

Guía de vigilancia epidemiology of maternal mortality, Fetal and Neonatal

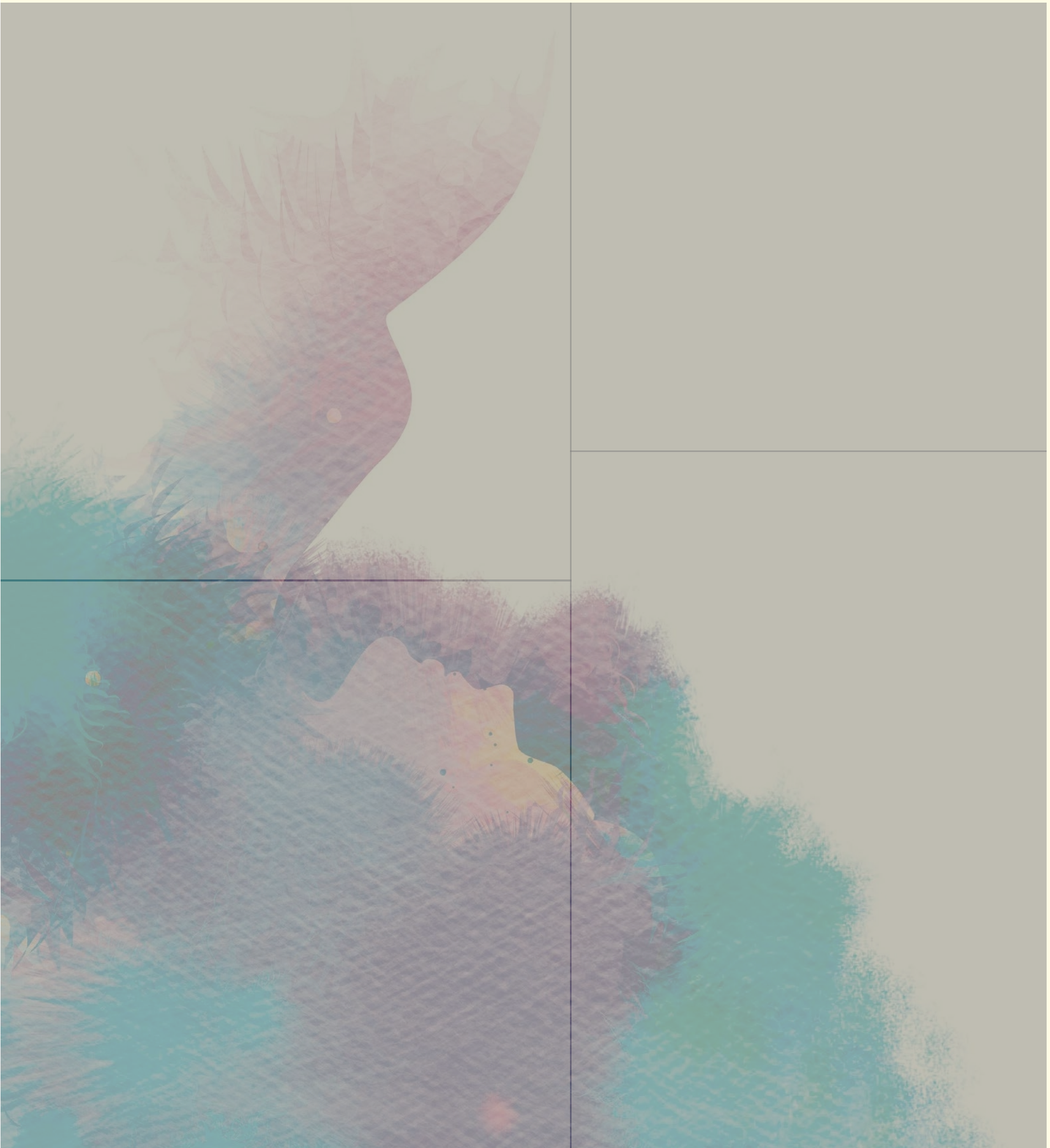
MINISTRY OF PUBLIC HEALTH AND WELFARE OF PARAGUAY•í0Z!

SECOND EDITION

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PUBLIC HEALTH
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INTRODUCTION

The Ministry of Public Health and Social Welfare (MSPBS), through the General Directorate of Health Programs, presents the second edition of the **"GUIDE TO EPIDEMIOLOGICAL SURVEILLANCE OF MATERNAL, FETAL, AND NEONATAL MORBIDITY AND MORTALITY,"** which aims to provide
continuity to the processes outlined in the Neonatal Alliance and the National Mobilization for the Reduction of Maternal and Neonatal Mortality, and to fulfill international commitments made toward achieving the 2030 Sustainable Development Goals (SDGs).

