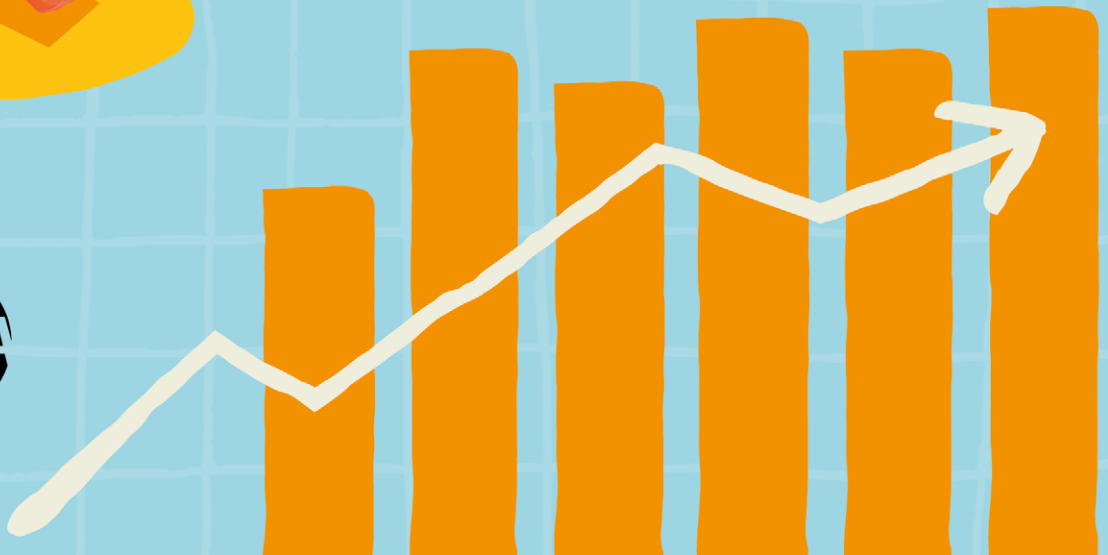
Maternal and Perinatal Death Surveillance and Response

STATUS REPORT 2021

Assessment of Countries in
East and Southern Africa



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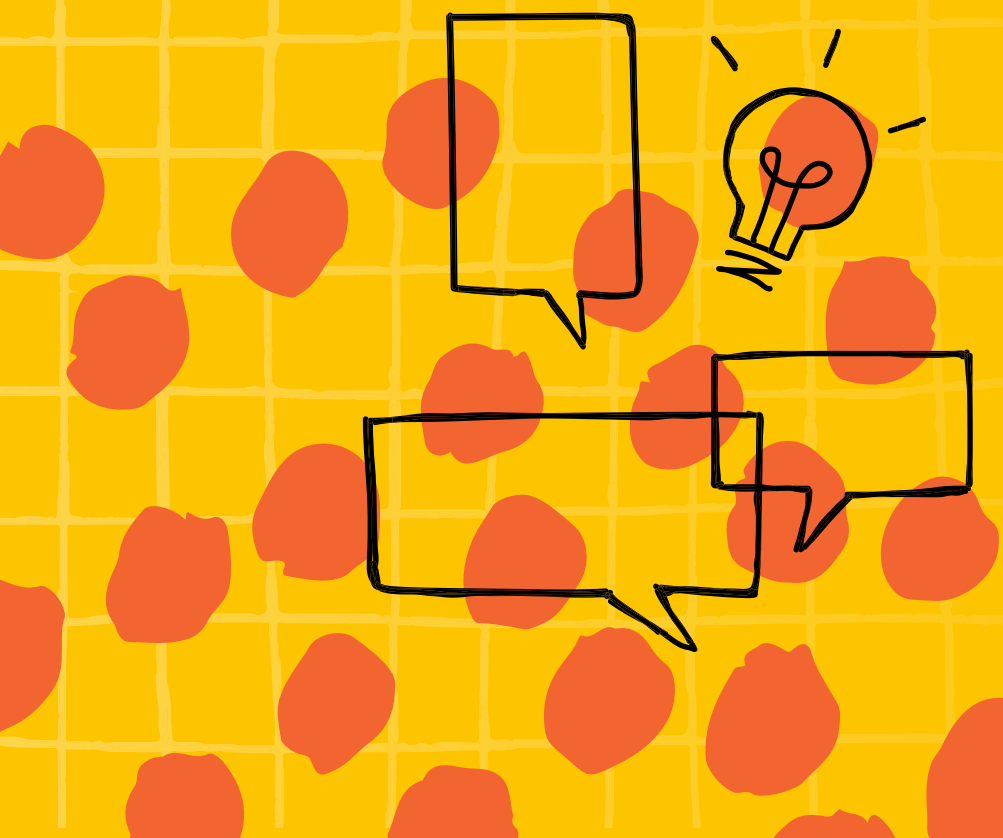

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Acknowledgments

Commissioned by the UNFPA East and Southern Africa Regional Office (ESARO), this report is a joint effort with UNICEF East and Southern Africa Regional Office and WHO Regional Office for Africa. The three agencies (United Nations ESA inter-agency) collaborated on the design of the study, data collection, validation and analysis.

This report is based on a desk review and study conducted in countries in the East and Southern Africa region. We would like to acknowledge and appreciate the role of the Ministries of Health in the region and gratefully appreciate UNFPA, UNICEF and WHO Country Offices and focal points for their commitment and support.

Dr. Muna Abdullah (Health System Specialist, UNFPA ESARO) was the main coordinator. Special recognition goes to Jyoti Tewari (Coordinator of the Integrated Sexual and Reproductive Health Team, UNFPA ESARO), Dr. Nancy Kidula (Medical Officer, Contraception and Fertility Care Unit, WHO), and Dr. Fatima Gohar (Maternal, Newborn & Adolescent Health Specialist, UNICEF) for their continuous technical leadership and support and Dr. Yousuf Alrawi (Sexual and Reproductive Health Programme Analyst, UNFPA ESARO) for his contribution in the final review. Finally, we would also like to thank the Consultant, Mary Kinney, for her role in developing this report.

Foreword

The East and Southern Africa (ESA) region has made significant progress in recent years in improving the survival and health of girls, women, and newborns. Between 2000 and 2017, the 23 countries in the ESA region achieved a reduction of 49 per cent, exceeding the global average of 38 per cent, to arrive at an average of 391 deaths per 100,000 live births. Nearly all ESA countries made good progress between 2000 and 2017. Despite this, the average MMR is still well above the global average of 211/100,000 and progress has been uneven. Inequity between and within countries, exacerbated by COVID-19, remains.

Most countries in the region will need to accelerate their progress in order to meet national, regional and global Sustainable Development Goal targets. The vast majority of maternal and newborn deaths are preventable with access to quality sexual and reproductive health services. Maternal and Perinatal Death Surveillance and Response (MPDSR) can provide a tool to identify these preventable causes of maternal and perinatal deaths and then plan and implement actions, to avoid similar tragic events from happening in the future.

This report explores the current status of MPDSR in countries in the ESA region, including tracking progress from and identifying implementation challenges and recommendations for strengthening MPDSR systems. Evidence shows that countries in the region are at different levels in implementing a robust MPDSR system. The report aims to identify country-specific bottlenecks and highlights successful practices tailored to countries for the effective implementation of MPDSR.

The report gathers information from countries to support decision-makers and programme managers in implementing evidence-based steps to build an effective MPDSR system at different levels, which will ultimately improve the quality of care and prevent avoidable maternal and perinatal deaths.

Finally, the report supports countries in meeting their obligations under regional and global initiatives, such as the Campaign for Accelerated Reduction of Maternal Mortality in Africa (CARMMA), the Africa Health Strategy, the Sustainable Development Goals, and the Global Strategy for Women's, Children's, and Adolescents' Health. I recommend this report to all involved in providing sexual, reproductive, maternal, newborn, and adolescent health care in the East and Southern Africa region.

Lydia Zigomo
Regional Director, UNFPA East and Southern Africa

Acronyms

CEMD	Confidential Enquiry into Maternal Deaths
CHAI	Clinton Health Access Initiative
COD	Cause of Death
CRVS	Civil Registration and Vital Statistics
CSO	Civil Society Organization
DHIS2	District Health Information System 2
DRCHCo	District Reproductive and Child Health Coordinator
EPMM	Ending Preventable Maternal Mortality
ESA	East and Southern Africa
eMPDNS	electronic Maternal and Perinatal Death Notification System
FCDO	Foreign, Commonwealth and Development Office
HMIS	Health Management Information System
ICD MM	International Classification of Diseases-Maternal Mortality
ICD PM	International Classification of Diseases- Perinatal Mortality
IDSR	Integrated Disease Surveillance and Response
LSTM	Liverpool School of Tropical Medicine
MDSR	Maternal Death Surveillance and Response
MPDSR	Maternal and Perinatal Death Surveillance and Response
MCSP	Maternal and Child Survival Program
M&E	Monitoring and Evaluation
NGO	Non-governmental Organization
RMNCAH	Reproductive, Maternal, Newborn, Child and Adolescent Health
SMAGs	Safe Motherhood Action Groups
USAID	United States Agency for International Development
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
VHW	Village Health Worker
WHO	World Health Organization

Background

Maternal and Perinatal Death Surveillance and Response (MPDSR) is an established, sound and robust system for reviewing maternal deaths and establishing nationwide enquiries into deaths during pregnancy labour and puerperium. MPDSR is a system that measures and tracks all maternal and perinatal deaths in real time, helps to understand the underlying factors contributing to the deaths, and stimulates and guides actions to prevent future deaths. It is a form of continuous surveillance that links the health information system and quality improvement processes from local to national levels, permits routine identification, notification, quantification, and determination of causes of maternal and perinatal deaths, and is useful information to help respond with actions that will prevent future deaths (World Health Organization, 2021a). MPDSR also supports the delivery of quality maternal and newborn health care (World Health Organization, 2021b).

MPDSR has been identified by multiple global and regional bodies as a priority for ending preventable maternal and newborn deaths and stillbirths. The World Health Organization (WHO) released global technical guidelines on Maternal Death Surveillance and Response (MDSR) (World Health Organization, 2013) in 2013, and a perinatal death audit in 2016 (World Health Organization, 2016a). In 2020, WHO listed MPDSR among the essential interventions to mitigate the indirect effects of COVID-19 on maternal and perinatal outcomes (World Health Organization, 2020). Operational guidance and tools to support MPDSR implementation were released in September 2021 (World Health Organization, 2021c). Global priority for MPDSR has been demonstrated through inclusion in the United Nations Secretary-General's Global Strategy for Women's and Children's Health in 2015 (Every Woman Every Child, 2015), and as part of the accountability milestone of the Ending Preventable Maternal Mortality (EPMM): A Renewed Focus for Improving Maternal and Newborn Health and Well-being in 2021 (World Health Organization and United Nations Children's Fund, 2021). In Africa, institutionalizing MPDSR is one of the priorities of the African Union Commission's action plan towards ending preventable maternal, newborn and child mortality in Africa since 2013 (United Nations Population Fund, 2013).

The joint United Nations (i.e. WHO, UNFPA and UNICEF) regional offices in East and Southern Africa (ESA) have been supporting countries and facilitating south-south learning to strengthen MPDSR in the region. As countries adapt and apply this guidance, implementation gaps and challenges remain in preventing successful MPDSR uptake (Kinney et al., 2021). The United Nations inter-agency partners started to monitor MPDSR in ESA through the standard biennial survey in 2014. A MPDSR regional status report for 2016 and 2018 have been produced and disseminated to enhance the quality and use of MPDSR. This report represents the status of MPDSR in 2021, and documents the progress made since 2016.

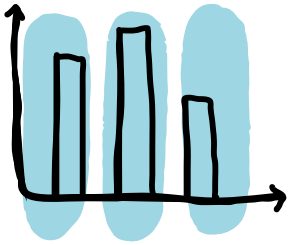
In 2020, WHO listed MPDSR among the **essential interventions** to mitigate the indirect effects of COVID-19 on maternal and perinatal outcomes

Aim and objectives

The aim of this study is to understand the status of MPDSR in countries in the ESA region, including tracking progress from 2016 to 2021, and identifying implementation challenges and recommendations for strengthening MPDSR implementation.

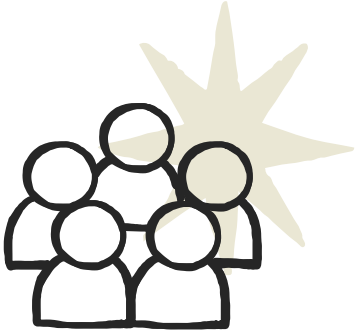
Objectives:

To understand **progress** made on strengthening the MPDSR system since 2016.



To assess the **status** of the UNFPA programme scores for 2016 and 2021.

To understand implementation **challenges**.



To identify recommendations for the effective **implementation** of MPDSR at scale.

Methodology

This report is based on an online survey sent to **23 countries,** plus Zanzibar, by UNFPA, WHO, and UNICEF regional offices

This report is based on an online survey sent to 23 countries, plus Zanzibar, by UNFPA, WHO, and UNICEF regional offices (United Nations ESA inter-agency). The survey was sent in an email request as a Google Form link, as well as in a Microsoft Word document, to UNFPA, WHO and UNICEF country officers working on MPDSR, with a request by the United Nations ESA inter-agency to convene a joint meeting with their respective national Ministry of Health MPDSR focal persons. The 2021 questionnaire was consistent with the 2016 and 2018 questionnaires to allow comparability. The 2021 questionnaire was adapted slightly to reorder and clarify questions, as well as expanded to include questions about the impact of COVID-19. Questions were presented in English and French.

Only countries that completed the survey in 2021, and had also completed the two previous surveys (2016 and 2018) were included in the assessment of trend data. A Google Form was used to collect data, and Excel was used for the analysis of data. The UNFPA programme score of 10 tracer indicators used in the 2018 report were applied.

To inform the discussion and recommendations, a desk review was conducted of global and national guidelines, as well as with United Nations ESA inter-agency MPDSR-related documentation and related literature.

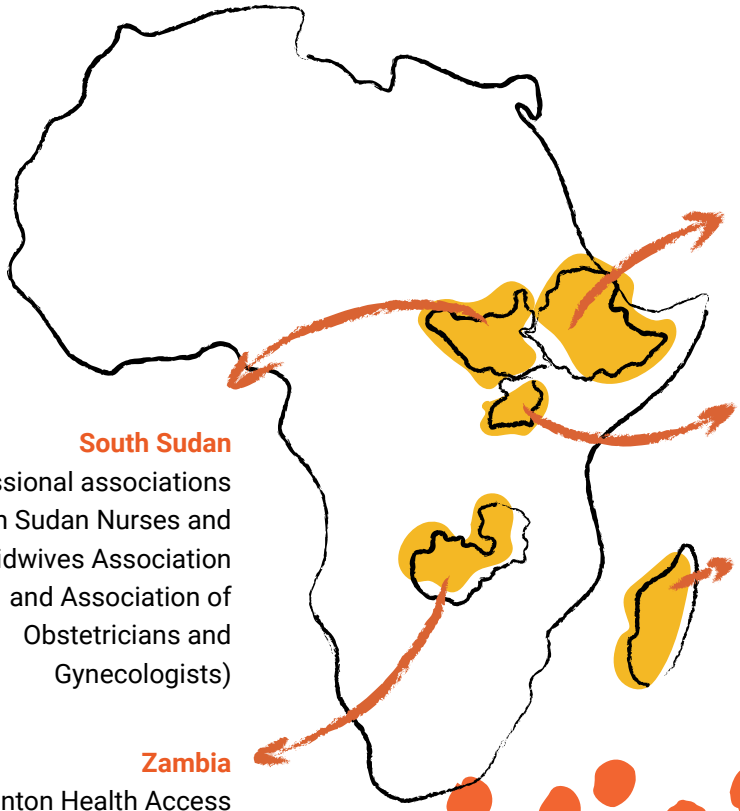
Preliminary results were shared with country and regional representatives for feedback. Some inconsistencies between responses over time were identified, mostly around the tracer indicators measuring national MPDSR reporting. Since questions were asked slightly differently in the 2018 and 2021 surveys, some countries may have received different scores for the same tracer indicator between surveys. Therefore, a validation exercise was undertaken for two tracer indicators: (1) national committee produces annual report; and (2) national maternal mortality report available publicly. A validation exercise was conducted to confirm the responses to these questions by sending an email to the person who submitted the survey with these two questions. Twelve countries responded to the validation process1. The data provided in the validation exercise was then applied to the 2021 results and the UNFPA programme score.

1 Countries that contributed to the data validation process: Angola, Comoros, Ethiopia, Kenya, Lesotho, Madagascar, Mozambique, Namibia, Rwanda, Tanzania, Zambia, and Zimbabwe.

Results

2021 Results

The survey was completed by 17 countries (inclusive of Zanzibar)[2] (see Table 1). The Annexes provide data by country for the relevant indicators tracked in this survey. Thirteen of these countries had completed the previous surveys, from which to compare progress. The 2021 questionnaires were completed with or by the joint UNFPA, WHO and UNICEF country offices and verified by the respective Ministry of Health MPDSR focal points. Others involved in data collection included:



Ethiopia
Ethiopian Public Health Institute MPDSR focal person

Uganda
USAID, FHI360, Save the Children, and World Bank

Madagascar
USAID-ACCESS MPDSR focal person and USAID National Data Manager

South Sudan
Professional associations (South Sudan Nurses and Midwives Association and Association of Obstetricians and Gynecologists)

Zambia
Clinton Health Access Initiative (CHAI) and Jhpiego Zambia

2 Zanzibar has a separate MPDSR system and structure than Tanzania mainland and hence this report considered Zanzibar separately from Tanzania mainland.

Table 1

Countries included in the trend analysis with data points available

Countries	2016	2018	2021
Angola	x	x	x
Botswana		x	x
Comoros	x		x
Democratic Republic of the Congo	x	x	x
Ethiopia	x	x	x
Kenya	x	x	x
Lesotho	x		x
Madagascar	x	x	x
Mozambique	x	x	x
Namibia	x	x	x
Rwanda	x	x	x
South Sudan	x	x	x
Tanzania	x	x	x
Uganda	x	x	x
Zambia	x	x	x
Zanzibar		x	x
Zimbabwe	x	x	x

The survey requested that respondents submit relevant national guidelines, as well as any MPDSR related reports, for example a National MPDSR Annual Report or a Confidential Enquiry into Maternal Deaths (CEMD) Report. As shown in Table 2, national guidelines were submitted by nine countries (Democratic Republic of the Congo, Ethiopia, Madagascar, Namibia, Rwanda, Uganda, Zambia, Zanzibar, and Zimbabwe), three countries submitted MPDSR-related reports (Ethiopia, Kenya and Lesotho), while two countries (Kenya and Rwanda) submitted a CMED Report.

