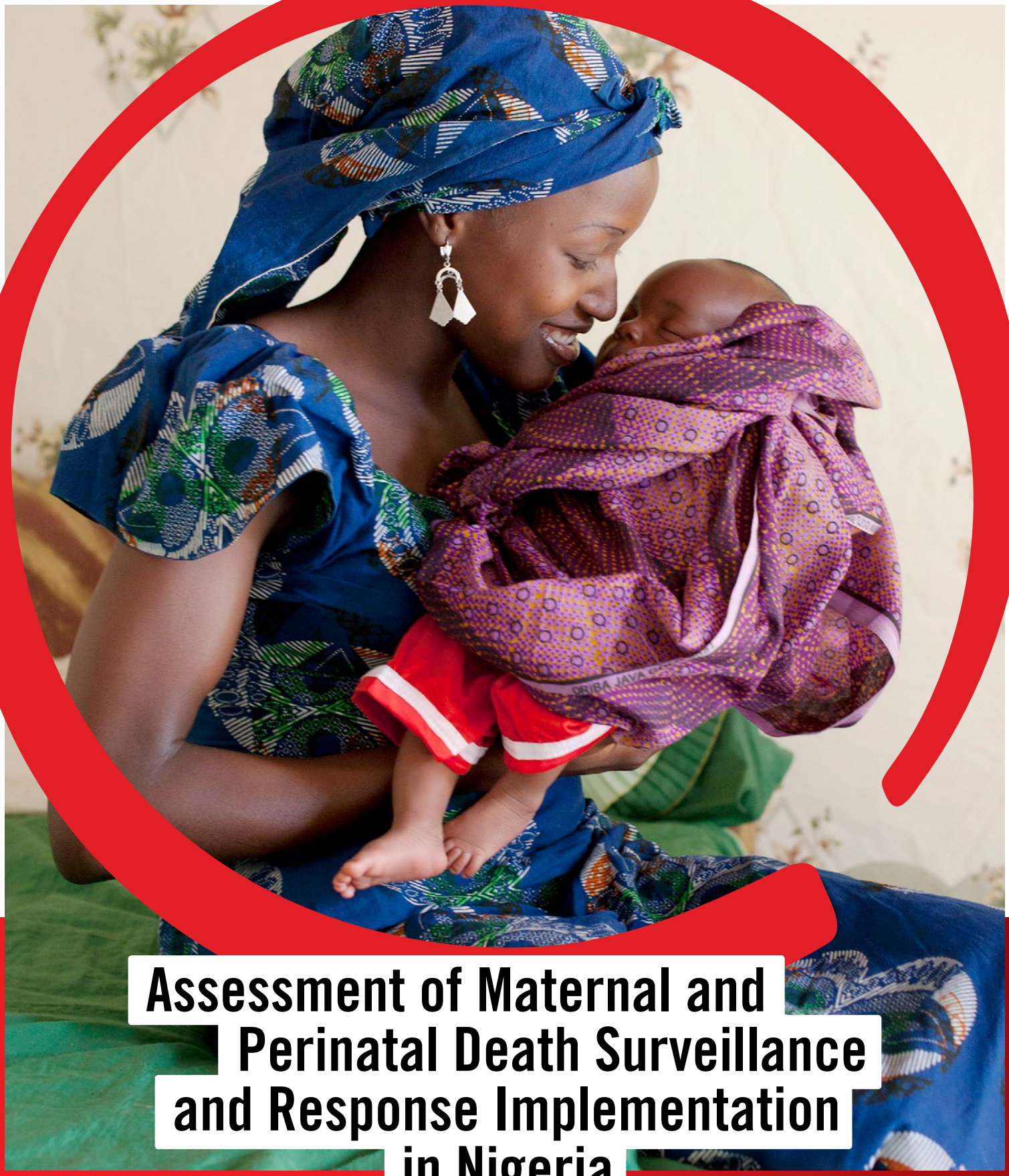

Assessment of Maternal and Perinatal Death Surveillance and Response Implementation in Nigeria

AUGUST 2017

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ACRONYMS

CE	Confidential Enquiry
CHAI	Clinton Health Access Initiative
ENAP	Every Newborn Action Plan
FMC	Federal Medical Centre
FMC	Federal Medical Centre
FMOH	Federal Ministry of Health
FTH	Federal Teaching Hospital
GH	General Hospital
HOD	Head of Department
LGA	Local Government Authority
MCSP	Maternal and Child Survival Program
MDR	Maternal Death Review
MMR	Maternal Mortality Ratio
MPDSR	Maternal and Perinatal Death Surveillance and Response
NHREC	Nigeria Health Research Ethics Commission
NISONM	Nigerian Society of Neonatal Medicine
NPHCDA	National Primary Health Care Development Agency
NMR	Neonatal Mortality Rate
PAN	Paedatric Association of Nigeria
PDR	Perinatal Death Review
PHC	Primary Health Centre
PPRINN-MNCH	Partnership for Reviving Routine Immunisation in Northern Nigeria and Maternal Newborn and Child Health
SBR	Stillbirth Rate
SDG	Sustainable Development Goals
SNL	Saving Newborn Lives
SOGON	Society of Gynaecology and Obstetrics of Nigeria
WHARC	Women's Health and Action Research Centre
WHO	World Health Organization
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

Background

With a focus on achieving the Sustainable Development Goals, Nigeria aims to accelerate efforts to improve outcomes for women and babies. There is global consensus that accurate information about the causes of death through mortality audits is necessary to help inform efforts to end preventable maternal and perinatal deaths. Maternal and Perinatal Death Surveillance and Response (MPDSR) is a continuous cycle of identification, notification, and review of maternal and perinatal deaths, followed by actions to improve quality of care and prevent future deaths. MPDSR is an established mechanism to examine the circumstances surrounding each death, including any breakdowns in care, whether from the household to the health facility, which may have been preventable. There is global consensus that this process is an important part of the continuous action cycle for quality improvement that can link data from the local to the national level.

The Nigerian Federal Ministry of Health (FMOH) adopted the Maternal and Perinatal Death Surveillance and Response policy and guidelines in 2016. Since other maternal and perinatal death audit models had been implemented in the country, the FMOH and supporting partners have sought to understand the experience with these models to improve implementation of the policy.

The assessment objective was to provide an understanding of the characteristics of past and current maternal and perinatal death audit processes in Nigeria, including their operational enhancers and challenges. The assessment was carried out by Save the Children's Saving Newborn Lives program and USAID's Maternal and Child Survival Program, with support from the FMOH, state ministries of health, and professional associations.

Methodology

The assessment was conducted in two phases during September and October 2016. The first phase was a telephone survey of key stakeholders that mapped past and current MPDR processes across all 36 states and the Federal Capital Territory (FCT). The second phase, an in-depth study of functional processes, involved visits to selected facilities in one state located in each of the six geopolitical zones, as well as interviews with key informants at national, state, and facility levels. The assessment was reviewed by the Nigeria Health Research Ethical Committee, the Johns Hopkins School of Public Health Institutional Review Board, and Save the Children - US, and was designated "non-human subjects research."

Findings

The desk review identified 10 programmes implementing death audit models across Nigeria dating back to 2008. These programmes applied a variety of audit types, including confidential enquiry, maternal death review and verbal autopsy, and clinical audit. Most of the programmes were implemented in geopolitical zones with the highest burden of maternal and perinatal mortalities, all focused on maternal deaths, and only three included perinatal mortality. All of the programmes, except the clinical audit, provided specific guidelines and tools, produced reports, and worked in partnership with states and local and international partners. The programme audit models varied in structures, with some using local structures, whereas others were specific to programmes and inhibited institutionalization of the audit model into the existing systems. At the time of the assessment, state-level stakeholders reported widespread orientation and dissemination of the national MPDSR guidelines to the state ministry of health level. However, there was moderate to limited setting up of processes needed to implement MPDSR across the states.

The assessments showed a range of awareness and implementation of MPDSR and other audit models for maternal and perinatal deaths. There was general awareness of the importance of collecting mortality data and notifying authorities regarding maternal deaths. However, the practice of reviewing the causes and avoidable factors related to maternal deaths and recommending changes was not widespread. Overall, there was very little integration of stillbirths and neonatal deaths into data collection and notification, and almost no review of the care received prior to these deaths. Many facilities were unaware of or not using the new national MPDSR guidelines. In all but one state, tertiary, secondary and primary health facilities had either not implemented or were still at the level of creating awareness of MPDSR.

National stakeholders reported that MPDSR is a FMOH priority, noting its inclusion in major policy documents, such as the National Strategic Health Development Plan. Multitudes of challenges were identified including:

- MPDSR is poorly funded and largely donor dependent; generally there is inadequate funding for RMNCH.
- Health workers are resistant to change and are ignorant of or misinformed about the "no name, no blame" mortality audit approach.
- Written standards and protocols for newborn resuscitation are lacking at various levels of health system.
- Harmful traditional practices persist.
- MPDSR tools are voluminous and the language is too technical.
- Political commitment is low. There is no strategic implementation plan for MPDSR and no link to the quality improvement framework.
- Inadequate health personnel persists.
- Poor documentation on patients results from poor recordkeeping and poor reporting of deaths.
- MPDSR committees do not respond to recommendations.

Nonetheless, national stakeholders, including FMOH, are confident that, with stronger political commitment at the state level, MPDSR has the potential to improve data generation and quality of care in the health sector.

Discussion and Recommendations

There is little debate over whether the task of systematically counting and accounting for deaths is important. The question is how to ensure that data become an instrument to support changes in practice. Audit on its own will not save lives unless used as a tool in a package for improving quality of care in health facilities. As Nigeria prioritises and standardises the process for MPDSR, implementation may increasingly be viewed as a sustainable and ongoing process with great potential to build off the existing systems in place. The MPDSR national guidance is new, only formally launched in November 2016, though a draft was shared with states in 2015. The various experiences on death audit practices in Nigeria confirm that the derivation of benefits depends entirely on the quality of the audit process; poor implementation of MPDSR will not lead to ending preventable deaths.

Recommendations to government and implementing partners based on the results of this assessment include:

- **Strengthen or establish tracking of MPDSR implementation** at national, state, and facility levels, with regular meetings to discuss and adjust implementation if necessary.
- **Ensure dissemination and use of national MPDSR forms and guidelines** at facility, state, and national levels, and orient all stakeholders. Standardised forms (preferably the national MPDSR forms) should be used for documenting all cases under review.
- **Link quality improvement initiatives to MPDSR processes**, especially between the national MPDSR guidelines and the forthcoming national quality improvement guidelines. States and facilities should integrate the new quality improvement initiative into the MPDSR process.
- **Improve MPDSR reporting requirements** by ensuring all stakeholders understand required reporting channels between facility, state, and national levels. The national stakeholders should review the MPDSR report flow from health facility to LGA/state in the current guidelines.
- **Integrate MPDSR into federal and state data systems, ensuring quality of data capture and analysis** into HMIS, problems identified, and solutions implemented. A standardised classification system for cause of death

classification should be considered.

- **Strengthen leadership and nurture champions of MPDSR at all levels**, ensuring that facilities identify an MPDSR focal person and establish MPDSR committees. Leaders should be mentored to ensure a no-blame approach to death review and to document successes.
- **Engage communities** through the ward committees to ensure a formal communication process of results from facility-based death reviews. Stakeholders should explore the feasibility of community death notification and, where possible, verbal and social autopsy for community maternal and perinatal deaths.

Conclusion

Each death that is carefully documented and reviewed has the potential to tell a story about what could have been done differently to improve the care available and health outcomes for each woman and baby.

The practice of mortality audits in Nigeria requires leaders to champion the process—especially to ensure a no-blame environment—and to motivate change agents at other levels to address systemic concerns. The existence, and in some cases institutionalization, of other audit processes in many of the facilities assessed indicate that there is a system in place in which be introduce and strengthen MPDSR implementation. The information from this assessment can serve as a baseline for monitoring the implementation of MPDSR and to advocate for greater investments to ensure smooth and effective institutionalization of MPDSR across Nigeria.

INTRODUCTION

Background to this Assessment

The past two decades have witnessed substantive progress in reducing maternal and child deaths, yet progress has been slow to reach those who need it most and too many preventable deaths continue to occur each year. Globally, in 2015, an estimated 5.6 million deaths occur from pregnancy and childbirth complications at birth or complications in the first month after birth, including 303,000 maternal deaths, 2.6 million stillbirths, and 2.7 million newborn deaths.[1] Nearly half (40%) of these deaths occur in sub-Saharan Africa and most are preventable.

The time of labor and the day of birth is when nearly half of maternal and perinatal deaths occur, making the perinatal period a risky time for mothers and babies.[2-4] The main causes of maternal and perinatal mortality often vary geographically and within specific populations based on the local epidemiologic and social context.[3]

In sub-Saharan Africa, the leading direct obstetric causes of maternal deaths include hemorrhage (37%), hypertension (16%), and sepsis (10%).[5] Africa's regional estimates show that preterm birth complications (30%), complications during childbirth (30%) and neonatal infections—sepsis/meningitis/tetanus (19%) contribute to the majority of newborn deaths.[6]

The commitments to the Sustainable Development Goals (SDGs), including the targets to end preventable maternal and newborn deaths, require renewed focus and accountability as outlined by the 2015 Global Strategy for Women's and Children's and Adolescent's Health 2016-2030, the 2014 World Health Organization (WHO) Every Newborn Action Plan and the WHO 2015 Ending Preventable Maternal Mortality strategy.[7-11] Quality of care is a priority for these global efforts. Quality is defined as "the extent to which health care services provided to individuals and patient populations improve desired health outcomes" or, more colloquially, as "doing the right thing for every person every time." [12] Quality health care is safe, effective, timely, efficient, equitable, and people-centered.[12] Manifestations of and common contributors to poor quality of care include provision of non-evidence-based care; disrespectful, abusive or uncompassionate care; non-timely care; unavailable or unskilled health workers; lack of essential infrastructure, equipment and drugs; lack of effective referral systems, and lack of essential health information to guide clinical care and inform management decisions. The WHO standards for improving the quality of maternal and newborn care in health-care facilities published in 2015 emphasise both evidence-based provision of care as well as patients' experience of health care along with cross-cutting essential health system functions (e.g., actionable information systems.[13] In 2017, WHO launched a Quality of Care network to improve maternal and newborn care in nine countries[1] focused on implementation of quality improvement (QI) interventions to achieve WHO standards across national, district and facility levels. [14]

There is also global consensus that accurate information about causes of death is necessary to help inform efforts to end preventable deaths. In 2004, the World Health Organization (WHO), in a landmark publication titled, *Beyond the Numbers*,[15] recommended that all countries that had not established maternal death audit systems should do so without further delay to help reduce maternal deaths. In 2012, the United Nations Commission on the Status of Women passed a resolution calling for the elimination of preventable maternal mortality. In 2016, the WHO also released guidance on conducting mortality audits for stillbirths and neonatal deaths alongside tools for adaptation at national, sub-national or facility level.[16] A vital component of any elimination strategy is a surveillance system that can track the number of deaths and provide information about the cause of death and underlying contributing factors and actions to address contributing factors to prevent future preventable deaths. Therefore, one of the key actions recommended in the global action plans is the institutionalization of maternal and perinatal death surveillance and response systems (MPDSR) to enable a country's use of audit data to track and prevent maternal and early newborn deaths, as well as stillbirths.

Despite global recommendations and the presence of favourable policies in many countries, particularly for maternal death notification, few countries have robust operational MPDSR systems.[17] In some settings, MPDSR systems have been designed

1 Bangladesh, Côte d'Ivoire, Ethiopia, Ghana, India, Malawi, Nigeria, Tanzania and Uganda

and/or are being implemented as stand-alone activities rather than as one contributing to goal-oriented quality improvement efforts focused on improving coverage, quality, equity, and access to care to reduce preventable maternal and perinatal morbidity and mortality. Currently, there is a lot of movement behind MPDSR strategies. WHO is tracking MDSR status through the MDSR Working Group, which is being expanded to include perinatal. Recently, the working group completed a global survey of national level MDSR policy and high-level implementation status. Additionally, the MDSR Action Network supports knowledge sharing and understanding of MDSR. USAID's Maternal and Child Survival Programme (MCSP) is working with global, regional, and country partners to understand experiences to date in implementing maternal death review, perinatal death review, and/or integrated MPDSR systems in selected countries in the Africa region, including Nigeria, and identifying factors that facilitate or inhibit the uptake and sustainability of the audit system.

Situation in Nigeria

Nigeria is Africa's most populous country, with an estimated population of 187 million in 2016 and a total fertility rate of 5.6.[18] In 2015 in Nigeria, over seven million babies were born; 240,000 of these babies died in their first month of life, an additional 314,000 were stillborn and 58,000 women died of pregnancy and childbirth related complications.[18,19] While Nigeria made significant progress in maternal and child health, the country did not achieve Millennium Developmental Goal 4 for child survival, primarily due to inadequate reduction of neonatal mortality; the country also did not achieve Millennium Developmental Goal 5 for maternal survival.

The Federal Government of Nigeria committed to the SDGs in 2015, including the targets to end preventable maternal and newborn deaths. The National Health Policy 2017-2021 places reproductive, maternal, newborn, child and adolescent health (RMNCAH) as a public health priority and developed a specific strategy that highlights issues on quality of care. Additionally, the *Nigeria Every Newborn Action Plan* (NiENAP), launched in November 2016, provides specific actions necessary to achieve significant mortality and coverage targets by 2030.[20] A successful implementation of this plan would achieve the set targets for 2030 by reducing: (a) the maternal mortality ratio below 270 per 100,000 live births from its current rate of 576 per 100,000 live births; (b) the stillbirth rate below 27 deaths per 1,000 live births from its current rate of 42 per 1000 live births; and (c) the neonatal mortality rate below 15 deaths per 1,000 live births from its current rate of 37 per 1000 live births.

The causes of maternal, neonatal and child mortality are mostly preventable through systematic public health education and strengthening of the health system blocks to address with the three delays: delay in seeking care, delay to accessing health care and delay in receiving quality care. The Nigerian government has already invested heavily in newborn and child health intervention programmes, such as the Midwives Service Scheme (MSS); the Subsidy Reinvestment and Empowerment Program, Maternal and Child Health (SURE-P-MCH); and systematic primary health care infrastructure upgrades through the Ward Health System (NPC and ICF International, 2014). Other key child health programmes include the Expanded Programme on Immunisation, the Polio Eradication Initiative and National Emergency Action Plan, Integrated Community Case Management of Childhood Illnesses in Nigeria, and the Integrated Maternal Newborn and Child Health Strategy.

In an effort to narrow focus on maternal and newborn health, the Nigeria Every Newborn Action Plan (NiENAP), launched in late 2016, includes a set of intervention packages that follow a three-pronged approach of (1) promotion of facility-based deliveries at scale, (2) strengthening facility readiness for providing quality care for mothers and newborns, and (3) providing quality care for newborns, focusing on childbirth, care at birth, and care during the first week of life. Maternal and perinatal death audits and response to the recommendations made from the audit can strengthen each of these packages.

Maternal and Perinatal Death Surveillance and Response Terminology

Mortality audit is the process of capturing information on the number and causes of deaths—whether for maternal deaths, stillbirths and neonatal deaths. The mortality audit then identifies specific cases for systematic, critical analysis of underlying demand- and supply-side contributors, including the quality of care received, in a no-blame, interdisciplinary setting, aiming to improve the care provided to all mothers and babies. It is an established mechanism to examine the circumstances surrounding each death including any breakdowns in care, from the household to the health facility, which may have been preventable. This process is an important continuous action cycle for quality improvement that can link data from the local to the national level. The definition and classification of maternal deaths, stillbirths, and neonatal deaths is the starting point for any MPDSR system (Table 1).

Table 1: Terminology related to maternal and perinatal death[21]

Indicator	Numerator	Denominator
Maternal mortality ratio (expressed as maternal deaths per 100,000 live births)	The number of maternal deaths occurring in a defined period (usually one year). A maternal death is the death of a woman while pregnant or within 42 days of the termination of pregnancy irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. Can be direct (resulting from obstetric complications of the pregnancy state) or indirect (resulting from previously existing disease or disease that developed during pregnancy).	Total number of live births occurring in the same time period (usually one year).
Stillbirth rate (expressed as stillbirths per 1000 total births)	Number of babies born per year with no signs of life weighing ≥ 1000 g and/or after 28 completed weeks of gestation	Total number of births per year (live and stillborn)
Neonatal mortality rate (expressed as newborn deaths per 1000 live births)	Number of live born infants per year dying before 28 completed days of age	Total number of live births per year
Perinatal mortality rate (expressed as perinatal deaths per 1000 total births)	Number of foetal deaths among foetuses born weighing ≥ 1000 g and/or after 28 completed weeks of gestation, plus neonatal deaths through the first 7 completed days after birth Some definitions include all neonatal deaths up to 28 days*	Total number of births (live and stillborn)

Maternal and Perinatal Death Surveillance and Response in Nigeria

Healthcare provision in Nigeria is a concurrent responsibility of the three tiers of governance, namely Federal, State, and Local Government Areas (LGAs). The Federal Government is generally responsible for tertiary health care (teaching hospitals and Federal Medical Centres) and policy formulation in the country. State governments are responsible for secondary level health care in general hospitals. Primary health care is formally the responsibility of LGAs in the country, and the Federal Government supports through the National Primary Health Care Development Agency (NPHCDA).[22]

At the clinical level, a mortality audit is a common practice, especially in tertiary and teaching facilities. Some states have piloted specific approaches on a larger scale but, for many years in Nigeria, there was no harmonised or standard process for reviewing maternal and perinatal deaths, and implementation was dependent upon interested individuals conducting clinical audits, mainly pertaining to maternal deaths.

With the release of WHO guidelines for MPDR in 2013[23] and growing national interest, the Federal Ministry of Health (FMOH) sought to operationalise a mortality audit system for the reduction of maternal and perinatal death. Starting with maternal death review, MDSR was adopted by the FMOH with the support of Society of Gynaecology and Obstetrics of Nigeria (SOGON) and the International Federation of Gynaecology and Obstetrics (FIGO) in 2013.

In 2014, the Saving Newborn Lives project of Save the Children, the Paediatric Association of Nigeria (PAN), and the Nigerian Society of Neonatal Medicine (NISONM) advocated for the integration of stillbirths and neonatal deaths into the MDSR system, and supported the development of an integrated MPDSR guideline and tools with the FMOH in 2015. The National Council on Health (NCH) approved the MPDSR guideline and tools in 2016 (Box 1).

Box 1: Goal and objectives in the National MPDSR Guideline[24]

Goal: to eliminate preventable maternal and perinatal deaths

Objectives:

1. To notify and collect accurate data on all maternal and perinatal deaths in the country, including:
    a) Notify on every maternal and perinatal death
    b) Number, identify and report all maternal and perinatal deaths; and
    c) Determine the causes of death, contributing factors and review all maternal and perinatal deaths (using facility records, verbal autopsies);
2. To analyse and interpret data collected, in respect of:
    a) Trends in maternal and perinatal mortality;
    b) Causes of death (medical) and contributing factors (quality of care, barriers to care, nonmedical factors e.g. socio-cultural, religious factors, health seeking behaviour, etc.);
    c) Avoidability of the deaths, focusing on those factors that can be remedied;
    d) Risk factors, groups at increased risk, and maps of maternal and perinatal deaths;
    e) Demographic and socio-political and religious factors.
3. To use the data to make evidence-based recommendations for action to decrease maternal and perinatal mortality. Recommendations will be on applicable subjects, such as:
    a) community education and involvement;
    b) timeliness of referrals;
    c) access to and delivery of services;
    d) quality of care;
    e) training needs of healthcare personnel or protocols use;
    f) deployment of resources where they are likely to have impact;
    g) regulations and policy;
    h) Billing and cost of care, emergency services; and
    i) Advocacy for MNCH interventions.
4. To disseminate findings and recommendations to civil society, health personnel, and Decision/Policy makers to increase awareness about the magnitude, social effects and preventability of maternal and perinatal mortality.
5. To ensure actions take place, by monitoring, evaluating and reporting the implementation of recommendations.
6. To inform programmes on the effectiveness of interventions and their impact on maternal and perinatal mortality, including feedbacks.
7. To guide and prioritize research related to maternal and perinatal mortality.
8. To strengthen referrals and linkages between and across the levels of care.

The national guideline, data collection registers, and other tools aim to achieve routine tracking and review of all maternal and perinatal deaths in Nigeria.[24] The schematic in Figure 1 demonstrates the integrated relationship between the Maternal and Perinatal Death Surveillance (MPDSR), and Maternal and Perinatal Death Review (MPDR) Cycle of Activities intended in the new harmonised guidelines. The government has since disseminated this policy and directed State Governments in the country to implement it. Currently, there is no routine tracking system for the rollout of MPDSR and no way to monitor those LGAs and facilities that have begun, ceased, or continue to implement any form of death review.

Figure 1: National MPDSR guideline and data collection tools

Prior to the adoption of MPDSR, a number of institutions and programmes had established maternal and/or perinatal death audits in various locations in the country. Data from some of these experiences have been presented and published.[25-35] However, a systematic review of the status of maternal and perinatal death audits in Nigeria has not been undertaken. An assessment of the status of implementation of different audit and review approaches was necessary to appraise previous and ongoing audit efforts and determine their potential use to institutionalise MPDSR effectively. Such information will also serve as valuable baseline and reference data for future assessments.

Scope of the Assessment

Purpose

This study aimed to conduct a national assessment that would provide a thorough baseline understanding of the characteristics of past or current maternal and perinatal death audit processes, including their operational enhancers and challenges, across Nigeria. Information generated from this study will, in addition to serving as baseline, be invested in the smooth and effective institutionalization of MPDSR across Nigeria.

This assessment sought to answer the following questions:

1. What is the status of the maternal and perinatal death review (M/PDR) practices in Nigeria?
2. In which states, and what, where and how is it implemented?
3. What are the best practices as well as enablers and barriers of its implementation?
4. How can these findings be deployed to strengthen the rollout of MPDSR in Nigeria?

Understanding the answers to these questions will be useful for the current efforts at strengthening and institutionalizing MPDSR in all parts of the country.

Specific Objectives

The main study objective was to assess the status of M/PDR practice in Nigeria. Specifically, the aims of the assessment were to:

a) Establish the past and current status of M/PDR implementation
b) Identify key operational enhancers and barriers to effective rollout of maternal, perinatal and/or neonatal death review and response
c) Make and disseminate recommendations for effective rollout of MPDSR at the state level

METHODOLOGY

The assessment employed qualitative data collection methods conducted in two phases: a national mapping followed by an in-depth phase in states including interviews with key stakeholders at national, state and facility levels of the health systems involved with MPDSR implementation. The mapping phase sought to identify information on past and current M/PDR processes in all 36 states and the FCT. The data assembled helped to identify states and then facilities for the in-depth phase. This second phase of the assessment involved compiling detailed information through in-depth interviews with stakeholders, along with direct observations of selected health facilities within a subset of states representing the six geopolitical zones.

Data Sources and Tools

At the national level, the co-investigator team convened a wide group of stakeholders including the Federal Ministry of Health, UN agencies, professional associations, and other partners to review the interview questionnaires and methodology. Four tools were developed and used for this assessment (Appendix 3):

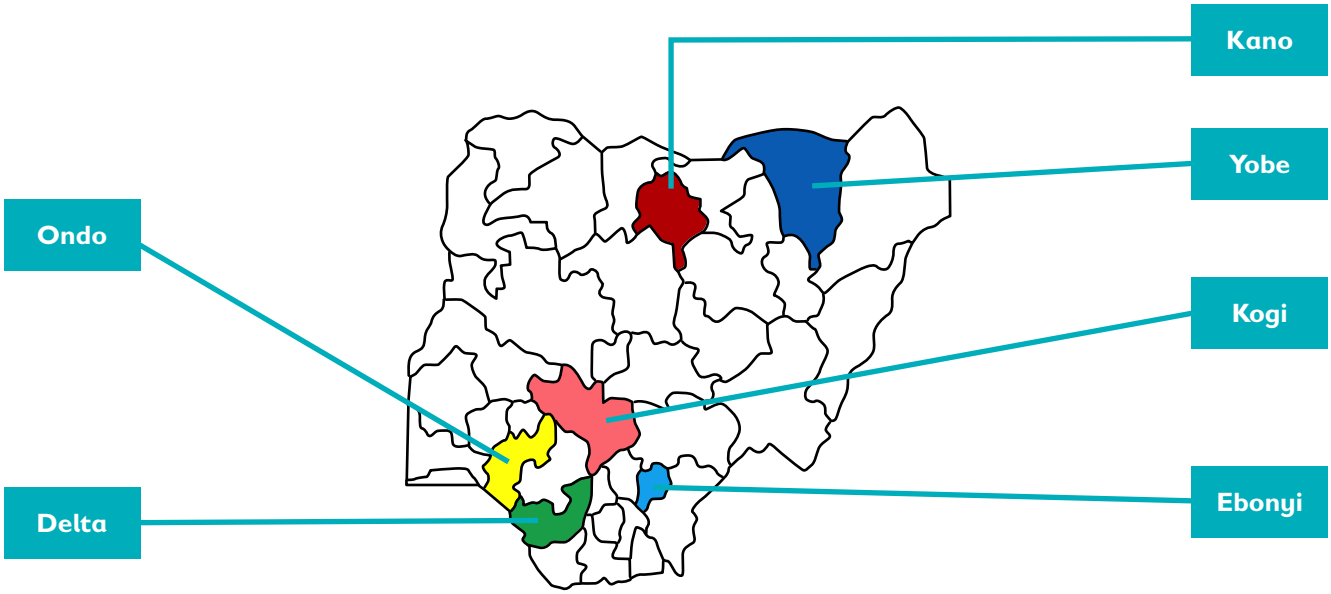
1. Mapping assessment questionnaire used to conduct the telephone interviews with SMOH officials of all the states
2. In-depth facility interview questionnaire used to conduct interviews with facility staff directly involved in the conduct of MPDSR
3. In-depth stakeholder interview questionnaire used to conduct interviews with stakeholders in MNCH at the state level
4. Key informant interview guide for securing the perspectives of national-level stakeholders in MNCH

The assessment was informed by a desk review of key international and in-country publications; the first phase used a telephone survey to interview State and FCT RMNCH Coordinators using a semi-structured questionnaire. In the second phase, stakeholders at the state and LGA levels participated in structured in-person interviews containing 34 questions to gather information regarding the stakeholder's specific role in MPDSR implementation, current MPDSR practices, community linkages, and experiences with changes in care resulting from MPDSR. Stakeholders at the LGA level were asked 12 additional detailed questions about local experiences of MPDSR, and some of the risks and benefits associated with the MPDSR process. Facility staff of available health facility workers involved in MPDSR-related activities present on the day of the facility assessment participated in a semi-structured in-person interview containing 71 questions to collect information about how reviews are done at facility-level.