The Guide is intended to facilitate the surveillance of adverse events, such as maternal, fetal, and neonatal morbidity and mortality, occurring at all levels and across all sectors of the National Health System (SNS). It contains tools proven to be useful for analyzing these events, in order to guide decision-makers and health professionals through the epidemiological surveillance process and to ensure a high-quality information system, with the aim of establishing strategies, interventions, and plans for continuous quality improvement to be implemented at all levels of the SNS. It is aligned with the National Health Policy 2015–2030, as well as the National Plan for Sexual and Reproductive Health 2019–2023 and the National Plan for Children 2016–2021.

Its update and validation are the result of a participatory, multisectoral, and inter-institutional effort, which included technical input from departments within the Ministry of Public Health and Social Welfare (MSPBS) and technical advice from experts at other public institutions, universities, scientific societies, and autonomous agencies.

"Bicentenario de la Epopeya Nacional 1864 - 1870"

Poder Ejecutivo
Ministerio de Salud Pública y Bienestar Social

Resolución S.G. Nº 333 -

POR LA CUAL SE APRUEBA LA GUÍA DE VIGILANCIA EPIDEMIOLÓGICA DE LA MORBIMORTALIDAD MATERNA, FETAL Y NEONATAL, SE ESTABLECE LA OBLIGATORIEDAD DE SU USO E IMPLEMENTACIÓN EN TODOS LOS ESTABLECIMIENTOS DE SALUD DEL SISTEMA NACIONAL DE SALUD Y SE ABROGA LA RESOLUCIÓN S.G. Nº 481/2017.

Asunción, 28 de julio de 2022.-

VISTO:

La Nota DGPS Nº 199/2022, de fecha 13 de junio de 2022, por la cual la Dirección General de Programas de Salud solicita la aprobación de la Segunda Edición de la Guía de Vigilancia epidemiológica de la morbimortalidad materna, fetal y neonatal 2022, y se establece la obligatoriedad de implementar en todos los Establecimientos del Sistema Nacional de Salud, y;

CONSIDERANDO:

Que la Constitución de la República del Paraguay, en su Art. 68 encomienda al Estado paraguayo la protección y promoción de la salud como derecho fundamental de la persona y en interés de la comunidad, y en su Art. 69 enuncia que se promoverá un sistema nacional de salud que ejecute acciones sanitarias integradas, con políticas que posibiliten la concertación, la coordinación y la complementación de programas y recursos del sector público y privado.

Que la Ley Nº 836/1980, Código Sanitario, establece que: "...Art. 3º El Ministerio de Salud Pública y Bienestar Social, que en adelante se denominará el Ministerio, es la más alta dependencia del Estado competente en materia de salud y aspectos fundamentales del bienestar social. Art. 4º La autoridad de Salud será ejercida por el Ministro de Salud Pública y Bienestar Social, con la responsabilidad y atribuciones de cumplir y hacer cumplir las disposiciones previstas en este Código y su reglamentación...".

Que la Ley Nº 1032/1996, "Que crea el Sistema Nacional de Salud", dispone en su Artículo 4º que operará mediante la oferta de servicios de salud de los subsectores públicos, privados o mixtos, de seguros de salud y de las universidades, coordinados por el mismo, de acuerdo con las normas de derecho público y privado vigentes.

Que a través de la Resolución S.G. Nº 612, de fecha 25 de agosto de 2015, y del Decreto Nº 4541, de fecha 07 de diciembre de 2015, se aprueba la Política Nacional de Salud 2015–2030, y se dispone su implementación y aplicación en todo el territorio de la República para garantizar el ejercicio pleno del derecho a la salud de todos los habitantes del Paraguay.

Que por Resolución S.G. Nº 64, de fecha 08 de marzo de 2017, se aprueba el "Plan Nacional de Salud Integral de la Niñez 2016–2021" y se dispone su implementación en la Red Integrada e Integral de Servicios de Salud (RIISS).

Que por Resolución S.G. Nº 481, de fecha 18 de septiembre de 2017, se aprueba la Guía de Vigilancia Epidemiológica de la Morbimortalidad Materna, Fetal y Neonatal 2016, y se establece la obligatoriedad de su uso e implementación en todos los Establecimientos de Salud del País, Servicios Privados, Instituto de Previsión Social, Hospital Militar, Hospital Policial, Hospital de Clínicas, dependiente de la Universidad Nacional de Asunción.