Table 2

Documents received from respondents

Country	National Guidelines	MPDSR-related Report	CMED Report
Angola		(2021)	
Botswana		(2014)	
Comoros			
Democratic Republic of the Congo	X	(2020)	
Ethiopia	X	X (2020)	
Kenya		X (2017)	X (2017)
Lesotho		X (2011/2015 Maternal and 2019 Perinatal)	
Madagascar	X		
Mozambique		(2019)	(2019)
Namibia	X	(2018/9)	(2012-15)
Rwanda	X		X (2019)
South Sudan			
Tanzania		(2019)	
Uganda	X	(2020/2021)	
Zambia	X	(2015)	
Zanzibar	X		
Zimbabwe	X	(2020)	

Progress in setting up MPDSR systems

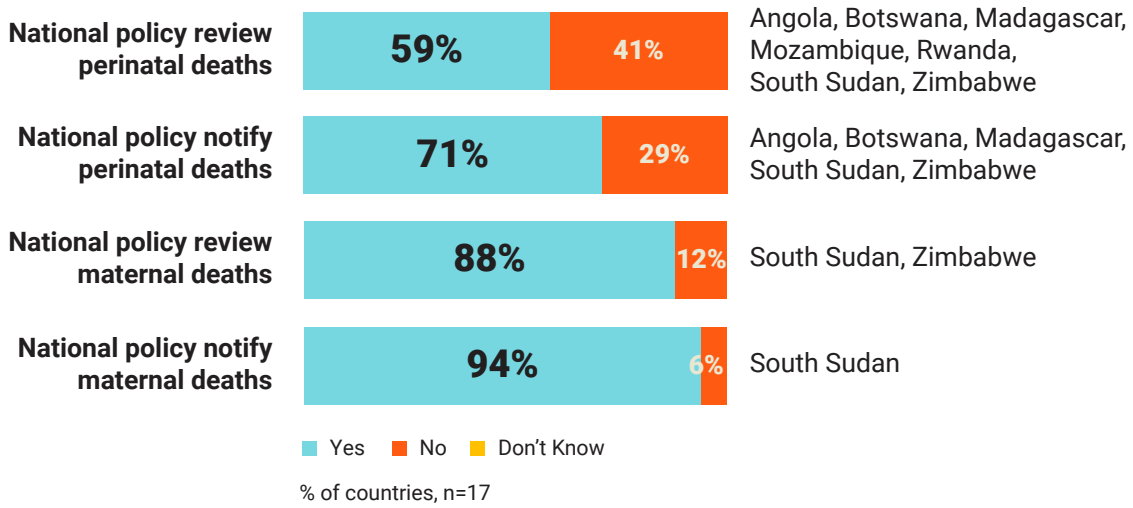
Notification and review policies

Global guidance on notification of a maternal death indicates: "Generally, classifying an event or disease as notifiable means it must be reported to the authorities within 24 hours and followed up by a more thorough report of medical causes and contributing factors. Deaths occurring in health-care facilities should be notified within 24 hours, and deaths in communities should ideally be notified within 48 hours. Ideally the initial notification of the suspected maternal death should be done immediately, by the fastest means possible. The initial notification should be followed by a written report using a case-based report form. The form is completed and submitted electronically where possible; if not, it is delivered by telephone or on paper. If no cases of a maternal death have been identified during the week, a 'zero' is actively reported." (World Health Organization, 2013).

By 2021, all but one country reported having national policies on maternal death notification and the review of maternal deaths (see Figure 1). Twelve countries (71 per cent) had a national policy on perinatal death notification available. Five countries (29 per cent) did not have a policy on perinatal death notification (Angola, Botswana, Madagascar, South Sudan, and Zimbabwe). Seven countries (41 per cent) did not have a policy on reviewing perinatal deaths.

Figure 1

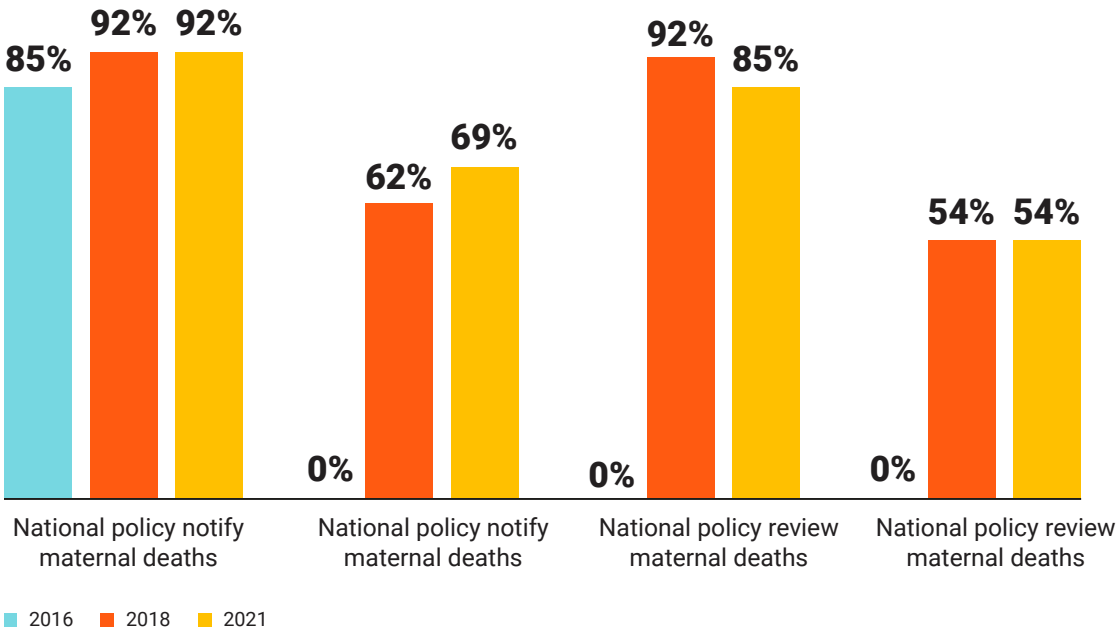
Countries reporting national MPDSR-related policies in 2021



Between 2016 and 2021, policies were mostly unchanged (see Figure 2). Mozambique reported acquiring a national policy for maternal death notification between 2016 and 2018. South Sudan reported a policy in 2016, but indicated no policy in 2018 and 2021. Two more countries (Democratic Republic of the Congo and Tanzania) reported a policy for notifying perinatal deaths from 2018 to 2021. Zimbabwe reported policies in place for perinatal death notification and maternal death review in 2018, but reported no current policies.

Figure 2

Proportion of countries reporting policies in place by year



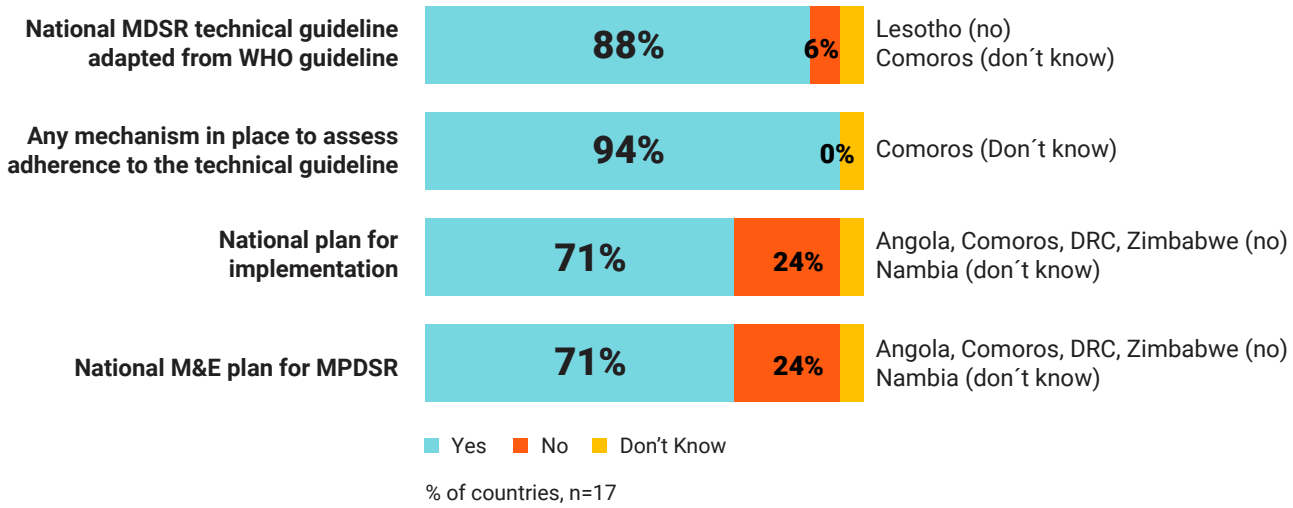
World Health Organization technical guidelines on notification

Most countries – with the exception of Lesotho – reported having national technical MPDSR guidelines. All countries with guidelines indicated a mechanism to assess adherence to the technical guideline. Botswana and South Sudan do not include perinatal deaths in their guidelines. Comoros was not sure if they had a guideline, and if it included perinatal deaths. Since 2018, the Democratic Republic of the Congo, Madagascar and Zambia added perinatal to their national guidelines.

Twelve countries (71 per cent) have a plan in place for implementation and for monitoring and evaluating the implementation of MPDSR (see Figure 3). Namibia responded that they did not know if a plan was in place. Four countries (Angola, Comoros, Democratic Republic of the Congo, and Zimbabwe) indicated that they did not have these plans in place. Civil society organization (CSO) engagement in the implementation of the national MPDSR plan was reported in 11 countries (Comoros, Democratic Republic of the Congo, Kenya, Madagascar, Namibia, Rwanda, South Sudan, Tanzania, Uganda, Zambia, and Zimbabwe), while six countries (Angola, Botswana, Ethiopia, Lesotho, Mozambique, and Zanzibar) indicated no CSO engagement.

Figure 3

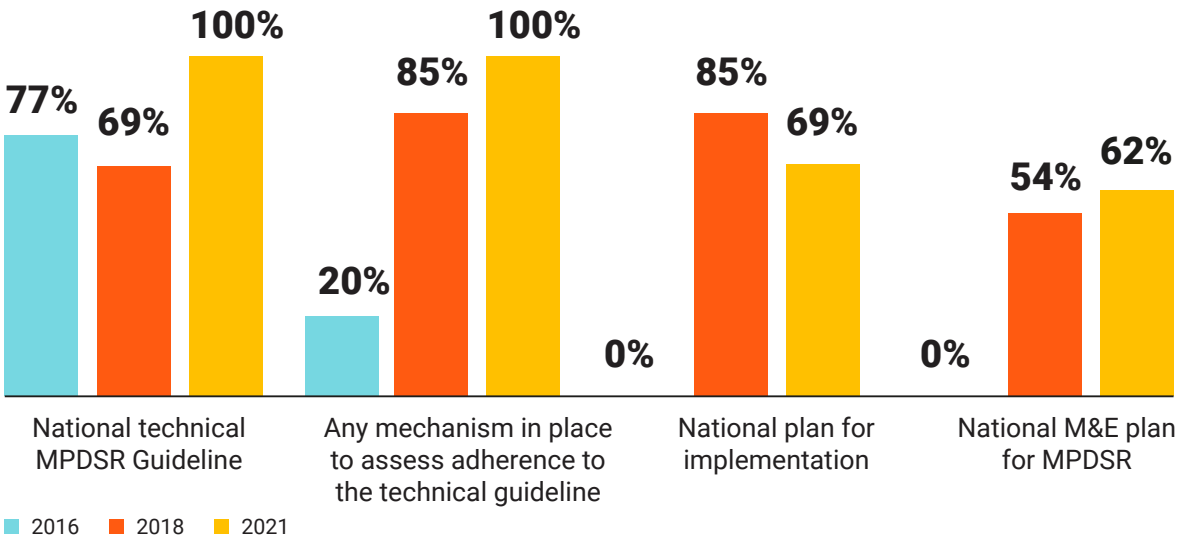
National MPDSR guidelines and implementation plans in place (n=17)



Over time, there was an increase in the number of countries with technical guidance and mechanisms to assess adherence and to monitor national MPDSR plans (see Figure 4).

Figure 4

Countries reporting policies by year (n=13)

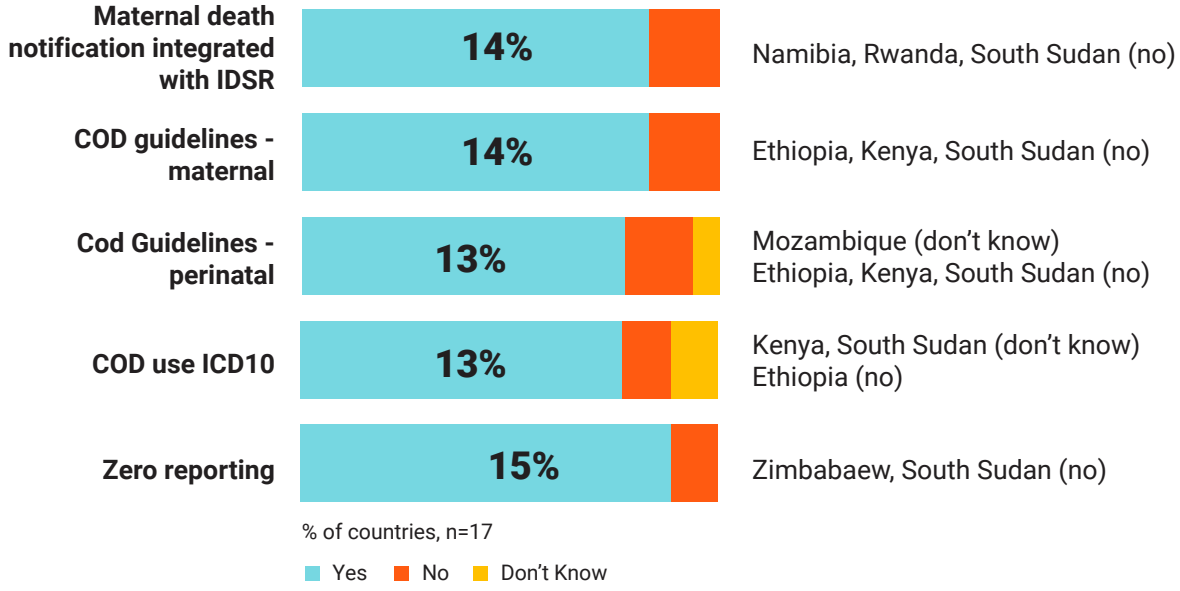


For surveillance, 14 countries integrate maternal death notification with the Integrated Disease Surveillance and Response (IDSR), while Namibia, Rwanda and South Sudan do not (see Figures 5 and 6). Guidelines for cause of death (COD) certification for maternal deaths exist in 14 countries (Angola, Botswana, Comoros, Democratic Republic of the Congo, Lesotho, Madagascar, Mozambique, Namibia, Rwanda, Tanzania, Uganda, Zambia, Zanzibar, and Zimbabwe), and guidelines for COD certification of perinatal deaths exist in 13 countries (Angola, Botswana, Comoros, Democratic Republic of the Congo, Lesotho,

Madagascar, Namibia, Rwanda, Tanzania, Uganda, Zambia, Zanzibar, and Zimbabwe)[3]. Three countries (Ethiopia, Kenya and South Sudan) have neither. For the countries with guidelines, 13 countries reported using the International Classification of Diseases and Related Health Problems (Ethiopia indicated no; South Sudan and Kenya indicated "don't know"). There is an active process of notifying suspected maternal deaths, whether or not any occurred in 15 countries (Angola, Botswana, Comoros, Democratic Republic of the Congo, Ethiopia, Kenya, Lesotho, Madagascar, Mozambique, Namibia, Rwanda, Tanzania, Uganda, Zambia, and Zanzibar). If no maternal deaths occurred, a "zero" is captured in the data collection system. Two countries (South Sudan and Zimbabwe) do not conduct zero reporting. Over time, these indicators have remained mostly constant with the exception of zero reporting which has seen a marked increase.

Figure 5

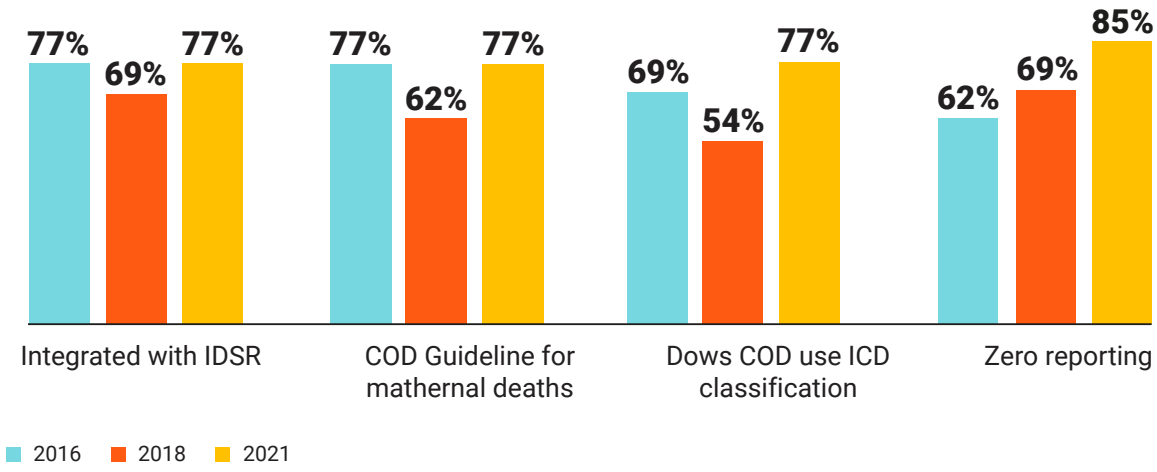
Surveillance indicators in 2021 (n=17)



3 Note: the question did not specify International Classification of Diseases-Maternal Mortality (ICD MM) or International Classification of Diseases-Perinatal Mortality (ICD PM) only if the country has a COD certification guideline.

Figure 6

Maternal death surveillance indicators, by year (n=13)



Resources

Source of funding for MPDSR came from a range of sources, with 11 countries[4] (65 per cent) indicating resources from their national government (see Figures 7 and 8). The top funders in order of frequency include: UNFPA, WHO, UNICEF, Government, and USAID. Jhpiego and CHAI were identified by a few countries. Other partners identified included: Foreign, Commonwealth and Development Office (FCDO) and Liverpool School of Tropical Medicine (LSTM) for Kenya, and PIVOT and MARIE-STOPES for Madagascar.

All countries indicated that WHO provided technical support (see Figure 9). Other agencies have also provided technical support on MPDSR, including UNFPA, UNICEF, USAID, professional associations and Jhpiego. Nearly half of countries reported technical support from professional associations. Other partners identified included FCDO, LSTM and the University of Nairobi in Kenya, FHI in Mozambique, universities and CSOs in Uganda, and non-governmental organization (NGO) ASOS in Madagascar. Figures 8 and 9 show breakdown by country of reported support by partner.