Site Selection and Sampling

All 36 states and the Federal Territory were included in the mapping phase. For the in-depth phase, six states were purposively selected, one from each of the country's six geo-political zones (Figure 2), based on the geopolitical spread, landscaping findings on diversity of experiences on M/PDR and the current status of implementation of the National MPDSR, and the state's MNCH profile. Details on the sampling methods are available in Appendix 6.

Figure 2: Map showing which states participated in the in-depth phase



For the in-depth phase, 30 facilities were included, which involved five health facilities from each state including tertiary, secondary, and primary levels (Table 2a). The facility selection was based on geographic accessibility, past or present involvement in M/PDR, years of experience with death audits, regular meetings of the M/PDR committee, experience in verbal autopsy, and having high volume of deliveries (Appendix 4). Across the six states, 23 stakeholders were also interviewed including State Health Coordinators, Medical Directors from tertiary and secondary hospitals, Health Department Heads and Primary Health Care Directors (LGA), and others (Table 2b).

Table 2: Types of facilities and stakeholders included in the in-depth phase of assessment

a) Types of facilities visited

Facility type	N
Tertiary	6
Secondary	17
Primary	7

b) Types of stakeholders interviewed

Stakeholder	N
State Health Coordinators	5
Medical Director (Tertiary hospital)	3
Medical Director (Secondary hospital)	6
Health Department Heads and Primary Health Care Directors (LGA)	6
Other (State Director of Planning, Research & Statistics, SMO 2 - Medical Services & Training, Executive Secretary, State Primary Health Care Board)	3

Data Collection and Analysis

For the mapping phase, clinicians were trained on the methodology and the use of the survey questionnaire; they were assembled in a confidential location to administer the survey with the RMNCH Coordinators of the 36+1 states. Prior to the telephone interviews, respondents received the questionnaire via email in order to gather information characterizing past and current maternal and perinatal death audits. In circumstances in which complete information was not obtained during a first call, additional calls were made or other recommended officials were contacted. Voice recordings of each interaction facilitated subsequent refinement of data accuracy. The data collection teams for the mapping phase were comprised of obstetricians, Paediatricians and nurses/midwives, as well as members of the SOGON and PAN, who were trained in the assessment purpose, tools, and methods. Letters of support were written by FMOH to the Commissioners of Health in all the states, which facilitated both the mapping and in-depth phases of data collection.

At the state level, for the in-depth phase, teams were solicited from MCSP and Save the Children staff, as well as local health officials, state MPDSR committee members, and professional associations (SOGON, PAN, NISONM, NANNM); those who served as data collectors underwent a one-day training on the methods and data collection tools. Relevant health authorities and facilities were contacted about the date of the visit in advance and provided with information about the assessment.

The in-depth phase involved interviews with key informants and facility key informant interviews that provided information on local death audit practices. Participants included heads of hospitals or primary health Centres, the staff in charge of maternity wards, and/or heads of Departments of Obstetrics & Gynaecology and Paediatrics. Key stakeholder interviews were carried out with National and State RMNCH Coordinators, LGA RMNCH Coordinators, officials of relevant professional associations, sub-national and international NGOs and UN Agencies. Facility visits began with an introduction and a presentation of existing MPDSR processes by facility representatives. An observation checklist was used to collect information on evidence of availability of audit tools including policies and guidelines, along with evidence of routine and sustainable audit practice such as minutes from M/PDSR meetings. The number and types of facilities visited, as well as the positions of stakeholders consulted across six states are presented in Tables 2a and 2b. At the national level, clinicians who had conducted the mapping phase interviewed key informants by telephone.

Ethical Considerations

Prior to any activity of this study, an application was submitted to the Nigeria Health Research Ethical Committee (NHREC) on July 19, 2016; subsequent determination of non-human subject research was issued on August 17, 2016. The study also received a 'Non-Human Subjects Research Determination' by the Johns Hopkins School of Public Health Institutional Review Board, and the Save the Children – US Ethical Review Committee.

The data collected for this assessment did not include any personal information from respondents. The questions in the tools gathered data on the current state of practice, but did not require respondents to provide personal reflection or opinions. No risks were anticipated with participation in the assessment. Forms, registers, and meeting minutes collected did not include any identifying information of cases discussed through the MPDSR process.

Prior to all key informant interviews, participants were asked to provide voluntary oral consent. The interviewers obtained oral consent before the start of the discussion by reading an oral consent script and asking the participant for a response. Their permission was also sought to audio-record the interview for improving the quality of the interview details. The language of preference was queried in the initial greeting. Where English was not preferred, the interview or discussion was conducted using the appropriate translation of the oral consent script and study tools.

RESULTS

Mapping Phase

Maternal and/or Perinatal Audit Models in Nigeria

Ten models of maternal and or perinatal death audits were observed to have ever existed across the country (Table 3, Appendix). All ten audit models focused on maternal deaths, while only three included perinatal mortality. All audit models, except the Clinical Audit model, had specific guidelines, tools and produced reports. Four of the models also generated scientific article publications.[25,27,29,30] All the audit models with the exception of clinical audit involved state and/or local government authorities partnering with other organizations, such as local professional associations, local NGOs, international NGOs, bilateral agencies, and/or UN agencies.

The audit models differed widely in their structures and functions. Some were appendages to specific MNCH programmes; others were established to serve routine healthcare services. Some programmes developed audit models that were entirely dependent on the local system for communicating their data flow and communications (e.g., routine HMIS); whereas others only partially used the local system; and some were completely independent and not linked to the local system. Six of the ten audit models involved the formation of State Audit Committees, which respectively coordinated their activities. In a similar proportion, hospital facility committees were constituted to conduct the death reviews. In only three of the models were death audit committees set up at the community level. Local committees were established that conducted on-site death reviews with some models, while reviews were conducted elsewhere in others. All but two models gave feedback to their respective service providers and communities, concerning the outcome of the deaths reviewed.

Table 3: Mapping results of maternal and perinatal death audit processes prior to MPDSR*

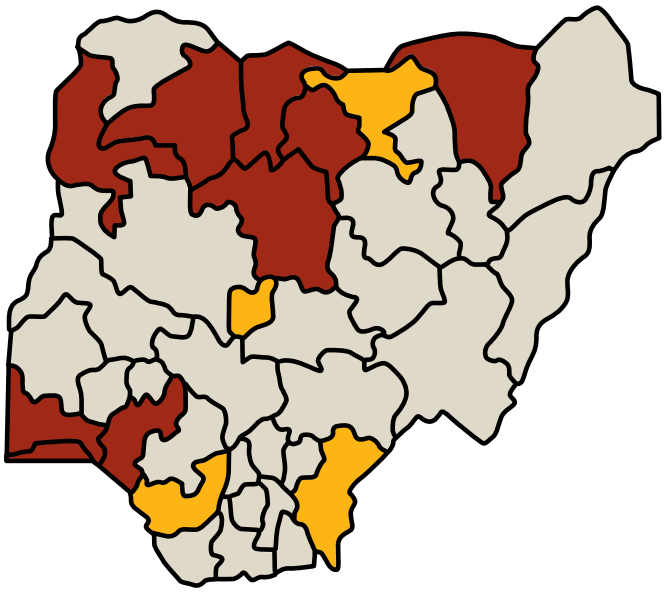
Programme Title (Partner support)	Components: Audit Type(s)	Implementation Level(s)	Start Year	Geographic Coverage (full/partial)	Current Status
1. Ondo State "Alive" Programme: Confidential Enquiry into Maternal Deaths in Ondo State (Ondo State Government)	CE, MDR	State, Facility, Community	2009	Ondo State (full)	Transitioning to MPDSR
2. Delta State MDR Programme (Delta State Government)	MDR	State, Facility	2014	Delta State (partial)	Transitioning to MPDSR
3. Quality Assurance in Obstetrics (Rotary International)	CE (maternal & foetal)	Facility	2008	Kaduna, Kano, FCT, Ondo (partial)	Ended 2015
4. Facility Maternal Death Review (PPRINN-MNCH)	CE, MDR	State, Facility	2010	Yobe and Zamfara (full); Katsina (partial)	Ended in 2013
5. Maternal Death Review in the Northern States under the Midwifery Service Scheme (NPHCDA)	MDR,VA	Facility, Community	2011	19+1 northern states (partial)	Ended in 2013
6. Maternal Death Review Programme in the Federal Capital Territory (SOGON)	MDR VA	State, Facility, Community	2014	FCT only (partial)	Ongoing
7. Community-Based Health Information System (CHAI)	MDR, PDR,VA	Community	2015	Kaduna, Kano, Katsina (partial)	Ongoing
8. Maternal Death Review Programme in Lagos State (WHARC)	MDR	State, Facility	2014	Lagos State (partial)	Ongoing
9. The Nigerian Maternal, Newborn and Health Maternal Death Review Programme (MNCH2-MDR)	MDR,VA	State, Facility, Community	2014	Kaduna, Kano, Katsina, Jigawa, Yobe, Zamfara (full)	Ongoing
10. N/A	Clinical Audit	Facility	N/A	Entire country	Ongoing

Acronym key: CE – confidential enquiry; CHAI - Clinton Health Access Initiative; MDR – maternal death review; NPHCDA - National Primary Health Care Development Agency; PPRINN-MNCH - Partnership for Reviving Routine Immunisation in Northern Nigeria and Maternal Newborn and Child Health; SOGON - Society of Gynaecology & Obstetrics of Nigeria; WHARC - Women's Health and Action Research Centre. * More details about these models are available Appendix 7.

The mapping phase reviewed past and current maternal and perinatal death audit processes used in each Nigerian state, with every State reporting some form of audit process. Profiles for each State have been developed as part of this phase, presenting findings by State (Appendix 8). Clinical Audit (CA) was the model most practiced across the country and the only type used in the federal-run tertiary health centres (THCs) (Figure 3). There was no evidence collected about private-for-profit and faith-based facilities, which are widely believed to provide up to 60% of services in the country. The concentration of different models within individual states ranged from one to six; Kaduna and Kano States each had six different models being implemented. Most of the audit processes were implemented within specific programmes, often through external funding. Some of these programmes were pilot projects and therefore did not have total state coverage. Six of the ten audit models were implemented in the Northwest zone, which has the highest perinatal mortality and second highest maternal mortality in the country.

The implementation of the audit types varied as well as the perceptions of implementation across the various key informants. For example, reporting on action plan implementation ranged from communicating recommendations through minutes, reports, and letters to the assumption that recommendations would be implemented as expressed at the review. There were different forms of audit dissemination approaches such as CEMD reports, published Programme Evaluation Reports, and peer-review scientific journals. There was no dissemination of clinical audit findings. Different opinions were expressed on successes recorded with the audit models. Almost all stakeholders reported improvement in MNCH data and information sourcing; some felt that quality of care improved where models were deployed; others expressed fluctuations or no change.

Figure 3: Map showing types of current audit processes observed during the mapping assessment across Nigerian states



Key:

- Transitioning from MDR/PDR into MPDSR (committees formed at three levels)
- MDR (Facility/Community Verbal Autopsy) and Clinical Audit
- Clinical Audit only

Mapping of MPDSR in Nigeria

The scale of MPDSR activities by October 2016, when the mapping was conducted, revealed widespread orientation and dissemination of the national MDPRS Guidelines to the State Ministry of Health (MOH) level, but moderate to limited scale in terms of setting up the processes needed to implement MPDSR (Table 4). The mapping found that all states participated in the national orientation on MPDSR that was held in November 2015, during which the national MPDSR guidelines were disseminated and each State MOH asked to commence implementation by FMOH. The mapping revealed that 31 of the 36+1 states (84%) reported having established State MPDSR Steering Committees, with 28 (76%) reporting having developed an implementation plan for institutionalizing MPDSR in their respective state. Additionally 23 states (62%) reported having costed implementation plans. The establishment of Facility MPDSR Committees was reported in only one-third (12) of the states, mainly those with pre-existing death audit processes; most of these states are located within the Northwest geopolitical zone. In eight states (22%), Community MPDSR Committees had been introduced; more than half of these were in the Northwest. Eight of the 36+1 states (22%) had established functional networks to support effective MPDSR schemes; these states also had established MPDSR committees at all levels (State, LGA, facility). Evidence of compiled MPDSR reports existed in seven states (19%) but these reports did not entirely cover the states. Table 5 shows the pattern of past and current maternal and perinatal death audit processes used across Nigerian states (see Profiles in Appendix 8 for more details).

Table 4. Scale of MPDSR implementation activities

Indicator	Total # States (%)
States' participation in national orientation on MPDSR	36+1 (100%)
States with established MPDSR Steering Committees	31 (84%)
States with developed State MPDSR action plans	28 (76%)
States with established Facility MPDSR Committees	12 (32%)
States with established Community MPDSR Committees	8 (22%)
States with established tracking mechanism for rollout of MPDSR	8 (22%)
States with system for collating Statewide MPDSR reports	7 (19%)

Table 5: Past and Current Maternal and Perinatal Death Audit Processes used in Nigerian States

	BACKGROUND						MPDSR STATUS								
State	Population	Primary Health Centres	Secondary Heath Centres	Tertiary Health Facilities	Total Health Facilities	Facilities per 10,000 Pop.	Current MDR Types	Current PDR Types	State MPDSR Committee Formed	State MPDSR Action Plan Developed	State MPDSR Action Plan Costed	MPDSR Facility Committees Formed	MPDSR Community Committees	State MPDSR Data Collection System Exist	State MPDSR Reports Exist
Abia	3,464,000	518	96	1	615	2.1	CA	CA	Yes	Yes	Yes	Yes	No	No	No
Adamawa	3,888,000	998	28	1	1027	3.2	CA	CA	Yes	Yes	Yes	No	No	No	No
Akwa Ibom	4,786,000	355	187	1	543	1.4	CA	CA	Yes	No	No	No	No	No	No
Anambra	5,002,000	1360	123	2	1485	3.6	CA	CA	Yes	Yes	Yes	Yes	No	No	No
Bauchi	5,621,000	1010	22	2	1034	2.2	CA	CA	Yes	Yes	Yes	No	No	No	No
Bayelsa	2,023,000	172	59	1	232	1.4	CA	CA	No	No	No	No	No	No	No
Benue	5,045,000	1111	94	1	1206	2.9	CA	CA	Yes	Yes	Yes	No	No	No	No
Borno	4,895,000	421	52	1	474	1.1	CA	CA	Yes	Yes	Yes	No	No	No	No
Cross River	3,508,000	593	139	2	734	2.5	S&F-MDR	CA	Yes	Yes	Yes	No	No	No	No
Delta	4,972,000	820	102	2	924	2.2	S&F-MDR	CA	Yes	Yes	Yes	No	No	No	No
Ebonyi	2,584,000	516	48	3	567	2.6	CA	CA	Yes	No	No	No	No	No	No
Edo	3,979,000	871	47	6	924	2.9	CA	CA	Yes	Yes	Yes	No	No	No	No
Ekiti	2,848,000	395	62	2	459	1.9	CA	CA	No	No	No	No	No	No	No
Enugu	3,990,000	524	342	2	868	2.7	CA	CA	No	No	No	No	No	No	No
FCT-Abuja	1,681,000	638	93	7	738	5.2	CA, S&F-MDR; C-VA	CA	Yes	No	No	No	No	Yes	No
Gombe	2,807,000	508	22	1	531	2.2	CA	CA	No	No	No	No	No	No	No
Imo	4,767,000	805	531	2	1338	3.4	CA	CA	Yes	Yes	Yes	Yes	No	No	No
Jigawa	5,172,000	598	14	2	614	1.4	CA; S&F-MDR	CA	No	No	No	No	No	No	No
Kaduna	7,354,000	1551	33	4	1588	2.6	CA; S&F-MDR; C-VA	CA; C-VA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kano	1,219,000	1142	39	2	1183	1.3	CA; S&F-MDR; C-VA	CA; C-VA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Katsina	6,979,000	1463	32	1	1496	2.6	CA; S&F-MDR; C-VA	CA; C-VA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kebbi	3,906,000	380	31	1	412	1.3	CA; S&F-MDR	CA	Yes	Yes	Yes	Yes	Yes	No	No
Kogi	4,051,000	868	208	1	1077	3.2	CA	CA	Yes	Yes	Yes	No	No	No	No
Kwara	2,872,000	575	164	1	740	3.1	CA	CA	Yes	Yes	Yes	No	No	No	No
Lagos	10,957,000	1786	460	7	2253	2.5	S&F-MDR	CA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nasarawa	2,219,000	874	33	2	909	4.9	CA	CA	No	No	No	No	No	No	No
Niger	4,786,000	1322	12	1	1335	3.4	CA	CA	Yes	Yes	No	No	No	No	No
Ogun	4,439,000	1373	144	3	1520	4.1	S&F-MDR	CA	Yes	Yes	Yes	Yes	No	Yes	No
Ondo	4,142,000	769	40	2	811	2.3	S&F&L-GA-DR	CA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Oshun	4,130,000	1031	60	4	1095	3.2	CA	CA	Yes	Yes	No	No	No	No	No
Oyo	6,679,000	763	470	4	1237	2.2	CA	CA	Yes	Yes	No	No	No	No	No
Plateau	3,851,000	833	49	1	883	2.6	CA	CA	Yes	Yes	Yes	No	No	No	No
Rivers	6,330,000	417	54	5	476	0.9	CA	CA	Yes	Yes	0	No	No	No	No
Sokoto	4,452,000	668	43	2	713	1.9	CA	CA	Yes	Yes	Yes	No	No	No	No
Taraba	2,766,000	1030	14	1	1045	4.6	CA	CA	Yes	Yes	No	No	No	No	No
Yobe	2,778,000	1030	14	1	1045	4.5	CA; S&F-MDR; C-VA	CA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Zamfara	3,892,000	677	19	1	697	2.1	CA; S&F-MDR; C-VA	CA; C-VA	Yes	Yes	Yes	Yes	Yes	Yes	Yes

KEY: CA: Clinical Audit; S&F: State and Facility levels; S&F MDR: State and Facility-level Maternal Death Review; MDR: Maternal Death Review; F-MDR: Facility Maternal Death Review; F-PDR: Facility Perinatal Death Review; C-VA: Community Verbal Autopsy; CE: Confidential Enquiry (on maternal mortality); S&F&L-GA-DR: State, Facility and Local Government Area (LGA) Death Review; Yes: the Indicator in reference existed; No: the indicator in reference did not exist. State MPDSR profiles provide more details and available in Appendix 8.

In-Depth Phase

Implementation Status

The results from the 30 visits to facilities and 23 stakeholder interviews conducted across six states during the in-depth phase shows a range of awareness and implementation of the national MPDSR guidelines, and mortality audit for maternal and perinatal deaths in general. Many of the respondents were neither aware or nor actively using the new national MPDSR guidelines. Almost all the tertiary health facilities and the other secondary and primary health facilities had either not implemented or were still at the level of creating awareness for MPDSR, with the exception of one state (Table 6). However, the existence and, in some cases, institutionalization of practice of the older death audit models (Clinical Audit, MDR, etc.) reveals a system in place to strengthen MPDSR implementation. All of the facilities and stakeholders were aware of the importance of collecting mortality data and notifying authorities regarding maternal deaths, though the practice of reviewing the causes and avoidable factors related to maternal deaths and recommending changes were not widespread. Overall, there was very little integration of stillbirths and neonatal deaths into the data collection and notification process, and almost no review of the care received prior to these deaths. Of the 30 facilities visited, 15 (5 each in Kano, Ondo and Yobe States) were involved in programme-initiated audits (respectively MNCH-2, "Abiye" safe motherhood and MNCH-2 programmes).

Table 6: Audit models practiced in facilities assessed

State code	Facility level	Audit model practiced
State A	Secondary	MDR
	Secondary	MDR
	Secondary	MDR
	Secondary	MDR
	Tertiary	MDR
State B	Primary	Clinical audit
	Primary	Clinical audit
	Secondary	Clinical audit
	Secondary	Clinical audit
	Tertiary	Clinical audit
State C	Primary	MPDSR
	Primary	MPDSR
	Secondary	MPDSR
	Secondary	MPDSR
	Tertiary	MPDSR
State D	Primary	Clinical audit
	Primary	Clinical audit
	Secondary	Clinical audit
	Secondary	Clinical audit
	Tertiary	Clinical audit
State E	Primary	MDR
	Secondary	MDR
	Secondary	MDR
	Secondary	MDR
	Tertiary	MDR
State F	Tertiary	Clinical audit
	Secondary	MDR
	Secondary	MDR
	Secondary	MDR
	Secondary	MDR

MPDSR Practice

This section provides a summary of both the results from the facility questionnaires and the stakeholder interviews, including information on the history of implementation, resources provided for implementation, frequency of meetings, differences in approaches, information flow, community involvement, staff involved, the response to recommendations, and some of the benefits and challenges of conducting death reviews.

Introduction of MPDSR

The in-depth phase showed that diverse types of audit models were implemented across and within states.

A combination of strong political will of State Government and partnership with local professional associations and international NGO inspired the initiation of these audit models. Various audit model start dates varied from 2009-2014. Information regarding when and how the most widely practiced Clinical Audit started was unavailable; however, this assessment confirmed that other currently practiced audit models started as far back as 2009. MDR implementation began in 2014, with some facilities still practicing this model, while others have transitioned to MPDSR in 2016.

For most of the facilities assessed, the introduction of MPDSR was a matter of transitioning from a pre-existing death audit model. This transition process initiated with awareness creation activities held at statutory health system or facility meetings involving stakeholders in MNCH, such as quarterly meeting of MNCH stakeholders assembling partners and other stakeholders and providing a platform for introducing new concepts or reviewing existing ones. For PHCs practicing audit at the time of the assessment, community sensitization activities around MPDSR had been conducted and involved community leaders and Ward Development Committee members. In settings where more resources were available from the state government, media were also involved in awareness creation. All facilities selected an MPDSR focal person to participate in centralised trainings on MPDSR, who were empowered to orient other facility staff about the new MPDSR guidelines.

Composition of the MPDSR Committees

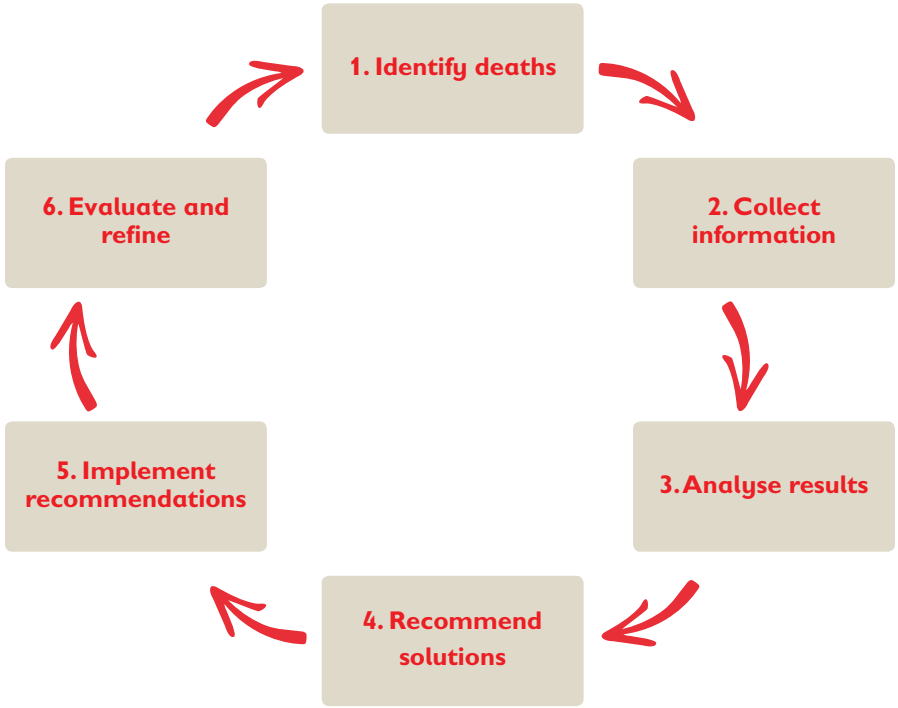
In secondary health centres practicing MPDSR, committee ranged from 5-9 members and comprised of multidisciplinary teams, with the average cadre ratio of: 7% managers, 32% clinicians, 30% nurses, 8% pharmacists, and 9% data clerks and laboratorians. The hospital's chief medical director, director of clinical services, or the most senior medical officer usually chaired the MPDSR committees. Each of these officials held other primary responsibilities that ranged from being facility managers, heads of departments, or units to programmes supervisors and clinicians. A similar arrangement prevailed in facilities that had MDR committees.

At two of the PHC sites, with evidence of MPDSR practice, committees had 4 and 15 members, respectively; in the latter, 13 of the members were community leaders, members of the WDC and Facility Support Committee.

The Operation of the MPDSR Committees

These findings are structured according to the audit cycle (Figure 4).

Figure 4. Six-Step Audit Cycle for MPDSR



Source: World Health Organization[16]

Step 1: Identify Deaths

One aspect of the MPDSR system is to identify all births, maternal deaths, stillbirths, and neonatal deaths that occur, whether in the labor ward, in other departments within a health facility, or in the community. The interviews conducted at the health facilities provided information on the different processes used for identifying maternal deaths, stillbirths, and neonatal deaths in the health facilities. The tertiary facilities reported the need to actively search for cases in other departments, probably owing to the smaller physical size and caseload at the peripheral facilities.

All facilities noted the importance of completing a case file for a maternal death within 24 hours. Most health facilities reviewed every maternal death, except in circumstances in which there was a high number of deaths necessitating selection of cases for review. The selection criteria were unclear across the institutions. The review of perinatal deaths was still limited to few facilities, with only one-third of facilities having reported to complete case files for perinatal deaths. Selection criteria for which perinatal deaths to review were also unclear, although primary level facilities with evidence of sustainable practice reported reviewing every perinatal death. Having no forms available was the primary reason given for not completing case files for maternal and perinatal deaths. Further, it was not evident whether all stillbirths and neonatal deaths were being issued death certificates.

Key informants at the facilities uniformly rated the data quality and use for the audit processes low. The stakeholders shared the same views regarding the low data quality and attributed it to poor attitude, poor understanding of the tools, lack of motivation, and a lack of information from relatives after a death.

On data quality

"The forms are not filled properly due to poor attitude of staff to work."
– Stakeholder interview

"Poor understanding of the tools and terminologies therein lead to poor quality of data and incomplete data."
– Stakeholder interview

"I cannot vouch for the accuracy of data being collected because staff are not motivated."
– Stakeholder interview

"Issues with under-reporting especially, from hard to reach communities are sometimes due to difficult getting information from relatives when the patient dies."
– Stakeholder interview

Facilities that reported having a death review process in place specifically noted the requirement to document and notify maternal deaths to the required bodies. Intrapartum or fresh stillbirths were mentioned, but were less common. Neonatal deaths were often excluded from registers of neonatal deaths if the babies have been readmitted and then died on the paediatric ward rather than in the neonatal unit. No facility reported that they connect these deaths in the paediatric ward to the routine maternal and perinatal death reviews at secondary and tertiary levels. There did not appear to be a similar situation for maternal deaths. There were no formal connections or reporting of maternal or perinatal deaths that take place in the community for any of the facilities assessed.

"You don't regularly hear about stillbirths. They are considered not as grievous."
– Facility Interview

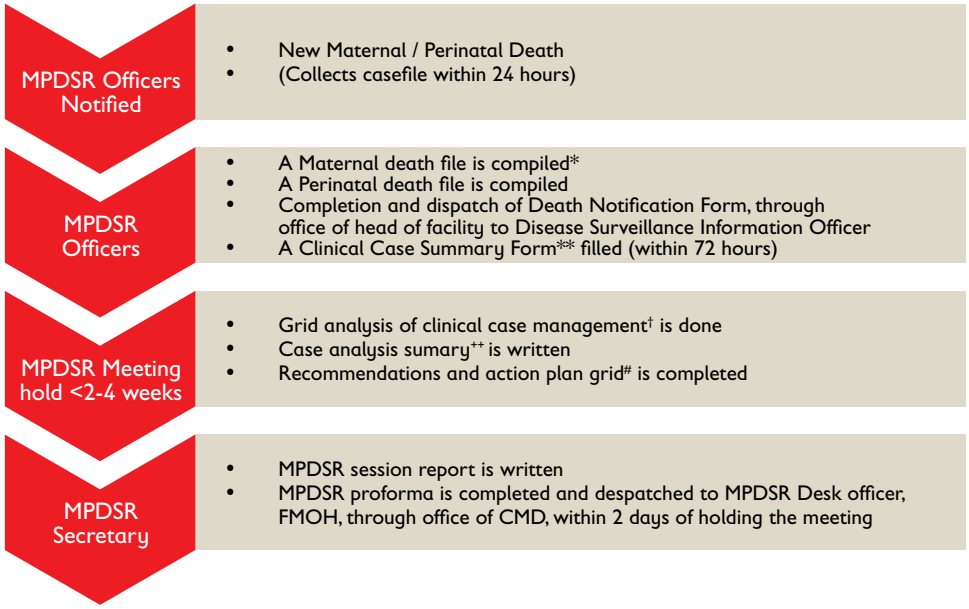
"Every death that occurs in our hospital is reported in the reports submitted to my office by nurses and midwives at the end of each shift. When I come to work in the morning, I conduct a hospital round to identify maternal and perinatal deaths and retrieve the respective case files for MPDSR processing."
– Facility Interview

"We use verbal autopsy questionnaire produced by the state in both English and Hausa (local language) languages"
– Primary health facility interview

In most facilities, community deaths were not captured in their records and no efforts were made to extend their death review efforts into the community of the deceased. One facility reported that Brought-in-Dead (BID) forms were produced for facilities to capture such deaths. One facility reported that community members were encouraged to promptly report community deaths to facilities in their domain. Finally, the two primary health centres from the same state that demonstrated evidence of MPDSR practice reported conducting a verbal autopsy on every maternal and perinatal death that occurred within their catchment communities.