Que por Resolución S.G. Nº 282, de fecha 20 de junio de 2017, se crea el Comité de Ejecución de la Alianza Neonatal y de la Movilización Nacional para la disminución de la

"Bicentenario de la Epopeya Nacional 1864 - 1870"

Poder Ejecutivo
Ministerio de Salud Pública y Bienestar Social

Resolución S.G. Nº 333 -

POR LA CUAL SE APRUEBA LA GUÍA DE VIGILANCIA EPIDEMIOLÓGICA DE LA MORBIMORTALIDAD MATERNA, FETAL Y NEONATAL, SE ESTABLECE LA OBLIGATORIEDAD DE SU USO E IMPLEMENTACIÓN EN TODOS LOS ESTABLECIMIENTOS DE SALUD DEL SISTEMA NACIONAL DE SALUD Y SE ABROGA LA RESOLUCIÓN S.G. Nº 481/2017.

Asunción, 28 de julio de 2022.-

Mortalidad Materna y Neonatal; y se abrogan las Resoluciones S.G. Nº 104/2014 y S.G. Nº 367/2015.

Que por Resolución S.G. Nº 597, de fecha 02 de diciembre de 2019, se aprueba el "Plan Nacional de Salud Sexual y Reproductiva 2019–2023" y se dispone su implementación y utilización en todos los Establecimientos de Salud y en la formación de profesionales de salud.

Que es fundamental la actualización de la Guía para mantener su validez y fortalecer la vigilancia epidemiológica de la morbimortalidad materna, fetal y neonatal, y de esta manera implementar acciones que puedan contribuir a la disminución de las mismas. A su vez realizar el análisis de la Morbilidad Materna Extremadamente Grave, que se incorpora en un capítulo buscando optimizar la vigilancia y el análisis de los casos que producen una situación severa a la salud materna, a fin de establecer intervenciones para la mejora continua de la calidad de atención.

Que la política Nacional de Salud 2015–2030 establece las líneas de acción que el Estado Paraguayo está decidido a realizar en el periodo para garantizar el ejercicio pleno del derecho de la salud de todos los habitantes del Paraguay. De este modo, el país se compromete a responder al acceso universal a la Salud y la cobertura universal de salud que se encuentran en el núcleo de los desafíos contemporáneos.

Que en concordancia con lo preceptuado en el Art. 242 de la Constitución de la República del Paraguay, el Decreto Nº 21.376/1998, en su Art. 19 dispone "Compete al Ministerio de Salud Pública y Bienestar Social ejercer la administración de la Institución a su cargo" y en su Art. 20, numeral 6) establece "Son funciones del Ministro de Salud Pública y Bienestar Social, entre otras cosas la de ejercer la administración general de la Institución como Ordenador de Gastos y responsable de los recursos humanos, físicos y financieros de la misma y en el numeral 7) le asigna como función específica la de dictar resoluciones que regulen la actividad de los diversos programas y servicios, reglamente su organización y determine sus funciones".

Que la Dirección General de Asesoría Jurídica, según Dictamen A.J. Nº 1133/2022, de fecha 27 de julio de 2022, ha emitido su parecer favorable para la firma de la presente Resolución.

POR LO TANTO, en uso de sus atribuciones legales;

LA MINISTRA SUSTITUTA DE SALUD PÚBLICA Y BIENESTAR SOCIAL
R E S U E L V E:

Artículo 1º. Aprobar la Guía de Vigilancia epidemiológica de la morbimortalidad materna, fetal y neonatal, que forma parte como Anexo de la presente Resolución.

Artículo 2º. Establecer la obligatoriedad de la utilización e implementación de la Segunda Edición de la guía epidemiológica de la morbimortalidad materna, fetal y neonatal, para todos los establecimientos de Salud del Sistema Nacional de Salud.

"Bicentenario de la Epopeya Nacional 1864 - 1870"

Poder Ejecutivo
Ministerio de Salud Pública y Bienestar Social

Resolución S.G. Nº 333 -

POR LA CUAL SE APRUEBA LA GUÍA DE VIGILANCIA EPIDEMIOLÓGICA DE LA MORBIMORTALIDAD MATERNA, FETAL Y NEONATAL, SE ESTABLECE LA OBLIGATORIEDAD DE SU USO E IMPLEMENTACIÓN EN TODOS LOS ESTABLECIMIENTOS DE SALUD DEL SISTEMA NACIONAL DE SALUD Y SE ABROGA LA RESOLUCIÓN S.G. Nº 481/2017.

Asunción, 28 de julio de 2022.-

Artículo 3º. Responsabilizar de la implementación de la Guía aprobada en el artículo 1º de la presente Resolución al Viceministerio de Atención Integral a la Salud y Bienestar Social, al Viceministerio de Rectoría y Vigilancia de la Salud, a la Dirección General de Desarrollo de Servicios y Redes de Salud, a la Dirección General de Información Estratégica en Salud, a la Dirección General de Vigilancia de la Salud y a la Dirección General de Programas de Salud.