4 Angola, Botswana, Ethiopia, Kenya, Madagascar, Namibia, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe

Figure 7

Source of funding for MPDSR (n=17)

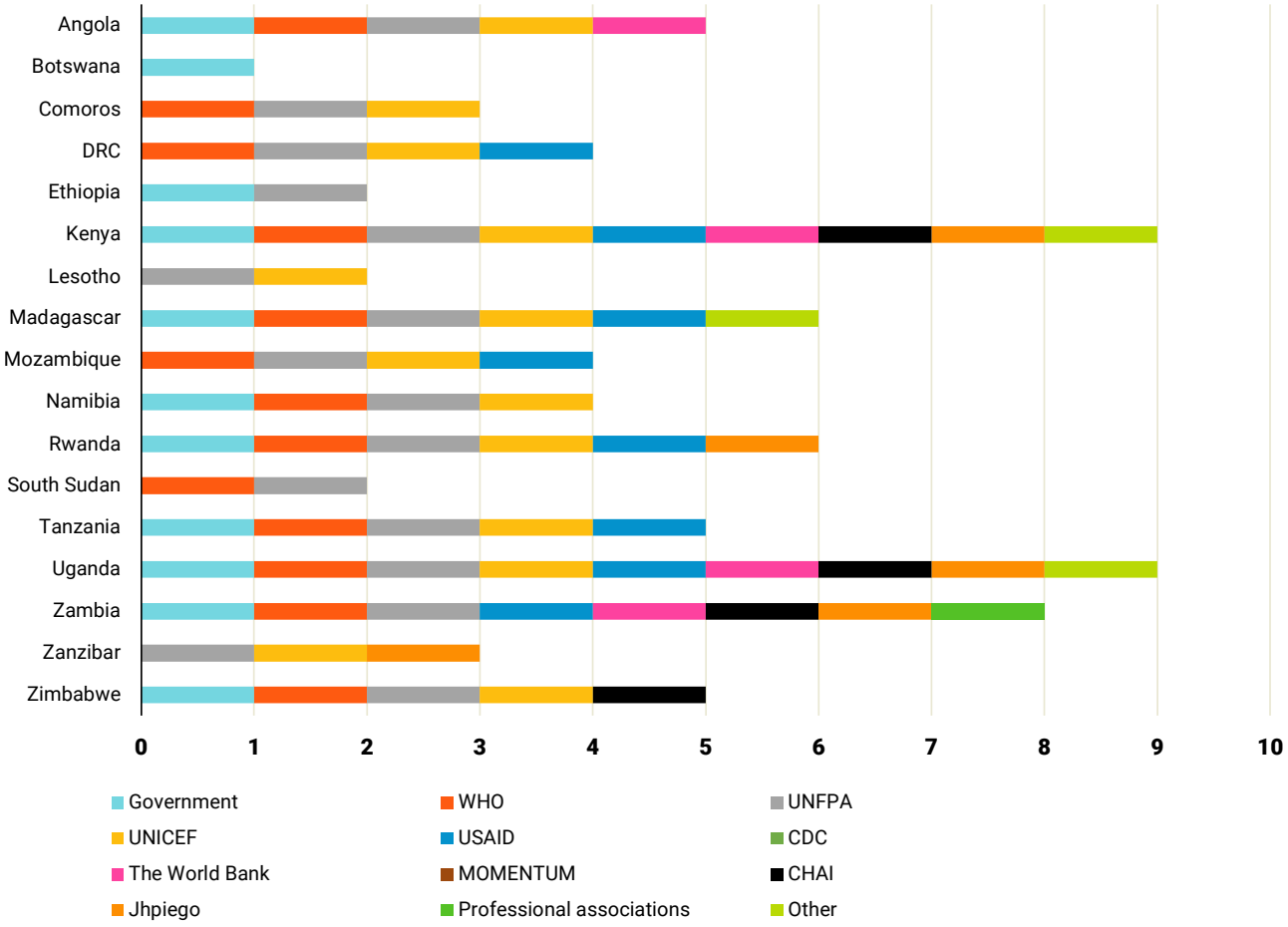


Figure 8

Overview of partner support for MPDSR (n=17)

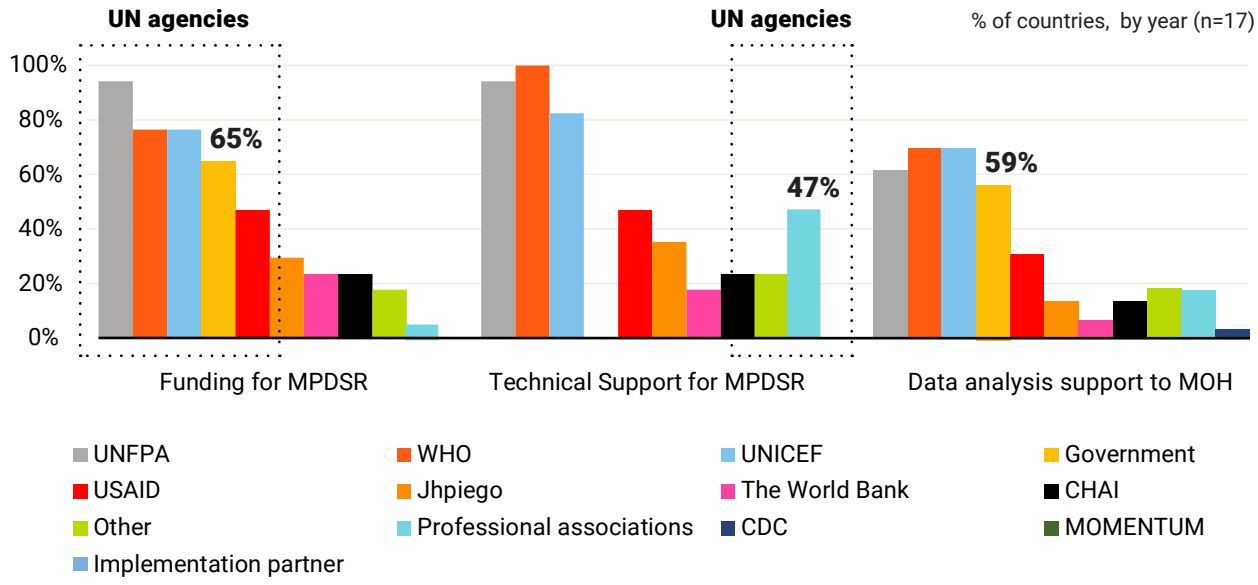
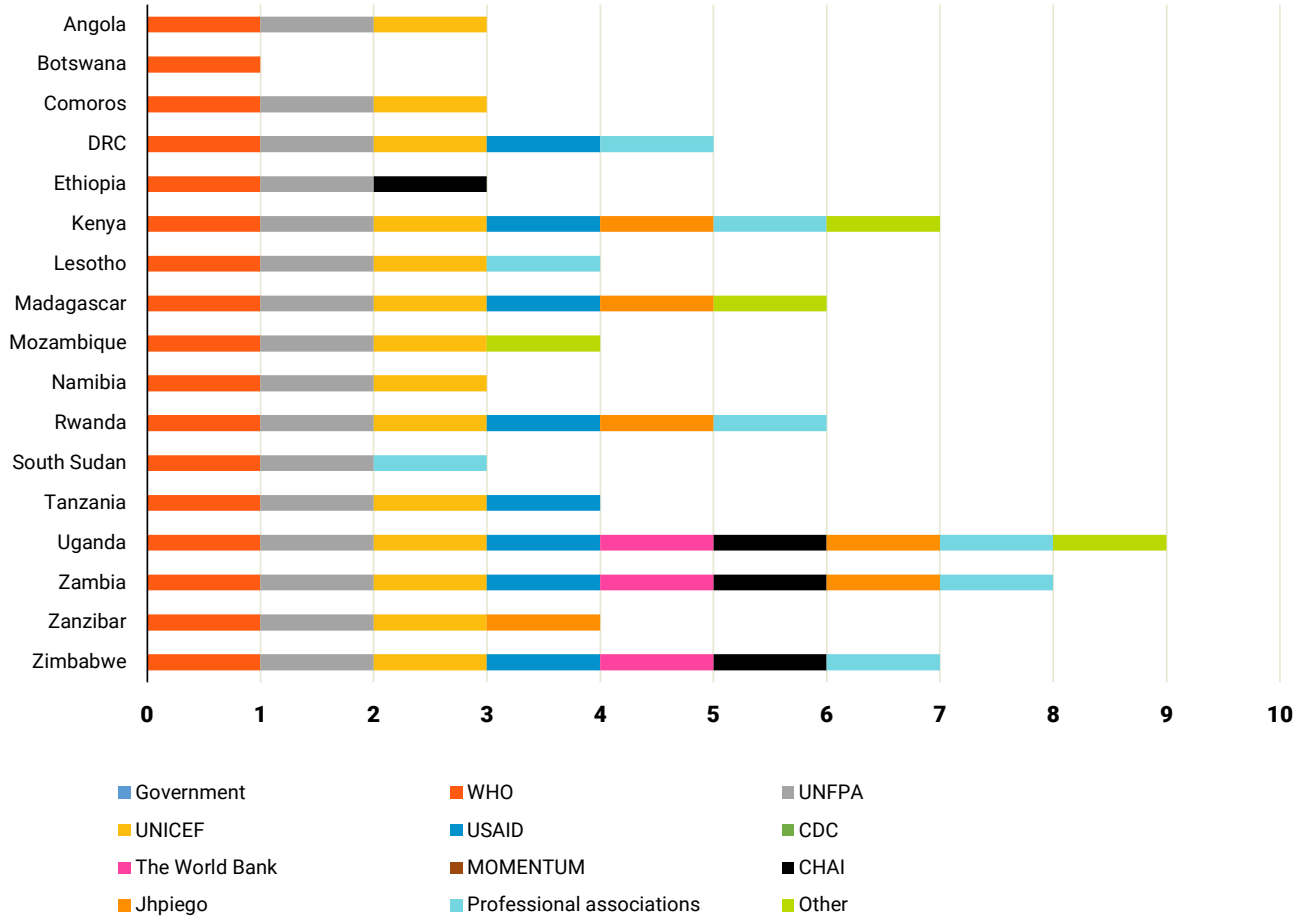


Figure 9

Technical support for MPDSR by partner (n=17)



Changes in the functionality of the MPDSR system

Review committees

The global MDSR guidelines indicate that "Reviews should be done at the facility or district level by multidisciplinary committees made up of health professionals and management staff" (World Health Organization, 2013).

As recommended by WHO, each case of maternal death has to be reviewed by the review committees at the facility, district and upper levels (World Health Organization, 2013). Review of perinatal deaths should also take place, but the specific guidelines on the review process are context specific (World Health Organization, 2016a).

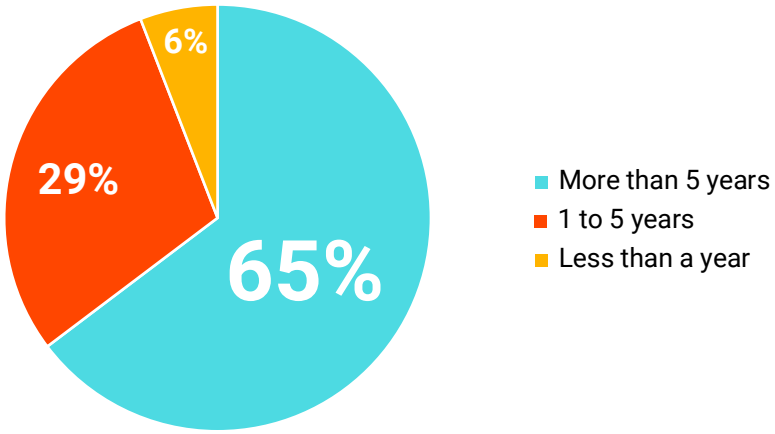
National level

In 2021, all but one country (Botswana) reported an integrated maternal and perinatal death national committee; Botswana reported only a national maternal death review committee. Angola and South Sudan are the only two countries that have newly established committees since 2016 (according to trend data). As shown in Figure 10,

national committees have been in place for more than five years in 11 countries[5] (65 per cent); for one to five years in five countries[6] (29 per cent); and in the past year in South Sudan (6 per cent).

Figure 10

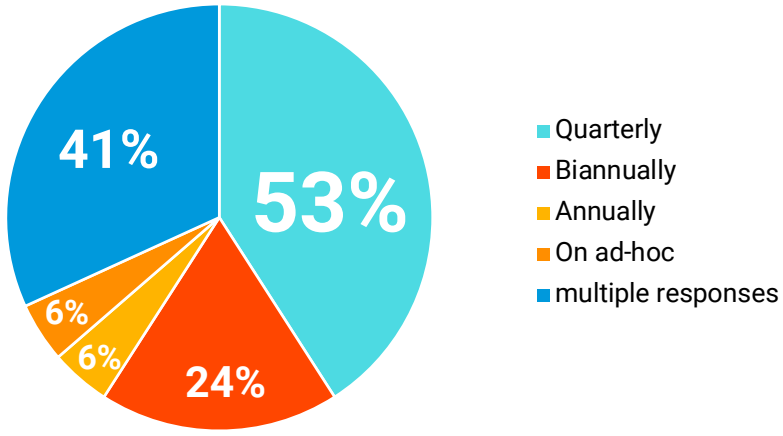
Length of time national committee has been in place (n=17)



The national committees mostly meet quarterly (53 per cent) or biannually (41 per cent) (see Figure 11). One country (Comoros) reported to meet annually and another (South Sudan) as hoc. Two countries gave multiple responses (Angola reported biannually and ad hoc; Uganda reported biannually and quarterly).

Figure 11

Frequency of meetings for national MPDSR committee (n=17)



5 Angola, Botswana, Ethiopia, Kenya, Lesotho, Mozambique, Namibia, Rwanda, Tanzania, Uganda, and Zimbabwe

6 Comoros, Democratic Republic of the Congo, Madagascar, Zambia, and Zanzibar

Subnational level

At the subnational level, all countries reported having established MPDSR subnational committees which are integrated (maternal and perinatal) (see Figure 12). The majority of the countries have had this committee in place for more than five years (12 countries or 71 per cent). South Sudan is the only country that did not report having subnational committees established in previous surveys. Half of the countries in the survey reported that the subnational committees meet quarterly (nine countries or 53 per cent) or ad hoc (five countries or 31 per cent) (see Figure 13). One country (Mozambique) meets biannually at subnational level.

Figure 12

Length of time since establishment of subnational level MPDSR committees (n=17)

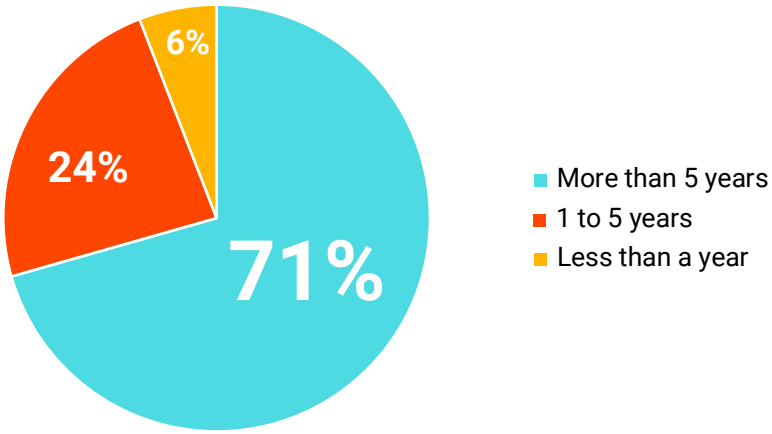
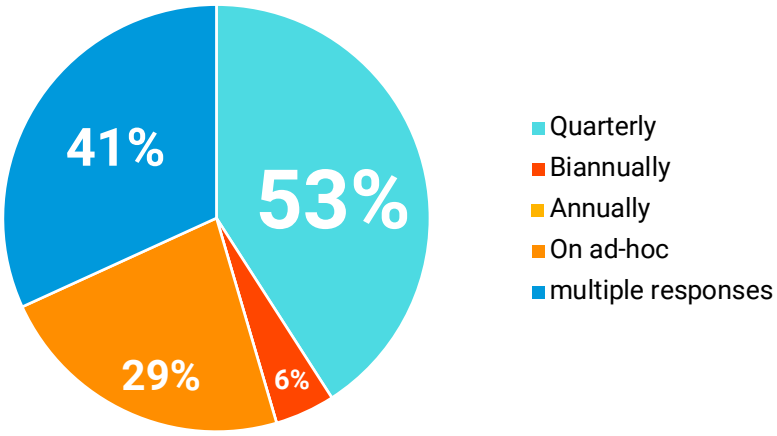


Figure 13

Frequency of subnational MPDSR committee meetings (n=17)



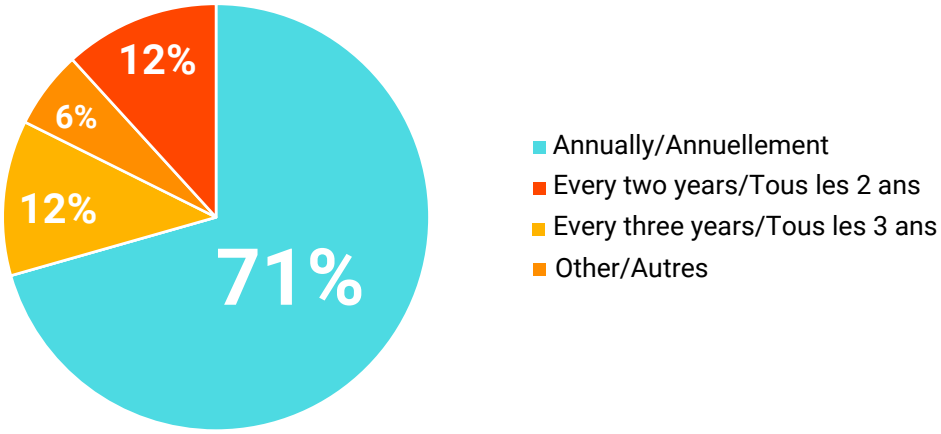
MPDSR reporting

According to the MDSR guidelines, "Annual national and district reports that summarize MDSR results, recommendations, and the response actions taken are a critical component of MDSR. An annual report is also a response in and of itself… because it feeds into the planning process and can contribute to changing how systems work and incorporate new interventions on a broad scale." (World Health Organization, 2013). The MPDSR document to support implementation recommends the completion of a national MPDSR report annually (World Health Organization, 2021a). There are two main types of reports from the MPDSR system: (1) the report from the national MPDSR committee that is used to inform national and subnational planning; and (2) a report on monitoring and evaluation (M&E) of the MPDSR system itself. Publishing the report and making it publicly available is one mechanism to disseminate information and ensure accountability and transparency.