The national guideline clearly stipulate that all maternal and perinatal deaths should have a casefile collected by an MPDSR officer, including a death notification form, within 24 hours. Figure 6, extracted from the guideline, shows the steps for operating MPDSR at facility level. The individual responsible for this task may vary and have other roles, but there should be at least one person designated to oversee this process at the facility level. Facilities report to the State MOH and MPDSR officer, who report to the FMOH and also produce an annual report for the national MPDSR committee. The key informant interviews revealed that tertiary facilities report directly to the federal level while district facilities report to the state level. Irrespective of level of practice, each facility should send report to State level for their reporting to the national steering committee since the national steering committee expects states to have an annual MPDSR report. The guideline does not mention aligning MDPSR with the quality improvement committees, which is a gap.

Figure 6. Steps for operating MPDSR at facility level from the national guideline



Source: Nigeria Federal Ministry of Health[24]

Step 2: Collect Information

While LGA and state-level stakeholders reported familiarity with the national MPDSR data collection forms, few facilities had copies on hand and used these tools for the death review processes. Only 16 facilities (53%) reported having tools available for maternal death reviews and only five facilities (17%) reported having tools available for perinatal death reviews. Assessors observed two types of guidelines and tools predominantly in use—either the MPDSR guideline or the MDR guideline from 2013. Both guidelines covered "cause of death," "modifiable factors," and "recommendations." The other death audits utilised tools that were developed specifically for them. Some facilities had no standard forms and rather just compiled relevant case information in notebooks. Birth and death data were recorded in standard registers, and in the tertiary centres and one general hospital, the presenter summarised cases for presentation at review meetings. In the larger facilities, there were rotating staff responsible for compiling information on specific cases for the mortality audit meeting. In smaller facilities, the medical director usually led this.

Facilities practicing MPDSR reported relying on information in deceased's casefile and individual accounts of involved staff to conduct reviews and respectively complete the MPDSR/MDR forms. In the PHC facilities operating MPDSR, records on the deceased were combined with staff accounts and verbal autopsy (VA) information to conduct reviews on facility deaths, while review of community deaths were based on VA information alone.

On data collection

"One cannot vouch for the accuracy of data being collected because staff are not motivated. They do not know what it will be used for." – Stakeholder Interview

Step 3: Analyse Results

Per the guideline, facilities are required to send aggregated monthly and/or quarterly statistics to the LGA and state level. The assessment found that the majority of facilities reported sending reports per the guideline (21 facilities). This assessment

also observed that only facilities involved in programme-initiated MPDSR schemes regularly made their report submissions, and had their review data integrated into the HMIS, CRVS, and IDRS simultaneously. Although death review reports were compiled centrally at the state level, these efforts were yet to span entire states as desired; further scale-up to all health system facilities and communities will be required before total state data can be generated.

The method of classification of maternal and perinatal deaths and assignment of ICD codes used across institutions differed between and within the states. In some states, a state-level committee assigned the cause of death classification; while in others, it was performed by a designated doctor. Although doctors complete death certificates for maternal deaths, there was limited use of ICD-10 and document review indicated that no standard system was being used consistently, including ICD-10. Less than half of facilities could identify what system was used to classify cause of death (14 out of 30 facilities). For modifiable factors, only 12 facilities reported using a standard system and, of these, most employed the 3-delay model for classifying the maternal death modifiable factors and the root-cause analysis for classifying the perinatal factors.

Only eight facilities displayed monthly trends, although it is not clear which were tracking maternal and/or perinatal data, and what specific trends were being tracked (e.g., changes in causes of death or avoidable factors). Many respondents expressed the need to have data presented like this, but noted that staff capacity and lack of statistical skills were barriers to analyses.

The majority of facilities reported regular audit review meetings either monthly or quarterly. Half of the facilities reported keeping minutes of their meetings. While the tertiary facilities had standing meetings in which they would review every maternal death and a sample of perinatal deaths, the general hospital conducting death review meetings would often only meet when a death or near-miss occurred, particularly relating to a maternal case. However, some facilities reported holding meetings at monthly intervals, even when there were no deaths for review. Attendance at the meetings was reported to expected or mandatory in 16 facilities for all maternity staff, but only as needed from other departments. According to the national MPDSR guideline, the primary health facility MDPSR committees should comprise all relevant staff appointed by the Director of PHC. However, four of the PHC facilities assessed could not identify a clear coordinator for MPDSR.

On attending meetings

"We have difficulty finding an opportunity to gather everyone due to busy schedules."
- Facility interview

"Attendance is mandatory."
- Facility interview

'Time constraint [are a challenge]. Most people don't want to leave their job schedule during the reviews."
- Facility interviews

"Some committee members are from the interior (distant areas), so getting them to come is a bit difficult due to lack of motivation factor." - Facility interview

"Cause of death is cause of heated debate especially when the meetings are interdisciplinary."
- Facility interview

Step 4: Recommend Solutions

One of the most challenging parts of the review process is formulating appropriate recommendations, but this step is critical to successful MPDSR. As data and trends are examined, patterns of problems become evident. The type of solutions identified depend upon the individuals responsible for the investigation, the breadth of stakeholder involvement, and the level of development and local resources. The solutions should be directly linked to the cause of death and avoidable factors identified in each case. They may relate to a one-off action or an ongoing activity, and they may need to balance priorities based on the burden of various causes of mortality and the feasibility of implementing the various solutions. Review committees will be able to determine from the results of their own analyses and which mixture of strategies will be best suited to their circumstances, including their access to resources. However, solutions should always be SMART: specific, measurable,

appropriate, relevant and time-bound. The responsibility for tracking the progress of each solution should also be assigned to specific individuals. Even if the designated person is not solely responsible for making the change, assigning implementation and monitoring tasks to individuals reduces the likelihood of failure to follow through with action.

Of the facilities assessed, only 14 reported developing action plans as part of the review process. All facilities that ran programme-initiated audits (15) developed written action plans during their death review meetings; these plans were remitted to their facility management, coordinating state committees, and SMOH. Very few of the facilities reporting routine death review practice had a systematic process for establishing and following up on recommendations. The recommendations were linked to avoidable factors, according to respondents, but less than a third of facility reported documenting the recommendations in the meeting minutes. Meeting minutes were unavailable for review, but the description provided was that the meeting minutes include review of the previous meeting's action points, a short form summary of the case, and the recommendations. There was no standard form or format apart from this description, and the recommendations were not always associated with an individual or a time period for completion.

On recommending solutions

"Based on the number of death from particular diagnosis, recommendation are made to tackle the issues specific to such diagnosis in order to reduce number of death."
- Facility interview

"At the discretion of the committee members, [they] also consider doable recommendations."
- Facility interview

"Objectives were made, plans were itemised and specific people were identified to follow up and (their) ensure implementation."
- Facility interview

Step 5: Implement Recommendations

Ensuring action on each recommendation arising from the death review process is the critical step in this cycle. Recommendations based on modifiable factors that fall under the purview of administration may be acted on quickly within a responsive management structure (e.g., ambulance availability or lack of resuscitation equipment). However, it may be more effective to first focus on the modifiable causes that are within the control of health workers (e.g., detailed history taking and correct partograph use), and then use successes emerging from subsequent mortality audit meetings as an advocacy tool to prompt management to further action. In addition to following up on items that have not been completed, it is important to celebrate progress and identify successful changes when they occur.

Facilities routinely conducting reviews could point to specific examples of when a recommendation had arisen from a review of a death or near-miss. A number of stakeholders also recounted changes at the LGA or state level based on death review findings. None of these instances were formally documented as success stories, and there is no long-standing review of recommendations made and actions completed. There was no documentation of follow up on the recommendation, or information on what is done.

Facilities implementing MPDSR and MDR reported linkages to other facility quality improvement processes. Of the facilities assessed, 15 reported that MPDSR is linked to quality improvement efforts and provided examples from their practice.

Many accounts emerged regarding the ways in which the audit process influenced policy and practice changes. Facilities with sustainable practice reported a number of examples, such as: (a) high mortalities in the special care baby unit that necessitated the unit's fumigation, leading to reduction in mortality; and (b) knowledge of the leading causes of maternal and newborn mortalities, which informed the increased supply of essential commodities like magnesium sulfate, misoprostol, and non-pneumatic anti-shock garments. Facilities with evidence of practice gave other examples including: detection of fake drugs, prompting revised drug procurement policy; protocols developed to manage puerperal sepsis and for ambulance use; the revamping of blood banking services; introduction of free MNCH services; intensification of health education at ANC, enforcement of partograph use in labor; posting of health personnel that is more equitable; and better use of referrals.

In one state, the Confidential Enquiry on Maternal Mortality Scheme observed an association of high maternal mortalities with preceding involvement traditional birth attendant (TBA) care, which prompted the state's safe motherhood programme to introduce an early patient referral scheme for TBAs. This policy involved TBA receiving an incentive for every mother they referred to the health facility. The initiative ultimately led to a reduction of the state's MMR to 170 from 317 per 100,000 live births between 2011 and 2014. Additionally, treatment protocols were developed for managing obstetric emergencies and essential commodities were provided.

On implementing recommendations

"At review meetings, people criticise your management, but that's where people learn."

"Reviews are meant to bring things to the forefront. It's about accountability, checks and balances."

"Magnesium Sulphate (MgSO4) now stocked in labor ward instead of pharmacy."

"When the Committee observed 'bad maternal cases' were coming from a TBA-operated private clinic, to alert the State Primary Health Care Board to intervene. They intervened and stopped quackery in the village."

"Death review has improved documentation on patients on both treatment and time."

The stakeholders rated the quality of follow-up on the implementation of MPDSR committee recommendations and action plans as simply fair. Key informants noted a number of barriers to successful implementation (Box 2). These barriers included inadequate training of staff who did not participate in the centralised training on the scheme; inadequate qualified personnel, especially clinicians, to run the process; committee members' apathy; and inadequate financing or supply of audit tools. Other barriers identified included the existence of overwhelming challenges to health care provision (human, material, and structured resources), which frustrate accomplishment of action plans; frequent work stoppages in the health sector that disrupt the MPDSR cycle; and busy schedules of staff impairing timeliness, regularity, and attainment of quorum at review meetings.

Box 2: Common barriers identified by key stakeholders to successful audits

- Clinical audit sites:
  - non-invitation of other cadres of staff;
  - non-existence of policy, guidelines or tools on the process;
- MDR/MPSDR sites:
  - inadequate training on the scheme;
  - inadequate qualified personnel to run the process;
  - committee members' apathy;
  - inadequate financing or supply of audit tools;
- Cross-cutting barriers:
  - existence of overwhelming challenges to health care provision (human, material, and structured resources), which frustrate accomplishment of action plans;
  - frequent work stoppages in the health sector; and
  - busy schedules of staff, impairing timeliness, regularity, and attainment of quorum at meetings.

Step 6: Evaluate and Refine

The final step in the audit cycle involves looking back to evaluate what worked and what did not, and then refining and adapting the approach in order to move forward with an improved process and a more conducive enabling environment. It requires that steps 1 through 5 were completed, with opportunity for reflection after the fact. Simply holding meetings and discussing deaths does not necessarily enable change or improve quality of care. Leadership and supervision within a supportive environment are essential to ensure the completion of the audit cycle. Additionally, documenting changes over time, through an annual review meeting or report as described above, helps to identify successful components and those still needing work.

On quality of reviews

"Data captured is more for notification, but poor for review, because there is paucity of information for recommendation, preventable factors, and tracking of information for recommendation."

"Apart from power point presentations, there are no dedicated tools for these reviews at both paediatric and O&G department."

"The positive changes are evident; however, the documentation of the process were poor."

"Recommendations are usually not implemented."

"No written action plan is made, though the [MDR] forms have space for action plan."

Stakeholders and facility respondents frequently noted the need for more awareness and information about the MPDSR process, and the importance of maternal and perinatal deaths in general. While maternal deaths received more attention, it was thought that more could be done. Perinatal deaths were perceived as less important to policymakers, and even to health professionals and community members.

On advocacy

"Advocacy is required. If His Excellency can announce that maternal and perinatal deaths are reportable, in front of the chiefs, this would make such a difference."

The culture around self-reflection and review was also a key discussion point in the context of a supportive and enabling environment. Facilities with evidence of MPDSR or MDR practice reported that they did so under the "no name, no blame" atmosphere and ensured confidentiality. Although names of staff were not included in the reports of MPDSR committees, it was observed that some secondary and primary level facilities instituted disciplinary action against staff who were observed to have erred during service delivery to deceased patients. One respondent at a different facility reported that this process was to show junior staff how to 'learn from their mistakes' rather than taking a team approach to problem-solving. Blame was also reported to be more severe when staff from multiple disciplines took part.

On blame and punishment

"Staff 'sit up' because of the reviews. Even though they know they won't be punished, they do not want to have deaths come up."

"Review meetings are where people learn to 'stick to the rules'…Some staff are reprimanded verbally and [receive] other punishments."

"The review process should not be punitive. In the new system, all deaths are reportable but it does not come with consequences."

'When negligence is ascribed to a health worker, then the culprit is referred to disciplinary committee."

Some format of community linkage was observed in nearly half of all facilities in the six states (14 of 30 facilities) including through the Ward Committee or local chiefs. Respondents noted that the involvement of the community and Ward Committee is essential in making sure behaviour change happens.

On sharing information with the community

"The Ward Committee will come hear what messages need to get out to the community to prevent delays."

"Follow up is often carried out by the community leaders." – PHC Facility

'The community members of the committee will be sent to [address] the community on how to prevent maternal and perinatal death, especially post-partum haemorrhage." – PHC Facility

Key Informant Recommendations to Improve MPDSR

Recommendations from the key informants for improving MPDSR included the need to have legislation in place to entrench "no name, no blame" atmosphere for MPDSR and insulate it from litigation processes. Other recommendations included better quality training on MPDSR for local facility staff and more awareness creation on verbal autopsy and MPDSR in communities. There was a call for more funding, infrastructure, amenities, and essential commodities supplies to health facilities, better facility staffing, and prompt salary payments before the full benefits of MPDSR can be realised. Key informants recommend that: (1) participation of committee members be mandatory; (2) representatives of all relevant categories of professionals in facilities be actively involved during MPDSR meetings; (3) every committee member be formally trained before involvement in the meetings; and (4) the "no name, no blame" be enforced by all committees. They also opined that government ministries, departments, and agencies to be more responsive to recommendations sent to them by facility MPDSR committees. Stakeholders had recommendations for addressing the issue of poor data quality such as orienting, training, and retraining of staff who are involved in the filling of the forms; emphasis on importance of accurate data; more motivation of staff; and transitioning from paper to electronic means of documentation and data remittances. To improve the quality of verbal autopsy data at community level, key informants suggested advocacy and persuasion of traditional institutions; strengthening of the community structures such as the Ward Development Committees (WDC); and involving the traditional institutions with some roles in the MPDSR process.

The stakeholders also had recommendations for addressing other challenges to the MPDSR institutionalization processes.

- The respective State MPDSR Steering Committee visit State Commissioners of Health, to solicit:
    - Employment of more health personnel, especially at the LGA level;
    - Implementation of the national task-shifting and task-sharing policy;
    - Actions to prevent issues that cause frequent work stoppages in health facilities;
    - Safeguards and provision of essential facilities like electricity and water supply, and ambulances to all health facilities;
    - Sustained supply of hospital essential commodities;
    - Improvements to the referral system; and
    - Liaisons with development partners and multilateral agencies to secure support and funding for healthcare improvement
- Professional associations and academia undertake research and training that improve health education in the communities and address harmful traditional practices, including dissuading TBAs from harmful practices.
- Facility MPDSR Committees improve their communication with their respective state governments

Perspectives of National Stakeholders

The interviews with national stakeholders signalled that MPDSR is afforded priority by the FMOH through inclusion in major policy documents, including the *National Strategic Health Development Plan – 2*; the National Reproductive Health Policy; and the *Reproductive Maternal, Newborn, Child Health and Adolescent Health Strategy*. Poor funding, resistance to change by health workers, sourcing accurate information at community level, inadequate health personnel at LGA level, and insufficiently user-friendly data collection systems have been acknowledged as challenges that must be addressed. Nonetheless, the Ministry is confident that MPDSR has the potential to improve the quality of care and data generation in the health sector and has since encouraged and supported states to implement the new audit approach. FMOH currently seeks support to conduct the necessary supportive supervisory visits to the states, for the digitalization of the MPDSR data capture, and remittance processes. FMOH also intends to embark on the process of introducing MPDSR into all pre-service training curriculum.

Other stakeholders identified additional challenges and advanced recommendations to remedy them (Box 3). Ignorance or misinformation on the "no name, no blame" approach of MPDSR could derail implementation, unless sensitization and training of health workers and the public are undertaken. The government is urged to initiate the process of enunciating appropriate laws that will shield MPDSR implementation from abuse and litigation.

Box 3: Challenges reported by national key informants

- Dearth of funds
- MPDSR largely donor-dependent
- Health workers' resistance to change
- Ignorance & misinformation on "no name, no blame" approach
- Non-existence of written standards & protocols for newborn resuscitation at various levels of health system
- Inadequate funding of neonatal care & RMNCH
- Persistence of harmful traditional practices
- Tools are voluminous and the language is too technical
- Political commitment is low
- Absence of strategic plan for MPDSR
- Non-existence of quality improvement framework
- Inadequate health personnel
- Poor documentation on patients and record keeping
- Poor reporting of deaths
- Poor responses to committee recommendations
- Large number of mortalities for review in some settings

Other feedback from the stakeholders included that the MPDSR tools are bulky and its language too technical for PHC-level staff; persistence of harmful traditional practices was also identified as a threat to full MPDSR implementation. Poor reporting and documentation on deaths and committee meetings hinder MPDSR implementation. FMOH, SMOH and all partners supporting MNCH programmes should invest more in quality of care and MPDSR. Finally, MPDSR guidelines should be disseminated to all MNCH service points where required; all demotivating elements existing within the health system, such as delayed payment of salaries, be addressed.

The MPDSR process, so far, has been donor-dependent and needs government funding. Inadequate funding of the health system more broadly threats the success of MPDSR implementation. Governments at all levels need to increase budgetary allocations to the sector. Likewise, political commitment to MPDSR remains poor in some parts of the country, requiring additional prompting from FMOH to such states.

DISCUSSION

As Nigeria prioritises and standardises the process for MPDSR, implementation may increasingly be viewed as a sustainable and ongoing process with great potential to build off the existing systems in place for audit and quality improvement. The MPDSR national guidance is new, only formally launched in November 2016, though a draft was shared with states in 2015. The limited time for dissemination and training on the new tools may have resulted in limited awareness of the national guideline and tools at the facility level, as well as limited implementation overall. Since conducting this assessment in 2016, there has been a multitude of MPDSR-related activities across the country. A major one was the regional conduct of training-of-trainers by FMOH that targeted 30 State MOH for dissemination of the national guideline. It is, however, uncertain if these documents were distributed to any of our 30 facilities. Distribution of these guidelines to all the secondary and tertiary facilities occurred in Ebonyi, Kogi, Delta and Ondo States through respective state-level MPDSR trainings held between March and August 2017. Kano and Yobe State facilities had had similar trainings earlier through the support of MNCH2.

Implementation Status Influenced by History of Audit Models

There is little debate over whether the task of systematically counting and accounting for deaths is important; the question is how to ensure that data become an instrument to support changes in practice. Audit on its own will not save lives but, as part of a package, it is a tool for improving quality of care in health facilities and at the policy level. The various experiences on death audit practice in Nigeria confirm that the derivation of benefits is entirely dependent on the quality of the audit process[36], whereby poor implementation of MPDSR will not yield results in ending preventable deaths.

This national assessment unpacks the past and current extent of implementation of maternal and perinatal death audits and the extent of implementation. Apart from the long existing clinical audit, MDR was introduced to this country in 2008. Other audit models were tagged to specific MNCH programmes (e.g., NPHCDA's MSS and Rotary's Quality Assurance in Obstetrics programmes) and they partially or completely utilised their own structures for communication and data flow. Audit models specific to MNCH programmes did not seem to be retained by the State MOHs after the project ended. The audit models that utilised existing health system structures were observed to earn institutional memory. It was models like these that left behind capacities for subsequent scale-up or transitioning to MPDSR, as evident in Yobe, Kaduna, Kano, Katsina, Zamfara, Delta, Lagos, Ogun, and Ondo States, which were incidentally the states with the most advanced stages of MPDSR implementation. In this context, the earlier exposure to death audits enhanced the transition to MPDSR.

Another potentiating factor to the rapid embrace of MPDSR was the existence of supportive partners and political will. Of the states assessed, those with some sustained support from local and/or international partners for up to five years demonstrated a more advanced stage of MPDSR implementation. It will, however, be inappropriate to conclude that successful or sustained establishment of these audit schemes were dependent on the existence of partner support. Delta and Ondo States were entirely funded by their respective governments, with some technical support from partners, implying that strong political will, which results in the commitment of local resources to a cause, is more beneficial than relying entirely on partner support. Kano State was the only state whereby all facilities assessed had established MPDSR stipulated by the national guideline, perhaps due to strong SMOH political will coupled with resource application, past experiences on the scheme, and the existence of supportive partners. Other states will need to assemble these ingredients in order to achieve an institutionalised MPDSR.

Expanding MPDSR to Federal Tertiary Health Centres

The non-involvement of the Federal Government-owned THCs, especially the university teaching hospitals and Federal Medical Centres, left a major gap in the country's efforts to institutionalise MPDSR. These facilities are not only located in each state, they backstop all patient referrals in their respective domains, have the most senior and number of medical specialists, and have the responsibility of rendering pre-service, undergraduate, and postgraduate training for all medical and allied health workers. Persistence of the non-involvement of this top echelon of the health system will seriously compromise the pace of progression of the MPDSR institutionalization effort. The FMOH should, as a matter of urgency, issue directives to the Federal THCs to constitute MPDSR committees, without further delay, and commence the stipulated process of establishing the scheme in their respective institutions. Doing so has the potential to enhance the facilitator roles of these THCs in the states they are located in, and initiate the training of pre-service medical and allied health workers across the country.

Implementation Status

The results of the in-depth phase of 10 facilities and 7 stakeholder interviews in Kogi and Ebonyi States, published in a separate report,[37] showed a range of awareness and implementation of the national MPDSR guidelines and for any level of audit of maternal and perinatal deaths in general. For this in-depth phase, a score of 0-30 was assigned for each facility surveyed, using an adapted tool, to determine the stage of MPDSR implementation. Six of the ten facilities scored at a pre-implementation stage despite the fact that these states have used other audit processes in the past. This finding signifies weakness in the previous practice of the mortality audit system.

The assessment revealed the need to ensure that audit forms for maternal and perinatal deaths are available on-site, which have now been done for most facilities. However, it is not just the forms needed but also training on the use of the MPDSR tools. In particular, capacity development is required on the assignment of cause of death and classification system. With few facilities identifying and addressing avoidable factors through formal audit processes, there is need for better documentation of actions taken to address these factors and their effects at these facilities. Facilities should also consider how to use their data for decision making, particularly for quality improvement purpose.

The stakeholder interviews indicate that local champions and decision-makers have worked together to build momentum for this system. The role of the professional associations working together to advocate for and develop integrated guidelines for maternal and perinatal deaths should be highlighted. This partnership between obstetrics and paediatrics—with midwives often bridging the gap—merits additional investigation to identify practical lessons to apply at the state level, as well as to consider for other contexts and countries. It will be critical for these groups to grow awareness amongst their membership around the importance of assessing the care provided to babies that die as stillbirths and neonatal deaths, in addition to maternal deaths and near misses.

A pervasive culture of blame was prevalent within facilities conducting reviews and was cited as one of the risks of audit in those facilities that were not conducting reviews. The national guidelinesstipulate that the mortality audit process should be "not punitive; and no blame is apportioned to anyone thereof."[24] A facility-level participant code of conduct would be useful in ensuring this ethos is maintained. The national guideline already provides some of the crucial tenets that could be included in such a code of conduct.

"The MPDR process must engender confidentiality and impartiality all the time; no information on the platform must be disclosed outside the team; all participating staff must know that the process does not involve apportioning blame on anybody; and all participants must have advance knowledge of the anonymous conduct of the entire process." – National MPDSR guideline[24]

Adhering to the national guideline in this regard would alleviate the pressure reported by some of the junior staff, particularly in the facilities that are more academic. Some champions already use audits as a learning opportunity, rather than a disciplinary process, and these methods should be documented and shared. A study in the vein of positive deviance reviewing those facilities where implementation is working well could help combat the blame issue by identifying what makes these

individuals more successful and determine what can be replicated in other facilities and contexts.

Once the tools are available and being used, there are many opportunities to link the data to routine systems, including HMIS. The national guideline requests that, "data generated from the MPDSR processes be directly linked, at all levels, to the existing HMIS," … "The ultimate means to capture information on all deaths, including maternal and perinatal deaths, is the CRVS… This MPDSR process can contribute to a resurgent CRVS system in the country." - National MPDSR Guideline[24]

In order for this information to be useful, training on the MPDSR tools—in particular the cause of death classification system—should be rolled out at the facility level alongside dissemination of the forms and guidelines. The limited use of reporting with a consistent classification system for cause of death calls for greater understanding of what works or not in the Nigeria context regarding cause of death classification. MCSP is currently undertaking a mapping of training materials used in Nigeria to better support standardised reporting and understanding between indirect and direct causes of death. Once the mapping is complete, there will be a better understanding of what will be necessary to improve reporting.

MPDSR is part of the quality improvement practice; however, none of the facilities reported having functioning quality improvement committees. MCSP is now making an effort to combine MPDSR and quality improvement committees. For quality improvement, there is also a need to institute a feedback process to link the referral facilities to the lower level facilities on cases that where mortalities and near misses were initially managed in order to improve quality of care at the lower level facilities. There was some indication that feedback to lower-level facilities was happening at some facilities, but not as a routine practice.

Importantly, the national guideline describes MPDSR as comprising both facility-based reviews and verbal autopsies at the community level on every maternal and perinatal death, with analysis of the deaths done at facility, state and national levels. At this point, of this three-prong process, only facility-based reviews are taking place. Much stronger links are necessary with communities, coupled with resources for conducting verbal autopsy interviews around the sensitive topic of maternal or infant loss, to operationalise fully the MPDSR schematic as designed.

Limitations of this Assessment

This study aimed to provide information on what was happening in terms of mortality audit at the facilities visited, on the day of the visit. Therefore, no claims are made regarding the generalizability of the findings, especially because a small sub-sample of facilities was visited. The mapping phase depended solely on reports by stakeholders, which the assessment did not validate. While information on LGA-level and community activities was solicited, the interviews focused mainly on the process of conducting of mortality audit at the facility level. The informants interviewed at each health facility based most of the information collected on the self-report, and the feedback they provided could have, to some extent, depended on who was available to interview on the particular day of the visit. Further, some of the views expressed may not necessarily reflect those of other health care staff, particularly more junior staff who may be subject to more blame or scrutiny during mortality audit meetings. Data collectors were well-respected health care professionals, including those from national professional associations and implementing partners, which may have limited the openness of participants to discuss challenges and barriers faced.

CONCLUSION

The assessment found that MPDSR implementation is at a very early stage in most states. It will be beneficial to revisit the facilities and track the process after a period of concentrated rollout of the national tools and training.

Although inputs are necessary at every level of the health system and beyond, health workers in these states are keen to change what is in front of them. The mortality remains high in some states; thus, addressing general health system challenges may first need to be addressed before focusing on implementing audit as a means for quality improvement. The system requires leaders to champion the process, especially to ensure a no-blame environment, and to access change agents at other levels to address larger, systemic concerns. The policy is now in place with some states moving forward to implement at a faster pace than others do. The groundwork has been laid; it is now time to use MPDSR to end preventable deaths in Nigeria.

RECOMMENDATIONS

National Level

- Strengthen or establish tracking of MPDSR implementation at national, state and LGA levels with regular meetings to discuss and adjust implementation if necessary.
- Ensure the MPDSR reporting process between facility, state, and federal levels is clearly understood by all stakeholders.
- Review the MPDSR report flow from the health facility to LGA/State in the current guideline.
- Ensure all levels of the system use standardised classification system for cause of death and consider incorporating the modified ICD MM and ICD PM codes and simplifying for use at facility level.
- Ensure links between the national MPDSR guideline and the forthcoming national quality improvement guidelines under development.
- Consider integrating MPDSR information (data, problems identified, and solutions implemented) into the national HMIS.
- Ensure that the MPDSR reporting processes among facility, state, and federal levels are clearly understood by all stakeholders and rectified in the national MPDSR guideline.
- Discuss and devise strategies for engaging private-for-profit and faith-based facilities in the ongoing rollout of MPDSR.

