and Subnational	Q3-4
D. Mechanism of aggregate data analysis of MPDR cases						
1	Establish data collection mechanism	To improve data collection	HMIS Department	UNFPA, UNICEF and WHO	National	Q3
2	Coordinate progarmme and HMIS, as well as community health Centres	To assure data security	HMIS and MCH Deparment	UNFPA, UNICEF and WHO	National, Subnational	Q4
E. Facilitating subnational programme managers for MDSR implementation						
1	Training programme managers (12 municipalities level) on MDSR	Capacity-building	MCH department	UNFPA, UNICEF and WHO	National	Q3
2	Regular supertive supervision		MCH Department	UNFPA, UNICEF and WHO	National	Q3-4
3	Establish subnational commitee	To coordinate subnational level	DPHO MCH	NGOs and	Subnational	Q2
F. Monitoring MDSR implementation						
1	Developent of Standard Indicators of MPDSR		MCH Deptartment, HMIS Department	UNFPA, UNICEF and WHO	Nation wide	Q2
2	Conduct Monitor		MCH department	UNFPA, UNICEF and WHO	National and subnational	Q1-4

Support needed: i) technical support to conduct training and develop guidelines, including tools at national and subnational levels, by UNFPA, UNICEF and WHO; ii) national workshop on MPDRS; iii) study tour on MPDRS in Malaysia.

Annex 5. Conclusions and recommendations

Regional Meeting to Strengthen Capacity on Maternal and Perinatal Death Surveillance and Response, Paradise Island, Maldives, 16–18 February 2016

Conclusions

The following are the conclusions of the Meeting:

1. Member States' commitment in MPDSR implementation:
   i) A strong commitment was evident for improving monitoring and accountability for maternal and newborn health in the Member States. The participants recognized the urgency to end preventable maternal-newborn deaths and stillbirths.
   ii) Member States have acquired experience in MDRs and have progressively increased the scale of its implementation; however, the extent of implementation varies.
   iii) In transforming the MDRs into MPDSR, the elements of surveillance and response require strengthening. Member States are committed to strengthening these elements and prepare for adding the reviews of stillbirths and newborn deaths.
   iv) Identification, notification that include zero reporting and triangulation of maternal-newborn deaths and stillbirths need to be strongly integrated into the existing HMIS, CRVS and integrated disease surveillance systems. These are the key elements of the "S" element of the MPDSR.
   v) MPDSR will remain an integral part of efforts to improve QoC at all levels of healthcare delivery system, which is key component of the "R" element of the MPDSR.

2. Actions for implementing MPDSR:
   i) Member States agreed to strengthen the policy and legal framework for maternal-newborn death and stillbirth reporting and acting upon the findings so that corrective actions can be undertaken to prevent similar deaths in the future.
   ii) Ministries of health would coordinate efforts of all partner agencies, professional associations, civil societies and WHO collaborating centres to harmonize MPDSR implementation and its scale-up.
   iii) Interprogramme and intersectoral collaborations are crucial both in surveillance of maternal-newborn death and stillbirths and response actions based on recommendations of death reviews.
   iv) Member States will introduce the MPDSR in the preservice education and integrate it in the curricula of medical, nursing and midwifery education.
   v) Partner agencies working in the Region attach a high priority to MPDSR. They would work with countries to build capacity and scale up the implementation.

3. Monitoring of MPDSR implementation:
   i) Availability of national policies, enabling legal environment and mechanisms facilitating MPDSR implementation, such as functional MPDSR committees at national and subnational are to be established if required, and monitored.
   ii) Member States need to establish indicators for monitoring, and develop mechanisms for monitoring progress at various levels related to surveillance and response.

iii) The quality of data needs improvement, in terms of timeliness, completeness and accuracy, and use of standard definition and terminologies related to MPDSR.
iv) Periodic monitoring of the system would contribute to scaling-up of most cost-effective and efficient and models for ensuring sustainability of MPDSR.
v) Effectiveness and efficiency in implementing MPDSR are to be monitored to ensure progress in achieving results as planned in an efficient manner.

Recommendations

The following are recommendations for the Member States, WHO and partners:

1. Member States:
   i) Finalize and implement, systematically, plans for MPDSR implementation at national and subnational levels in collaboration with stakeholders, including partners, professional associations, civil societies, etc.
   ii) Through the leadership of ministries of health, create an environment for collaboration among stakeholders and partners to work together for building capacity and scaling-up of the MPDSR implementation. At all levels, empowerment and involvement of civil societies and communities should be considered.
   iii) Strengthen linkages between MPDSR approach and HMIS, and CRVS, as well as integrated disease surveillance system. This is to ensure the achievement of results, in terms of progress on the proportion of deaths reported and the proportion of deaths reviewed.
   iv) Leverage MPDSR approach for strengthening the national systems for improving QoC and to end preventable maternal-newborn deaths and stillbirths. This is to ensure the achievement of results, in terms of progress in implementing response based on the recommendations of death reviews.
   v) Identify needed support that can be provided by UN agencies, professional associations, WHO collaborating centres, civil society and bilateral agencies in implementing and scaling-up MPDSR approach.
   vi) Support professional associations in sensitization of their members in implementation of MDSR in public and private sectors.

2. WHO and partner agencies:
   i) Provide required technical support for national capacity-building on MPDSR and documentation of MPDSR implementation and scaling-up.
   ii) Share through available forum, such as South-to-South collaboration, as a learning platform to strengthen capacity and sharing experiences of the existing mechanisms and tools for strengthening the implementation and scaling-up of MPDSR.
   iii) Documentation and dissemination of best practices in effective implementation and scale-up of MPDSR in the Region.
   iv) Support development of tools and materials on MPDSR for inclusion in preservice curricula of medical, nursing and midwifery education.

Despite significant reduction (of more than 60%) in maternal and child mortality, our Region missed achieving Millennium Development Goals (MDGs) 4 and 5.

In response, a Regional flagship priority has been established for ending preventable maternal and neonatal mortality. To advance the flagship, the Regional Meeting to Strengthen Capacity on Maternal and Perinatal Death Surveillance and Response (MPDSR) was held in Maldives on 16–18 February 2016 to fortify the South-East Asia regional capacity and support country-level actions for maternal and perinatal death surveillance and response (MPDSR) to end preventable maternal and perinatal deaths.

The MPDSR meeting provided an opportunity for all SEAR countries to develop a 5-year term plan, a 3-year term plan and a plan for 2016 for implementing and expanding MPDSR in each country. The key message in expanding MPDSR was: “Think big, start small and grow slowly”.

World Health Organization
Regional Office for South-East Asia

World Health House
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110 002, India