Most countries reported that the national MPDSR committee produces an annual MPDSR report for national health planning (12 countries[7] or 71 per cent) (see Figure 14). Two countries (Comoros and South Sudan) reported that they have not started producing reports; two countries (Botswana and Zambia) reported a producing a national report every three years; and one country (Zimbabwe) reported an ad hoc approach. Twelve countries[8] provided the year of the latest report, eight[9] of which were in 2019–2021. Eleven of the countries (47 per cent) indicated that these reports were not published and publicly available online or printed. Of the published reports, countries reported integrated maternal and perinatal reports, separate reports and maternal only reports. Five countries (Botswana, Democratic Republic of the Congo, Mozambique, Tanzania, and Zambia) report that the subnational committee produces an annual MPDSR report.

Figure 14

Frequency of MPDSR committee producing a national report (n=17)



7 Angola, Democratic Republic of the Congo, Ethiopia, Kenya, Lesotho, Madagascar, Mozambique, Namibia, Rwanda, Tanzania, Uganda, and Zanzibar

8 Angola, Botswana, Democratic Republic of the Congo, Ethiopia, Kenya, Lesotho, Mozambique, Namibia, Tanzania, Uganda, Zambia, Zanzibar, and Zimbabwe

9 Angola, Democratic Republic of the Congo, Ethiopia, Kenya, Mozambique, Tanzania, Uganda, and Zimbabwe

Between 2018 and 2021, there was an increase in the number of countries that reported an annual national report produced by the MPDSR committee (from 6 to 10 countries), and a decrease in the number of countries reporting that reports are made publicly available (see Figures 15, 16 and 17). The data collected for these questions identified issues around inconsistencies with the survey questions and responses over time.

Figure 15

Proportion of countries that publish and make the MPDSR reports publicly available (n=17)

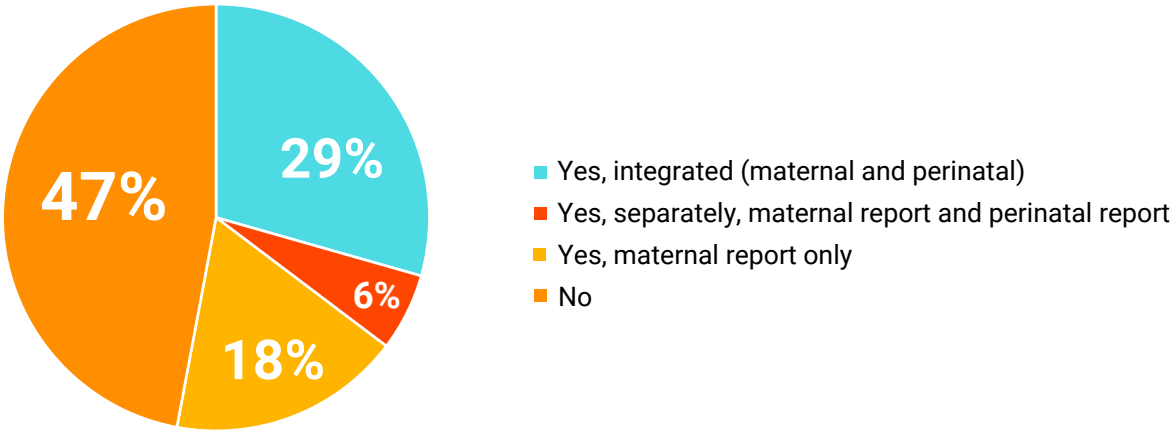


Figure 16

Progress of national MPDSR reporting

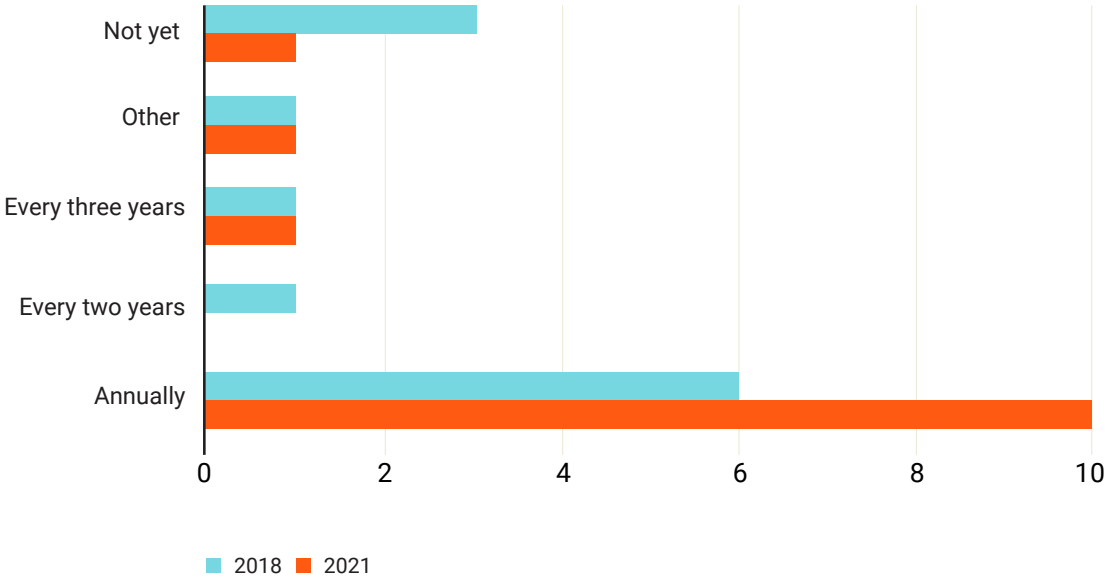
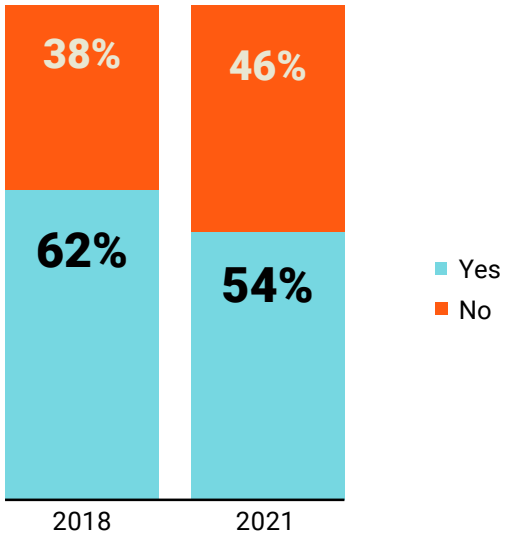


Figure 17

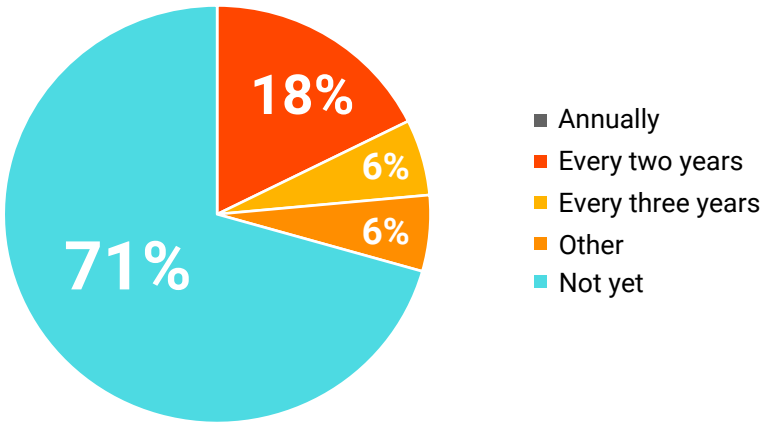
Proportion of countries that public and make MPDSR reports publicly available



For maternal deaths, countries may consider conducting a Confidential Enquiry, which is a qualitative and quantitative systematic and anonymous review of all or a representative sample of maternal deaths occurring at area, regional (state) or national levels. It identifies the numbers, causes and avoidable or r emediable factors associated with them, and makes recommendations for change. It is a more detailed analysis of maternal death, which is conducted anonymously by assessors, who are external to the place where the death took place. A Confidential Enquiry can also take time to establish and process, resulting in less frequent reporting (e.g. every three years). At the time of this survey, three countries (Kenya, Lesotho and Rwanda) reported publishing a National CEMD Report every two years, and one country (Namibia) reported publishing a report every three years. Most countries do not publish a Confidential Enquiry into maternal death report (12 countries[10] or 71 per cent). No countries reported publishing an annual CEMD report (see Figure 18).

Figure 18

National Confidential Enquiry into Maternal Deaths (CEMD) Report published (n=17)



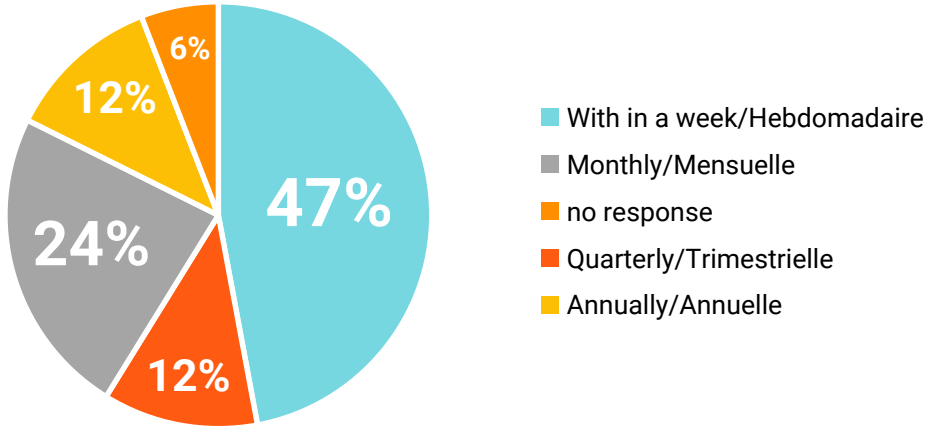
10 Angola, Botswana, Comoros, Democratic Republic of the Congo, Ethiopia, Madagascar, South Sudan, Tanzania, Uganda, Zambia, Zanzibar, and Zimbabwe

Reporting and notification

Successful implementation of MPDSR requires continuous and clear flow of information from facility to district or national committees and then back down through and across the health system (Kinney et al., 2021; Smith et al., 2017). This requires coordination structures and collaboration between different and within levels participating in the review. Eight countries[11] (47 per cent) indicated reporting of maternal deaths within a week from subnational to national level, although there was a range in frequency from within a week to annually (see Figure 19).

Figure 19

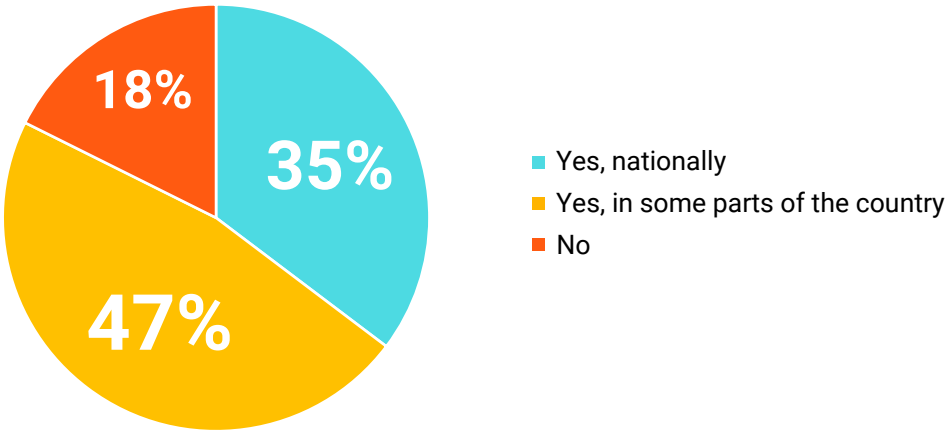
Frequency of reporting maternal deaths from subnational to national level (n=17)



The majority of countries (76 per cent) report that there is a system in place to identify and notify maternal and perinatal deaths in the community. The scale of implementation of social and verbal autopsy varies with only six countries (Botswana, Ethiopia, Lesotho, Namibia, Rwanda, and Zambia) reporting at national scale (see Figure 20).

Figure 20

Proportion of countries with social or verbal autopsy (n=17)



11 Botswana, Comoros, Ethiopia, Lesotho, Namibia, Tanzania, Uganda, and Zambia

A description of the different mechanisms to capture deaths in the community is shown in Table 3. Five countries (Democratic Republic of the Congo, Kenya, Lesotho, Rwanda, and Zimbabwe) report conducting verbal autopsy. Most of the countries indicate that deaths are reported to the nearest health facility via a community health worker.

Table 3

Description of system to identify and notify maternal and perinatal death that happened at the community (outside the health facility)

Country	Description of system to capture community deaths
Angola	No description provided.
Botswana	All community deaths are notified to the nearest health facility and at the civil registration and vital statistics office.
Comoros	No description provided.
Democratic Republic of the Congo	Implementation of a notification mechanism and verbal autopsy with harmonized tools.
Ethiopia	Health extension workers are responsible for identifying and notifying maternal and perinatal deaths happening in their respective kebele. There are health development armies and one to five networks that will notify the health extension workers if there is any maternal or perinatal death. The system is not going as strong as expected.
Kenya	Verbal autopsy report. Health-care workers and community health volunteers liaise with the local administrators to visit the home of the deceased and collect information which is later analyzed and compiled by the district/subcounty health management team. Practised by some counties.
Lesotho	The Village Health Worker (VHW) oversees deaths that occur within his/her catchment area and reports it to the facility. When a maternal death happens at community level the VHW using a national tool, carries out a verbal autopsy, fills the death form and submits it to the facility.
Madagascar	Community surveillance system effective in three of the 23 regions.
Mozambique	No description provided.

Namibia	No description provided.
Rwanda	There is a committee based at the health centre that conducts a verbal autopsy for each case of death that occurs at the community level.
South Sudan	No description provided.
Tanzania	The maternal and perinatal deaths taking place in the community are notified to the health facilities by the Community Health Workers which then notify the District Reproductive and Child Health Coordinator (DRCHCo). The DRCHCo notifies the regional and national levels. The notification is usually done within one week.
Uganda	Data analysis is stratified and aggregated by facility, district and national levels. The analysis further aggregates by age category, causes of maternal and perinatal deaths and clinical classification of perinatal deaths. Actions and recommendations are linked to the different categories and levels of analysis.
Zambia	Community leaders and community-based volunteers have been sensitized, and it is a national policy to identify and notify maternal and perinatal deaths through existing structures. Every maternal and perinatal death is reported to the traditional leaders and the nearest health facility. Safe Motherhood Action Group (SMAG) members use the SMAG standardized reporting tool to notify maternal and perinatal deaths to the health facility. One of the main roles of SMAGs is to identify all community deaths.
Zanzibar	Community Health Volunteers looking after all pregnant women and newborn/children within their designated catchment area, aiming at providing health education, follow up, monitor and report any health deviation and mortality to the nearest primary health-care facility.
Zimbabwe	The Ministry of Health and Child Care is implementing a community linked maternal and perinatal death notification system, and Village Health Workers are an important part of the system. Verbal autopsies are also being done at community level, although there is need for improvement on the way, frequency and levels at which these are being done.

The MDSR technical guidance indicates that “the number and frequency of maternal death reviews depends on the number of cases identified and the resources available to collect the necessary data. Whenever possible, the goal is to review all maternal deaths.” (World Health Organization, 2013). Data varied widely between countries on the number of deaths notified and cases reviewed (see Table 4). The latest United Nations estimates for maternal death, stillbirth and neonatal death are included to provide context. Generally,

there is gross underreporting of maternal and perinatal deaths, and in some cases, more cases were reviewed than notified (Mozambique and Uganda). Where it says “no data” there was no number entered into the survey. South Sudan indicated none were notified or reviewed.

Table 4

Deaths notified and reviewed as reported by country compared with United Nations estimated number of maternal deaths and perinatal deaths (stillbirths and neonatal deaths)

Country	**Number of maternal deaths** (United Nations estimates, 2017)	**Number of maternal deaths notified in 2020**	**Number of maternal deaths reviewed in 2020 nationally**	**Number of stillbirths** (United Nations estimates, 2019)	**Number of neonatal deaths** (United Nations estimates, 2020)	**Number of perinatal deaths notified in 2020**	**Number of perinatal deaths reviewed in 2020 nationally**
Angola	3000	915	137	25967	35358	10,88	0
Botswana	81	76	76	862	999	0	0
Comoros	72	30	0	674	797	142	0
Democratic Republic of the Congo	16000	6459	2133	98871	96760	69629	3481
Ethiopia	14000	1025	289*	90323	98795	Not available	656*
Kenya	5000	963	963	30030	31343	No data	No data
Lesotho	310	151	151	1611	2401	445	445
Madagas-car	2800	445	147	14671	17607	10934	
Mozam-bique	3100	791	804	25096	32259	3878 (neonatals)	1211
Rwanda	960	280	226	6798	6261	8679	1995

South Sudan	4500	0	0	11515	14976	0	0
Tanzania	11000	no data	no data	40480	42814	no data	No data
Zambia	1300	755	355	9597	14902	9686	2420
Zanzibar		48	48			1445	502 (35%)
Zimbabwe	2100	458	458	7113	11283	11 774	1100

* Indicated that this number was based on reports received.

Source of United Nations estimates: WHO data portal *www.who.int/data/maternal-newborn-child-adolescent-ageing*

Analysis and Feedback Loops

The majority of countries (12 countries[12] or 71 per cent) use a data collation and analysis programme, software or tools for MPDSR (see Figure 21); four countries do not (Angola, Comoros, Rwanda, and South Sudan); eleven countries[13] (65 per cent) reported using aggregate analysis to identify priorities by the national committee reported; four countries (Comoros, Democratic Republic of the Congo, Madagascar, and South Sudan) do not; and one country (Tanzania) did not know. Namibia indicated "don't know" for both questions.

Ten of the countries[14] (59 per cent) also reported using innovative approaches or technologies to facilitate MPDSR specifically. For example, Mozambique and Kenya reported using SMS through mobile phones for notifying maternal deaths. Zimbabwe has developed an electronic Maternal and Perinatal Death Notification System (eMPDNS) which is part of the District Health Information System 2 (DHIS2). Tanzania reported multiple innovative approaches including: (1) mTRAC linked to the DHIS2 which facilitates health workers to submit routine weekly health surveillance data by SMS; (2) adoption of digital communication technologies (i.e. email, social media, WhatsApp messenger, and listserves); and (3) data visualization summaries linked to interactive dashboards. Multiple countries reported using virtual platforms for meetings, such as Zoom, especially since the start of the COVID-19 pandemic.