State level

- State MPDSR committees should seek guidance from the national level on reporting requirements.
- State MPDSR committees should establish a system for tracking implementation, including listing of facilities and their status of MPDSR implementation.
- States should provide the resources needed to better document the process, including the action taken and the effect on quality of care.
- States should integrate the new quality improvement initiative into the MPDSR process and vice-versa, given that the same staff might be on both committees.
- Strengthen state-level MPRDSR committees and ensure they are highly visible as advocates and supporters of best practices for maternal and newborn care.
- Disseminate copies of national MPDSR forms and guidelines, along with training for at least one individual per facility.
- Ensure facilities have means for conducting MPDSR including forms and stationary.
- Ensure that the MPDSR focal person identified for each facility and facility leadership has established MPDSR committees at health facilities.
- Explore combining quality improvement and MPDSR training and actual functionality of these committees, especially at the primary health centres.

- Mentor leaders and support MPDSR champions who commit to a no-blame approach to death review.
- Use the next review opportunity to simplify the national MPDSR forms with alignment to globally recommended cause of death categories, particularly for neonatal deaths.
- Pilot an electronic version of the forms for facilities with computer and network access.
- Engage private-for-profit and faith-based facilities in the ongoing rollout of MPDSR.

Facility level

- Use standardised forms (preferably the national MPDSR forms) for documenting cases under review, including identifying action points.
- Adopt a meeting code of conduct—in either poster or handout format—to ensure that staff know they will not be punished or blamed.
- Ensure review of stillbirths and neonatal deaths is inter-disciplinary in larger facilities.
- Document meeting minutes, noting specific timeline and persons responsible for actions will facilitate follow up and review the action points at the subsequent meeting.
- Build capacity and confidence and providers to correctly assign cause of death using standardised classification aligned with national recommendations; identify key underlying contributors to death; and define and follow-up on actionable recommendations linking MPDSR to quality improvement activities.

Community level

- Formalise the Ward Committee's role in communicating results from facility-based death reviews.
- Advocate for a community representative or liaison to sit on the facility review committee, or at least receive minutes of meetings.
- Explore the feasibility of community death notification and, where possible, verbal and social autopsy for community maternal and perinatal deaths.

Capacity building

- Create awareness that maternal and perinatal deaths are now reportable events at all levels.
- Engage State Primary Health Care Development Agencies (SPHDCAs), professional associations, NGOs and other partners to provide information about MPDSR at meetings, trainings, and other related events.

REFERENCES

1. World Health Organization. World Health Statistics 2016: Monitoring health for the SDGs. Geneva: World Health Organization, 2016.
2. Oza S, Lawn JE, Hogan DR, Mathers C, Cousens SN. Neonatal cause-of-death estimates for the early and late neonatal periods for 194 countries: 2000-2013. *Bull World Health Organ* 2015; **93**(1): 19-28.
3. Lawn JE, Blencowe H, Waiswa P, et al. Stillbirths: rates, risk factors, and acceleration towards 2030. *Lancet* 2016; **387**(10018): 587-603.
4. Chou D, Daelmans B, Jolivet RR, et al. Ending preventable maternal and newborn mortality and stillbirths. *BMJ* 2015; **351**: h4255.
5. UNICEF, WHO. Tracking Progress towards Universal Coverage for Reproductive, Newborn and Child Health: The 2017 Report. . Washington, DC: United Nations Children's Fund (UNICEF) and the World Health Organization (WHO), 2017.
6. Liu L, Oza S, Hogan D, et al. Global, regional, and national causes of under-5 mortality in 2000-15: an updated systematic analysis with implications for the Sustainable Development Goals. *Lancet* 2016; **388**(10063): 3027-35.
7. Every Woman Every Child. The Global Strategy for Women's, Children's and Adolescents' Health. New York, NY: Every Woman Every Child, 2015.
8. WHO. Every Newborn: An action plan to end preventable newborn deaths. 2014. www.everynewborn.org.
9. WHO. Strategies toward ending preventable maternal mortality (EPMM). Geneva: World Health Organization, 2015.
10. Commission on Information and Accountability. Keeping promises, measuring results: Commission on Information and Accountability for Women's and Children's Health. Geneva: World Health Organization; 2011.
11. Independent Accountability Panel. 2016: Old challenges, new hopes: Accountability for the Global Strategy for Women's, Children's and Adolescents' Health: Every Women Every Child, 2016.
12. Tuncalp, Were WM, MacLennan C, et al. Quality of care for pregnant women and newborns-the WHO vision. *Bjog* 2015; **122**(8): 1045-9.
13. World Health Organization. Standards for improving quality of maternal and newborn care in health facilities. Geneva: World Health Organization, 2016.
14. WHO. Quality, Equity, Dignity: A network for improving quality of care for maternal, newborn and child health. 2017. http://qualityofcarenetwork.org/ (accessed February 22 2018).
15. WHO. Beyond the numbers: Reviewing maternal deaths and complications to make pregnancy safer. Geneva: WHO; 2004.
16. WHO. Making every baby count: audit and review of stillbirths and neonatal deaths. Geneva: World Health Organization, 2016.
17. Kerber KJ, Mathai M, Lewis G, et al. Counting every stillbirth and neonatal death through mortality audit to improve quality of care for every pregnant woman and her baby. *BMC Pregnancy Childbirth* 2015; **15 Suppl 2**: S9.
18. UNICEF. State of the World's Children 2016. New York: UNICEF, 2016.

19. Oza S, Cousens SN, Lawn JE. Estimation of daily risk of neonatal death, including the day of birth, in 186 countries in 2013: a vital-registration and modelling-based study. *The Lancet Global health* 2014; **2**(11): e635-44.

20. FMOH. Nigeria Every Newborn Action Plan: A plan to end preventable newborn deaths in Nigeria. Abuja: Federal Ministry of Health, 2016.

21. WHO. Make every baby count: audit and review of stillbirths and neonatal deaths. Geneva: World Health Organization, 2016.

22. Federal Ministry of Health. Saving Newborn Lives in Nigeria: Newborn health in the context of the IMNCH strategy. Abuja: Federal Ministry of Health, Ministry of Women's Affairs, Save the Children, USAID, WHO, UNICEF, UNFPA, PRRINN-MNCH, Nigerian Society of Neonatal Medicine, Society of Gynecologists and Obstetricians of Nigeria, Pediatric Association of Nigeria, Countdown to 2015 for Maternal, Newborn and Child Health, 2011.

23. WHO. Guidelines on maternal, newborn, child and adolescent health approved or under review by the WHO guidelines review committee: Recommendations on newborn health. Gevena, Switzerland: World Health Organization, 2013.

24. Federal Ministry of Health. National guidelines for maternal and perinatal death surveillance and response in Nigeria Abuja: Government of Nigeria, 2015.

25. Hofman JJ, Mohammed H. Experiences with facility-based maternal death reviews in northern Nigeria. *Int J Gynaecol Obstet* 2014; **126**(2): 111-4.

26. Hussein J, Hirose A, Owolabi O, Imamura M, Kanguru L, Okonofua F. Maternal death and obstetric care audits in Nigeria: a systematic review of barriers and enabling factors in the provision of emergency care. *Reprod Health* 2016; **13**: 47.

27. de Kok B, Imamura M, Kanguru L, Owolabi O, Okonofua F, Hussein J. Achieving accountability through maternal death reviews in Nigeria: a process analysis. *Health policy and planning* 2017.

28. EnCompass LLC. Maternal Health Accountability-Related Grants in Nigeria - Midline Evaluation Report: MacArthur Foundation, 2016.

29. Galadanci H, Kunzel W, Shittu O, Zinser R, Gruhl M, Adams S. Obstetric quality assurance to reduce maternal and fetal mortality in Kano and Kaduna State hospitals in Nigeria. *Int J Gynaecol Obstet* 2011; **114**(1): 23-8.

30. Galadanci H, Kunzel W, Zinser R, Shittu O, Adams S, Gruhl M. Experiences of 6 years quality assurance in obstetrics in Nigeria - a critical review of results and obstacles. *Journal of perinatal medicine* 2016; **44**(3): 301-8.

31. Bello O, et al. SOGON Maternal Death Review Program in the Federal Capital Territory. 9th International Congress of the Society of Gynaecology and Obstetrics of Nigeria. Abuja; 2015.

32. Okonta P. Delta State Government Maternal Death Review Scheme. 9th International Congress of the Society of Gynaecology and Obstetrics of Nigeria. Abuja, Nigeria; 2015.

33. Oyeneye L. Ondo State Government's "Abiye" Program's Confidential Enquiry into Maternal Deaths in Ondo State (CEMDOS). 9th International Congress of the Society of Gynaecology and Obstetrics of Nigeria. Abuja, Nigeria; 2015.

34. Sloan NL. Evaluation of the Clinton Health Access Initiative Maternal Neonatal Health Program in Nigeria Final Report: Clinton Health Access Initiative, 2016.

35. PRRINN-MNCH. Knowledge summary: Maternal death review. Nigeria: Partnership for Reviving Routine Immunization in Northern Nigeria: Maternal Newborn and Child Health Initiative, 2013.

36. Merali HS, Lipsitz S, Hevelone N, et al. Audit-identified avoidable factors in maternal and perinatal deaths in low resource settings: a systematic review. *BMC Pregnancy and Childbirth* 2014; 14(280) doi: 10.1186/1471-2393-14-280.

37. Williams A, Shittu O, Oluyinka O, et al. Assessment of Maternal and Perinatal Death Surveillance and Response Implementation in Ebonyi and Kogi States, Nigeria. Maternal and Child Survival Program 2017.

APPENDICES

ASSESSMENT OF MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE IMPLEMENTATION IN NIGERIA

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APPENDIX I: Ethical Approval Letter

National Health Research Ethics Committee of Nigeria (NHREC)
Promoting Highest Ethical and Scientific Standards for Health Research in Nigeria

Federal Ministry of Health

NHREC Protocol Number: NHREC/01/01/2007-19/07/2016
NHREC Approval Number: NHREC/01/01/2007-16/08/2016
Date: 17th August, 2016

RE: ASSESSMENT OF MATERNAL AND PERINATAL DEATH AUDIT SYSTEMS IN HEALTH FACILITIES IN NIGERIA

Health Research Committee assigned number: NHREC/01/01/2007

Name of Principal Investigator: Prof. Oladapo Shittu
Address of Principal Investigator: Department of Obstetrics and Gyneacology
Ahmadu Bello University Teaching Hospital
Shika, Zaria, Kaduna State
Oladapo.shittu@gmail.com

Date of receipt of valid application: 19/07/2016
Date when final determination of research was made: 16/08/2016

Notice of Research Exemption

This is to inform you that the activity described in the submitted protocol/documents have been reviewed and the Health Research Ethics Committee has determined that according to the National Code for Health Research Ethics, the activity described there-in meets the criteria for exemption and is therefore approved as exempt from NHREC oversight.

The National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code. The HREC reserves the right to conduct compliance visit your research site without previous notification.
Signed

Clement Adebamowo BMChB Hons (Jos), FWACS, FACS, DSc (Harvard)
Chairman, National Health Research Ethics Committee of Nigeria (NHREC)

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APPENDIX 2: Consent Form for Key Informant

ORAL CONSENT FOR KEY INFORMANT

ASSESSMENT OF MATERNAL AND PERINATAL DEATH REVIEW ACTIVITIES

Date: _____ 2016

Good day. My name is _____. I am representing the Save-the-Children supported Federal Ministry of Health nation-wide assessment of all maternal and perinatal death review processes. We are conducting a study of health facilities, which are or previously have implemented maternal and perinatal death reviews with the goal of finding ways to improve services. This facility was selected to participate in this study in consultation with the Ministry of Health.

We are conducting interviews with health facility staff and observing the documentation used for maternal and perinatal death review to learn more about how reviews are done at this facility. We would like to ask you to participate in an interview since you participate in these reviews. During the interview, we intend to ask your questions that will enable us to complete our questionnaire. Whilst this is going on, we intend to record our voices on tape, to enable us crosscheck the accuracy of our direct completion of the form during the interview. Your decision to participate is completely voluntary, and even if you agree to participate, you may withdraw at any time. There will not be any penalty if you decide not to participate or withdraw from this interview.

Information from this interview is confidential. We will not record the names of any patients during this assessment. Your name, and your facility's name, will not be included in the final report. There will be no direct benefit to you from participating in this study but we expect the findings will inform activities to improve services and care for women and babies overall. We are asking for your help to ensure that the information we collect is accurate.

Do you have any questions about the study? Do we have your agreement to proceed?

APPENDIX 3: Standard Tools Used for the Assessment

Mapping assessment questionnaire

– for the conduct of the telephone interview of SMOH officials of all the states

MPDSR MAPPING ASSESSMENT TOOL, TELEPHONE SURVEY Version 4

Checklist/Questionnaire A: ☐ National ☐ State

1. Data Collector Name: _____ Phone No: _____
2. Date completed (dd/mm/yyyy): _____/_____/_____

A. State Information

3. Geopolitical Zone: ☐ Northern-West ☐ North-East ☐ North-Central ☐ South-East ☐ South-West ☐ South-South
4. Name of the State: _____
5. Contact Person Designation (person who filled the form): _____
6. Tel: _____
7. Email: _____

B. INTRODUCTION

- Good day. My (data collector) name is _____. *[Introduce yourself]*
- Refer to liaison activities that have taken place beforehand.
  [e.g. *"Dr of RH Division of FMOH…… has referred me to you and says you will be able to give better information on the Maternal and Perinatal Death Audit systems in your state" or "an earlier letter from FMOH/SCI, Abuja has been sent to your ministry on this assessment", e.t.c.*]
- I am phoning in connection with a study that Save the Children's Saving New born Lives Project and USAID's Maternal and Child Survival Programme (MCSP) programme is currently doing with the support and approval of the Federal Ministry of Health. The study covers all the 36 states and FCT in the country.
- We want to get a better picture of the mapping for Maternal and Perinatal Death Audit systems in your state specifically and Nigeria.
- This will help the federal and state governments in the future planning and improvement of quality MNH services in our health facilities. *[Description of activities]*
- Would you mind if I ask you a couple of questions on the Maternal and Perinatal Death Audit systems in your state? Will that be okay? *[Verbal consent]*
- [1] Yes [2] No
- I would just like to check if I have your name correct:
- Name: _____
  [Complete beforehand above and confirm spelling if necessary]

  Email: _____ Phone: _____

  What is your designation? _____

  ☐ I will also appreciate if you can refer me after this to another staff of the SMOH/PHCDA (e.g. MPDSR Desk Officer, or Director of Medical services/PHC) or persons in your state who might have any information in this tools that you won't be able to supply me.

C. MDR/PNDR In The State

8. Does your state do Maternal Death Review (MDR)? ☐ Yes ☐ No ☐ Unsure ***(If "No" or "Unsure", GO to Q 11)*** **OR** *If you don't know or you are unsure, is there any other staff you can refer us to for this information. Please give his/her name and phone no.*

9. If Yes, since when? (Year) _____

10. If yes, List names of **facilities/communities** practicing MDR and indicate **year** when they began, date **last committee meeting** held, and whether they also do **VA** ***(use additional papers if more facilities/communities)***:

Facility (or Community) name	Level of facility	LGA	Current or past MDR	Approx births/ year

11. If No, state the challenges _____

_____

_____

_____

12. Does your state do Perinatal Death Review (PNDR)? ☐ Yes ☐ No ☐ Unsure ***(If "No" or "Unsure", GO to Q 15)*** **OR** *If you don't know or you are unsure, is there any other staff you can refer us to for this information. Please give his/her name and phone no.*

If Yes, Since when (year)? _____

13. If yes, List names of **facilities/community** practicing PNDR and indicate **year** when they began, date **last committee meeting** held, and whether they also do **VA (**use additional papers if more facilities/communities):

Facility (or Community) name	Level of facility	LGA	Current or past MDR	Approx births/ year

14. If no, state the challenges: _____

_____

_____

15. If "Yes" to Q 8 or 12, Which of the following approaches to MPDR are in use in your state ***(Complete only if Q 8 or 12 Answer is "Yes". Then tick where applicable, ELSE go to Q17):***

MDR (Maternal Death Review)	**PNDR (Perinatal Death Review)**
☐Facility Based Review	☐Facility Based Review
☐Community Based Review (Verbal Autopsy)	☐Community Based Review (Verbal Autopsy)
☐Confidential Enquiry	☐Confidential Enquiry
☐Near Misses Investigation	☐Near Misses Investigation
☐Clinical Audit	☐Clinical Audit
☐None	☐None

16. At which level is the MPDR done in your State *(Tick where applicable)*?

MDR	**PNDR**
☐Community Level	☐Community Level
☐Facility level	☐Facility level
☐Local Govt. Area level	☐Local Govt. Area level
☐State level	☐State level

17. To what extent is your state covered with the MPDR programme? (Please estimate coverage in percentages in the Table below)

MDR	**PNDR**
Coverage of Health Facilities: No: _____ (_____%)	Coverage of Health Facilities: No: _____ (_____%)
Coverage of LGAs: No: _____ (_____%)	Coverage of LGAs: No: _____ (_____%)
Coverage of State Communities: No: _____ (_____%)	Coverage of State Communities: No: _____ (_____%)

19. Does the State have MPDSR Tools available?
☐Adapted Tools ☐Adopted Tools ☐No Tools

20. If "Yes", indicate the type of tools developed in the following Table:

MDR	**PNDR**
☐ Death Notification Form	☐ Death Notification Form
☐ Death Reporting Form	☐ Death Reporting Form
☐ Audit Recommendation Form/Template	☐ Audit Recommendation Form/Template
☐ Committee Session Reporting Template	☐ Committee Session Reporting Template
☐ Confidential Enquiry Reporting Template	☐ Confidential Enquiry Reporting Template

21. Has your State established committee for each level of review? *(tick where applicable if* ***Yes): (If "No" or "Unsure", GO to Q 33)***

MDR	**PNDR**
☐Facility-Based committee (FBA)	☐Facility-Based committee (FBA)
☐Local Govt. Area Based committee (LBA)	☐Local Govt. Area Based committee (LBA)
☐State committee (SBA)	☐State committee (SBA)
☐National committee (NBA or confidential enquiry committee = CEMD)	☐National committee (NBA or confidential enquiry committee = CEMD)
☐There is No committee	☐There is No committee

22. If Committees exist,

a. do the committees have a legal backup document instituting them?
☐Yes ☐No ☐Unsure **OR**

b. do the committees have a Policy document instituting them?
☐Yes ☐No ☐Unsure

23. If "Yes", does the legal backup/Policy indicate a responsible person (e.g. Programme Manager) to follow up recommendations and actions undertaken by the committees?
a. ☐Yes ☐No ☐Unsure
b. If yes, Who is tasked for it (designation)?_____
c. How is the follow up done Follow up mechanism:_____
_____

24. If Committees exist, indicate which of the committee (s) is so endowed:

MDR	**PNDR**
☐Facility-Based committee (FBA)	☐Facility-Based committee (FBA)
☐Local Govt. Area Based committee (LBA)	☐Local Govt. Area Based committee (LBA)
☐State committee (SBA)	☐State committee (SBA)

25. Are the committee members trained on MDR/PNDR before commencing participation/sitting? ☐Yes☐ No ☐ Unsure

26. Are state level MDR/PNDR committee recommendations (feedback) communicated to the communities, health personnel,

facility managers and SMOH? ☐ Yes ☐ No ☐ Unsure

27. If Yes, how is it communicated? -_____

_____

_____

28. How are the recommendations followed up for implementation: _____

_____

_____

_____

29. Give examples of implemented committee recommendations: _____

_____

_____

_____

30. Who finances the Committee activities per level? (e.g. Government or NGO or No financing)

MDR Financing				PNDR Financing			
National	State	Community	Facility	National	State	Community	Facility

Who finances the implementation of the recommendations made by the respective Committees?	MDR Financing			PNDR Financing			
National	**State**	**Community**	**Facility**	**National**	**State**	**Community**	**Facility**

31. What is the role of NGOs or other stakeholders in MPDR in your State? _____

_____

_____

D. MPDSR EXPERIENCE

32. Is the state aware of the country's adoption of the integrated MPDSR model for use across the country (by National Council of Health 2016)? ☐ Yes ☐ No ☐ Unsure

33. Is the state using the National MPDSR guideline document from FMOH? ☐ Yes ☐ No ☐ Unsure ***(If Yes, skip Q35)***

34. Or, does the states have its version of the MPDSR Guideline doc? ☐ Yes ☐ No ☐ Unsure (***Skip this question if Yes to Q34)***If it's so, what is the difference from the National Guideline: _____

_____

35. Did this State participate in the National Orientation on MPDSR Guideline use? ***(Skip if NO)***
☐ Yes ☐ No ☐ Unsure

36. If National MPDSR Guideline **available**, to your knowledge, how many facilities are currently implemented it? *(Give number and list of facilities)* _____

_____

37. If current National Guideline not available yet, which guideline is or was in use in your State? _____

_____

38. Does SMOH have an action plan for its implementation in all state's facilities?
☐ Yes ☐ No ☐ Unsure

39. Is the State MPDSR work plan costed?

40. If Yes, who is funding (and forms of support) the costed work plan?
    a. Funder (s): _____
    b. Form of support: _____

41. Has the State constituted a State MPDSR Steering Committee? If Yes, give contacts of the chairman and Secretary of the committee.

42. Indicate the extent to which this MPDSR work plan has been implemented in your State? (tick applicable)
☐State Coordinating Committee formed;
☐Training conducted for Health Facility operators;
☐Facility Committees formed;
☐Training conducted for community operators;
☐Community committees formed;
☐Entire MPDSR system is fully operational;
☐Nothing has been done since

43. If not yet implemented, indicate the challenges: _____
_____
_____

44. Is there a designated focal person to lead the implementation of MPDSR:
    a. At state level? ☐ Yes ☐ No ☐ Unsure
    b. At LGA level? ☐ Yes ☐ No ☐ Unsure
    c. At Facility level? ☐ Yes ☐ No ☐ Unsure

45. Is there any Law/legislation on any of the MDR, PDR OR MPDSR. ☐ Yes ☐ No ☐ Unsure

If Yes, when was it enacted and its status of enforcement? _____

E. REPORTS

46. Are Maternal Deaths or Perinatal Deaths reports available for the state (current or past)? ***(Request a copy if Yes)***
MDR: ☐ Yes ☐ No ☐ Unsure
PNDR: ☐ Yes ☐ No ☐ Unsure

47. Do you have a system in place to collect State-wide MPDSR reports?
☐No system in place. ☐ Yes System in place
If yes, which office/Person is responsible: _____

F. ADDITIONAL COMMENTS

Any additional information provided by the informant during the discussion:

_____
_____
_____
_____
_____
_____
_____
_____
_____

In-depth facility interview questionnaire – for the conduct of facility staff directly involved in the conduct of MPDSR

MPDSR IN-DEPTH FACILITY ASSESSMENT TOOL, Version 2

Checklist/Questionnaire A

1. Data Collector Name: _____
2. Date completed (dd/mm/yyyy): _____/_____/_____

G. Facility Information

3. Geopolitical Zone: ☐Northern-West ☐ North-East ☐ North-Central ☐ South-East ☐ South-West ☐ South-South
4. State: _____
5. Name of the Facility: _____
6. Level of Facility: ☐ Tertiary Health Facility ☐ Secondary Heath Facility ☐ Primary Health Facility: ……...
7. Category of facility: ☐ Public ☐ Faith-Based ☐Private-for-profit
8. Contact Person Designation (person interviewed): _____
9. Tel: _____
10. Email: _____

H. HISTORY OF M/PDR IMPLEMENTATION AT THE FACILITY

11. Does the facility have a formal system for reviewing maternal deaths, stillbirths, and/or neonatal deaths? When was it started at the facility/community?

    1. Maternal deaths: ☐ Yes ☐ No ☐ Unsure If Yes, since when? (Year) _____
    2. Perinatal deaths: ☐ Yes ☐ No ☐ Unsure If Yes, since when? (Year) _____
    3. Stillbirths: ☐ Yes ☐ No ☐ Unsure If Yes, since when? (Year) _____
    4. Neonatal death: ☐ Yes ☐ No ☐ Unsure If Yes, since when? (Year) _____
    5. Near-misses? ☐ Yes ☐ No ☐ Unsure If Yes, since when? (Year) _____

12. If No to any of the above, state reasons: _____
    _____
    _____

13. Where did the decision to undertake M/PDR originate?
    ☐ National level ☐ State level ☐ LGA ☐ Facility level ☐ Other: _____

14. Was there a specific occasion or meeting where the decision to implement M/PDR was taken?
    ☐ Yes ☐ No ☐ Unsure If yes, approximate date: _____

15. Was there an implementation or action plan established? ☐ Yes ☐ No ☐ Unsure

16. Is there written minutes or documentation of the decision?
    ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q18)***

17. If Yes, ask if it would be possible to see a copy. (Ensure that all personally identifiable information is removed or obscured before photograph)
    a. Documentation seen ☐ Yes ☐ No
    b. Document received / photographed ☐ Yes ☐ No

18. If M/PDR is not implemented yet: has a formal decision for M/PDR implementation been made yet? ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q21)***

19. If yes, describe what decisions have already been taken, in respect of:
    a. The specifics: _____ _____
    _____
    _____
    b. Who will be involved: _____
    _____
    _____
    c. When implementation will start: _____
    _____
    d. Any existing or anticipated challenges to starting: _____
    _____
    _____
    _____

20. Before starting M/PDR, did the facility systematically document the following baseline data?
    a. Number of maternal deaths: ☐ Yes ☐ No ☐ Unsure
    b. Cause of maternal deaths: ☐ Yes ☐ No ☐ Unsure
    c. Number of perinatal deaths: ☐ Yes ☐ No ☐ Unsure
    d. Cause of perinatal deaths: ☐ Yes ☐ No ☐ Unsure
    e. Number of Neonatal death: ☐ Yes ☐ No ☐ Unsure
    f. Cause of Neonatal death: ☐ Yes ☐ No ☐ Unsure

21. Does the facility/community have a steering committee for reviewing?
    a. Maternal deaths: ☐ Yes ☐ No ☐ Unsure If Yes, since when? (Year) _____
    b. Perinatal deaths: ☐ Yes ☐ No ☐ Unsure If Yes, since when? (Year) _____
    c. Stillbirths: ☐ Yes ☐ No ☐ Unsure If Yes, since when? (Year) _____
    d. Neonatal death: ☐ Yes ☐ No ☐ Unsure If Yes, since when? (Year) _____
    e. Near-misses? ☐ Yes ☐ No ☐ Unsure If Yes, since when? (Year) _____

22. If Yes, when was the last committee meeting held? -Month and Year?
    a. Maternal deaths: _____/_____
    b. Perinatal deaths: _____/_____
    c. Stillbirths: _____/_____
    d. Neonatal death: _____/_____
    e. Near-misses: _____/_____

23. Before being involved in M/PDR, were the committee members trained on MDR/PNDR?
    ☐Yes ☐No ☐ Unsure

I. M/PDR ROLE-PLAYERS

24. Is there a MDR coordinator or focal person at the facility/community? ☐ Yes ☐ No ☐ Unsure
25. Coordinator/Focal person Job title: …….. *(write **none** if there is no MDR)*
26. Is there a PDR coordinator or focal person at the facility/community? ☐ Yes ☐ No ☐ Unsure
27. Job title: ……...…… *(write none if there is no PDR)*
28. Does the coordinator/Focal person (s) (Q24 & Q26) have other responsibilities ☐Yes ☐No.
29. If Yes, which ones (e.g. information officer, QI focal point, etc.): _____
30. Has anyone in this facility or state leadership signed a commitment or undertaking and agreement that s/he would ensure that M/PDR is implemented in the facility/community?
    ☐ Yes ☐ No ☐ Unsure If yes, specify title of the person: _____

31. What kind of support did you get from the following people? *(specify type of support, or write none, or not applicable if the post does not exist at the facility or district)*
    a. State Government (Commissioner/ Perm-Secretary/MNCH & RH Directors): _____
    b. State information officer (or equivalent): _____
    c. Local Government (Chairman/Health Counsellor/MNCH & RH Coordinator): _____
    d. Facility director: _____
    e. Matron / Nursing service manager: _____
    f. Unit manager (neonatal unit or maternity): _____
    g. Obstetrician: _____
    h. Paediatrician: _____
    i. Facility information officer: _____
    j. Other, specify: _____

32. Do you or did you have educational activities in your facility/community to introduce M/PDR to staff/community members?
    ☐ Yes ☐ No ☐ Unsure If yes, describe: _____

33. Are/were these activities: ☐ Internal ☐ Led by State ☐ Led by national? ☐ Led by NGO ☐ Professional Association (Specify: _____)

34. Are/were these activities held: ☐ On-site ☐ Off-site?

35. Approximately how many staff/community members are currently involved in your M/PDR Committee?
    a. Total: _____
    b. Managers (e.g. facility administrators): _____
    c. Clinicians (doctors or medical officers): _____
    d. Nurses/midwives: _____
    e. Pharmacists:
    _____
    f. Data Clerk/HIMS:
    _____
    g. Other (specify): _____
    _____
    _____
    _____

36. Have you received support (financial or in-kind) from the hospital, community, LGA or State budget to establish M/PDR?
☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q39)***

37. If yes, describe origin of the support:

☐ Hospital ☐ LGA ☐ State ☐ National ☐ NGO: _____ ☐ Professional Association (Specify: _____) ☐ Other: _____

38. Describe type of support received: _____

_____

_____

_____

_____

_____

J. M/PDR PRACTICE

39. Are there any *written* policies, guidelines or protocols regarding your practice of M/PDR?
☐ Yes ☐ No ☐ Unsure If yes, describe: _____
(*Note whether the document is specific to the facility, community, state or national level. Obtain a copy or take a photo if possible)*

K. MPDSR CYCLE: IDENTIFYING DEATHS

40. How are deaths identified? (Let the respondent answer first, then probe for different areas of facility, especially for maternal deaths as these are more likely to occur in different areas of the facility)

MDR	PDR
a) ☐ ANC register	1. ☐ ANC register
b) ☐ Ambulatory emergency care area	2. ☐ Ambulatory emergency care area
c) ☐ General adult inpatient ward	3. ☐ General adult inpatient ward
d) ☐ Labour and delivery register	d) ☐ Labour and delivery register
e) ☐ Outpatient department register	e) ☐ Outpatient department register
f) ☐ Postnatal register	f) ☐ Postnatal register
g) ☐ Neonatal register	g) ☐ Neonatal register
☐ Other, specify: _____	☐ Other, specify: _____

41. Are maternal and/or perinatal deaths that occur in the community documented at this facility?
☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q43)***

42. If yes, what is the process for identifying and documenting these? _____

_____

_____

L. M/PDR CYCLE: COLLECTING INFORMATION

43. How is information about maternal and/or perinatal deaths collected and summarised for MPDSR?

_____

44. Are M/PDR Tools developed?

    a. MDR Tools: ☐Yes ☐No

    b. PNDR Tools: ☐Yes ☐No

45. If Yes, Ask to see a copy of the forms used. Do the forms include sections on:

    c. Cause of death ☐Yes ☐No

    d. Avoidable/Modifiable factors ☐Yes ☐No

    e. Solutions (recommendations) to alleviate the factors ☐Yes ☐No

    (Obtain a copy or request to take a photograph, specifically capturing these sections – it should be blank copies)

46. What documents are used to compile cases for mortality audit meetings?

    ☐ Patient charts / case notes

    ☐ Registers

    ☐ None

    ☐ Other, specify: ……
    ……

47. In your opinion, do the medical records and registers capture the necessary information for assessment of cause of death and contributing factors for maternal and perinatal deaths?

    ☐Yes ☐No ☐Not sure.

48. If No, what is your suggestions to improve them? _____

    _____

49. Is your facility involved in any efforts to improve the organization of medical records and registers (e.g. standardization of records with minimum essential data points)? ☐Yes ☐No

50. What system is used to classify cause of death on the mortality audit forms?

    ☐ ICD-10 ☐ Modified ICD-10 ☐ None ☐ Other, specify: _____

51. What system is used to classify modifiable factors or sub-standard care?

    ☐ 3 delays

    ☐ Root cause analysis

    ☐ Patient – Provider – Administrator

    ☐ None

    ☐ Other, specify: _____

52. Are there any statistics related to M/PDR displayed somewhere (e.g. on a wall)?

    ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q54)***

53. If yes, describe what indicators are included: _____

54. Are there official channels through which M/PDR findings are reported to different levels of management on a regular basis?

    ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q56)***

55. If yes, where are the findings sent? _____

(Obtain a copy or request to take a photograph of the reporting template from the health facility to other levels within the system)

M. M/PDR CYCLE: ANALYSING DATA AND PRESENTING RESULTS

56. How frequent does the Facility/Community MDR/PNDR committee meet? *(specify per type of committee)*

MDR	PNDR
☐Weekly	☐Weekly
☐Monthly	☐Monthly
☐Quarterly	☐Quarterly
☐Yearly	☐Yearly
☐Triennially	☐Triennially
☐Other (Specify):	☐Other (Specify):

57. Who (positions/job titles) are invited to attend?

Obstetrician or an Experienced Personnel in Obstetrics	☐Yes ☐No
Physician or an Experienced Personnel	☐Yes ☐No
Neonatologist/Pediatrician or an Experienced Personnel in Pediatrics	☐Yes ☐No
Pathologist	☐Yes ☐No
Lab Technician	☐Yes ☐No
Nurses/Midwives	☐Yes ☐No
Anesthesiologist or Anesthetist	☐Yes ☐No
Community health worker	☐Yes ☐No
Facility Administrator/Director	☐Yes ☐No
Local Statistician	☐Yes ☐No
LGA Disease Surveillance Officer	☐Yes ☐No
Women advocacy group rep	☐Yes ☐No
LGA health Authority	☐Yes ☐No
Pharmacist	☐Yes ☐No
Community Leader/Local Community representative	☐Yes ☐No
Other (Specify) _____	☐Yes ☐No

58. Is attendance mandatory? ☐ Yes ☐ No ☐ Unsure

59. What is the title of the most senior staff member or administrator normally present? _____

_____

60. What is the title of the staff or administrator who runs/chair the meetings? _____

61. What is presented at the meetings (describe what happens at the meetings)? _____

_____

_____

62. Is every death reviewed or is a sample of deaths selected for discussion?

Maternal	**Perinatal**
☐ Every death ☐ Sample of deaths Specify proportion of deaths selected: …….	☐ Every death ☐ Sample of deaths Specify proportion of deaths selected: …….

63. If a sample of deaths of deaths is selected what criteria are used to decide which deaths get reviewed?

Maternal: Criteria used	**Perinatal: Criteria used**

64. What trend data or statistics are routinely presented, if any? _____

65. Are meeting minutes taken? ☐ Yes ☐ No ☐ Unsure

66. *(If yes, obtain a copy or request to take a photograph of recent meeting minutes. Ensure that all personally identifiable information is removed or obscured)*

N. M/PDR CYLCE: RECOMMENDING SOLUTIONS

67. How are modifiable factors linked to solutions in your M/PDR process? _____

_____

_____

_____

_____

_____

68. How does the mortality review team identify and prioritize recommendations? _____

_____

_____

_____

_____

_____

69. Is an action plan developed as part of the review process? ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q71)***

70. If yes, describe what the action plan entails: _____

_____

_____

71. Are these action plans ever shared with the relevant staff of your facility/community? ☐ Yes ☐ No ☐ Unsure.

    a. If yes, please describe how this sharing is carried out: _____

    _____

    _____

O. M/PDR CYCLE: IMPLEMENTING CHANGES

72. Does the mortality review process ever result in a change to the cause of death as compared to the cause of death recorded in the facility records (e.g. vital statistics report, maternity register, maternity monthly report, etc.)? ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q74)***

73. If yes, how is this assigned? _____

    _____

    _____

    _____

74. What is the process for reporting back to the review team on the status of recommendations? ____

    _____

    _____

    _____

    _____

75. Is there a written documentation system for tracking the follow-up on specific recommendations?
    ☐ Yes ☐ No ☐ Unsure ***(If yes, obtain a copy or request to take a photograph)***

76. In your opinion, what are some barriers to ensuring recommendations are implemented following mortality review (e.g. completing the "Response" portion of M/PDR)?

    ☐ MOH leadership/support

    ☐ Facility leadership/support

    ☐ State leadership/support

    ☐ Community leadership/support

    ☐ Lack of communication across levels

    ☐ Inadequate referral system

    ☐ Availability of essential commodities

    ☐ Availability of qualified personnel

    ☐ Availability of personnel with necessary up to date clinical competencies

    ☐ Availability of resources/finances

    ☐ Lack of community engagement

    ☐ Harmful local practices

    ☐ Others (describe): _____

77. Do you regularly link M/PDR to any other quality improvement activities in your facility?

☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q79)***

78. If yes, how: _____

_____

_____

_____

_____

79. Are success stories communicated? ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q81)***

80. If yes, how: _____

_____

_____

P. AVOIDING BLAME AND ENSURING CONFIDENTIALITY

81. How do you ensure staff protection during the mortality review process? _____

_____

_____

_____

_____

82. Are the names of individual staff members included in audit reports?

☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q84)***

83. If yes, please describe: _____

_____

_____

_____

_____

84. Is there any connection to professional disciplinary action and the M/PDR system?

☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q86)***

85. If yes, please describe: _____

_____

_____

86. Do you see any risks associated with the M/PDR process? ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q88)***

87. If yes, please describe: _____

Q. CASE STUDY QUESTIONS

88. What do you think is working well in your facility/community regarding M/PDR? What were the main factors that facilitated implementation of M/PDR in your facility/community? _____

89. What are / were some of the barriers / obstacles to the implementation of M/PDR at your facility/community?

90. What changes would be most helpful to improve the M/PDR process in your facility/community? _____

91. Can you tell us about a time where the recommendations made during the mortality audit process resulted in a change in how care was provided? _____

92. Approximately how much time (cumulative hours) does the M/PDR committee spend per month on all activities related to M/PDR in your facility/community? _____

_____

_____

_____

_____

93. Sometimes mortality audit can be a demoralising activity for staff. How do you maintain morale in meetings? _____

_____

_____

_____

_____

_____

94. In your view how useful is M/PDR for improving the quality of care and health outcomes for women and newborns in your facility/community? _____

_____

_____

_____

_____

_____

R. ASSESSOR'S GENERAL OBSERVATIONS AND IMPRESSIONS

95. Impressions regarding the intensity of involvement of facility senior management in conducting M/PDR

☐ A lot of involvement and/or support (moral, material, etc)

☐ Some involvement and/or support (moral, material, etc)

☐ Neutrality / Little support

☐ Resistance

Comments: _____

_____

_____

96. Impressions of the quality of data captured in M/PDR summary forms

☐ Excellent ☐ Average ☐ Poor

Comments: _____

_____

_____

97. Impressions of the quality of recommendations contained in the review meeting notes

☐ Excellent ☐ Average ☐ Poor

Comments: _____

_____

_____

98. Impressions of the quality of follow up actions

☐ Excellent ☐ Average ☐ Poor

Comments: _____

_____

_____

99. Other comments and observations:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

COMMENTS FOR FACILITY/COMMUNITY (FOR IMMEDIATE FEEDBACK)

100. GENERAL IMPRESSIONS OF MONITOR/ASSESSOR

_____

_____

_____

_____

101. RECOMMENDATIONS FOR LOCAL CONSIDERATION

_____

_____

_____

_____

102. IDEAS FOR POLICY MAKERS AND OTHER LEVELS OF MANAGEMENT

_____

103. NAME OF ASSESSOR **SIGNATURE** **DATE**

In-depth stakeholder interview questionnaire – used for interviewing stakeholders in MNCH at state level

MATERNAL/PERINATAL DEATH REVIEW: STAKEHOLDERS ASSESSMENT TOOL, Version 2

Checklist/Questionnaire B

1. Data Collector Name: _____
2. Date completed (dd/mm/yyyy): _____/_____/_____

S. Stakeholder Information

3. Stakeholder interviewed:
   a. Position: _____
   b. Unit/Department you work in: _____
   c. The sector you work in: ☐ Public ☐Faith-based ☐Private-for-profit
4. Level of Intervention of stakeholder:
   ☐ National ☐ State ☐ LGA ☐ Facility ☐ Community
5. Geopolitical Zone:
   ☐ Northern-West ☐ North-East ☐ North-Central ☐ South-East
   ☐ South-West ☐ South-South
6. Name of State: _____
7. Name of LGA: _____
8. Name of Community: _____

T. M/PDR ROLE-PLAYERS

9. Is there a state/national MDR coordinator? ☐ Yes ☐ No ☐ Unsure
10. Is there a state/national PDR coordinator? ☐ Yes ☐ No ☐ Unsure
11. What is the role(s) of the coordinator(s) in relation to M/PDR? _____
_____
_____
_____
12. What are some of the non-M/PDR responsibilities of the coordinator(s)? _____
_____
_____
_____
____

U. M/PDR PRACTICE

13. Are there guidelines in place for review of maternal deaths? ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q15)***
14. If yes, at what levels are these guidelines (e.g. national, state, LGA, Community): _____
_____
_____
_____
_____
15. Are there guidelines in place for review of perinatal deaths? ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q18)***
16. If yes, at what level are these guidelines (e.g. national, state, LGA, community): _____
_____
_____
_____
_____
17. Ask to obtain a copy of the guidelines and check if the guidelines include the following:

☐ Standardized maternal death review form

☐ Standardized perinatal death review form

☐ Training materials and activities

☐ Supervision activities

☐ Reporting requirements (timing, information flow, standard indicators to report on)

☐ Process for notification of every maternal death

☐ Process for selecting deaths for audit

☐ Process for conducting death audit (facility-type or verbal autopsy)

☐ Stratification of guidelines by facility level (1°, 2° or 3°) and category (public/private)

☐ Integration with quality improvement approaches

18. Are M/PDR systems integrated with the following structures:

a. HMIS ☐ Yes ☐ No ☐ Unsure

b. CRVS ☐ Yes ☐ No ☐ Unsure

c. IDSR ☐ Yes ☐ No ☐ Unsure

d. Other (describe): _____

19. Is a central M/PDR report compiled? ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q24)***

20. If yes, when was the most recent report compiled (Month and Year)? _____

21. At what level (Please tick as applicable)? ☐State ☐National ☐LGA ☐Other? _____

22. Who (position title) is responsible for compiling the report? _____

23. What is/was done with the recommendations contained in the report? _____

_____

_____

_____

V. COMMUNITY LINKS

24. Do facility-based M/PDR process involve getting input from the community?

☐ Yes ☐ No ☐ Unsure

25. What current mechanisms exist to identify deaths at community and make sure they get reported?

_____

_____

_____

W. TECHNICAL: ABILITY TO GENERATE HIGH-QUALITY DATA AND ANALYSES

26. Can you tell us about a policy or programme related decision, or change in service delivery that has been based upon M/PDR findings **at your level** (state, LGA, facility, community, etc)? _____

_____

_____

_____

_____

27. In your opinion, do the registers and recording forms currently used in health facilities capture necessary data for assessment of cause of death and contributing factors for maternal and perinatal death audits? ☐ Yes ☐ No ☐ Unsure Comments: _____

_____

_____

_____

28. Do you have any concerns about the quality of information around maternal deaths, stillbirths, and/or neonatal deaths? ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q31)***

29. If Yes, which concerns? _____

_____

_____

_____

_____

30. How could these concerns be addressed? _____

_____

_____

_____

_____

_____

_____

31. Is your team involved in any efforts to improve medical records and registers (e.g. standardization of records with minimum essential indicators)? ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q33)***

32. What is your team involvement? _____

_____

_____

_____

_____

_____

33. In your opinion, what are some factors that are barriers to ensuring *community*, *state* or *national* level actions take place following mortality review (e.g. completing the "Response" portion of M/PDR)? ***(Specify barriers and tick level where it is applicable)***

Barriers		National	State	LGA	Facility	Community
e.	☐ MOH leadership/support					
f.	☐ Inter-departmental leadership/support					
g.	☐ Disconnect between national and/or state and facilities					

h.	☐ Inadequate referral system					
i.	☐ Availability of essential commodities					
j.	☐ Availability of qualified personnel					
k.	☐ Availability of personnel with necessary up to date clinical competencies					
l.	☐ Availability of resources/finances					
m.	☐ Harmful local practices					
n.	☐ Other (specify):					

34. What strategies/mechanisms have you adopted to overcome these barriers/challenges? _____

_____

_____

_____

X. LOCAL GOVERNMENT AUTHORITY HEALTH MANAGEMENT LEVEL ONLY

(Skip this section if the interviewee is a state level stakeholder)

35. Where did the decision to undertake M/PDR originate?
☐ National level ☐ State level ☐ LGA Level ☐ Facility level ☐ Other: _____

36. How does your state support health facilities to gather and analyse the necessary data to make decisions? _____
_____
_____
_____
_____
_____

37. What support the LGA also provides for the M/PDR process? _____
_____
_____

38. How is M/PDR information used by the LGA health management team to improve MNH services? _____
_____
_____
_____
_____

39. Does your state provide any support training for facility staff:

o. In data collection? ☐ Yes ☐ No ☐ Unsure

p. In using data for quality improvement? ☐ Yes ☐ No ☐ Unsure

40. Can you describe any processes you use to assess the quality and accuracy of birth and death data?_____
_____
_____
_____
_____
_____

41. Do you have Community M/PDR Committee(s)? ☐ Yes ☐ No ☐ Unsure

42. Is verbal autopsy used by this committee? ☐ Yes ☐ No ☐ Unsure

43. If yes, what method is used to implement "cause of death assignment and ICD coding"?

☐Special Committee ☐Designated Doctor ☐Other (specify): _____

44. Do you see any risks associated with the M/PDR process? ☐ Yes ☐ No ☐ Unsure ***(If No, Unsure, Go to Q47)***

45. If yes, please describe these risks: _____

_____

_____

_____

_____

_____

46. How could these risks be minimized?

_____

_____

_____

47. Is there anything else you would like to discuss today?_____

_____

_____

_____

_____

PHASE 2: Key informant interview guide - for securing the perspectives of national-level stakeholders in MNCH: Government, Professional Associations, and Development Partners

Phase 2: Key informant interviews: INTERVIEW GUIDE WITH GOVERNMENT OFFICIALS

Introduction:

- Thank informant for his/her time and willingness to be interviewed
- Interviewer briefly summarizes purpose of visit/interview
- Get written informed consent

Questions:

1. How are you involved in the implementation of MPDSR/MDR/PNDR?
2. What do you see as the priorities for MPDSR/MDR/PNDR in Nigeria?
3. How has your Division/Department/Board/Agency been involved with MPDSR/MDR/PNDR?
    - How do MPDSR/MDR/PNDR feature in you work?
    - What engagement does your Division/Department/Board/Agency have with implementation MPDSR/MDR/PNDR?
    - *Probes:*
        - *Policy*
        - *Budgeting/ Financing*
        - *Dissemination of materials developed for the care of small newborns and kangaroo mother care*
        - *Training or technical support*
        - *Direct implementation*
4. What kind of policies and guidelines related to MPDSR/MDR/PNDR are available?
    - How is the implementation MPDSR/MDR/PNDR covered in the current government plans and strategies?
5. What is being done in Nigeria with respect to sustaining the implementation of MPDSR?
    - How does the MPDSR/MDR/PNDR feature in these efforts?
    - *Probes:*
        - *Pre-service training*
        - *In-service training*
        - *Support for implementing partners*
        - *Supportive supervision*
6. Is there a specific policy of resource allocation for implementation of MPDSR/MDR/PNDR at the federal and state levels?
    - If "Yes", what does it entail?
7. How is resource allocation done for MPDSR/MDR/PNDR at different levels of the federal or state health system?

8. In your opinion, what is being done well with regard to the implementation of MPDSR/MDR/PNDR in Nigeria / your state?

    - What are the existing opportunities for strengthening implementation of MPDSR in the country / your state?
    - How can the MPDSR benefit from these opportunities?
    - To what extent should implementation of MPDSR/MDR/PNDR benefit from these opportunities?

9. In your opinion, what are the challenges in the implementation of MPDSR/MDR/PNDR?

10. What are the specific challenges for the implementation of MPDSR/MDR/PNDR?

    - *Probes:*
        - *Training*
        - *Finances*
        - *Human resources*
        - *Infrastructure*
        - *Political will*
        - *Specific challenges for kangaroo mother care*

11. What data are available with respect to the MPDSR/MDR/PNDR?

    - How are these data used?
    - *Probes:*
        - *Who uses it?*
        - *What decisions are made?*
    - To what extent are data on MPDSR/MDR/PNDR care available?

12. What do you think is required for Nigeria / your state to achieve high coverage in the implementation of MPDSR?

Thank informant for participation

Phase 2: Key informant interviews: INTERVIEW GUIDE WITH REPRESENTATIVES OF PROFESSIONAL ASSOCIATIONS

Introduction:

- Thank informant for his/her time and willingness to be interviewed
- Interviewer briefly summarizes purpose of visit/interview
- Get written informed consent

Questions:

1. To what extent has your association been championing MPDSR/MDR/PNDR?
2. What are your views on MPDSR/MDR/PNDR?
3. What, if any, is your organization's stance with regard to implementation of MPDSR/MDR/PNDR?
4. How would you describe the awareness and knowledge of your association's members with regard to MPDSR/MDR/PNDR? (Is MPDSR/MDR/PNDR ever discussed at meetings?)
5. What are your members' attitudes towards MPDSR/MDR/PNDR?
6. To what extent would your members support MPDSR/MDR/PNDR where they work? What would they require?
7. What would you say is being done well with regard to the provision of MPDSR/MDR/PNDR in Nigeria / your state?
    - What are the existing opportunities for strengthening
    - MPDSR in the country / your state?
    - How can the MPDSR/MDR/PNDR benefit from these opportunities?
    - To what extent ought the implementation of MPDSR benefit from these opportunities?
8. In your opinion, what are the challenges in the provision of newborn care?
9. What are the specific challenges for the MPDSR/MDR/PNDR
    - *Probes:*
        - *Training (pre-service & in-service)*
        - *Finances*
        - *Human resources*
        - *Infrastructure*
        - *Political will*
        - *Specific challenges related to the implementation of MPDSR/MDR/PNDR*
10. What are your views on the scaling up of MPDSR?
    - Should MPDSR be prioritized for scale-up?
    - For what reasons do you feel this way?
    - What do you think it will take for Nigeria to achieve high coverage in the implementation of MPDSR?
    - How do you see the role of your organization in the scale-up of MPDSR?
    - *Probes:*
        - *Advocacy*
        - *Training*
        - *Supervision / mentoring*
        - *Materials development*

11. How many centers are you aware of that have kangaroo mother care services or where mothers are practicing kangaroo mother care?

12. Are there specific champions of MPDSR in your association that we should talk to? [Snowball sampling]

Thank informant for participation

Phase 2: Key informant interviews: INTERVIEW GUIDE WITH DEVELOPMENT PARTNERS

Introduction:

- Thank informant for his/her time and willingness to be interviewed
- Interviewer briefly summarizes purpose of visit/interview
- Get written informed consent

Questions:

1. What has been your organization's role in MPDSR/MDR/PNDR in the country/state?
2. How is MPDSR/MDR/PNDR prioritized in your country/state program/plan?
3. What has your organization done in the last five years in this with regard to the MPDSR/MDR/PNDR? (If nothing special for small newborns, probe for general newborn care)
    - *Probes:*
        - *Support for country/state – how and where*
        - *Participation in development of materials for care of the (small) newborn*
        - *Capacity building and training*
    - If your organization has developed training materials, guidelines, protocols, job aids, or similar documents, how were they disseminated?
        - How readily available are these materials?
        - How have you assisted in helping to provide access to the materials?
4. What would you say is being done well with regard to the implementation of MPDSR in Nigeria / your state?
    - What are the existing opportunities for strengthening MPDSR in the country / your state?
    - How can the MPDSR benefit from these opportunities?
    - To what extent should implementation MPDSR benefit from these opportunities?
5. In your opinion, what are the challenges in the implementation MPDSR/MDR/PNDR?
6. What are the specific challenges for implementation MPDSR/MDR/PNDR?
    - *Probes:*
        - *Training*
        - *Finances*
        - *Human resources*
        - *Infrastructure*
        - *Political will*
        - *Specific challenges for implementation of kangaroo mother care*
7. How do you see the way forward for the implementation MPDSR in Nigeria/your state?
    - What recommendations would you make for the scale-up of implementation MPDSR?
    - *Probes:*
        - *Training*
        - *Finances*
        - *Human resources*
        - *Infrastructure*
        - *Advocacy*

Thank informant for participation

APPENDIX 4: MPDSR Implementation Scoring Scheme for Facilities

Implementation construct	Progress marker	Instrument items
1. Creating awareness *5. (2 points maximum)*	Number and type of (senior) managers involved in implementation process (in relation to size of facility)	Special persons who take specific effort in promoting MPDSR including management, professionals, driving forces (contact person, meeting coordinator, other champion) *1 point*
		Clear leader(s) involved in establishing and championing MPDSR (past or future) *1 point*
2. Adopting the concept *6. (2 points maximum)*	Decision to implement MPDSR	Knowledge of the original decision to implement MPDSR. If MPDSR not yet implemented, has a formal decision been taken? *1 point*
	Steering committee	MPDSR leadership team or steering committee established *1 point*
3. Taking ownership *7. (6 points maximum)*	Tools available	MPDSR data collection form available *1 point*
		Tools include cause of death *1 point*
		Tools include modifiable factors *1 point*
		Tools include place to follow up on actions taken *1 point*
	Meeting process established	Ability to describe or show documentation of meeting process *0.5 points*
		Staff meeting conduct agreement available *0.5 points*
	Resources allocated	Allocations from the hospital budget to establish MPDSR *0.5 points*
		Allocations from other partners to establish MPDSR *0.5 points*
4. Evidence of practice *8. (7 points maximum)*	Evidence of MPDSR meetings	Meeting minutes available *1 point*
		Meeting minutes include action items *1 point*
		Meeting minutes include follow up from previous meetings *1 point*
		Meeting notes respect confidentiality of staff and patients *1 point*
	Orientation for new staff	Face-to-face or written orientation to MPDSR *1 point*
	MPDSR data use	Data trends displayed or shared *2 points*
5. Evidence of routine integration *9. (7 points maximum)*	Further evidence of practice	Evidence of change based on recommendation arising from MPDSR findings *3 points*
	Evidence of MPDSR policy	MPDSR appears in facility statements and policies *1 point*
	Multi-disciplinary meetings	MPDSR meetings include staff from different disciplines, management *2 points*
	Community linkages	Evidence of reporting findings and progress to community *1 point*
6. Evidence of sustainable practice *10. (6 points maximum)*	Documented results	Facility records show ongoing MPDSR review meetings for at least 1 year *2 points*
	Evidence of staff development	Plan in place to ensure all staff receive MPDSR training *1 point*
		Evidence that staff have received MPDSR training in the past year *1 point*
	Score on the first 5 constructs (divided by 12)	Score on the first 5 constructs will influence sustainability *2 points*
MAXIMUM TOTAL SCORE		*30 points*

Adapted with permission from MRCSA Research Unit for Maternal and Infant Health Care Strategies.

APPENDIX 5: MPDSR Assessment Monitoring Tool

Activity		Task	#	May				June				July				August				September				October				##												Responsibility		Progress/remarks.
				2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13	20	27	3	10	17	24		Primary	Secondary	
1	**Develop Concept Note**	Draft concept note	x																																					OYINBO	ALL	
		Finalize concept note		x	x	x																																				
2	**Application for NHREC Exemption**	drafting of letter of application for the country director to sign.				x																																		OYINBO	WILLIAMS	
		submission of the application with final						x																																	OYINBO	WILLIAMS	
		follow-up calls to the NHREC Admin.							x	x	x	x	x	x	x																										OYINBO	WILLIAMS	
3	**Develop Protocol**	adaptation of the protocools for the Africa Regional MPDSR Assessment.								x	x	x	x	x	x																											SHITTU	MATHE	
4	**Develop/adapt tools for landscape and in-depth assessment**	Development of the Landscape tool with inputs from assessment team members															x	x	x	x	x																					SHITTU	MATHE	
		adaptation of the in-depth interview tools of the African Regional MPDSR assessment.														x	x	x	x	x	x	x																				SHITTU	MATHE	
5	**Training for Landscape Assessment**	SHORLISTING OF THE DATA COLLECTORS FOR BOTH PHASE 1 AND 2.																			x	x	x	x	x	x																	OLUTUNDE	OYINBO	
		DEV. DATA ENTRY TEMPLATE																					x	x	x																	SHITTU	MATHE	
		Conduct training of landscape data collectors																							x	x	x																SHITTU	MATHE	
6	**Conduct landscape assessment**	Conduct data collection																									x	x	x														SHITTU	MATHE	
		Conduct data analysis																												x	x												SHITTU	MATHE	
7	**Finalize report from landscape assessment**	Draft landscape report submitted for review																														x											SHITTU	MATHE	
		Select other 3 states for conduction of in-depth assessment																																									
		Landscape report finalized																												x													
8	**Conduct in-depth assessment**	Conduct training of in-depth data collectors																							x																	SHITTU	MATHE	
		Conduct data collection for in-depth assessment																														x	x	x	x	x							SHITTU	MATHE	
		Complete data entry for in-depth assessment																																			x	x					SHITTU/OYINBO	MATHE	
9	**Complete data analysis for in-depth assessment**	Complete data analysis for in-depth assessment																																				x	x	x					MATHE/SHITTU	MATHE	
10	**Finalize report from in-depth assessment and disseminate**	Draft in-depth assessment report submitted for review																																										MATHE/SHITTU	OYINBO	
		Finalize combined assessment report complete																																										"OYINBO"	WILLIAMS	
		Develop papers, blogs, briefs & scientific papers																																									OYINBO/SHITTU	WILLIAMS/SCUS	
		Disseminate final report at MPDSR steering Committee Meeting																																									WILLIAMS/OYINBO	FMOH/SOCQON/NISONM	

APPENDIX 6: Criteria for selecting states for the in-depth phase

Table A6.1: Showing the Criteria used for selecting one State per Geopolitical zone for the In-depth Interviews

S/n	States	Geopolitical State coverage of Audit System (% HFs)	Diversity in MPDR models (No. of models, excluding CA)	Cumulative Experience on M/PDR (Duration in years)	State's Burden of M & N Deaths (Population as proxy)	Total Scores (max=14)	Ranking in each Zone	States selected for In-depth Phase
	FCT	2	3	3	1	9	1st	
1	Benue	1	1	1	2	5	2nd	
2	Kogi*	1	1	1	2	5	2nd	√
3	Kwara	1	1	1	2	5	2nd	
4	Nasarawa	1	1	1	1	4	6th	
5	Niger	1	1	1	2	5	2nd	
6	Plateau	1	1	1	2	5	2nd	
						0		
7	Adamawa	1	1	1	2	5	3rd	
8	Bauchi	1	1	1	2	5	3rd	
9	Borno	1	2	1	2	6	2nd	
10	Gombe	1	1	1	2	5	3rd	
11	Taraba	1	1	1	2	5	3rd	
12	Yobe	2	3	2	2	9	1st	√
						0		
13	Kaduna	2	5	3	3	13	1st	
14	Kano	2	5	3	3	13	1st	√
15	Katsina	2	4	2	3	11	3rd	
16	Kebbi	1	2	1	2	6	6th	
17	Jigawa	2	3	2	2	9	4th	
18	Sokoto	1	1	1	3	6	6th	
19	Zamfara	2	3	2	2	9	4th	
						0		
20	Abia	0	0	0	2	2	1st	
21	Anambra	0	0	0	2	2	1st	
22	Ebonyi*	0	0	0	2	2	1st	√
23	Enugu	0	0	0	2	2	1st	
24	Imo	0	0	0	2	2	1st	
25	Akwa-Ibom	0	0	0	2	2	4th	
26	Bayelsa	0	0	0	1	1	6th	
27	Cross River	1	1	2	2	6	1st	
28	Delta	1	1	2	2	6	1st	√
29	Edo	0	0	0	2	2	4th	
30	Rivers	0	0	0	3	3	3rd	
31	Ekiti	0	0	0	2	2	5th	
32	Lagos	2	2	1	3	8	2nd	
33	Ogun	1	1	2	2	6	3rd	
34	Ondo	2	2	3	2	9	1st	√
35	Osun	0	0	0	2	2	5th	
36	Oyo	0	0	0	3	3	4th	

KEY:

1) Coverage: Complete = 3; 50-99% = 2; <50%=1.