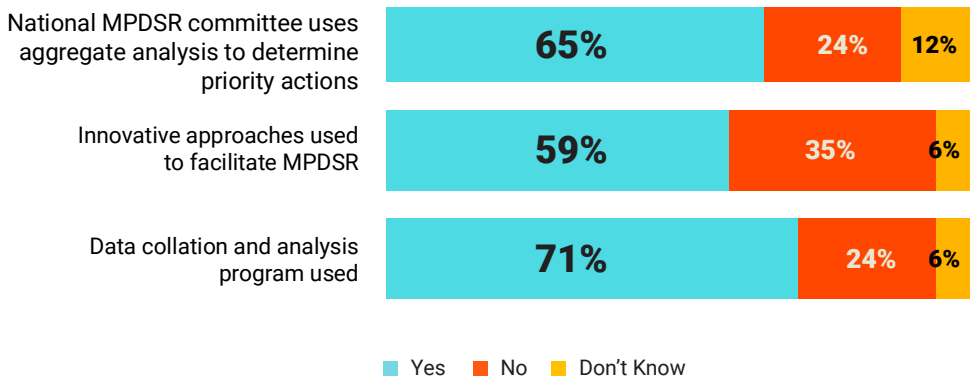
12 Botswana, Democratic Republic of the Congo, Ethiopia, Kenya, Lesotho, Madagascar, Mozambique, Tanzania, Uganda, Zambia, Zanzibar, and Zimbabwe

13 Angola, Botswana, Ethiopia, Kenya, Lesotho, Mozambique, Rwanda, Uganda, Zambia, Zanzibar, and Zimbabwe

14 Botswana, Kenya, Lesotho, Madagascar, Mozambique, Namibia, Rwanda, Uganda, Zambia, and Zimbabwe

Figure 21

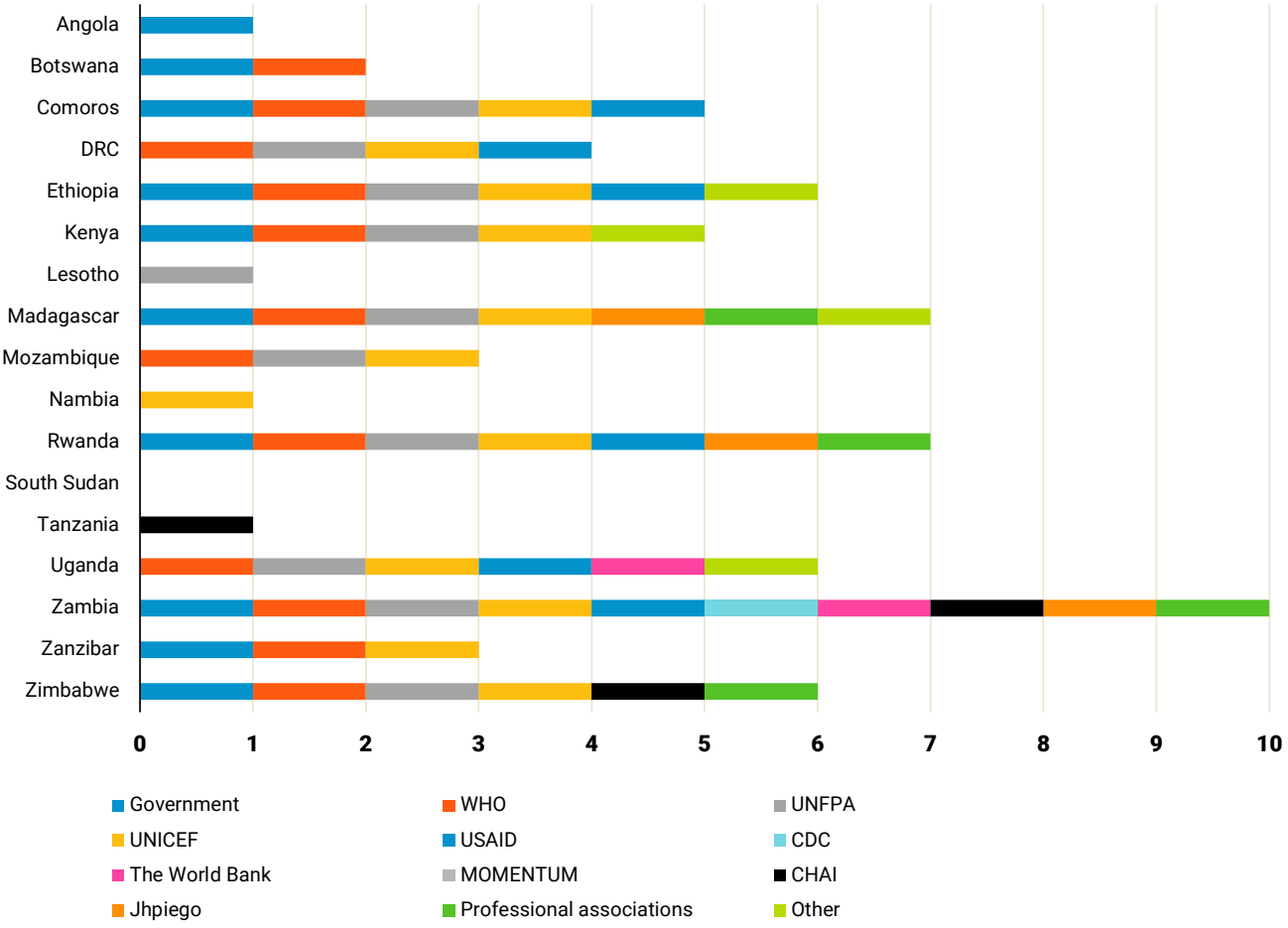
Information on data collation and analysis (n=17)



Support on data analysis primarily comes from United Nations agencies, government, USAID, and professional associations (see Figure 22). Tanzania indicated only CHAI, and Kenya only reported UNFPA. This may not mean other partners do not support, but rather that it is the primary partner providing support.

Figure 22

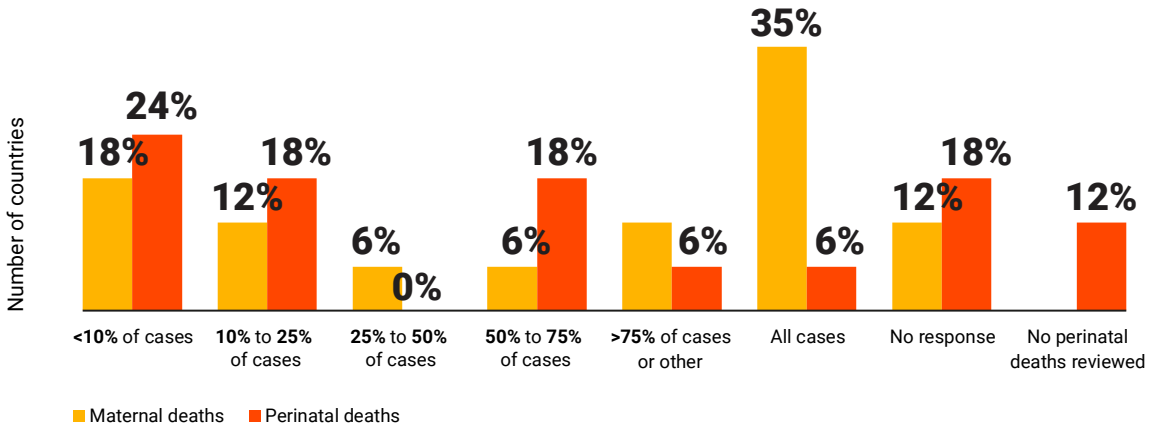
Technical support on data analysis (n=17)



The proportion of cases that the national committee discusses ranged widely for both maternal and perinatal deaths with no clear trends between countries or between maternal and perinatal. For maternal deaths, six countries (35 per cent) discuss all maternal cases (Ethiopia, Lesotho, Namibia, Rwanda, Uganda, and Zambia). Three countries (18 per cent) reported not discussing perinatal deaths at the moment (Angola, Botswana and Mozambique). South Sudan and Tanzania did not answer the question (see Figure 23).

Figure 23

Proportion of maternal and perinatal cases discussed by national committee (n=17)



On feedback/dissemination, all but two countries (Comoros and South Sudan) indicated a mechanism to disseminate findings and recommendations from the National MPDSR Report, mostly at the national and subnational levels (see Figure 24, 25 and 26). Subnational MPDSR reports are disseminated mostly to facility and local levels, with five countries (Botswana, Kenya, Lesotho, Rwanda, and Zimbabwe) indicating dissemination to the community level. The proportion of countries reporting mechanisms to disseminate national MPDSR findings has increased over time from 38 per cent in 2016 to 92 per cent in 2021. Although not all countries report disseminating beyond national level.

Figure 24

Mechanism to disseminate national MPDSR Report (n=17)

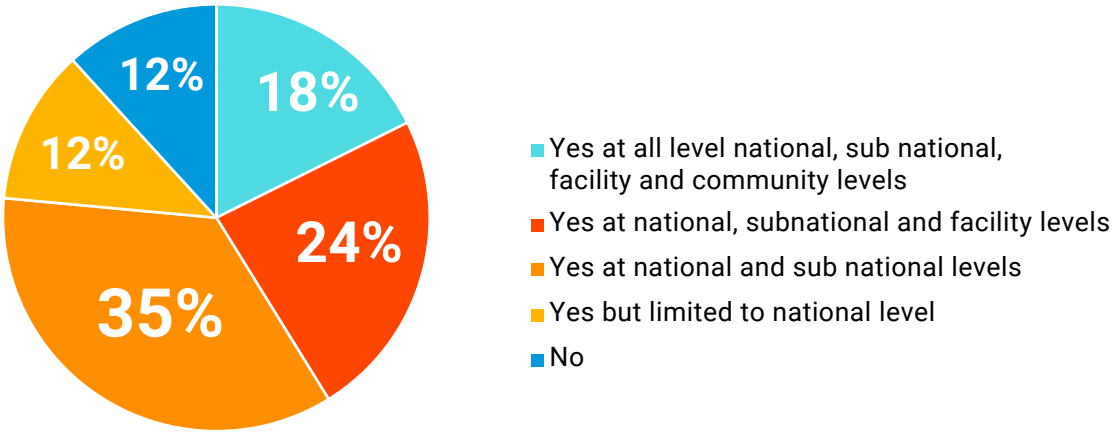


Figure 25

Mechanism to disseminate subnational MPDSR Report (n=17)

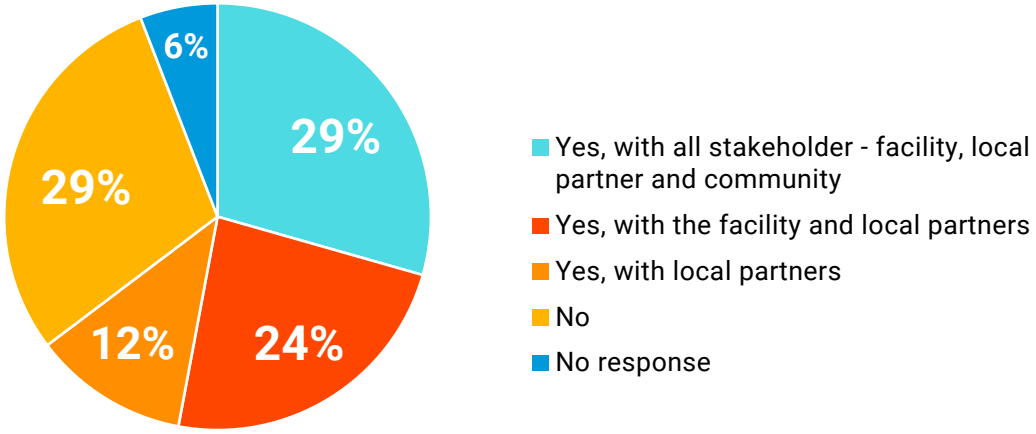
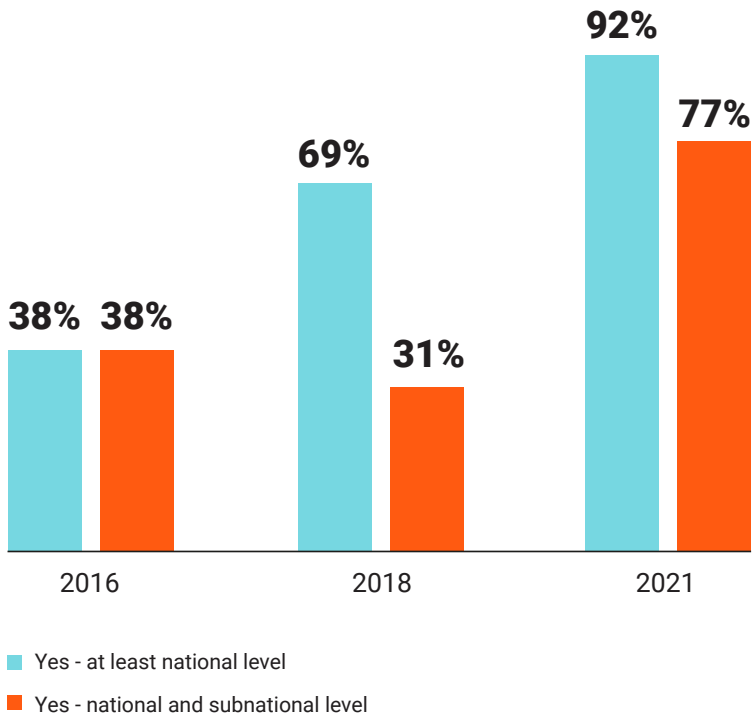


Figure 26

Mechanism to disseminate national MPDSR findings (n=13)

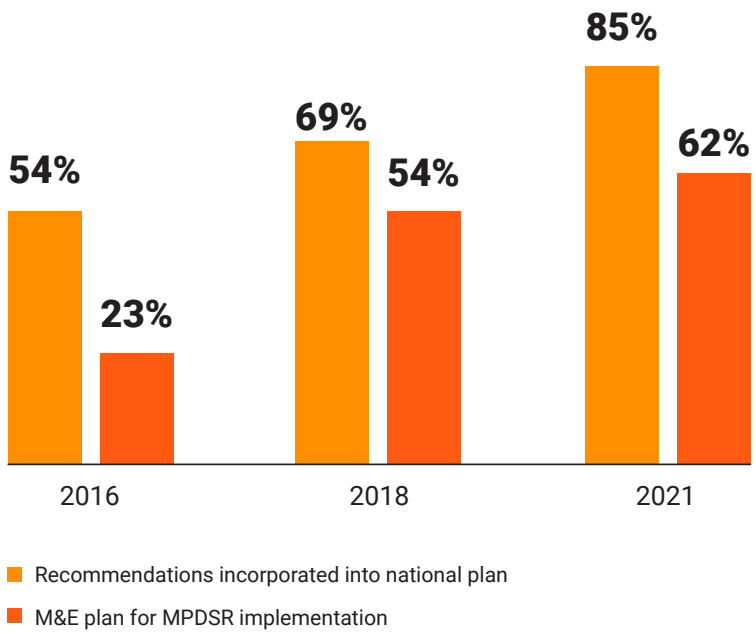


Monitoring and evaluation of the MPDSR system itself is necessary to ensure that the major steps in the system are functioning adequately and improving with time. A monitoring framework with indicators should be agreed to, and indicators assessed annually to consider the proposed indicators in the recent WHO guidance (World Health Organization, 2021a). Most countries (14 countries[15] or 85 per cent) indicated that recommendations are incorporated into their annual plans (see Figure 27).

15 Botswana, Ethiopia, Democratic Republic of the Congo, Kenya, Lesotho, Madagascar, Mozambique, Namibia, Rwanda, Tanzania, Uganda, Zambia, Zanzibar, and Zimbabwe

Figure 27

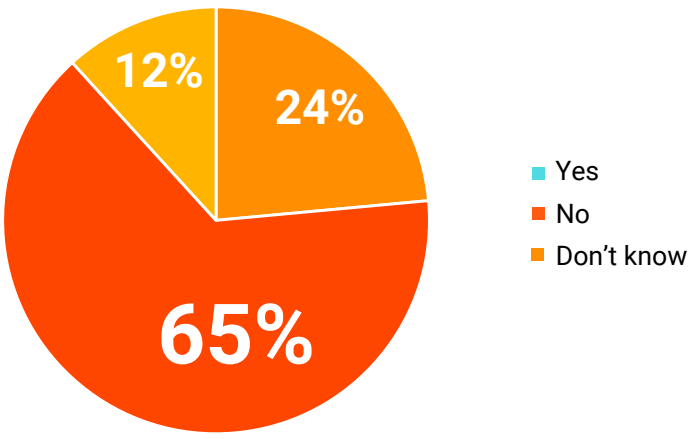
Change in reporting of recommendations and M&E plans over time (n=13)



As of 2021, four countries (Ethiopia, Lesotho, Rwanda, and Zimbabwe) indicated that they have had evaluations (see Figure 28). Tanzania indicated "don't know", however they did have an evaluation conducted by the Maternal and Child Survival Program (MCSP) in 2018 of national policy and subnational/facility level assessment in two regions (Maternal and Child Survival Program, 2018). Countries have increasingly reported that recommendations are incorporated into annual plans, and that an M&E plan is in place for MPDSR implementation.

Figure 28

Proportion of countries with evaluations of MPDSR implementation (n=17)



Implementation factors

Across all levels, the common obstacles to the implementation of MPDSR include lack of human and material resource capacity, lack of a system of accountability to act upon the recommendations and report on it, and a lack of a feedback mechanism (see Figure 29). There has been little change in terms of obstacles reported overtime.

- The top five key obstacles in responding to the **national level** recommendations from the review process include: lack of resources, lack of a feedback mechanism, lack of system of accountability, weak capacity of MPDSR, and lack of training (see Figure 30).
- The top five key obstacles in responding to the **subnational level** recommendations from the review process include: lack of resources, lack of system of accountability, lack of a feedback mechanism, weak capacity of MPDSR, and lack of training (see Figure 30).
- The top five key obstacles in responding to the **facility level** recommendations from the review process include: lack of staff skills to implement, lack of resources, lack of supplies, and lack of a system to integrate recommendations into a continues quality improvement process (see Figure 30).

Overall, the most identified challenges included inadequate material and human resources, and under reporting of suspected maternal deaths. Half of the countries (53 per cent) identified issues around blame culture impeding implementation. One third of the countries reported problems of geography and infrastructure, and inadequate legal frameworks.

53% of the countries identified issues around blame culture impeding implementation.

Other challenges mentioned include:

- Angola: challenge of lack of leadership, planning, coordination, accountability, and monitoring.
- Ethiopia: partner support, both technical and financial, is mandatory to strengthen the system, but only one dedicated partner is supporting MPDSR at national level financially (i.e. UNFPA). Government (Ethiopian Public Health Institute) has requested partners for their support on Technical Assistance recruitment for MPDSR data management and technical support, but none has responded yet.
- Madagascar: challenge of data collection, lack of multisectoral coordination and low review rate.
    - Zambia: absence of standardized guidelines and tools, inadequate knowledge and skills at all levels, and that MPDSR is not considered a priority all the time thus inadequate implementation, monitoring and follow up of recommendations.
    - Zanzibar: challenge of adherence to recommendations and clear way forward agreed during the review meeting.
    - Zimbabwe: challenge of no legal framework to support the notification and review of perinatal deaths.

Figure 29

Overall key challenges or barriers preventing implementation of recommendations (n=17)

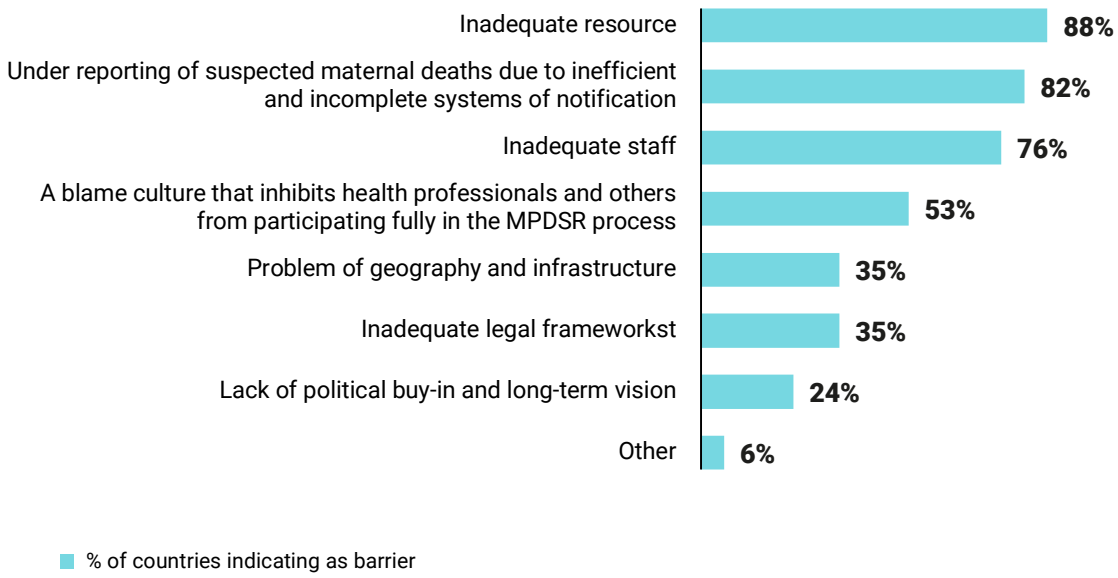
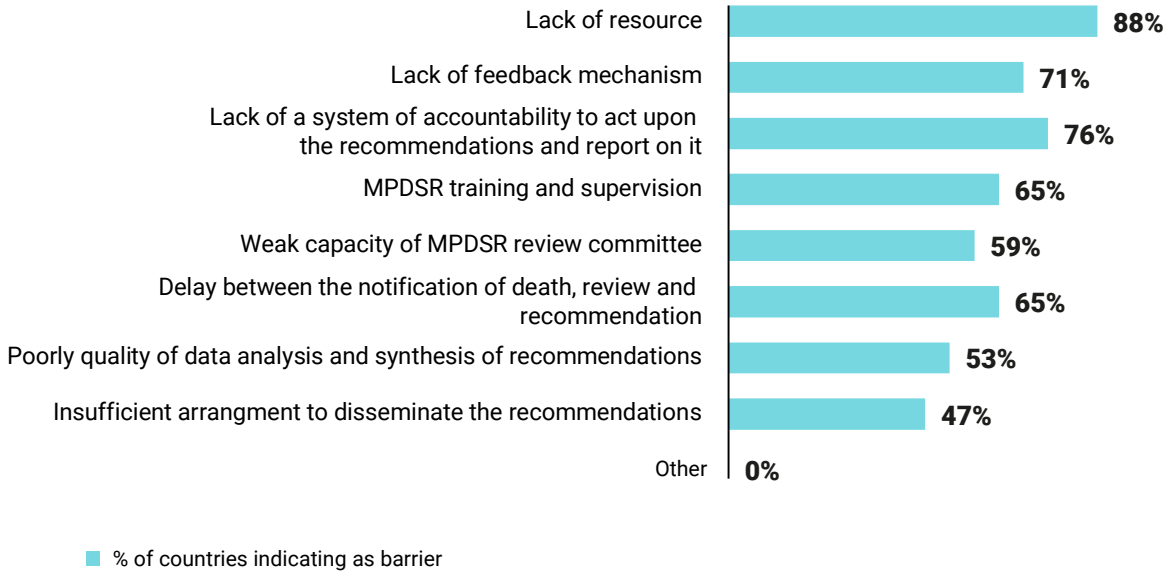
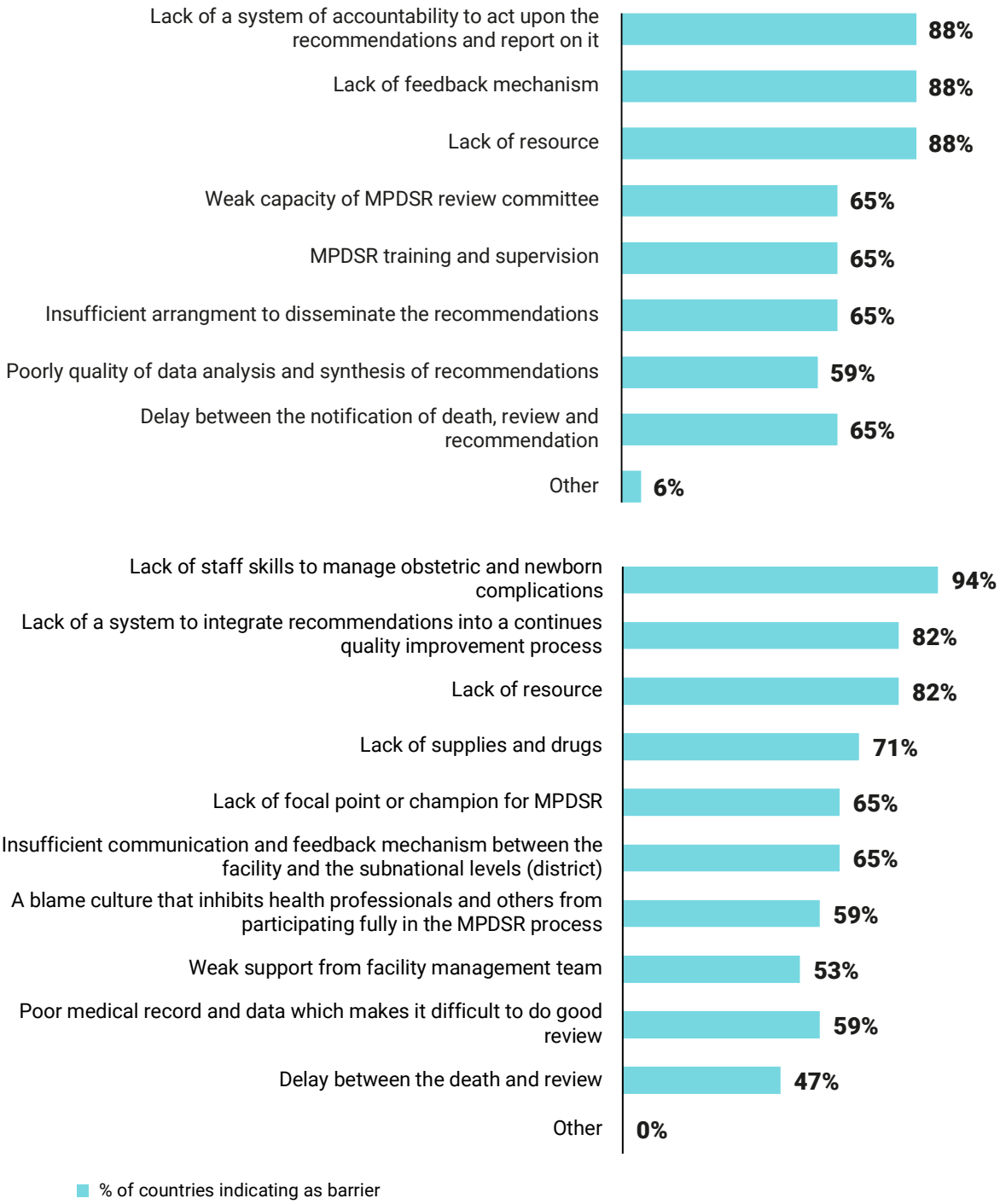


Figure 30

National, subnational and facility level obstacles in responding to MPDSR (n=17)




Lack of a system of accountability to act upon the recommendations and report on it
88%
Lack of feedback mechanism
88%
Lack of resource
88%
Weak capacity of MPDSR review committee
65%
MPDSR training and supervision
65%
Insufficient arrangment to disseminate the recommendations
65%
Poorly quality of data analysis and synthesis of recommendations
59%
Delay between the notification of death, review and recommendation
65%
Other
6%
Lack of staff skills to manage obstetric and newborn complications
94%
Lack of a system to integrate recommendations into a continues quality improvement process
82%
Lack of resource
82%
Lack of supplies and drugs
71%
Lack of focal point or champion for MPDSR
65%
Insufficient communication and feedback mechanism between the facility and the subnational levels (district)
65%
A blame culture that inhibits health professionals and others from participating fully in the MPDSR process
59%
Weak support from facility management team
53%
Poor medical record and data which makes it difficult to do good review
59%
Delay between the death and review
47%
Other
0%
% of countries indicating as barrier

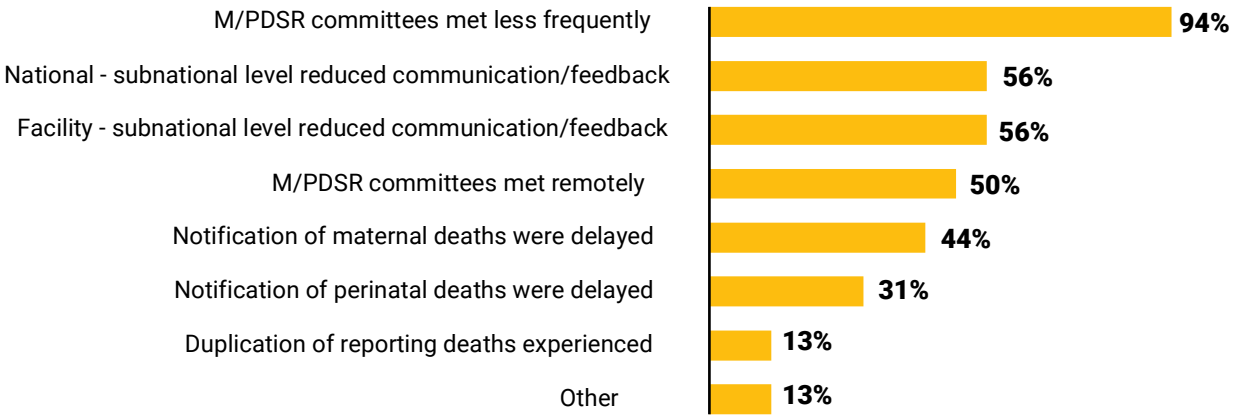
Impact of COVID-19 pandemic on MPDSR

All countries indicated that the COVID-19 pandemic had negatively affected MPDSR implementation. The most common issue was that the MPDSR committees met less frequently (over half of the countries indicated that they met remotely) (see Figure 31). Reduced communication and feedback mechanisms at all levels and delays in death notifications were also identified as challenges.

- Other challenges noted include:
  - Angola: MPDSR not functioning or deactivated.
  - Kenya: MPDSR was not prioritized, and many cases may have been missed or went unreported.
  - Lesotho: death could not be assessed on time due to COVID-19 restrictions at the beginning of the year.
  - Zambia: inadequate implementation of recommendations due to stock outs of Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) commodities, including contraceptives and medical abortion drugs.

Figure 31

Impact of the COVID-19 pandemic on MPDSR (n=17)



Some countries identified positive impacts on MPDSR during the time of the COVID-19 pandemic, notably the ability to use virtual platforms to hold meetings. Specific country responses include:

- Kenya: innovative capacity building initiatives virtual training, innovative referral mechanisms (Wheels for Life), and virtual consultations (telemedicine) to reduce incidences of complications and death.
- Namibia: some facilities continued with the review meeting amidst the pandemic and regularly submitted files to the national level.
- Rwanda: increase/uptake of skills in Information Technology due to the use of virtual platforms for meetings.
- Zambia: use of virtual technologies.
- Zimbabwe: it is possible to conduct audit meetings virtually and this saves on money and time.

UNFPA programme score and indicators

UNFPA created a programme score for MPDSR using 10 tracer indicators, one point for each indicator achieved. In 2021, four countries scored 10 out of 10, and an additional 11 countries received an eight or above on the UNFPA programme score (see Table 5). Two countries (Comoros and South Sudan) scored below five. All countries had a national maternal death review committee that meets regularly, as well as review committees at subnational level. Maternal deaths were notifiable in all but one country (South Sudan). Countries scored lowest for making the national MPDSR report available publicly and for domestic resource allocation for MDSR (see Figure 32).

In 2021, **four countries scored 10 out of 10,** and an additional 11 countries received an eight or above on the UNFPA programme score

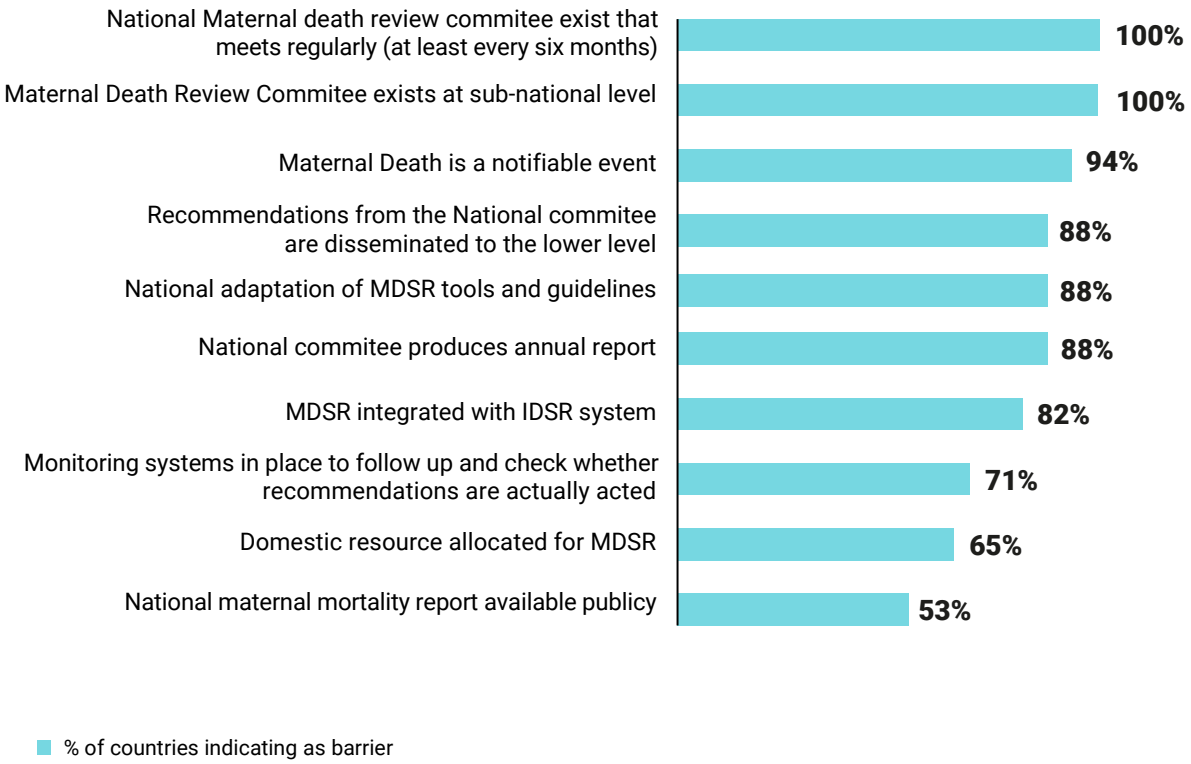
Table 5

Country scores in 2021 (n=17)

Country	TOTAL SCORE
Angola	**8**
Botswana	**10**
Comoros	**4**
Democratic Republic of the Congo	**8**
Ethiopia	**10**
Kenya	**9**
Lesotho	**8**
Madagascar	**9**
Mozambique	**9**
Namibia	**8**
Rwanda	**8**
South Sudan	**4**
Tanzania	**9**
Uganda	**10**
Zambia	**9**
Zanzibar	**8**
Zimbabwe	**9**

Figure 32

Proportion of countries achieving the UNFPA programme tracer indicators



UNFPA programme indicator changes

The scoring exercise for monitoring the UNFPA programme indicator identified areas of achievement for some countries (see Table 6). Common achievements were establishing a monitoring system to follow up and check whether recommendations are actually acted on, as well as integrating MDSR with IDSR. Table 6 also provides details by country on which indicators were achieved or have yet to be achieved. In some cases, the country scores declined due to the responses provided by the 2021 survey. The decline in score for some countries may represent an inconsistency in reporting and understanding of the tracer indicators used for this programme indicator.

Table 6

UNFPA programme indicator scores in 2018 and 2021 and indicators achieved or not since 2018

Country	2018	2021	Indicators not achieved (red signifies achieved in 2018)	Indicators achieved since 2018
Angola	5	8	National maternal mortality report published and available publicly Monitoring systems in place	National committee produces annual report Mechanism to disseminate national findings
Botswana	10	10		
Comoros	-	4	National adaptation of MDSR tools and guidelines National committee produces annual report National maternal mortality report available publicly Recommendations from the national committee are disseminated to the lower level Monitoring systems in place domestic resource allocated for MDSR	
Democratic Republic of the Congo	9	8	Monitoring systems in place Domestic resource allocated for MDSR	
Ethiopia	10	10		
Kenya	10	9	National maternal mortality report published and available publicly	
Lesotho	-	8	National MPDSR guideline Domestic resources allocated	N/A
Madagascar	7	9	National maternal mortality report published and available publicly	National MPDSR guideline
Mozambique	6	9	Domestic resource allocated for MDSR	Integrated with IDSR Monitoring system in place

Namibia	10	8	MDSR integrated with IDSR system Monitoring systems in place	
Rwanda	8	8	National maternal mortality report published and available publicly MDSR integrated with IDSR system	
South Sudan	1	4	Maternal death is a notifiable event National committee produces annual report National maternal mortality report published and available publicly MDSR integrated with IDSR system Recommendations from the national committee are disseminated to the lower level Domestic resource allocated for MDSR	Frequency of national meetings National MPDSR guideline Subnational maternal death committee established Monitoring system in place
Tanzania	8	9	National maternal mortality report available publicly	
Uganda	10	10		
Zambia	6	9	National committee produces annual report (every three years not annually)	National MPDSR guideline Mechanism to disseminate findings Monitoring system in place
Zanzibar	6	8	Domestic resource allocated for MDSR	National committee produces annual report Integrated with IDSR Mechanism to disseminate findings
Zimbabwe	9	9	Monitoring system in place	

Discussion

[...] most countries in ESA have policies and systems in place, yet **follow up and regular reporting** continues to be a challenge.