2) Diversity: scored by number of models established, up to max 5.

3) Experience: <2 years=1; 3-4 years=2; 5 or more=3.

4) Mortality Burden: [Proxy by population] >5mil=3; 2-5mil=2; <2mil=1.

*Indicated States were selected because of further programmatic interest in them

APPENDIX 7: Models of Maternal and Perinatal Death Audit Processes that Antedated Advent of MPDSR

This segment describes the various audit methods ever used in Nigeria, based on published information or those provided in scientific forums. Highlights of the information are provided in Table A7.1.

Table A7.1: Characteristics of Models of Maternal and Perinatal Death Audit Processes that Antedated Advent of MPDSR

Facilitator(s)	Programme Title	Audit Type (CE/MDR/ PDR/VA)	Key Objectives	Start Date (Year)	Current Status (Ongoing/ Ended)	Geographic Coverage	Health System Levels Coverage (State/ Facility/ Community)	Outcomes	Challenges	Best Practices	Values for MPDSR
Ondo State Govt	Ondo State "Abiye" Programme: Confidential Enquiry into Maternal Deaths in Ondo State (CEMDOS)	CE, MDR	Accurately measure Maternal Mortality Ratio (MMR);Determine common causes of maternal deaths; Determining the geographical distribution of maternal deaths; Determining the factors contributing to maternal deaths"	2015	Transiting into MPDSR	Entire Ondo State	State, Facility, Community	Has provided evidences of outcome of the main MNH interventions	slow pace of buy-in by public; poor transportation, communication for data remittances; infrequent use of post-mortem	Already institutionalized in entire state	Existing capacities for use to establish MPDSR
Delta State Govt.	Delta State MDR Program	MDR	For improving quality of care in facilities, and consequently improve maternal and newborn outcomes	2015	Transiting into MPDSR	1/5 of all THCs + SHCs (one per zone) of Delta State	State, Facility	Facility MMR now known; Improved quality of care	Poor filling of MDR forms; unremitted reports from health facilities; health workers strikes; diminishing funding	Strong SMOH commitment; Integration of MDR with MNCH scheme & zonal structuring of health facilities; partnership with SOGON	Existence of MDSR capacities in all zones of the state
Rotary International	Quality Assurance in Obstetrics	CE (maternal & foetal)	Improve maternal and newborn health outcomes by raising the quality of obstetric care in 19 selected THC and SHCs located in three states.	2008	Ended 2015	Kaduna (5HF); Kano (5HF); FCT (5HF); Ondo (4HF)	Facility	Gave trends in facility maternal & stillbirth rates, their causes and responsiveness to capacity building	Poor documentation on patients & data entry; Frequent strikes; Frequent damage to foetal monitors	Capacities in obstetric care raised in the 19 HFs, as models in their states	Can build on built capacities for maternal & foetal care
PPRINN-MNCH	The Partnership for Reviving Routine Immunisation in Northern Nigeria and Maternal Newborn and Child Health Initiative's Facility Maternal Death Review	CE, MDR	Purposed for quality improvement in MNCH facility services.	2010	Ended in 2013	Yobe (All HFs); Zamfara (All HFs); Katsina (50% of HFs)	State, Facility	Improved patient care with management protocols; better use of staff & deployment; essential and life-saving equipment supplies.	Initial fear of blame; lateness, postponements & irregular timing of meeting; high staff attrition; poor documentation on patients	Ease and effectiveness with which it was institutionalised	Existing capacities for transiting to MPDSR
NPHCDA	National Primary Health Care Development Agency (NPHCDA) Maternal Death Review in the northern states under the Midwifery Service Scheme (MSS)	MDR,VA	Purposed for monitoring the facility and community outcomes of its MSS MNCH program	2011	Ended in 2013	19+1 northern states (Their MSS sites)	Facility, Community	Gave maternity statistics in communities served; showed causes of mortality (none incurred in some states).	Not available	Not available	Existing capacities for VA in MSS sites for MPDSR nation-wide

Facilitator(s)	Programme Title	Audit Type (CE/MDR/ PDR/VA)	Key Objectives	Start Date (Year)	Current Status (Ongoing/ Ended)	Geographic Coverage	Health System Levels Coverage (State/ Facility/ Community)	Outcomes	Challenges	Best Practices	Values for MPDSR
SOGON	The Society of Gynaecology & Obstetrics of Nigeria (SOGON) Maternal Death Review Programme in the Federal Capital Territory	MDR. VA	Pilot MDR implementation at State, Facility & Community levels simultaneously	2014	Ongoing	FCT only (3 SHCs + 3 Communities)	State, Facility, Community	Revealed trends in facility & Community MMR, causes of mortality; improved QOC at facility & Community levels	Incessant strikes by health workers; late data remittances; and infrequent meetings of state-level Committee	This model is the most complete; with the state, Facility & Community committees in synergy	Transition to MPDSR is simplified; introduction of PNDR and scale-up to other HFs and communities are needed
CHAI	Clinton Health Access Initiative (CHAI) Community-Based Health Information System (CBHIS)	MDR, PDR,VA	Aimed to provide its MNH programme with reliable and easily accessible data on vital events in order to understand, monitor and evaluate the communities' health status and programme outcomes	2015	Ongoing	Kaduna (10 LGA); Kano (10 LGA); Katsina (10 LGA)	Community	Revealed trends maternity statistics that confirmed significant improvements in maternal & newborn health outcomes in target communities	Early in the programme, under-reporting of births was observed, which was quickly responded to with more monitoring & supervision	Investment in local structures and institutions	Provides existing capacities at community level for MPDSR
WHARC	Women's Health and Action Research Centre (WHARC) Maternal Death Review Programme in Lagos State	MDR	Facilitation of MDSR in three of Lagos States' SHCs for the purpose of researching into the processes, contexts, and outcomes, towards more effectiveness and efficiency of the scheme.	2014	Ongoing	Lagos State (3 SHCs)	State, Facility	Findings that the MDR meeting process has some flaws in how the following are managed:'no name, no blame'; communication; team management in the face of diversity in cadres; and accountability	None	Partnership between State government health facilities and local and international researchers	Trainings for the transition from current M/PDR practices to the MPDSR must use findings; emphasis team management, communication skills and accountability in the context of QOC
MNCH2	The Nigerian Maternal, Newborn and Health Maternal Death Review Programme (MNCH2-MDR)	MDR,VA	One of the five prongs of MNCH2 Programme - Improve QOC and improved performance of MNCH services on effectiveness, equity and efficiency	2014	Ongoing	Kaduna, Kano, Katsina, Jigawa, Yobe, Zamfara	State, Facility, Community	Reports awaited	Reports awaited	Reports awaited	Its expanse within and across states present the platform, yet, for smooth transition to MPDSR
Facility Management		Clinical Audit	For quality of care improvement in facilities	NA	Ongoing	Entire country	Facility	Facility-specific outcomes	Accompanied by anxiety, rancor, blame & punishments	Least expensive or demanding to organise	Existing capacities for use to establish MPDSR

Details of models of death review processes ever introduced

Clinical Audit

This is the traditional death audit model practiced in Nigerian THCs and SHCs from time immemorial. It has been purposed for reviewing deaths incurred within health facility with a goal to understand their immediate and remote causes, and identify preventable factors which when addressed, resulting in quality of care improvements in the facility. Its institutionalization has always been one of the prerequisites for accrediting THCs for serving as training institutions for undergraduate and postgraduate medical and health related trainings.

Typically, this model of audit is conducted by individual departments where the death occurred, or is occasionally made to involve other departments, either that were considered to have been involved in the management of the deceased or whose input in the process will give better understanding of the case. It is a model that is employed across all clinical departments where death occurs, and not restricted to MNCH services. Its conduct relies on information drawn from the deceased's Casefile and additional information extracted from individuals involved in the preceding management. Participation in the session is mandatory for all staff of the department and there is always an advance notification of the exercise. For obstetrics and gynecology departments, the reviews are mainly limited to maternal deaths and near misses. In some facilities, intrapartum stillbirths receive a clinical audit if there was thought to be avoidable factors, but rarely are antepartum stillbirths or early neonatal deaths reviewed. Paediatric departments are much less likely to conduct routine reviews, particularly for neonatal deaths.

The session is usually chaired by the head of department, who calls for the case to be presented, usually by a clinician who was involved in managing the deceased. During the ensuing discussion, other members of the managing team are asked to provide additional relevant information, questions are raised to seek clarifications, and attempts are made to answer the following questions. First, what were the circumstances of the death? Second, what was the cause(s) of death? Third, what factors contributed to the death? Fourth, was the death was preventable? Fifth, what should have been done differently to avert the death?. The lessons learnt and observed gaps in management usually constitute immediate review and updating of treatment protocol and standard operating procedures, with a view to improving the quality of care and averting other deaths.

Inherently beneficial as this model may be, its conduct is not guided by any rules or ordinances and the sessions are, at times, diverted by sentiments to: settle old scores between clinicians; exhibit individual supremacy in patient care; and apportion blame on individuals adjudged to have erred in practice and behaviour. It is not unusual to find staff being issued with queries and other punishments as outcomes of these exercises. Consequently, its anticipation frequently generates anxiety to participating health workers. Notification of death is not a component of the clinical audit model, it expects the facility HMIS to routinely capture and report each death. In health facilities that have not introduced MDR, this remains the operating audit method across the country. There are rarely links or information flow either to or from the community in this model.

Ondo State Government's "Abiye" Programme's Confidential Enquiry into Maternal Deaths in Ondo State (CEMDOS)[2].

This initiative of the Ondo State government commenced in October 2009 with aims of resuscitating its ailing healthcare system and addressing its high maternal mortality. The programme was purposed to improve maternal health, with the CEMDOS, being one of its key features. The specific objectives of the latter were to: (a) accurately measure and track maternal mortality; (b) determine the common causes and contributing factors of maternal deaths; and (c) map out the geographic distribution of the deaths. This programme was backed with an enforcing law that demands spouses and caregivers to report maternal deaths within 48 hours, failure of which attracts a jail term, fine, or both.

At the start of the programme, maternal deaths at the community level were reported directly to Ward/Community Disease Surveillance & Notification Officers, who completed and dispatched a Maternal Death Notification Form to the LGA-M & E Officer. In turn, the officer remitted the form to the CEMDOS office, domiciled in the domiciled in the State Directorate of Planning, Research, and Statistics (DPRS) of the Ministry of Health. Facility deaths required the completion and remittance of the Notification Form by the HMIS Officer to the Hospitals' Management Board DPRS Officer (DPRS-HMB), who in turn sent them to CEMDOS. The latter conducted centralised death reviews, developed action plans and recommendations that were

2 Lawal Oyeneye. Plenary presentation at the 9th International Congress of the Society of Gynaecology and Obstetrics of Nigeria, Abuja, Nigeria, November, 2015.

passed to government, respective facilities and communities.

In 2015, this system was modified to accommodate facility MDR, and facility MDR Committees were set up to review local deaths, using the SOGON MDR tools, and remit their reports and recommendations to the DPRS-HMB for onward delivery to CEMDOS.

This death audit scheme has published annual Confidential Enquiry on Maternal Death Reports from 2013 to date. The most recent edition indicated the state might have attained the MDG-5, the only Nigerian state to do so. Another celebrated outcome of this initiative was its documentation of TBAs' major contribution to the Type-3 Delay in maternal deaths and morbidities. This prompted the engagement of TBAs to refer their patients promptly to health facilities, at a fee paid by the government. The subsequent phase of implementation of the programme involved the training of the TBAs on other vocations and issuance of take-off grants to them in their new occupations.

The operators of the scheme enumerated challenges to include: slow pace of buy-in by the public; transportation and communication difficulties impairing data remittances; and infrequent use of post-mortem deprives it of confirmation of "cause of death."

Delta State Government Maternal Death Review Scheme[3]

The establishment of this scheme by the SMOH was inspired by the training-of-trainers on MDR by SOGON in 2013 and an advocacy visit by SOGON's Zonal leadership to the Commissioner for Health. Consequently, a Delta State MDR Steering Committee was inaugurated in March 2014, trainings on MDR were conducted in the three senatorial zones, and Facility MDR Committees were established. The SOGON-FMOH Guidelines and tools, the precursor to the current National MPDSR tools, were adopted and used for the scheme, purposed for improving quality of care in facilities, and consequently improve maternal and newborn outcomes.

One THC/SHC in each of the 11 zones of the state (totaling One THC and 10 SHCs, out of 57) had MDR introduced. In order to enhance the function of the Committees, sub-technical committees were formed, each comprising the Secretary, MDR Officer, obstetrician and experienced midwife, to first carry out detailed mortality analysis in advance of successive MDR Committee meetings. This strategy shortened the time spent reviewing each death at the main meeting.

The achievements of this MDR process were impressive. It increased HCW commitment to the prevention of maternal death; improved understanding of key government officials and stakeholders of factors leading to maternal deaths; prompted improved state blood transfusion services; informed revision of the provisions of government's free maternal care programme to adequately treat cases of puerperal/post-abortion sepsis, a leading cause of death in the state; prompted the development of referral forms and designing of effective referral systems; the development of a risk scoring systems for pregnant women to guide a tiered health facility access for ANC services; and provided accurate facility statistics of 52 maternal deaths out of 25,855 births in the SHCs, a MMR of 201/100,000 births in 2014.

A complementary bill to make maternal death reportable was sponsored by Medical Women Association in Delta state, but is still being processed by the state legislature.

The success of this model is attributable to factors including strong political will by the SMOH, funding of the programme by SMOH, integration of the MDR programme with other healthcare programmes—the free MNCH scheme and zonal structuring of health facilities—and partnership with SOGON, who conducted all trainings.

Challenges that confronted the scheme included inappropriate and incomplete filling of MDR forms; declining number of remitted reports from health facilities; prolonged interruption of health services by health workers strikes; diminishing funding; and HCW resistance to changes prompted by MDR committee recommendations, especially when it involves their making additional effort.

Rotary International's Quality Assurance in Obstetrics Programme[4,5]

3 Patrick Okonta. Plenary presentation at the 9th International Congress of the Society of Gynaecology and Obstetrics of Nigeria, Abuja, Nigeria, November, 2015.

4 Hadiza Galadanci, Wolfgang Künzel, Robert Zinser, Oladapo Shittu, Stefanie Adams, Manfred Gruhl. Experiences of 6 years quality assurance in obstetrics in Nigeria – a critical review of results and obstacles. Journal of Perinatal Medicine. ISSN (Online) 1619-3997, ISSN (Print) 03005577, DOI: 10.1515/jpm-2014-0302, January 2015.

5 Galadanci H, Künzel W, Shittu O, Zinser R, Gruhl M, Adams S. Obstetric quality assurance to reduce maternal and foetal mortality in

Rotary International's quest to enhance healthcare took another turn in 1994 when it became involved in the promotion of reproductive health. In 2008, Rotary Action Group for Population & Development (RFPD) partnered with the FMOH and SMOH of Kaduna and Kano from 2008, FCT from 2011, and Ondo State from 2013 to start an MNCH programme. The initiative sought to improve maternal and newborn health outcomes by raising the quality of obstetric care in 19 selected THC and SHCs located in the three states. The strategic thrusts of this initiative were to document, analyze and track selected maternity indicators in the target hospitals; identify facility-specific modifiable factors of incurred maternal and foetal deaths; and respond by instituting interventions that include provision of equipment and supplies, training of the maternity staff, and supportive supervision of the sites.

In this regard, the programme trained individual midwives in each facility to document routinely 16 specific MNCH indicators (comprising demographics, antenatal, delivery, and newborn information) in "Maternity Record Book" designed for the project and filled designated monthly Summary Forms. Each state had a trained midwife who conducted monthly supervisory visits to each facility, collected the Summary Forms, and remitted them to a Central Project Office located at Aminu Kano Teaching Hospital, Kano, where trained personnel carried out continuous data analyses. Interpretation of the data was done by the local and international project obstetricians (who communicated by phone and e-mails), to identify the quality of care issues in each facility, for rectification. Responses to identified gaps in care were in two forms. The first includes facility-specific recommendations communicated directly by the local consultants and the respective state midwives. For cross-cutting issues, the interventions, such as trainings, re-trainings, introduction to newly supplied equipment etc., were instituted during two three-day "Review Meetings" that were held at 6-month intervals for the obstetricians and midwives assembled from all participating hospitals. Refresher training on contemporary management of the leading causes of maternal and foetal death was a constant feature of these meetings. Equipment supplied to each hospital ranged from routine delivery instruments, Vacuum Extractors, Electronic Foetal Monitoring Devices, family planning supplies, to Ultrasound Machines.

The facility MMR reported by this initiative compared to those by both the SOGON and Ondo State Government programmes; it observed initial annual declines, up till 2011, after which a slower increase ensued in the respective states. Pre-eclampsia/eclampsia, PPH, and late patient referrals were reported as leading contributors to maternal mortality. This was one of the few programmes that gave insight into the pattern of foetal deaths in Nigerian hospitals, revealing higher rates in Kaduna and Kano compared to FCT and Ondo State, a similar trend of initial drop in foetal deaths until 2011, and a slow increase thereafter. It observed that severity of maternal condition and late arrivals in the facilities for care were the two leading contributors to the foetal deaths.

The challenges encountered by the programme included: incomplete or confusing data entry on individual patients; frequent health workers stoppages, which interrupted services and continuity in data accumulation; and frequent damage to the supplied foetal monitoring devices.

The Partnership for Reviving Routine Immunisation in Northern Nigeria and Maternal Newborn and Child Health Initiative (PRRINN-MNCH)' Facility Maternal Death Review (FMDR)[6,7]

PRRINN-MNCH was a maternal, newborn and child health programme implemented in four states in Northern Nigeria (Jigawa, Yobe, Katsina, and Zamfara) between 2006 and 2013. Supported by DFID-UK and the Government of Norway, its implementation was facilitated by Save the Children and GRID Consulting. The programme started in 2006 as PRRINN, in pursuit of state-wide routine immunisation activities in the four states, but this was extended in 2008 to include maternal, newborn and child health promotion and became a combined programme, PRRIN-MNCH. Although the focus of the programme was MNCH, it also dwelt on governance issues and the inter-linkages between these and systems issues at primary health care (PHC) level, and did operations research. Whereas its MNCH programme covered the whole of Yobe and Zamfara States, it was directed at only half of Katsina State, with the exclusion of Jigawa State.

The programme sought to improve maternal and child health in northern Nigeria, and therefore contribute to the achievement of Nigeria's MDG 4 & 5 targets by improving effective access to MNCH (including routine immunisation) services in the four states. In this regard, it sought to improve delivery for routine immunisation and maternal, neonatal and child health services via the primary health care system by improving: their individual performance ratings; capacities to provide Routine Immunisation services; capacities to render Family Planning Services; and also provide Basic Emergency Obstetric & Newborn Care (BEmONC). In the context of its EmONC promoting efforts, PRRINN-MNCH established facility-based MDR

Kano and Kaduna State hospital in Nigeria. Int J Gynaecol Obstet. 2011;114:23–8.

6 Maternal Death Reviews (MDR) in Northern Nigeria: Experiences from PRRINN-MNCH Program.

7 Project Completion Review. Partnership for Reviving Routine Immunisation in Northern Nigeria – Maternal Newborn and Child Health Initiative, PRRINN-MNCH

processes in Katsina, Yobe, and Zamfara states in 2010, in pursuit of quality improvement in services.

An MDR Guidelines and tools were developed for northern Nigeria, using those from other settings; the tools included Notification Form, Review Form, Follow-up Form and Interview Guide, all of which received the endorsement of participating State governments. Selected staff of the health facility (HF) were designated members of Quality Improvement (QI) team and received training on MDR and were subsequently supported in carrying out maternal death reviews in their respective facilities. The team usually included a doctor (principal medical officer of the hospital or the doctor in charge of the maternity), the matron in charge of the maternity, the chief nursing officer, and the in-charges of the laboratory, operating theatre and the pharmacy department. In small EmONC facilities, sometimes a community member of the HF health committee, the Officer in-charge, MCH coordinator or PHC director of the Local Government Area (LGA) were involved as members.

Whenever deaths occurred, the QI team chair received notification and, he/she collected the deceased's casefile and conducted further interviews, where necessary, for sufficient information. The findings and recommendations of the team were communicated to the appropriate targets of the facility, health system and discussed at the quarterly LGA MDR meetings. Reinforcement of this MDR process was made through supportive supervisory visits to each facility, the training of selected members of each QI team to serve as supportive supervisors, and team of QI trainers were trained for each state to provide mentoring support and sustainable sources of QI team members in their domains.

An evaluation of this MDR process in 2013 was reported to have acknowledged the following successes: improved patient care from following management protocols; better utilization of available human resources; acquisition of essential and life-saving equipment and supplies; and responsive posting of additional skilled staff by the LGA and the State Hospital Management Board.

This MDR process encountered challenges that included: (1) an initial fear of blame of the health workers; (2) lateness, postponement and irregular timing of meetings, occasioned by staff shortages and high workload; (3) incomplete review of all maternal deaths in settings with high mortality; (4) high rate of staff attrition and transfers led to loss of QI team members and interruption of their schedules; and (5) poor documentation on patients, including the completion of MDR Form. Another notable challenge was the inertia exhibited by PHC directors and MNCH coordinators, both key health system supervisors, to monitor the MDR activities. The printing of all MDR tools were entirely left to PRRINN-MNCH, their incorporation into the State HMIS was not achieved.

Clinton Health Access Initiative (CHAI) Community-Based Health Information System (CBHIS)[8]

The high maternal and perinatal mortality in especially northern Nigeria, prompted CHAI to use support from Norwegian Agency for Development and Cooperation (NORAD) to collaborate with FMOH and the SMOH of Kaduna, Kano and Katsina States. This effort sought to "develop and implement a comprehensive and sustainable household-to-hospital approach that formally integrates community-based birth attendance into the health system to address critical gaps." It focused on averting preventable deaths that occur within 24 to 48 hours around birth through early identification of complications, prompt and effective management of delivery, and timely referral when necessary, in 30 LGAs of the target states.

It invested in a comprehensive approach that aimed at improving quality of care around the time of birth at all levels of care. Being cognizant of the high rate of homebirths in the target communities, it adopted the following strategies. First, it aimed to improve the quality of home births as a first step. Second, to simultaneously improving the lower level facilities to offer BEmONC and CEmONC services in readiness for anticipated increase in demand; third, it aimed for formal involvement of the TBAs in the health system, to serve as "first responders" in identifying, stabilizing and referring women and newborn for appropriate interventions. These strategies informed the implementation of the following activities: (1) linking and engaging TBAs for creating a continuum of care from household to hospital; (2) training SBAs and TBAs to recognise early warning signs, initiate treatment and promptly refer and transport to the nearest health; (3) providing skillful SBAs and TBAs with kits for supporting home delivery; (4) fully equipping and supplying PHCs with basic essential BEmONC supplies; (5) training and equipping hospitals and their staff to deliver CEmONC; (6) establishing functional emergency transport and communications systems and linking birth attendants and communities to use them; and (7) establishing effective management systems and protocols for reporting vital events.

8 Nancy Sloan. Evaluation of the Clinton Health Access Initiative Maternal Neonatal Health Programme in Nigeria. Final Report. November, 2016.

It is the last of these activities that is of especial interest to this discuss; it involved the revitalization, upgrade and expansion a dormant Community Based Health Management Information System (CBHMIS), a traditional reporting system that required respected community leaders to serve as key reporters of live births, stillbirths, maternal deaths, and neonatal deaths. The CHAI programme employed this CBHMIS to provide its MNH programme with reliable and easily accessible data on vital events in order to understand, monitor, and evaluate the communities' health status and programme outcomes, as there was no existing alternative national system for such purpose. The tools used for this system were developed from a process of review and adaptation of existing community-based data collection tools and revisions and endorsements of state governments and other partners. These tools were used to conduct two-day trainings for about 1,500 community leaders to operate the system in the target 30 LGAs.

The CHAI-CBHMIS data collection process started with the Ward Head compiling the names of live births and reported deaths related to pregnancy/maternity, the newborn period or still births in his immediate community. The Ward Head received support from Imam, who officiated a naming or burial ceremony, a TBA who attended a birth or witnessed the death of a newborn or stillborn child, or sensitised community members. This information was then submitted upwards to the Village Head, who entered the information in the CBHMIS registers. At monthly intervals, Village Heads submitted the information at the District Head's office. CHAI engaged field consultants known as Local Engagement Consultants (LECs) visited each District Head to collect the submitted data on all communities in the LGA and entered these into an excel-based file. The excel file was submitted to the respective CHAI State M&E officer, who collated the data for the 10 LGAs and entered the information into an Access Database which was then submitted to the CHAI National LGA M&E officer for final review and analysis. LGA level review meetings facilitated analyzing reporting rates of each LGA, retraining the community leaders on the process, and feeding leaders back on outcomes of previous submissions. In advance of these meetings, the CHAI State M&E officer analyzed and supplied reports on previous data to these meetings. The frequency of the review meetings was subsequently changed to quarterly.

In order to determine the effects of the MNH interventions of the CHAI programme in the three target states, an International consultant was commissioned to carry out its evaluation. Because of funding constraints, a household mapping and survey mode of evaluation was shelved in favour of a longitudinal analysis of the accumulated CBHMIS data. Highlights of the findings of the analysis, which covers January 2015 to June 2016, include:

Estimated population of people in the 30 LGAs within the three target states = 30 million

Total births	= 185, 522
Live births	= 181,247
Stillbirths	= 4,275
Maternal Deaths	= 866
Newborn Mortality Rate reduction	= 43% (statistically significant)
Stillbirth Rate reduction	= 15% (highly statistically significant)
Perinatal Mortality Rate reduction	= 27% (highly statistically significant)
Combined Stillbirth & Newborn Rate reduction	= 26% (highly statistically significant)
Maternal Mortality Ratio reduction	= 37% (statistically significant)

The main challenges mentioned in the evaluation report were those encountered early in the programme; there was under-reporting of births, which was detected early and corrected with intense retraining and supportive supervision of the CBHMIS implementers.

The Society of Gynecology & Obstetrics of Nigeria (SOGON) Maternal Death Review Programme in the Federal Capital Territory (FCT)[9]

Following the successful partnership of SOGON with the FMOH and FIGO for the adoption of nation-wide MDR scheme, the

9 Olugbenga Bello et al. Plenary presentation at the 9th International Congress of the Society of Gynaecology and Obstetrics of Nigeria, Abuja. 2015

organization deemed it necessary to deploy its expertise to demonstrate it within a health system. In this regard, it secured a three-year support from MacArthur Foundation and collaborated with the FCT administration to implement this national model with a pilot of the MDR at state, facility, and community levels.

The initiative was purposed to ultimately improve the quality of Maternal Health Care by garnering stakeholders' collaboration with SOGON to conduct MDR and simultaneously improve community confidence and use of Health facilities. Using a strategy of intimate implementation with the FCT administration, the earlier developed SOGON-FMOH MDR Guidelines and tools were used to establish an FCT-MDR Committee, randomly select three SHCs and one community served by each facility. After conducting trainings, facility MDR committees were established for the SHCs and Community MDR committees (CMDRC), by verbal autopsy (VA), for the three communities. Maternal deaths occurring within the SHCs were promptly collected by the MDR Officer, who completed the MDR Form in readiness for the MDR Committee's death review and recommendations for preventing recurrence of the modifiable factors, implementation of which is pursued. For births and deaths of women of reproductive age (WRA) occurring within the three communities and outside health facilities, the Ward/Community Leader (who is also the CMDRC Chair) is informed, who notifies the PHC In-charge (who is CMDRC Secretary). The latter confirms a maternal death, conducts a VA, and completes the appropriate form in readiness for the monthly CMDRC review meeting, where modifiable factors are identified and recommendations for their prevention made and subsequently tracked.

Although the facility and community committees are expected to routinely complete the supplied registers and submit copies of their completed MDR forms to their respective LGA M&E Officers, duplicate copies of these data are collected each month by a team of visiting project supervisors, comprising of the project manager and the FCT-MDR Committee Chair. Data assembled by these supervising visitors are entered into an Excel database in the project office.

The death review processes and data capture began in February 2015 and remains ongoing. Its facility MMR, of 161-398 per 100,000 births, has shown consistency with those published by the Rotary project for FCT SHCs and has revealed PPH, Pulmonary Edema with Cardiac Failure as the two leading causes of MM[10]. Retraining of maternity staff, drills on PPH management, installation of Electricity Power Inverters in the Blood Banks and improved supply of oxygen to the wards with mobile cylinders, were some of the committee recommendations upon which they acted. At the community level, a trend of diminishing maternal mortality is emerging. The programme has ignited the enthusiasm of the stakeholders, who have since embarked on community mobilization for improved PHC service use and negotiated with SHC medical directors for acceptance of "unbooked" patients referred to their facilities.