This report presents the current status and progress of MPDSR policy, resources and functionality in ESA from 2016 to 2021. Policies and guidelines required to set up MPDSR systems are now in place in most countries, and more governments are contributing resources for implementing MPDSR. Improvements to the functionality of MPDSR was demonstrated through the establishment and management of the national and subnational MPDSR committees, and improved reporting and notification of deaths, as well as analysis and feedback loops. Countries identified consistent barriers inhibiting MPDSR implementation at all levels, notably challenges of human and material resources, lack of feedback mechanisms and a lack of a system of accountability. The impact of the COVID-19 pandemic on MPDSR implementation since 2020 was reported with countries identifying both challenges and innovative approaches to continue implementation. The monitoring of MPDSR implementation through the UNFPA programme indicator shows most countries in ESA have policies and systems in place, yet follow up and regular reporting continues to be a challenge.

The United Nations inter-agency MPDSR standard biannual survey has enabled the regional offices to track country progress and identify strengths and challenges experienced in countries in order to channel their support. Since the start of the ESA MPDSR biannual survey, more studies and reviews on understanding the status and implementation factors of MPDSR in the region have been published (Kinney et al., 2021; Martin et al., 2016; Lusambili et al., 2019; Kinney et al., 2020). While it is well documented that implementation of MPSDR at all levels remains a challenge in most ESA countries, this report demonstrates that progress has been made in some countries. For example, South Sudan has added a policy on notification and established a national MPDSR committee. Other positive examples, which can be drawn from this report include Zambia and Madagascar having added perinatal deaths to their national guidelines, as well as established a mechanism to assess guidelines and a MPDSR implementation plan. Country findings from this report may allow for identifying interesting case studies for delving further into understanding how the MPDSR policy and process has changed over time.

Two recent scoping reviews on factors influencing MPDSR implementation, one with 38 primary research studies from sub-Saharan Africa (World Health Organization, 2021a) and the other with 28 studies from the region (Lusambili et al., 2019) have also found progress in the implementation and study of MPDSR. Since quality improvement interventions, including MPDSR, are complex, fluid and context specific, there needs to be consideration of both the tangible elements of implementation, as well as intangible human aspects of relationships and perspectives that may influence the success of implementing the intervention (Akachi and Kruk, 2017; Heiby et al., 2014; Langley and Denis, 2011; Davidoff et al., 2015). Both reviews identified

that most of the studies describe tangible inputs of implementation, such as those tracked in this survey (e.g. availability of policy, guidelines, data systems, and review committees). While ensuring these tangible elements are in place is essential for readiness to implement and continued implementation (Kinney et al., 2020; Belizan et al., 2011), there are a few minimum requirements or standard approaches to measuring implementation of these components, such as minimum proportion of cases reviewed (World Health Organization, 2013, 2016a; Kinney et al., 2021). The recently published WHO document *MPDSR: Materials to support implementation*, provides new guidance on how to measure and monitor progress, which should be considered for future research and tracking (World Health Organization, 2021a).

This United Nations inter-agency regional MPDSR biannual survey includes questions on subnational level implementation, which are also focused on readiness to implement (e.g. are subnational committees in place). The survey is not designed to measure the quality of implementation at these levels, nor the status of implementation. As more countries demonstrate readiness to implement with national policies and mechanisms in place and subnational committees established, more focus will need to shift to studies that measure the response and impact of MPDSR on improving health systems at all levels and the quality of the MPDSR process. A standard tool has been developed for measuring MPDSR implementation at facility and subnational levels to track progress (Kinney et al., 2020), however, even this tool does not measure the impact of the response. Unpacking the feedback loops and the "response" part of MPDSR requires consideration of the complex interplay and change dynamics of implementation of MPDSR (Kinney et al., 2021; Lusambili et al., 2019). Health policy and systems research approaches, including qualitative assessments and use of implementation frameworks and theory will be required (Akachi and Kruk, 2017; Davidoff et al., 2015; Persson, 2017; Topp, 2017; Kruk et al., 2017; Hulscher et al., 2013; Nilsen, 2015).

Implementation barriers align with those already identified at the different levels in the scoping review (Kinney et al., 2021). The lack of skills to implement MPDSR will need to be addressed, with support from implementing partners, and will require clarity on the competencies needed at technical and management levels for implementation. The reporting of "lack of resources" at all levels reflects partly the lack of knowledge and agreement about the cost of MPDSR, both the actual implementation of the process, as well as the response (Kinney et al., 2021). Lack of accountability and mechanisms for feedback loops of MPDSR reflect wider health system governance issues that require consideration of the complex interplay of connectedness and networks between health system levels, different sites and different role players (Kinney et al., 2021). Operational feedback loops encourage stakeholder "buy-in" to the process as people see the benefits of MPDSR. While this survey did not capture the "response" or impact of MPDSR on health systems, it did identify that mechanisms are in place in most of these countries to disseminate findings and evaluate MPDSR. Moving forward, surveys measuring the status of implementation should incorporate questions specifically on the response element of MPDSR and identify case studies for learning.

MPDSR, or any form of maternal and perinatal death review or audit, is one of the multiple tools and practices used as a measure for, and means to, improve quality of health care (Amelia et al., 2015). Additionally, there needs to be better linkages between MPDSR and other quality improvement efforts, rather than parallel tracking and monitoring (World Health Organization, 2021b). MPDSR is often included as part of a package of interventions implemented for strengthening quality improvement efforts, and integration of these efforts will likely increase the desired impact (World Health Organization, 2021b; Willcox et al., 2020). Case studies of how MPDSR and quality of care can be integrated are available in a recent WHO brief (World Health Organization, 2021b).

Strengths and limitations

This report is based upon a standard survey that has been administered in different formats since 2014. Data collection varied slightly between surveys, notably the 2018 data was collected at a regional workshop in 2018 with a team of country delegates; whereas the 2016 and 2021 surveys were sent by email to United Nations inter-agency focal points to complete with their respective Ministry of Health officials. The 2014 survey was not included in the trend analysis due to non-comparable survey methods. Variation in responses may be due to different people completing the survey and having different views on questions. Data validation was attempted through the request of national guidelines and reports, but this data was not consistently submitted. Data on functionality of the MPDSR was not validated through any additional validation efforts linked to this survey. The data submitted on death notifications and reviews was not comparable and prevented aggregated analysis. The inconsistency in data submitted by year for countries prevented trend analysis across all countries and indicators. Additionally, the survey was conducted in English with French translation, therefore language may have limited participation and/or clarity on questions.

Variation in responses may be due to different people completing the survey and having different views on questions.

Recommendations

Regional level

- Communicate and disseminate the results of this report to key stakeholders, Ministry of Health officials and partners in participating countries, as well as ESA regional and global stakeholders. Dissemination may be done through:
  - a presentation to the Global MPDSR Technical Working Group;
  - a webinar;
  - a published report and an academic paper; and
  - an interactive dashboard featuring the results from the reports in order to show progress over time by country.
- Work with Ministry of Health and national partners to strengthen MPDSR practice, including identification, notification, reporting, and reviewing processes, capacity building, monitoring and implementation of recommendations.
- Support countries to prepare and present "Best Practice" case studies, which highlight what has worked well for strengthening implementation of MPDSR.
- Support countries to conduct implementation research to monitor the progress of implementation at facility and subnational levels, as well as to better systematically document the "response" aspect of MPDSR.
- Consider applying others survey tools and health policy and system research approaches for monitoring national MPDSR processes in the future.
- Support countries in utilization of tools, guidelines and approaches, especially the new document, *MPDSR: Materials to Support Implementation guidance* document (World Health Organization, 2021a), as well as other tools (such as the process model score developed and implemented by MCSP in four countries) (Kinney et al., 2020).
- Strengthen CEMD through providing guidance at regional level for standardized CEMD process.

National level

- Lead, own and partner
  - Ensure proactive leadership and accountability of the MPDSR process to support implementation at national, subnational and facility levels.
  - Ministry of Health to strengthen integration of MPDSR within the broader maternal health programme in the various health system processes, which will inherently ensure ownership by the government.
  - Leverage and coordinate stakeholders ensuring Ministry of Health ownership of all data, reports and processes. There should be alignment and coordination of partners' support to MPDSR, not siloes.

- Strengthen engagement of the professional associations which work closely with the Ministry of Health, especially providing technical support. They should be requested to attend review meetings and support in capacity building.

- Improve death notification systems
  - Ensure all maternal deaths are notified and reviewed as per the WHO guidelines.
  - Improve notification systems to ensure all maternal deaths are notified as per the WHO MDSR technical guidelines (deaths occurring in health facilities should be identified and notified to the appropriate authorities within 24 hours, and deaths in communities within 48 hours. Notification should include "zero reporting," an active process of notifying suspected maternal deaths, whether or not any occurred) (World Health Organization, 2013).
    - Consider identifying barriers to notification through implementation research.
  - Strengthen the link between notification and the IDSR in order to ensure adequate and timely capture of maternal and perinatal death notification.
  - Formalize and scale up national system for capturing and reviewing community deaths. Enhance the use of community social structures, which many countries in Africa have, by strengthening social and verbal autopsy.
    - Consider identifying barriers to scale up through formative research.
    - Consider using WHO simplified tool for social autopsy.
- Capture, align, analyze, and use data
  - Ensure every woman, stillborn and newborn has a complete, accurate, standardized medical record during labour, childbirth and the early postnatal period, including birth and death registration (World Health Organization, 2016b).
  - Strengthen national systems to capture information on all events (i.e. births and deaths), and ensure linkage to national systems, such as IDSR, DHIS2, Health Management Information System (HMIS) and civil registration and vital statistics (CRVS).
  - Improve data analyse and use for regular reporting at all levels.
  - Strengthen CEMD through providing guidance at regional level for standardized CEMD process.
  - Continues improvement of data quality to ensure reliability of data– at the moment some countries struggle between a different number coming through IDSR and HMIS.
- Align with quality improvement
  - Synergy and alignment of MPDSR with other quality improvement processes at all levels.
  - Linking MPDSR to other quality improvement processes at all levels will ensure the "response" part of the process can be implemented and will

support broader health system strengthening (World Health Organization, 2021b).

- Consider implementation research to better understand how to streamline quality improvement processes and MPDSR.

- Research and document
  - Address implementation challenges using implementation research to identify feasible and priority solutions.
  - Document and circulate success stories about change from MPDSR, potentially through learning visits.
  - Encourage partners and academia to conduct implementation research to monitor the progress of implementation at national, subnational and facility levels and the impact of MPDSR.
  - Strengthen national systems to capture information on all events (i.e. births and deaths) in order to document and tally information using consistent criteria and definitions linked to national systems, such as HMIS and CRVS.
  - Consider a minimum set of perinatal indicators to be collected for each birth and death, as per WHO's guidelines and standards (World Health Organization, 2016a, 2016b).
- Communicate and link
  - Establish and strengthen clear communication channels between and within the different levels of the health system and the community.
  - Completion of MPDSR requires feedback loops, linkages and networks and well-defined pathways of data flow and information.
- Strengthen subnational and facility level implementation
  - Ensure subnational MPDSR mechanisms are in place, functioning and able to coordinate flow of data/information and feedback loops through review/response processes.
  - Facilitate learning for strengthening the perinatal audit and MPDSR.
  - Enable health facilities to conduct reviews of maternal and perinatal deaths and near-misses in a timely fashion (as per guidelines for maternal and perinatal) (World Health Organization, 2013, 2016a) and has a mechanism for implementing the recommendations of reviews (World Health Organization, 2016b).
    - Consider national policy or guidelines requiring facilities to conduct reviews with standard reporting mechanism in place.
- Provide standard audit tools and ensure staff capacity to implement death reviews.
- Innovate
  - Consider the use of innovative approaches, such as remote meetings and SMS death notification.
- Invest wisely

- Incorporate MPDSR in your maternal and newborn health and quality of care/ health system strengthening investments.
- Ensure clear understanding of what investments are needed for which parts of MPDSR implementation.
- Enhance resource allocation for strengthening the MPDSR functions, as well as for implementation of recommendations. Strengthen resource allocation by the government will enhance accountability and ownership by the government.

- Use the MPDSR resources and regional technical support
  - Access and use *MPDSR: Materials to support implementation* for guidance on how to strengthen implementation and measure and monitor progress in future research/tracking.
  - Work with regional partners such as multilateral organizations and harnessing the power of south-south collaboration.

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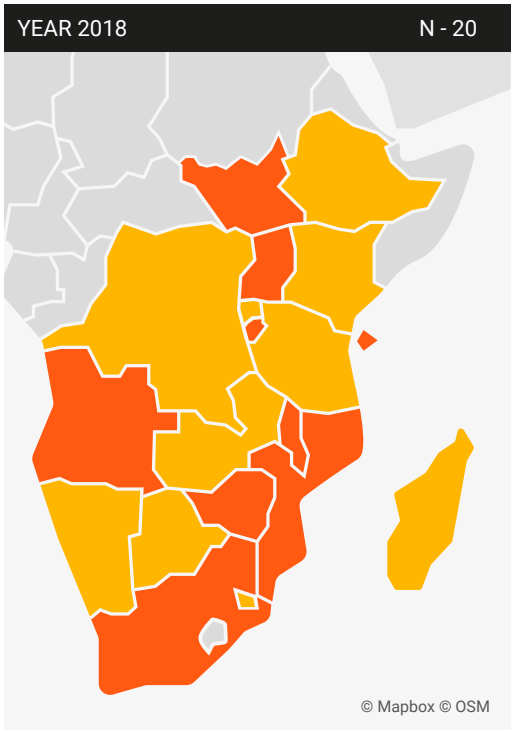
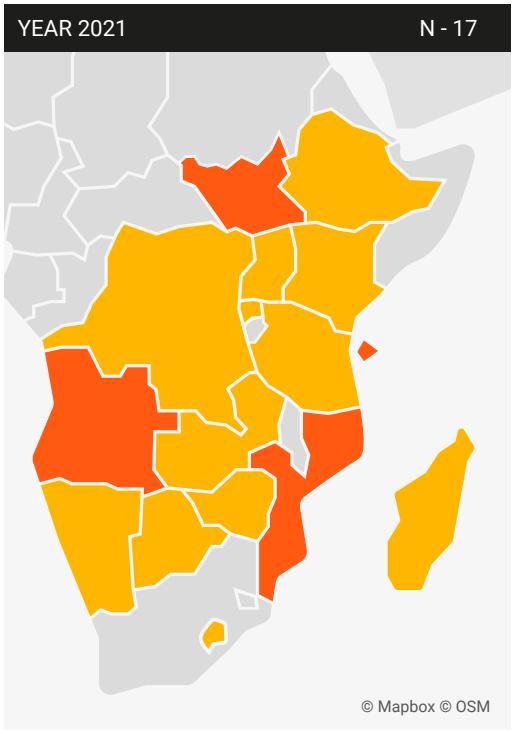
Annexes

Annex 1: MPDSR data visualization

1
MPDSR System Components (10 criteria)

Community MPDSR



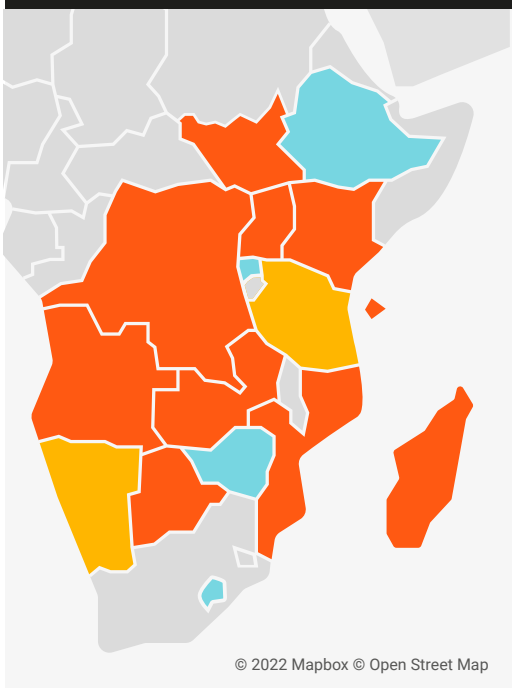


Legend
Yes No Don't know

2
Source of Funding for MPDSR

Evaluation of MPDSR System

HAS AN EVALUATION OF THE IMPLEMENTATION OF THE MPDSR BEEN CONDUCTED IN YOUR COUNTRY
N -17



Legend

Yes No Don't know

Response sumary

If yes, please provide details

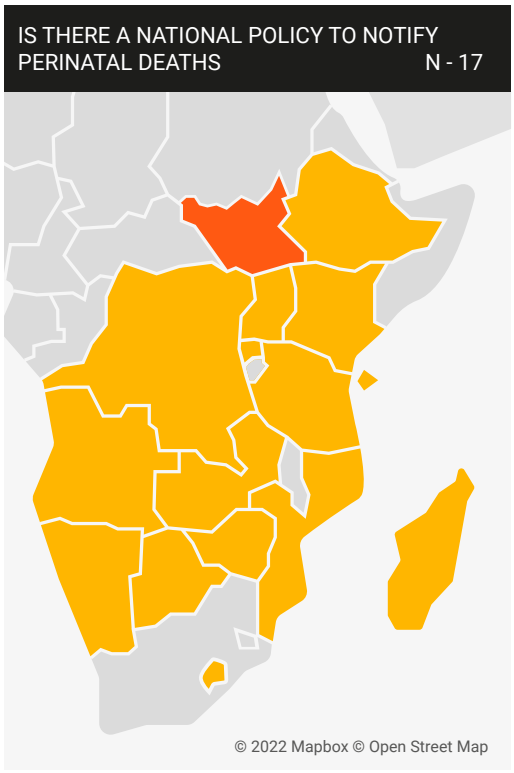
Ethiopia
MDSR system evaluation has been conducted and final report is prepared. The findings will be good inputs for the preparation of strategic plan.

Lesotho
We will require technical support to evalutae the three systems and perhaps find a way to integrate them

Rwanda
An evaluation of MPDSR program has been conducted in 2019 with financial support from USAID and a report has been produced

Zimbabwe
An assessment on the implementation on MPDSR in Zimbabwe was conducted in 2017 with support from USAID. A consolidated report on the assessment was published

3
Source of Technical Assistance for MPDSR



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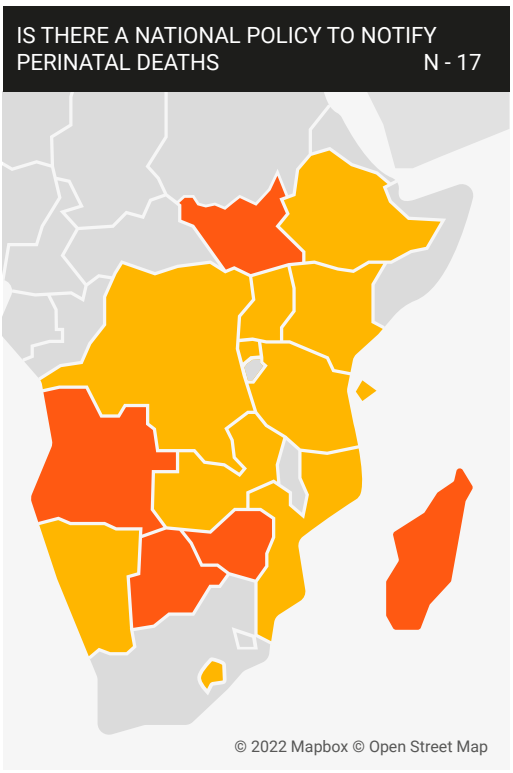
Yes No

Response sumary

94,1%



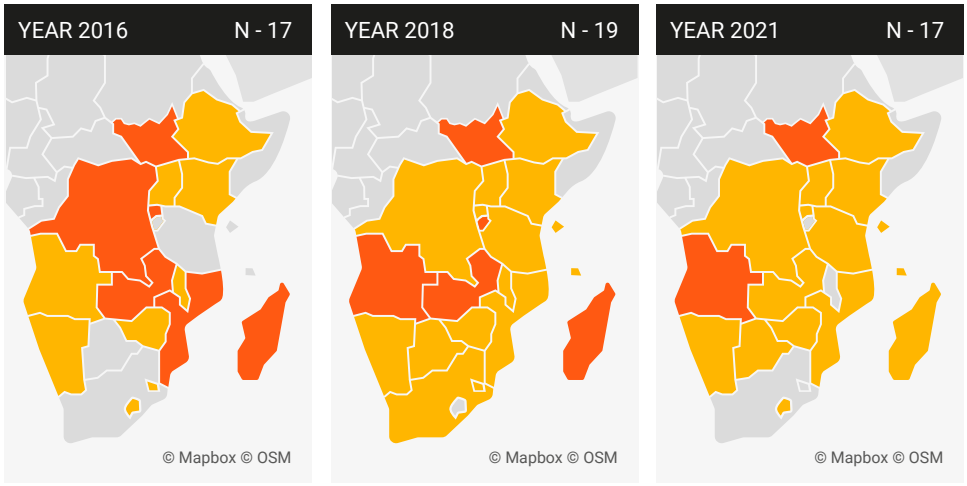
Legend

Yes No

Response sumary

70,6% 29,4%

4
Utilization of MPDSR Recommendation



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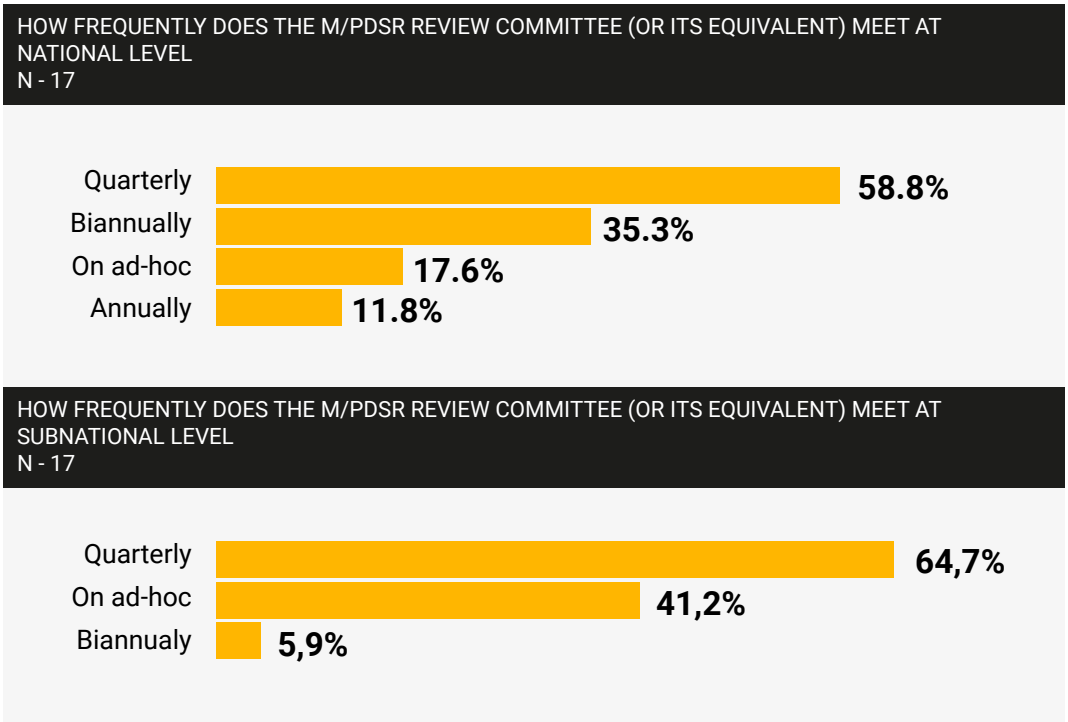
Yes No

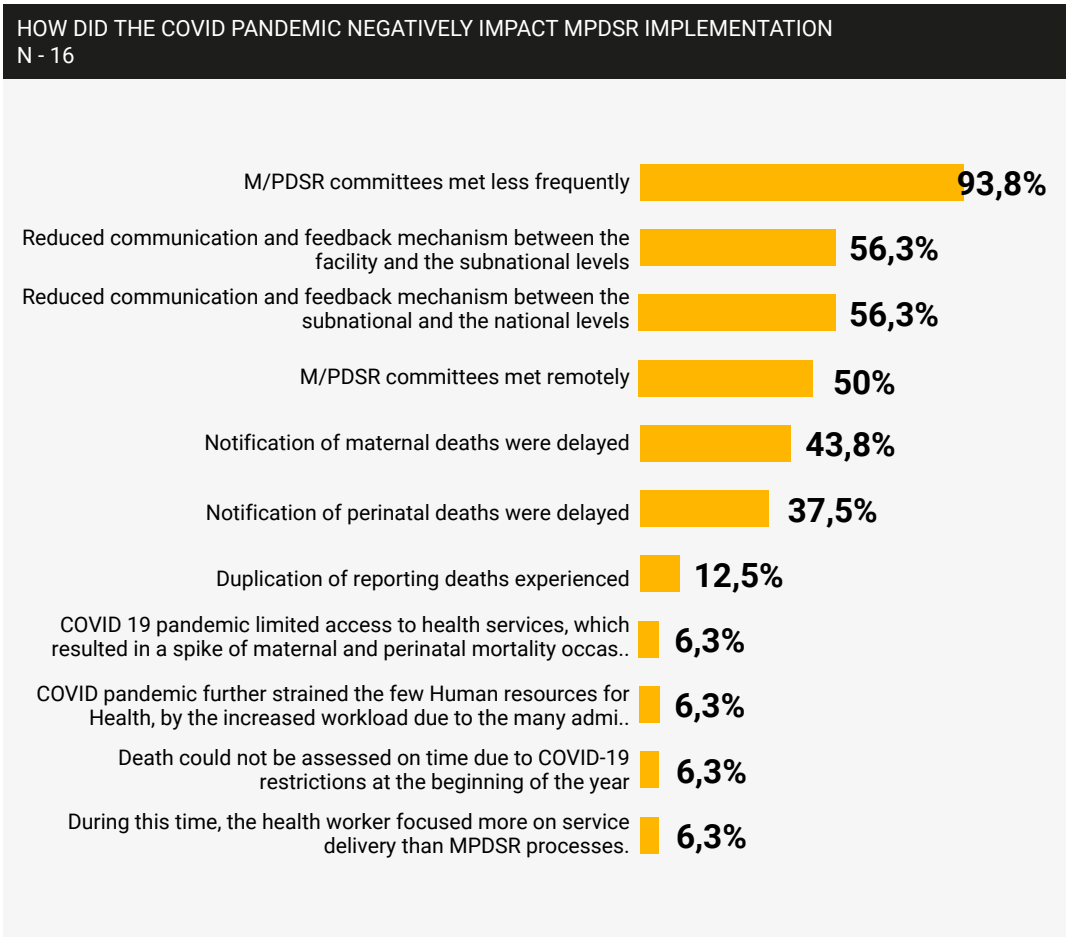
5
Community MPDSR

Frequency of MPDSR Review Committee Meetings Year 2021

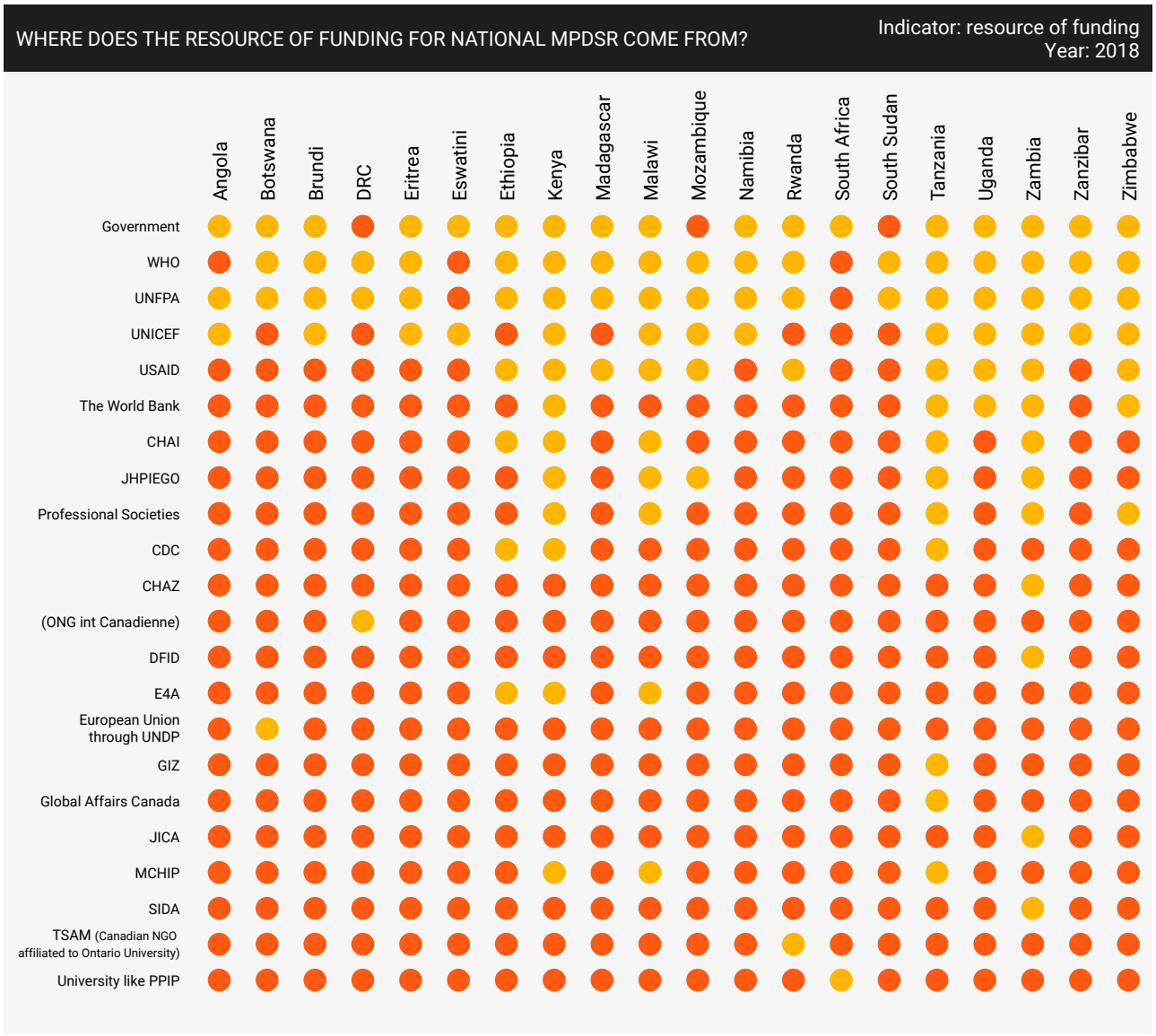


6
Frequency of MPDSR Committee Meeting

Key challenges & Impact of COVID-19 on MPDSR



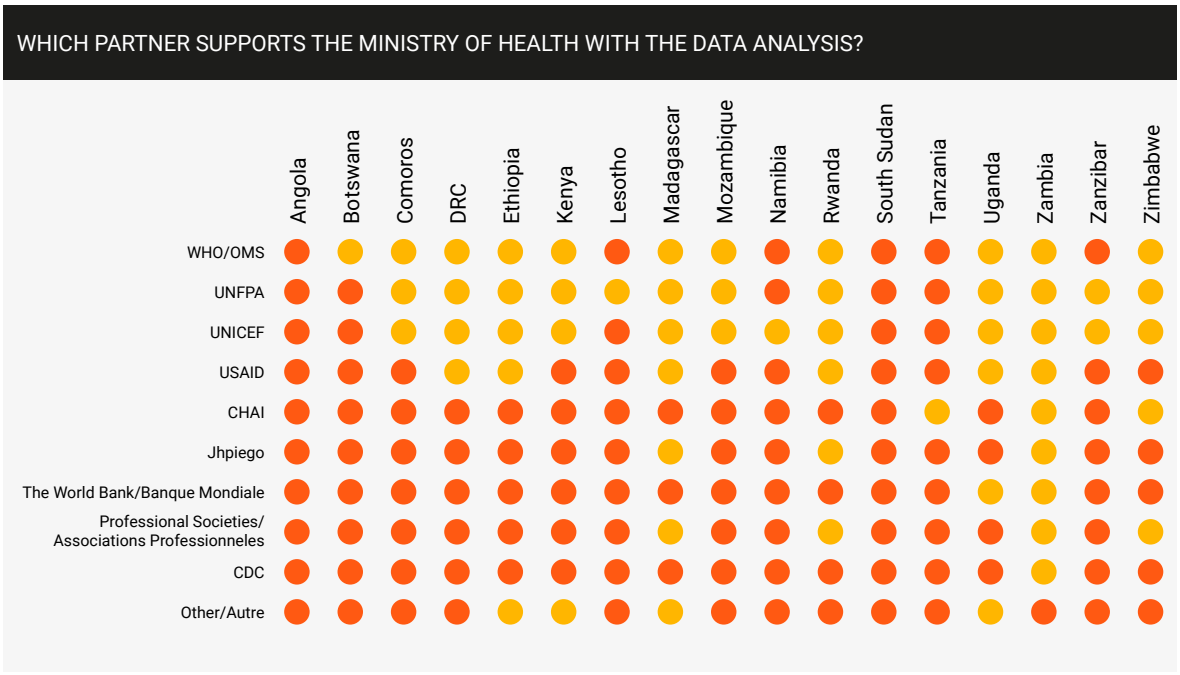
7
Impact of COVID-19 on MPDSR



8

Existence of Policy for Notification of Maternal Death and Perinatal Death

Source of Technical Assistance

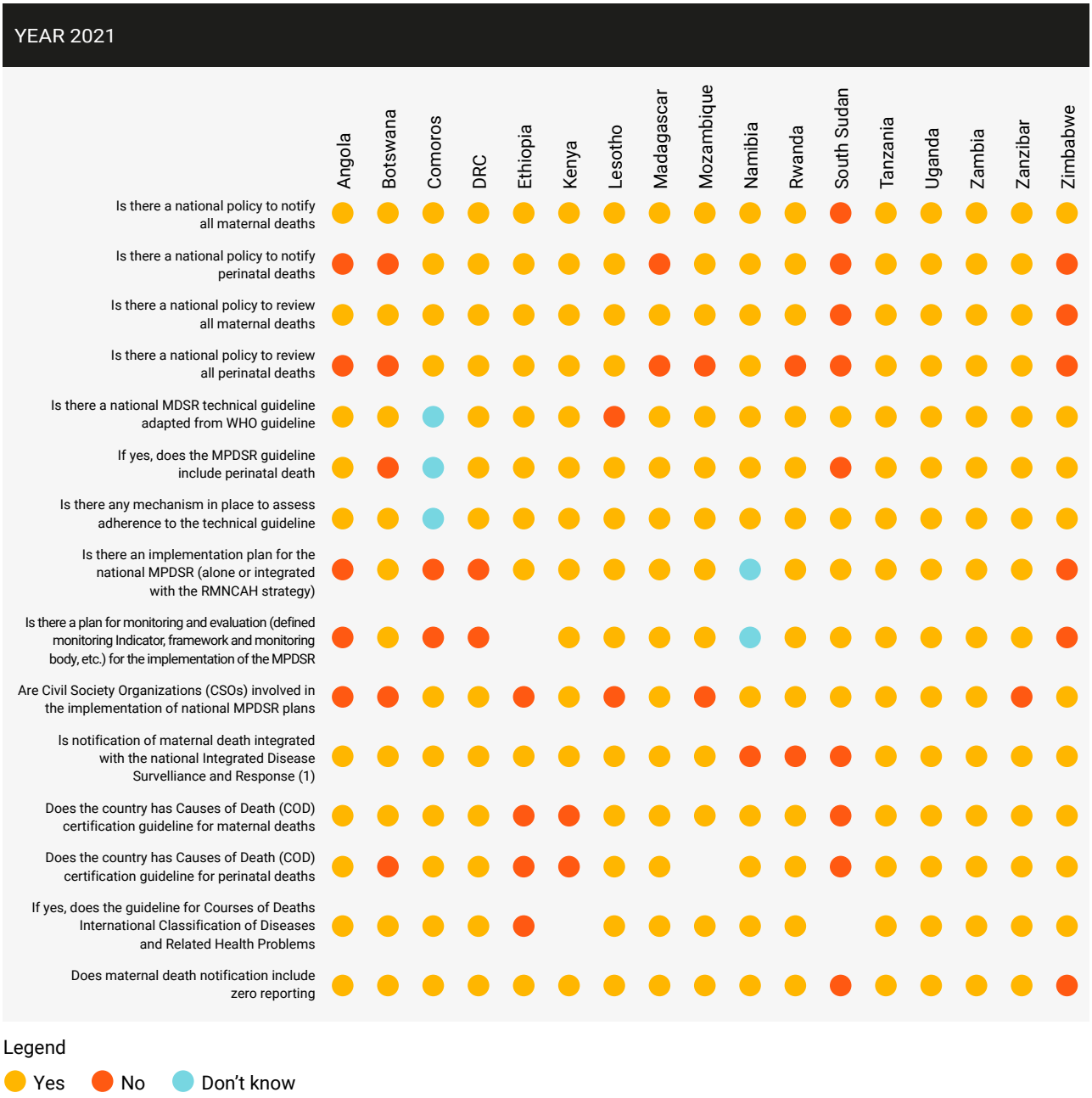


Legend

Yes No Don't know

9 Evaluation of the MPDSR System

Setting Up MPDSR System



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