A mid-term project review of the SOGON project, recently conducted by independent evaluators, from the funding organization, published the following quotes on the project[11]:

"The reviews have been going on. We have seen positive results. There is improvement in the level of awareness and consciousness. There was a death at Kwali General Hospital due to delay at the PHC. This stimulated the need to talk to the Heads of PHCs in Kwali. We gave them a refresher – a reorientation on identification of danger signs and this has strengthened the referral system. —Professional association respondent, FCT"

"There is change in the health workers' attitude to work because they know that if a death occurs, everyone involved will, at the monthly meetings, give account of the role he or she played so that has put a check and has made them to rise to their responsibilities. In maternity, they are aware that we meet monthly. All those involved in the management of a patient are invited when a patient dies. Everyone is on his or her toes." —Facilities respondent, FCT."

Incessant health workers work stoppages, delays in data remittances and infrequent meeting of the state-level MDR Committee were the main challenges encountered. It is also instructive to note that state-level units of SOGON facilitated MDR processes in Delta, Ogun and Lagos States (as described in the respective states).

10 Hadiza Galadanci, Wolfgang Künzel, Robert Zinser, Oladapo Shittu, Stefanie Adams, Manfred Gruhl. Experiences of 6 years quality assurance in obstetrics in Nigeria – a critical review of results and obstacles. Journal of Perinatal Medicine. ISSN (Online) 1619-3997, ISSN (Print) 03005577, DOI: 10.1515/jpm-2014-0302, January 2015.

11 John D and Catherine T. MacArthur Foundation. Maternal Health Accountability-Related Grants in Nigeria - Midline Evaluation Report. February, 2016

National Primary Health Care Development Agency (NPHCDA) Maternal Death Review in the Northern States under the Midwifery Service Scheme (MSS)

In an effort to accelerate the reduction of maternal, newborn and child mortality, the Nigerian government established the Midwifery Service Scheme in 2009, to provide better access to skilled birth attendance and other MNCH services in rural communities. In the scheme, about 4,000 newly graduated, unemployed, and retired midwives were employed and deployed to 1,000 designated PHC sites across the country. As a means of quality assurance and monitoring the scheme, a "quarterly cluster monitoring exercise" involving the use of a checklist to determine the presence and activity of the staff and their challenges. A tool was developed and used for capturing routine MNCH data at the facilities.

The higher burden of maternal mortality in northern Nigeria prompted the NPHCDA to establish an MDR process into its MSS sites across the three geopolitical zones of northern Nigeria between July and December 2011. NPHCDA had earlier developed MDR tools, comprising Facility Review Forms, Maternal Death Review Forms, Maternal Death Notification Forms, Maternal Follow-up Forms, and Community Death Review Forms. After securing rapport with relevant stakeholders training of trainers and implementers of the scheme were conducted and committees established at three levels: facility, state, and national. Each Facility MDR Committee had four members whose responsibilities were to complete and remit Notification Forms on every maternal death; conduct review on each death; compile quarterly and annual review reports; derive recommendations and action plans from their reviews and ensure their implementation at both facility and community levels.

Each State MDR Committee had four members selected from the SMOH, School of Midwifery, THC/SHC (SOGON member), and a Development Partner. Their responsibilities were to facilitate maternal and neonatal death reviews at the MSS sites, support stakeholders to decipher the root causes of the deaths and institute preventive measures against recurrences, review the work of the Facility Committees, and provide immediate feedback. Zonal-level debriefing meetings were held periodically to discuss state-level reports, including their successes, challenges and build consensus on the way forward. National debriefing meetings were also held with similar objectives, the committee of which had the additional responsibilities of compiling and disseminating confidential enquiry reports and mobilizing resources for systems and MDR strengthening.

Deaths occurring within the facilities were appropriately documented and reviewed by the Facility MDR Committee. Community deaths occurring within the catchment communities of the MSS facility had verbal autopsy instituted, documented, and reviewed by the same Committee.

Between March and June 2012, an evaluation of the MDR scheme was undertaken with an analysis of data accumulated between July and December 2011. Out of 80,304 deliveries, there were 77,869 live births. A total of 141 maternal deaths were incurred; 51.8% of which occurred within the health facilities, 35.3% at home, and 13% in transit. An overall MMR of 181 per 100,000 live births were reported: 100 per 100,000 in the facilities and 81 per 100,000 live births at community level. Almost 81% of the deaths were due to direct causes, especially PPH and PET/Eclampsia. Out of the 19+1 states involved, no maternal deaths were recorded in Kaduna, Kwara, and Zamfara States, while Borno, Katsina, and Sokoto States had the highest mortalities.

The report was silent on the best practices and challenges encountered by this MDR processes.

In summary, the NPHCDA MDR scheme was a two-pronged audit process that was built into a nation-wide community-level MNH intervention that served to simultaneously monitor outcomes at facility and home levels.

Women's Health and Action Research Centre (WHARC) Maternal Death Review Programme in Lagos State

Women's Health and Action Research Centre (WHARC) is leading non-governmental, not-for-profit organization in Nigeria with the mission to promote the health and social well-being of women through research, documentation, and advocacy. Since 2014, the organization has collaborated with the Lagos State Ministry of Health to facilitate MDSR in three of its SHCs up to the time of compiling this report, for the purpose of researching into the processes, contexts, and outcomes, towards more effectiveness and efficiency of the scheme.

Lagos SMOH had earlier used the support of the local unit of SOGON to establish MDSR at state and facility levels throughout the state in 2014, akin to that established in Delta State and described earlier. The scheme adopted the FMOH-SOGON MDSR Guidelines and tools and conformed to their protocols.

As a work up to the partnership, WHARC had shared its MDSR operations research proposal and secured the approvals of the Lagos SMOH, its State MDSR Committee and the facility management and MDSR Committees of the three selected SHCs for the programme. WHARC assured of its commitment to confidentiality of any information obtained, and no names of specific patients were presented during the committee meetings and thereafter.

The WHARC approach involves embedding researcher(s) in the MDSR Committee of each of the three facility; they observe all of the proceedings of the monthly review meetings and have permission to take notes and make electronic recording of proceedings for subsequent accurate analysis. Previously, the organization had conducted awareness and methodology trainings to the hospital staff and committee members, to reinforce their capacities on MDSR. It has subsequently been providing logistics support to the committees.

Observations made and data compiled from this ongoing study have been very revealing of the strengths and weaknesses of the MDSR as is currently practiced and have been the subject of some publications already.[12,13] A third report on the programme, to be titled "Maternal Death Review in Three Hospitals in Lagos State, Nigeria, 2015-2016: Results and Outcomes" is nearing completion.

From one of these articles[12], a number of startling revelations were made from the observation of four MDR meetings; this study had used conversation and discourse analysis to identify patterns and strategies used in verbal and non-verbal interactions between MDR panel members. The findings included explicit reminders of the code of conduct, gentle enquiries, and instilling a sense of togetherness, which were used in doing no-name, no-blame. Additionally, participation was encouraged by several strategies including questioning, formulation, and invoking protocol; joint analysis and participatory decision-making was noted but limited. In managing personal accountability, members evaded responsibility by passing the buck. The authors concluded that, for MDRs to be effective in reducing maternal mortality, their conduct would need more investment in several areas.

These areas include training of staff on communication skills, and removal of concerns about blame and accountability in such meetings where 'higher' and 'lower' cadres of staff come together to discuss the death of clients under their care; additionally, trainings should raise the level of interest and commitment to the MDR process, to go well beyond conforming to guidelines.

In summary, the WHARC model is a research-laden complement of the Lagos State's Facility MDR, which involves a continuous contextual appraisal of the methods and outcomes of the MDR for more effectiveness.

The MNCH2 Programme in Six Northern States of Nigeria

The Nigerian Maternal, Neonatal, and Child Health programme (MNCH2) is a country-led programme, funded by the UK Government, that seeks to reduce maternal and child mortality in northern Nigeria. It builds on the preceding efforts of PRRINN-MNCH and PATHS 2 in the same region, and will span 2014 to 2019 in target six states: Jigawa, Kaduna, Kano, Katsina, Yobe, and Zamfara. In this regard, the programme seeks to improve the quality, coverage, and demand for integrated maternal, newborn and child health (MNCH), routine immunisation (RI) services, and healthy timing and spacing of pregnancy (HTSP), thus, ensuring a more holistic and culturally appropriate concept to accelerate reductions in maternal, newborn and child deaths. MNCH2 provided a package of technical assistance to the six states to broaden the coverage and range of integrated, cost-effective MNCH services and achieve a step-change improvement in quality of MNCH care.

It is on the backdrop of these objectives that this programme introduced MDR in its target states at state and facility levels in 2015, with an extension to the LGA/Community level in late 2015. It has since commenced a transitioning of these MDR processes to the MPDSR by building capacities for the inclusion of perinatal death reviews. The respective national guidelines and tools were adopted for implementing both audit processes.

This assessment effort has presented the levels of implementation of these audits in the programme's six target states in the Mapping report, while additional insight was provided by in-depth reports on Kano and Yobe States.

12 Hussein J, Hirose A, Owolabi O, Imamura M, Kanguru L, Okonofua F. Maternal death and obstetric audits in Nigeria: A systematic review of barriers and enabling factors in the provision of emergency care. Reproductive Health 2016; 13: 47.

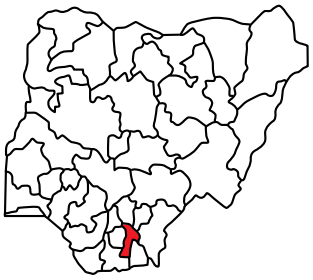
13 De Kok BC, Imamura M, Kanguru L, Owolabi T, Okonofua FE, Hussein J. Achieving accountability through maternal death reviews in Nigeria. A process analysis. Health Policy and Planning 2016 (Accepted for Publication)

APPENDIX 8: MPDSR State Profiles

Nigeria is Africa's most populous nation and accounts for nearly one-quarter of the continent's maternal, newborn, and child deaths. This appendix presents MPDSR State Profiles, which summarise the findings of the mapping analysis by state. Without data, there can be no accountability. Without accountability, we risk making no progress for Nigeria's women and children. The data included in these profiles come mainly from large-scale, periodic household surveys and interviews conducted with key stakeholders at the state level (Table A8.1). Continued efforts are necessary to strengthen MPDSR as well as improve civil registration, vital statistics and health management information systems, and the institutional capacity to gather and use these data.

Table A8.1: Notes and data sources

Indicator	Definition and data source
Population	State level populations are from the National Census of 2006 updated to 2012 levels
Maternal mortality ratio (national)	Annual number of deaths of women from pregnancy-related causes per 100,000 live births. The national maternal mortality ratio from the NDHS 2013 is used on each state profile because sub-national data are unavailable. The estimated number of maternal, neonatal and under-five deaths are calculated by applying the national and zonal mortality rates to the number of births for each state and for the country as a whole.
Perinatal mortality rate	Number of foetal deaths in foetuses born weighing ≥ 1000 g and/or after 28 completed weeks of gestation, plus neonatal deaths through the first 7 completed days after birth, expressed per 1,000 births. Data are zonal from the NDHS 2013.
Neonatal mortality rate	Deaths that occur during the first 28 days of life, expressed per 1,000 live births. Data are zonal from the NDHS 2013.
Facilities per 10,000 population	Data from the Federal Ministry of Health. Nigerian Health Facilities. 2012.
Number of Primary Health Centres	Data from the Federal Ministry of Health. Nigerian Health Facilities. 2012.
Number of Secondary Health Centres	Data from the Federal Ministry of Health. Nigerian Health Facilities. 2012.
Number of Tertiary Health Centres	Data from the Federal Ministry of Health. Nigerian Health Facilities. 2012.
Total Health Facilities	Data from the Federal Ministry of Health. Nigerian Health Facilities. 2012.
Previous maternal death review method(s)	Data from results of the Mapping Assessment
Year maternal death review started	Data from results of the Mapping Assessment
Previous perinatal death review method(s)	Data from results of the Mapping Assessment
Year perinatal death review started	Data from results of the Mapping Assessment
Current maternal death review method	Data from results of the Mapping Assessment
Current perinatal death review method	Data from results of the Mapping Assessment
State MPDSR Committee Formed	Data from results of the Mapping Assessment
State MPDSR Action Plan Developed	Data from results of the Mapping Assessment
State MPDSR Action Plan Costed	Data from results of the Mapping Assessment
MPDSR Facility Committees Formed	Data from results of the Mapping Assessment
MPDSR Community Committees Formed	Data from results of the Mapping Assessment
State MPDSR Data Collection System Exist	Data from results of the Mapping Assessment



ABIA STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

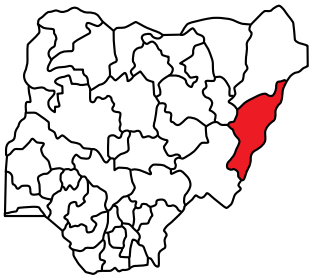
Background

Population	3,464,000
Maternal mortality ratio	576
Facility perinatal mortality rate	36
Facility neonatal mortality rate	37
Facilities per 10,000 population	2.1
Number of Primary Health Centres	518
Number of Secondary Health Centres	96
Number of Tertiary Health Centres	1
Total Health Facilities	615
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The Mapping Assessment observed that Clinical Audit was the process for maternal and perinatal death reviews used in all tertiary health centres and secondary health centres. Since participation in the FMOH MPDSR guidelines dissemination meeting, the state inaugurated a State MPDSR Committee and used support of UNFPA to establish facility MPDSR Committees in a total of nine tertiary health centres and secondary health centres. Reports are beginning to emerge from the committees.



ADAMAWA STATE

STATE PROFILE FOR
MATERNAL AND PERINATAL
DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	3,888,000
Maternal mortality ratio	576
Facility perinatal mortality rate	45
Facility neonatal mortality rate	43
Facilities per 10,000 population	3.2
Number of Primary Health Centres	998
Number of Secondary Health Centres	28
Number of Tertiary Health Centres	1
Total Health Facilities	1027
Previous maternal death review method(s)	Clinical Audit; F- MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

Adamawa State, NPHCDA introduced facility MDR to the MSS-PHCs and VA to their respective communities between the years 2011-2013, these were operated with its guidelines, tools and data collecting system. At the time of the Mapping Assessment (October 2016), only Clinical Audit processes were in use in the hospitals for maternal and perinatal death reviews. The State MPDSR Committee has been constituted and a costed Action Plan developed for implementing the programme in the state, and awaits funding and anticipated support from EU, UNFPA, or UNICEF.

AKWA IBOM STATE

STATE PROFILE FOR
MATERNAL AND PERINATAL
DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	4,786,000
Maternal mortality ratio	576
Facility perinatal mortality rate	37
Facility neonatal mortality rate	32
Facilities per 10,000 population	1.4
Number of Primary Health Centres	355
Number of Secondary Health Centres	187
Number of Tertiary Health Centres	1
Total Health Facilities	543
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✗
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The Mapping Assessment observed that Clinical Audit was the only process for maternal and perinatal death reviews used in its tertiary health centres and secondary health centres. Since the state participated in the FMOH MPDSR guidelines dissemination meeting, it constituted a State MPDSR Committee, but no further activity has taken place since; this is attributed to lack of funds and support.

ANAMBRA STATE

STATE PROFILE FOR
MATERNAL AND PERINATAL
DEATH SURVEILLANCE AND RESPONSE (2016)

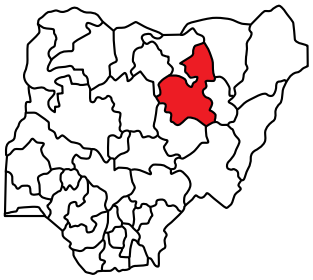
Background

Population	5,002,000
Maternal mortality ratio	576
Facility perinatal mortality rate	36
Facility neonatal mortality rate	37
Facilities per 10,000 population	3.6
Number of Primary Health Centres	1360
Number of Secondary Health Centres	123
Number of Tertiary Health Centres	2
Total Health Facilities	1485
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The Mapping Assessment observed that Clinical Audit was the process for maternal and perinatal death reviews used in tertiary health centres and secondary health centres. Since participation in the FMOH MPDSR guidelines dissemination meeting, the state inaugurated a State MPDSR Committee and used support of UNFPA to establish facility MPDSR Committees in a total of nine tertiary health centres and secondary health centres . Reports are beginning to emerge from the work of these committees.



BAUCHI STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

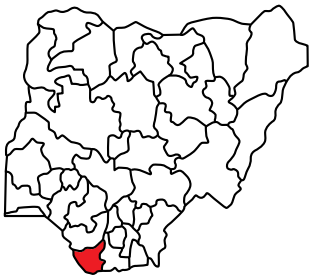
Background

Population	5,621,000
Maternal mortality ratio	576
Facility perinatal mortality rate	45
Facility neonatal mortality rate	43
Facilities per 10,000 population	2.2
Number of Primary Health Centres	1010
Number of Secondary Health Centres	22
Number of Tertiary Health Centres	2
Total Health Facilities	1034
Previous maternal death review method(s)	Clinical Audit; F- MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

NPHCDA introduced facility MDR to the MSS-PHCs and VA to their respective communities from 2011-2013; these were operated with its guidelines, tools, and data collecting system. At the time of the Mapping Assessment, only Clinical Audit processes were in use in the hospitals for maternal and perinatal death reviews. The State MPDSR Committee has been formed and a costed Action Plan developed for implementing the programme in the state, and awaits funding and support.



BAYELSA STATE

STATE PROFILE FOR
MATERNAL AND PERINATAL
DEATH SURVEILLANCE AND RESPONSE (2016)

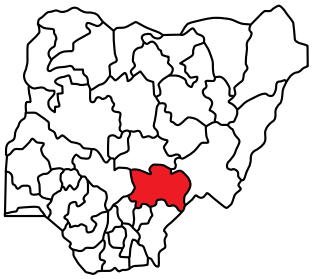
Background

Population	2,023,000
Maternal mortality ratio	576
Facility perinatal mortality rate	37
Facility neonatal mortality rate	32
Facilities per 10,000 population	1.4
Number of Primary Health Centres	172
Number of Secondary Health Centres	59
Number of Tertiary Health Centres	1
Total Health Facilities	232
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✗
State MPDSR Action Plan Developed	✗
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The Mapping Assessment observed that Clinical Audit was the only process for maternal and perinatal death reviews being used in its tertiary health centres and secondary health centres. Since the state participated in the FMOH MPDSR guidelines dissemination meeting, no activity has taken place since (an MPDSR Committee is yet to be formed); this is attributed to lack of funds and support.



BENUE STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

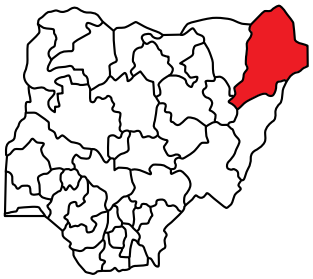
Background

Population	5,045,000
Maternal mortality ratio	576
Facility perinatal mortality rate	34
Facility neonatal mortality rate	35
Facilities per 10,000 population	2.9
Number of Primary Health Centres	1111
Number of Secondary Health Centres	94
Number of Tertiary Health Centres	1
Total Health Facilities	1206
Previous maternal death review method(s)	Clinical Audit; F- MPDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The NPHCDA introduced facility MDR to the MSS-PHCs and VA to its communities between 2011-1013, these were operated with its guidelines, tools, and data collecting system. At the time of the Mapping Assessment, only Clinical Audit processes were in use in the hospitals for maternal and perinatal death reviews. The State MPDSR Committee has been constituted and a costed Action Plan for implementing the programme in the state has been developed, and awaits funding and support.



BORNO STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

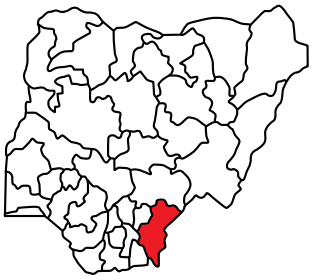
Background

Population	4,895,000
Maternal mortality ratio	576
Facility perinatal mortality rate	45
Facility neonatal mortality rate	43
Facilities per 10,000 population	1.1
Number of Primary Health Centres	421
Number of Secondary Health Centres	52
Number of Tertiary Health Centres	1
Total Health Facilities	474
Previous maternal death review method(s)	Clinical Audit; F-MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The NPHCDA introduced facility MDR to the MSS-PHCs and VA to their respective communities between 2011-1013, and these were operated using its guidelines, tools, and data collecting system. At the time of the Mapping Assessment, only Clinical Audit processes were in use in the hospitals for maternal and perinatal death reviews. The State MPDSR Committee has been formed and a costed Action Plan developed for implementing the programme, but the state awaits funding and likely support from UNICEF or UNFPA.



CROSS RIVER STATE

STATE PROFILE FOR
MATERNAL AND PERINATAL
DEATH SURVEILLANCE AND RESPONSE (2016)

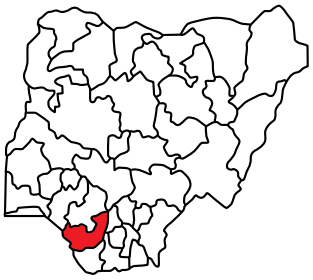
Background

Population	3,508,000
Maternal mortality ratio	576
Facility perinatal mortality rate	37
Facility neonatal mortality rate	32
Facilities per 10,000 population	2.5
Number of Primary Health Centres	593
Number of Secondary Health Centres	139
Number of Tertiary Health Centres	2
Total Health Facilities	734
Previous maternal death review method(s)	Clinical Audit; F-MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	State and Facility level MDR
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

Community MDR by VA was first introduced to the state in 2010 by Chanrai Foundation, the programme was continued by DPHC-SPHCDA until 2014. SOGON started facility MDR in all secondary health centres in 2014. The Mapping Assessment observed MDR activities in eight hospitals (1 tertiary health centre and 7 secondary health centres); all the remaining hospitals were still using Clinical Audit for maternal and perinatal death reviews. After participation in the FMOH MPDSR guidelines dissemination meeting, a State MPDSR Committee was formed and a costed Action Plan was developed, but no other activity held thereafter.



DELTA STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	4,972,000
Maternal mortality ratio	576
Facility perinatal mortality rate	37
Facility neonatal mortality rate	32
Facilities per 10,000 population	2.2
Number of Primary Health Centres	820
Number of Secondary Health Centres	102
Number of Tertiary Health Centres	2
Total Health Facilities	924
Previous maternal death review method(s)	Clinical Audit; State and Facility level MDR;
Year maternal death review started	2014
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	State and facility level MDR
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

In 2014, West African Health Organization embarked upon a pilot Community-based Death Review scheme in partnership with SPHCDA & SMOH, which led to the establishment of facility- and state-level MDR processes, in partnership with SOGON in 2014. The Mapping Assessment observed facility MDR in 12 hospitals (1 tertiary health centre and 11 secondary health centres); they used the FMOH-SOGON MDR guidelines and tools. All the other hospitals in the state use Clinical Audit for reviewing maternal and perinatal deaths. A State MPDSR Committee was inaugurated and a costed action plan developed but transitioning from MDR into MPDSR is pending.

EBONYI STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

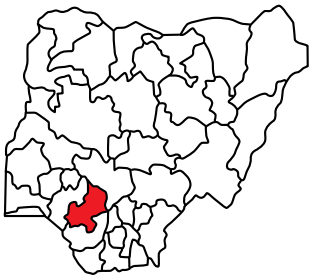
Background

Population	2,584,000
Maternal mortality ratio	576
Facility perinatal mortality rate	36
Facility neonatal mortality rate	37
Facilities per 10,000 population	2.6
Number of Primary Health Centres	516
Number of Secondary Health Centres	48
Number of Tertiary Health Centres	3
Total Health Facilities	567
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✗
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The Mapping Assessment observed that Clinical Audit was the process for maternal and perinatal death reviews used in its tertiary health centres and secondary health centres. Since the state participated in the FMOH MPDSR guidelines dissemination, it inaugurated a State MPDSR Committee that is yet to commence work, as it awaits funding and support.



EDO STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	3,979,000
Maternal mortality ratio	576
Facility perinatal mortality rate	37
Facility neonatal mortality rate	32
Facilities per 10,000 population	2.9
Number of Primary Health Centres	817
Number of Secondary Health Centres	47
Number of Tertiary Health Centres	6
Total Health Facilities	924
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

Edo State had no formal introduction of audit process before the advent of the MPDSR. The Mapping Assessment observed that all the hospitals in this state employed Clinical Audit for reviewing maternal and perinatal deaths. After participation in the FMOH MPDSR guidelines dissemination meeting, a State MPDSR Committee was constituted and a costed work-plan was developed that awaits funding & support. This state has a law that seeks to promote MNCH, including MDR, but it is yet to be implemented.

EKITI STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	2,848,000
Maternal mortality ratio	576
Facility perinatal mortality rate	39
Facility neonatal mortality rate	61
Facilities per 10,000 population	1.9
Number of Primary Health Centres	395
Number of Secondary Health Centres	62
Number of Tertiary Health Centres	6
Total Health Facilities	459
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✗
State MPDSR Action Plan Developed	✗
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The Mapping Assessment found that Clinical Audit was the only process for maternal and perinatal death reviews used in its tertiary health centres and secondary health centres. Since the state participated in the FMOH MPDSR guidelines dissemination meeting, no major step has been taken towards implementation of the scheme in the state, and non-availability of funds and support was advanced as the responsible factor.

ENUGU STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

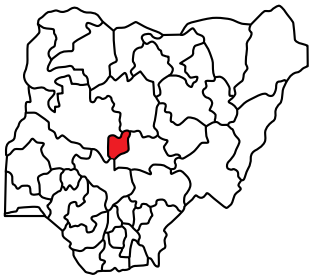
Background

Population	3,990,000
Maternal mortality ratio	576
Facility perinatal mortality rate	36
Facility neonatal mortality rate	37
Facilities per 10,000 population	2.7
Number of Primary Health Centres	524
Number of Secondary Health Centres	342
Number of Tertiary Health Centres	2
Total Health Facilities	868
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✗
State MPDSR Action Plan Developed	✗
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The Mapping Assessment observed that clinical Audit was the only process for maternal and perinatal death reviews used in its tertiary health centres and secondary health centres. Since the state participated in the FMOH MPDSR guidelines dissemination, no major step has been taken towards implementation of the scheme in the state.



FCT-ABUJA STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

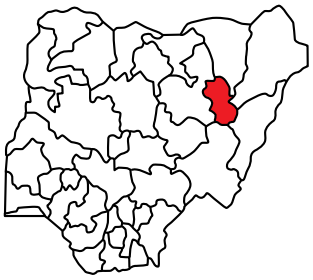
Background

Population	1,681,000
Maternal mortality ratio	576
Facility perinatal mortality rate	34
Facility neonatal mortality rate	35
Facilities per 10,000 population	5.2
Number of Primary Health Centres	638
Number of Secondary Health Centres	93
Number of Tertiary Health Centres	7
Total Health Facilities	738
Previous maternal death review method(s)	Clinical Audit; State and Facility MDR; Community Verbal Autopsy
Year maternal death review started	2008
Previous perinatal death review method(s)	Clinical Audit; Facility Perinatal Death Reviews
Year perinatal death review started	2008
Current maternal death review method	Clinical Audit; State and Facility MDR; Community Verbal Autopsy
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✗
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✓
State MPDSR Reports Exist	✗

Rotary International first introduced maternal and foetal death audit to five of its secondary health centres in 2011-2015; this used its own data collection system and its analysis and review was held outside the FCT. In 2011-2013, the NPHCDA established MDR in MSS-PHCs and VA processes in their respective communities; it used its own tools and data collecting system, a single multistate analysis and review was published in 2014. A third audit system was introduced by SOGON in 2014; this established MDSR Committees at the state-level, in three secondary health centres (for MDR) and three communities (for VA). It employed the prevailing national FMOH-SOGON MDSR guidelines and tools and simultaneously used the FCT and project data collecting systems. At the time of the Mapping Assessment, only this SOGON audit was running in the three secondary health centres and three communities; all the other tertiary health centres and secondary health centres operated the Clinical audit for both maternal and perinatal death reviews. The FCT recently transformed its existing MDSR Committee into a MPDSR Committee, retaining its chair and some members. The committee has developed no action plan.



GOMBE STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

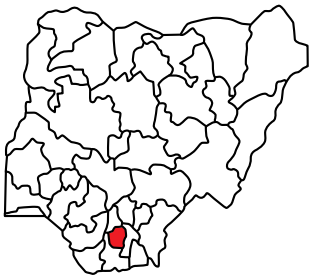
Background

Population	2,807,000
Maternal mortality ratio	576
Facility perinatal mortality rate	45
Facility neonatal mortality rate	43
Facilities per 10,000 population	2.2
Number of Primary Health Centres	508
Number of Secondary Health Centres	22
Number of Tertiary Health Centres	1
Total Health Facilities	531
Previous maternal death review method(s)	Clinical Audit; F-MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✗
State MPDSR Action Plan Developed	✗
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The NPHCDA's facility MDR community VA were respectively introduced into the state's MSS-PHCs and their respective communities between 2011-1013, and these were operated with its guidelines, tools and data collecting system. At the time of this Mapping Assessment, only Clinical Audit processes were in use in the hospitals for maternal and perinatal death reviews. Since participation in the FMOH MPDSR Guidelines dissemination meeting in 2015, no major step has been taken towards implementing the MPDSR in the state.



IMO STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

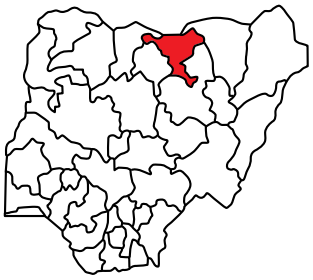
Population	4,767,000
Maternal mortality ratio	576
Facility perinatal mortality rate	36
Facility neonatal mortality rate	37
Facilities per 10,000 population	3.4
Number of Primary Health Centres	805
Number of Secondary Health Centres	531
Number of Tertiary Health Centres	2
Total Health Facilities	1338
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The Mapping Assessment observed that Clinical Audit was the process for reviewing maternal and perinatal deaths used in its most of its tertiary health centres and secondary health centres.

Since participation in the FMOH MPDSR guidelines dissemination meeting, the state inaugurated a State MPDSR Committee and used support of UNFPA and UNICEF to establish State and some facility MPDSR Committees. MPDSR data collecting system has been delineated but reports are awaited.



JIGAWA STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

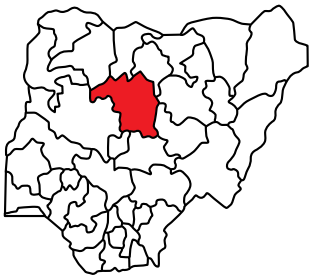
Background

Population	5,172,000
Maternal mortality ratio	576
Facility perinatal mortality rate	44
Facility neonatal mortality rate	44
Facilities per 10,000 population	1.4
Number of Primary Health Centres	598
Number of Secondary Health Centres	14
Number of Tertiary Health Centres	2
Total Health Facilities	614
Previous maternal death review method(s)	Clinical Audit; State and Facility MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit; State and Facility levels MDR
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✗
State MPDSR Action Plan Developed	✗
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The NPHCDA introduced MDR to MSS-PHCs and VA to their communities in 2011-2013; it used its own tools and data collecting system, and a single multistate analysis and review was published in 2014. Subsequently, the SMOH used some support from Evidence-for-Action (Mamaye-UKAID) to establish MDR in 14 hospitals (1 tertiary health centre and 13 secondary health centres). These MDR committees use visitation, e-mails, and meeting with relevant SMOH Officers to give feedback on outcomes of their reviews. Some of the successes recorded from this MDR system are the introduction of free MNCH services that covers caesarean sections and postoperative medications in the state. The Mapping Assessment also observed that since participation in the FMOH MPDSR Guidelines dissemination meeting, no major step has been taken towards transitioning from MDR into MPDSR in the state. Clinical Audit is still practiced in the remaining tertiary health centre in the state.



KADUNA STATE

STATE PROFILE FOR
MATERNAL AND PERINATAL
DEATH SURVEILLANCE AND RESPONSE (2016)

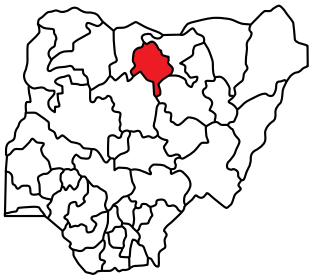
Background

Population	7,354,000
Maternal mortality ratio	576
Facility perinatal mortality rate	44
Facility neonatal mortality rate	44
Facilities per 10,000 population	2.6
Number of Primary Health Centres	1551
Number of Secondary Health Centres	33
Number of Tertiary Health Centres	4
Total Health Facilities	1588
Previous maternal death review method(s)	Clinical Audit; Facility & State level MDR; Community Verbal Autopsy
Year maternal death review started	2008
Previous perinatal death review method(s)	Clinical Audit; Facility PDR; Community Verbal Autopsy
Year perinatal death review started	2008
Current maternal death review method	Clinical Audit; Facility & State level MDR; Community Verbal Autopsy
Current perinatal death review method	Clinical Audit; Community Verbal Autopsy

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✓
State MPDSR Data Collection System Exist	✓
State MPDSR Reports Exist	✓

This state has hosted five audit processes. The Rotary International's facility MDR & PDR operated in 2008-2015 involving five secondary health centres. They used their own guidelines and tools. The NPHCDA introduced MDR to MSS-PHCs and VA to their communities in 2011-2013 using their own tools and data collecting system. CHAI's effort at preventing maternal and newborn deaths within the 48-hour perimeter-birthing period linked to their work with CBHMIS in 2014-2016. MNCH2 programme embarked on statewide facility MDR at the outset and is now transforming to MPDSR at state, facility, and community levels. In all the tertiary health centres and remaining secondary health centres, Clinical Audit was still being used for maternal and perinatal death reviews. At the time of time of this Mapping Assessment, MPDSR was well established with 31 functional committees as follows: one at state-level, 19 in secondary health centres, and 11 community-based ones domiciled in primary health centres. The state programme uses the national guidelines: chaired by an obstetrician; uses prescribed internal reporting system; sends feedback to health personnel, facility managers and SMOH, using letters and meetings to do so. Improvements credited to these audit processes include better blood banking and transfusion services, supply of electricity power generators where needed, and improved staff postings. Some reports on MPDSR are available in the state.



KANO STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

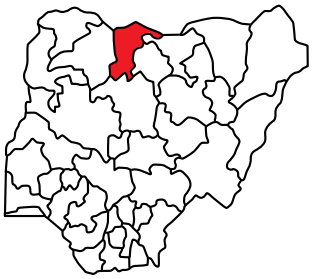
Background

Population	11,219,000
Maternal mortality ratio	576
Facility perinatal mortality rate	44
Facility neonatal mortality rate	44
Facilities per 10,000 population	1.3
Number of Primary Health Centres	1142
Number of Secondary Health Centres	39
Number of Tertiary Health Centres	2
Total Health Facilities	1183
Previous maternal death review method(s)	Clinical Audit; State & Facility level MDR; Community Verbal Autopsy
Year maternal death review started	2008
Previous perinatal death review method(s)	Clinical Audit; Facility PDR; Community Verbal Autopsy
Year perinatal death review started	2008
Current maternal death review method	Clinical Audit; Facility & State level MDR; Community Verbal Autopsy
Current perinatal death review method	Clinical Audit; Community Verbal Autopsy

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✓
State MPDSR Data Collection System Exist	✓
State MPDSR Reports Exist	✓

This state has hosted five audit processes. The Rotary International's facility MDR & PDR operated in 2008-2015 involving five secondary health centres. They used their own guidelines and tools. The NPHCDA introduced MDR to MSS-PHCs and VA to their communities in 2011-2013 using their own tools and data collecting system. CHAI's effort at preventing maternal and newborn deaths within the 48-hour perimeter-birthing period linked to their work with CBHMIS in 2014-2016. MNCH2 programme embarked on statewide facility MDR at the outset and is now transforming to MPDSR at State, facility, and community levels. In all the tertiary health centres and remaining secondary health centres, Clinical Audit was still being used for maternal and perinatal death reviews. At the time of time of this Mapping Assessment, MPDSR was well established with 47 functional committees as follows: one at state-level, 18 in secondary health centres, and 28 community-based ones domiciled in primary health centres. The state programme uses the national guidelines: chaired by an obstetrician; uses prescribed internal (state, LGA and community) reporting system; report directly to the Hospitals Management Board, and a quarterly Stakeholders' meeting; send feedback to health personnel, facility managers and SMOH, using letters and meetings to do so. Improvements credited to these audit processes include knowledge and tracking of maternal and perinatal mortalities and their causes, better blood banking and transfusion services, and improved staff commitment to work.



KATSINA STATE

STATE PROFILE FOR
MATERNAL AND PERINATAL
DEATH SURVEILLANCE AND RESPONSE (2016)

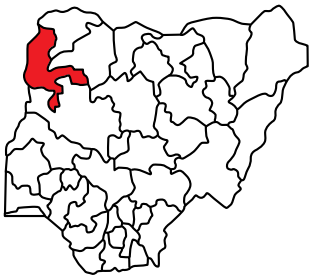
Background

Population	6,979,000
Maternal mortality ratio	576
Facility perinatal mortality rate	44
Facility neonatal mortality rate	44
Facilities per 10,000 population	2.6
Number of Primary Health Centres	1463
Number of Secondary Health Centres	32
Number of Tertiary Health Centres	1
Total Health Facilities	1496
Previous maternal death review method(s)	Clinical Audit; State & Facility level MDR; Community Verbal Autopsy
Year maternal death review started	2008
Previous perinatal death review method(s)	Clinical Audit; Community Verbal Autopsy
Year perinatal death review started	2015
Current maternal death review method	Clinical Audit; State and Facility level MDR; Community Verbal Autopsy
Current perinatal death review method	Clinical Audit; Community Verbal Autopsy

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✓
State MPDSR Data Collection System Exist	✓
State MPDSR Reports Exist	✓

Katsina State was one of the three earliest beneficiaries of programmatic audit processes that was introduced by PRRINN-MNCH in 2008-2013 to cover all the hospitals in the state as integral part of its pursuit of quality improvement in obstetric care; it used programme-designed guidelines and tools, and used facility, LGA and State officials to operate the scheme. The second audit process introduced to this state was that by the NPHCDA, which introduced MDR to MSS-PHCs and VA to their communities in 2011-2013; it used its own tools and data collecting system, and a single multistate analysis and review was published in 2014. The third was CHAI's effort at preventing maternal and newborn deaths within the 48-hour perimeter-birthing period linked to their work with CBHMIS in 2014-2016. The fourth and latest audit process established is the ongoing MNCH2 programme with statewide facility MDR at the outset and now transforming to MPDSR at State, facility, and community levels. In all the tertiary health centres and remaining secondary health centres within the state, Clinical Audit was still being used for maternal and perinatal death reviews. At the time of time of this Mapping Assessment, MPDSR was well established with 21 functional committees as follows: one at state-level, 15 in secondary health centres, and 5 community-based ones domiciled in primary health centres. The state programme uses the national guidelines: chaired by an obstetrician; uses prescribed internal reporting system; sends feedback to health personnel, facility managers and SMOH, using advocacy visits and meetings to do so. A data collecting system is already in place and some MPDSR reports are available. Some reports on MPDSR are available in the state.



KEBBI STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

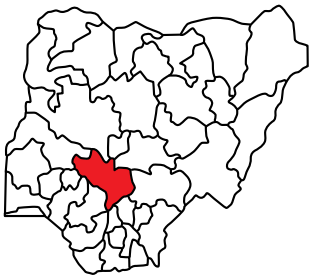
Population	3,906,000
Maternal mortality ratio	576
Facility perinatal mortality rate	44
Facility neonatal mortality rate	44
Facilities per 10,000 population	1.3
Number of Primary Health Centres	380
Number of Secondary Health Centres	31
Number of Tertiary Health Centres	1
Total Health Facilities	412
Previous maternal death review method(s)	Clinical Audit; State & Facility level MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit; Facility & State level MDR
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✓
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

This was one of the 19+1 northern states of Nigeria that benefited from the NPHCDA's MDR and VA processes established in the MSS-PHCs and VA to their communities in 2011-2013; it used its own tools and data collecting system, and a single multistate analysis and review was published in 2014.

The Mapping Assessment observed that the SMOH had used support from MSH, UNICEF and UNFPA to establish MDSR at state and facility levels in early 2015, involving a total of 13 facilities (3 secondary health centres and 10 PHCs), and these are being transitioned into MPDSR since the FMOH guidelines dissemination meeting held in late 2015.



KOGI STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	4,051,000
Maternal mortality ratio	576
Facility perinatal mortality rate	34
Facility neonatal mortality rate	35
Facilities per 10,000 population	3.2
Number of Primary Health Centres	868
Number of Secondary Health Centres	208
Number of Tertiary Health Centres	1
Total Health Facilities	1077
Previous maternal death review method(s)	Clinical Audit; F- MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit;
Current perinatal death review method	Clinical Audit

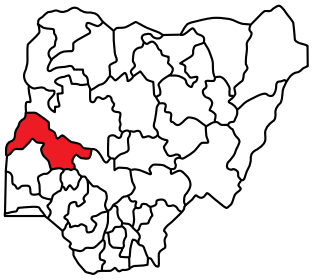
Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

NPHCDA introduced facility MDR to the MSS-PHCs and VA to its communities between 2011-1013, these were operated with its guidelines, tools, and data collecting system.

At the time of the Mapping Assessment, only Clinical Audit processes were in use in the hospitals for maternal and perinatal death reviews.

The State MPDSR Committee has been constituted and a costed Action Plan developed for implementing the programme in the state, and awaits funding and support.



KWARA STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	2,872,000
Maternal mortality ratio	576
Facility perinatal mortality rate	34
Facility neonatal mortality rate	35
Facilities per 10,000 population	3.1
Number of Primary Health Centres	575
Number of Secondary Health Centres	164
Number of Tertiary Health Centres	1
Total Health Facilities	740
Previous maternal death review method(s)	Clinical Audit; F- MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit;
Current perinatal death review method	Clinical Audit

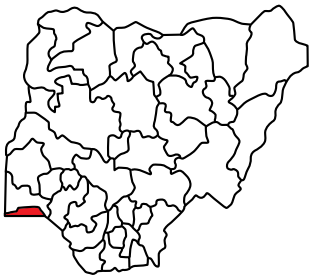
Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The NPHCDA introduced facility MDR to the MSS-PHCs and VA to its communities between 2011-1013, these were operated with its guidelines, tools, and data collecting system.

At the time of the Mapping Assessment, only Clinical Audit processes were in use in the hospitals for maternal and perinatal death reviews.

The State MPDSR Committee has been constituted and a costed Action Plan for implementing the programme has been developed, and the state awaits funding and support.



LAGOS STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	10,957,000
Maternal mortality ratio	576
Facility perinatal mortality rate	39
Facility neonatal mortality rate	61
Facilities per 10,000 population	2.5
Number of Primary Health Centres	1786
Number of Secondary Health Centres	460
Number of Tertiary Health Centres	7
Total Health Facilities	2253
Previous maternal death review method(s)	Clinical Audit; State and Facility level MDR
Year maternal death review started	2014
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	State and Facility level MDR
Current perinatal death review method	Clinical Audit

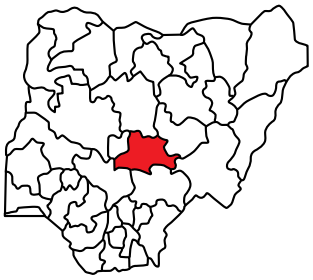
Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✓
State MPDSR Data Collection System Exist	✓
State MPDSR Reports Exist	✓

State and facility level MDR were established in the state in 2014 by the SMOH, using the partnership and support of SOGON, Evidence4Action (Mamaye-UKAID), UNFPA and WHARC. The MDR process was transitioned into MPDSR in June 2016, after trainings were held for all the facility MPDSR committee members.

The Mapping Assessment observed the existence of functional MPDSR Committees at state level and in a total of 23 hospitals (1THC and 22 secondary health centres), existence of a data collecting system, and existence of reports from the preceding MDR process. The committees report to the SMOH and gave feedbacks by direct visits to facility managers and health personnel.

Some of the recorded successes of the scheme are the expansion of ICU services in each hospital; provision of Scooters for transporting Blood from the state's Central Blood Bank to requesting hospitals, in order to beat the heavy Lagos traffic.



NASAWARA STATE

STATE PROFILE FOR
MATERNAL AND PERINATAL
DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	2,219,000
Maternal mortality ratio	576
Facility perinatal mortality rate	34
Facility neonatal mortality rate	35
Facilities per 10,000 population	4.9
Number of Primary Health Centres	874
Number of Secondary Health Centres	33
Number of Tertiary Health Centres	2
Total Health Facilities	909
Previous maternal death review method(s)	Clinical Audit; F- MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

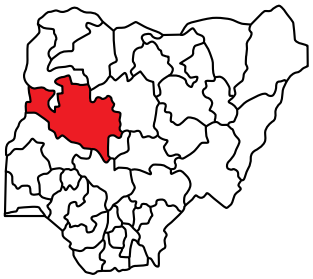
Status of MPDSR

State MPDSR Committee Formed	✗
State MPDSR Action Plan Developed	✗
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The NPHCDA introduced facility MDR to the MSS-PHCs and VA to its communities between 2011-1013, these were operated with its guidelines, tools, and data collecting system.

At the time of the Mapping Assessment, only Clinical Audit processes were in use in its hospitals for maternal and perinatal death reviews.

Since participating in the FMOH MPDSR guidelines dissemination meeting, no major activity has been accomplished towards establishing the scheme in this State.



NIGER STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	4,786,000
Maternal mortality ratio	576
Facility perinatal mortality rate	34
Facility neonatal mortality rate	35
Facilities per 10,000 population	3.4
Number of Primary Health Centres	1322
Number of Secondary Health Centres	12
Number of Tertiary Health Centres	1
Total Health Facilities	1335
Previous maternal death review method(s)	Clinical Audit; Facility level MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The NPHCDA established facility MDR to the MSS-PHCs and VA to its communities in 2011-1013, and these were operated with its guidelines, tools, and data collecting system.

At the time of the Mapping Assessment, only Clinical Audit processes were in use in its hospitals for maternal and perinatal death reviews.

The State MPDSR Committee has been constituted and an Action Plan and developed, which is awaiting costing, funding and support.

OGUN STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	4,439,000
Maternal mortality ratio	576
Facility perinatal mortality rate	39
Facility neonatal mortality rate	61
Facilities per 10,000 population	4.1
Number of Primary Health Centres	1373
Number of Secondary Health Centres	144
Number of Tertiary Health Centres	3
Total Health Facilities	1520
Previous maternal death review method(s)	Clinical Audit; State and Facility level MDR; Community Verbal Autopsy
Year maternal death review started	2014
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	State and Facility level MDR
Current perinatal death review method	Clinical Audit

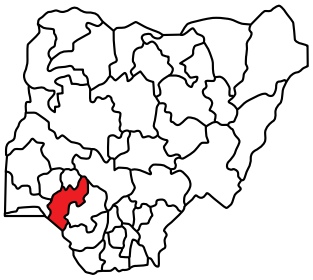
Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✓
State MPDSR Reports Exist	✗

MDR was introduced to the state and facility levels in 2014, through the partnership of the SMOH with UNFPA.

The Mapping Assessment observed existence of MDR committees at state and Facility levels in the state; they sent their recommendations to the SMOH, facility managers by assigning focal persons to deliver them when conducting monitoring visits to the hospitals.

Some successes reported from the scheme include the procurement and supplies of anti-shock garments for resuscitating hemorrhaging patients, operating Theatre Tables and essential equipment such as Sphygmomanometers.



ONDO STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

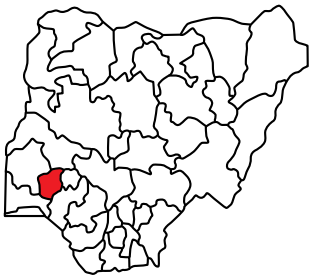
Population	4,142,000
Maternal mortality ratio	576
Facility perinatal mortality rate	39
Facility neonatal mortality rate	61
Facilities per 10,000 population	2.3
Number of Primary Health Centres	769
Number of Secondary Health Centres	40
Number of Tertiary Health Centres	2
Total Health Facilities	811
Previous maternal death review method(s)	Clinical Audit; Confidential Enquiry (on maternal morality); State & Facility MDR
Year maternal death review started	2009
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	State and Facility level & LGA- death reviews
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✓
State MPDSR Data Collection System Exist	✓
State MPDSR Reports Exist	✗

Ondo State was the first to establish a Confidential Enquiry on Maternal Mortality scheme in the country, 2009 and the process was initiated by the state governor, a physician, who disclosed it was prompted by the high maternal mortality he met in the state. An enforcing law was enacted to ensure prompt reporting of every maternal death, irrespective of where it occurred. Review of the deaths were carried out by the State Confidential Enquiry Committee (CEMDOS), who made recommendations to the Commissioner for Health, facility mangers, health personnel and community leaders, using telephone calls. With the advent of FMOH-SOGON MDR guidelines in 2014, the state established facility MDR committees, to strengthen the scheme.

The Mapping Assessment found the existence of MDR committees at the state (CEMDOS) and facility levels and observed that the process of transitioning them to MPDSR had begun; costed Action Plan had been developed, and re-training of committee members had taken place, with support from the SMOH and Mamaye-UKAID. A number of successes were reported using the audit models. Examples provided during the mapping assessment include the organization of more efficient referral of patients with Preterm Rupture of Membranes (PROM); Institutionalization of MgSO4 use for treating the leading cause of maternal death – pre-eclampsia/eclampsia; and the establishment of fake drugs detection mechanism.



OSUN STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	4,130,000
Maternal mortality ratio	576
Facility perinatal mortality rate	39
Facility neonatal mortality rate	61
Facilities per 10,000 population	3.2
Number of Primary Health Centres	1031
Number of Secondary Health Centres	60
Number of Tertiary Health Centres	4
Total Health Facilities	1095
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

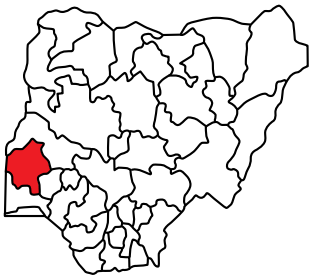
Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

Osun State had no formal introduction of any audit process before the advent of the MPDSR.

The Mapping Assessment observed that all the hospitals used Clinical Audit for reviewing maternal and perinatal deaths in the state.

After participation in the FMOH MPDSR guidelines dissemination meeting, an MPDSR committee was formed that developed and Action Plan that is awaiting costing, funding and implementation.



OYO STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	6,679,000
Maternal mortality ratio	576
Facility perinatal mortality rate	39
Facility neonatal mortality rate	61
Facilities per 10,000 population	2.2
Number of Primary Health Centres	763
Number of Secondary Health Centres	470
Number of Tertiary Health Centres	4
Total Health Facilities	1237
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

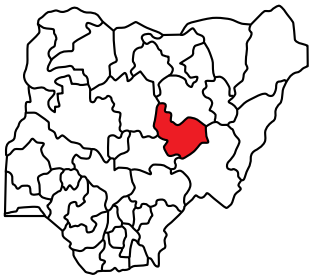
Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

There was no formal introduction of any audit process to this state before the advent of the MPDSR.

The Mapping Assessment observed that all the hospitals used Clinical Audit for reviewing maternal and perinatal deaths in the state.

After participation in the FMOH MPDSR guidelines dissemination meeting, an MPDSR committee was formed that developed and Action Plan that is awaiting costing, funding and implementation.



PLATEAU STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	3,851,000
Maternal mortality ratio	576
Facility perinatal mortality rate	34
Facility neonatal mortality rate	35
Facilities per 10,000 population	2.6
Number of Primary Health Centres	833
Number of Secondary Health Centres	49
Number of Tertiary Health Centres	1
Total Health Facilities	883
Previous maternal death review method(s)	Clinical Audit; F-MPDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

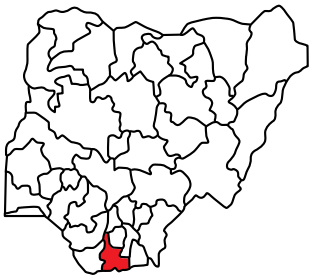
Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The NPHCDA introduced facility MDR to the MSS-PHCs and VA to their respective communities between 2011-1013, and these were operated with its guidelines, tools and data collecting system.

At the time of the Mapping Assessment, only Clinical Audit processes were in use in the hospitals for maternal and perinatal death reviews.

The State MPDSR Committee has been formed and a costed Action Plan developed for implementing the programme, but the state awaits funding and support.



RIVERS STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	6,330,000
Maternal mortality ratio	576
Facility perinatal mortality rate	37
Facility neonatal mortality rate	32
Facilities per 10,000 population	0.9
Number of Primary Health Centres	417
Number of Secondary Health Centres	54
Number of Tertiary Health Centres	5
Total Health Facilities	476
Previous maternal death review method(s)	Clinical Audit
Year maternal death review started	-
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

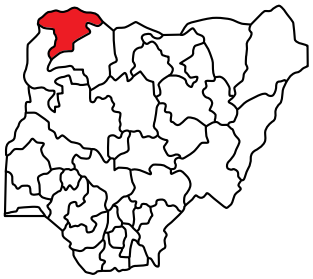
Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

There was no formal introduction of any death audit process before the advent of the MPDSR.

The Mapping Assessment found that all the hospitals in the state relied on the use of the Clinical Audit for reviewing maternal and perinatal deaths.

Following the state's participation in the FMOH MPDSR guidelines dissemination meeting, a State MPDSR Committee was formed, but no other major step has since been taken towards establishing the scheme in the state.



SOKOTO STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

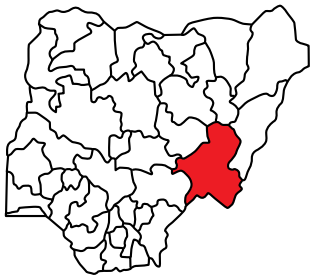
Population	4,452,000
Maternal mortality ratio	576
Facility perinatal mortality rate	44
Facility neonatal mortality rate	44
Facilities per 10,000 population	1.9
Number of Primary Health Centres	668
Number of Secondary Health Centres	43
Number of Tertiary Health Centres	2
Total Health Facilities	713
Previous maternal death review method(s)	Clinical Audit; F- MDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	2011
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The NPHCDA introduced MDR to MSS-PHCs and VA to their communities in 2011-2013; it used its own tools and data collecting system, and a single multistate analysis and review was published in 2014. Subsequently, no other audit process was introduced to this State until the advent of the FMOH MPDSR.

The Mapping Assessment revealed that a State MPDSR committee was formed, which developed a costed action plan but the implementation has been stalled by lack of funds and support. Clinical Audit is the process in use across its hospitals.



TARABA STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	2,766,000
Maternal mortality ratio	576
Facility perinatal mortality rate	45
Facility neonatal mortality rate	43
Facilities per 10,000 population	4.6
Number of Primary Health Centres	1030
Number of Secondary Health Centres	14
Number of Tertiary Health Centres	1
Total Health Facilities	1045
Previous maternal death review method(s)	Clinical Audit: F-MPDR; Community Verbal Autopsy
Year maternal death review started	2011
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit
Current perinatal death review method	Clinical Audit

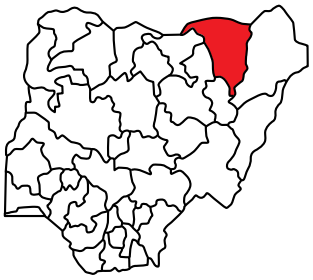
Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✗
MPDSR Facility Committees Formed	✗
MPDSR Community Committees Formed	✗
State MPDSR Data Collection System Exist	✗
State MPDSR Reports Exist	✗

The NPHCDA's facility MDR community VA were respectively introduced into the state's MSS-PHCs and their respective communities between 2011-1013, and these were operated with its guidelines, tools and data collecting system.

At the time of this Mapping Assessment, only Clinical Audit processes were in use in the hospitals for maternal and perinatal death reviews.

Since participation in the FMOH MPDSR Guidelines dissemination meeting in 2015, no major step has been taken towards implementing the MPDSR in the state.



YOBE STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

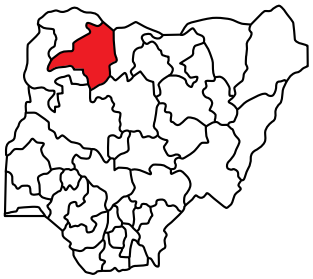
Background

Population	2,778,000
Maternal mortality ratio	576
Facility perinatal mortality rate	45
Facility neonatal mortality rate	43
Facilities per 10,000 population	4.5
Number of Primary Health Centres	1030
Number of Secondary Health Centres	14
Number of Tertiary Health Centres	1
Total Health Facilities	1045
Previous maternal death review method(s)	Clinical Audit; State and Facility level MDR; Community Verbal Autopsy
Year maternal death review started	2008
Previous perinatal death review method(s)	Clinical Audit
Year perinatal death review started	-
Current maternal death review method	Clinical Audit; State and Facility level MDR; Community Verbal Autopsy
Current perinatal death review method	Clinical Audit

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✓
State MPDSR Data Collection System Exist	✓
State MPDSR Reports Exist	✓

Yobe State has benefited from three preceding audit processes: the PRRIN-MNCH facility MDR was established in 2008-2013 to cover all the hospitals in the state, it used programme-designed guidelines and tools, and used facility, LGA and State officials to operate the scheme; the second audit process was the NPHCDA facility MDR for MSS-PHCs and Community VA scheme, in 2011-2013; and the third is the ongoing MNCH2 programme that started in 2014 as facility MDR and is now transforming into full MPDSR. During the preceding MDR efforts, the State Director of Medical Services chaired the State Committee. Its reports were made to the State Commissioner for Health, while its recommendations were feedback to health personnel, health facility managers and the SMOH. The audit process has led to more staff employed; doctors posted to needy areas; and integrated supportive supervision (ISS) established.



ZAMFARA STATE

STATE PROFILE FOR MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (2016)

Background

Population	3,892,000
Maternal mortality ratio	576
Facility perinatal mortality rate	44
Facility neonatal mortality rate	44
Facilities per 10,000 population	2.1
Number of Primary Health Centres	677
Number of Secondary Health Centres	19
Number of Tertiary Health Centres	1
Total Health Facilities	697
Previous maternal death review method(s)	Clinical Audit; State and Facility MDR; Community Verbal Autopsy
Year maternal death review started	2008
Previous perinatal death review method(s)	Clinical Audit; Community Verbal Autopsy
Year perinatal death review started	2015
Current maternal death review method	Clinical Audit; State and Facility level MDR; Community Verbal Autopsy
Current perinatal death review method	Clinical Audit; Community Verbal Autopsy

Status of MPDSR

State MPDSR Committee Formed	✓
State MPDSR Action Plan Developed	✓
State MPDSR Action Plan Costed	✓
MPDSR Facility Committees Formed	✓
MPDSR Community Committees Formed	✓
State MPDSR Data Collection System Exist	✓
State MPDSR Reports Exist	✓

Zamfara state has three audit programmes introduced before the MPDSR. The first was introduced by PRRINN-MNCH in 2008-2013 to cover all the hospitals in the state as integral part of its pursuit of quality improvement in obstetric care; it used programme-designed guidelines and tools, and used facility, LGA and State officials to operate the scheme. The second audit process by the NPHCDA, which introduced MDR to MSS-PHCs and VA to their communities in 2011-2013, used its own tools and data collecting system. A single multistate analysis and review was published in 2014. The third is the ongoing MNCH2 programme (spans 2014-2019), which seeks to improve quality of care, effectiveness, equity, efficiency, and performance of MNCH services: it embarked on a statewide facility MDR at the outset and is now transforming to MPDSR at state, facility, and community levels.