Artículo 4º. Abrogar la Resolución S.G. Nº 481, de fecha 18 de setiembre de 2017.

Artículo 5º. Comunicar a quienes corresponda y cumplido, archivar.

DRA. LIDA SOSA ARGUELLO
MINISTRA SUSTITUTA

/M
SIHESE Nº 64.431/2022.

Página 3 de 3

INTRODUCTION

Paraguay has an estimated Maternal Mortality Ratio (MMR) of approximately 67.3 per 100,000 live births for the year 2017, representing a 59% reduction compared to the 2000 MMR of 164 per 100,000 live births. Data from the MSPBS indicate that the MMR in 2018 was 70.8 MM per 100,000 live births, in 2019 it was 67.6, and in 2020 it was 77.9. And according to provisional data through December 2021, there was a significant increase in the maternal mortality rate to 159.9 MM per 100,000 live births, which is linked to maternal deaths resulting from the COVID-19 pandemic.

The infant mortality rate has fallen from 20.2 (2000) to 12.2 (2020) deaths per 1,000 live births, representing a significant 39.6% reduction over the past 20 years. Provisional data for 2021 indicate that the infant mortality rate is 11.6. In addition, there has been a significant decrease in the neonatal mortality rate, which has fallen from 11 (2000) to 9.2 (2020), representing a reduction of 16.4 deaths among infants under 28 days of age per 1,000 live births.

Maternal (MM), fetal (MF), and neonatal (MN) deaths are considered universal indicators of inequality in living conditions, access to health services, and the quality of those services. They are the end result of the interaction of a series of factors present as early as the preconception period, which persist or worsen during pregnancy and have a direct impact on the health of the newborn (NB). The social component stands out among these factors, specifically in terms of the mother's economic, educational, legal, and family circumstances, as well as the timeliness and efficiency of health services.

The circumstances influencing these deaths are sometimes common to those affecting the health of the general population; therefore, actions implemented to reduce them will have a positive impact on the health conditions of society—that is, they will have repercussions beyond maternal, fetal, and neonatal survival.

Neonatal mortality is the main component of infant mortality and is the one that countries find most difficult to reduce. The situation is all the more concerning because most of these deaths are preventable, provided there are adequate resources to address unmet basic needs.

Our country has reaffirmed its commitment to reducing maternal and neonatal mortality, as set forth in the Sustainable Development Goals (SDGs), the Sustainable Health Agenda for the Americas 2018–2030 (ASSA 2030), and the Montevideo Consensus.

Within the framework of the National Health Policy 2015–2030, the Paraguayan government directs its actions toward guaranteeing the full exercise of the right to health through universal access and achieving universal health coverage at the highest possible level to reduce health inequities and improve the population's quality of life, within the framework of sustainable human development.

The National Plan for Sexual and Reproductive Health 2019–2023 has as its strategic objective to improve people's sexual and reproductive health (SRH) through the development of fair, equitable, and inclusive public policies with a focus on rights, gender, and interculturality. Its strategic pillars include safe motherhood, safe fatherhood, and neonatal health; therefore, actions aimed at implementing the plan will be instrumental in reducing maternal, fetal, and neonatal morbidity and mortality. Likewise, the **Epidemiological Surveillance of Maternal, Fetal, and Neonatal Morbidity and Mortality** (**VEMMMFN**) must be strengthened at all levels and across all sectors of the National Health System (SNS), establish participatory technical mechanisms, and develop processes that, on an ongoing and systematic basis, help to promptly detect relevant events affecting the health and lives of women and newborns, as well as analyze and implement appropriate improvement measures.

The 2016–2021 National Plan for Children aligns its goals and indicators with the objective of reducing neonatal morbidity and mortality through coordinated actions with other departments for the surveillance, registration, and analysis of adverse events in this area.

Regarding the Intentional Search and Reclassification of Maternal Deaths (BIRMM), it is important to note that the country has strengthened the methodology while improving data from administrative records.

The VEMMMFN enables real-time monitoring of trends and causes of morbidity and mortality events and represents an important step toward quantifying maternal, fetal, and neonatal mortality; it also serves to guide actions aimed at strengthening maternal and neonatal care, as well as measuring progress in public health policies and related programs.

LEGAL FRAMEWORK

- 1992 Constitution of the Republic of Paraguay.
- International Agreements: Universal Declaration of Human Rights, 1948.
- International Agreements: Convention on the Rights of the Child, 1989.
- International Agreements: Belém do Pará Convention, 1994.
- International Agreements: Sustainable Development Goals and Agenda 2030.
- International Agreements: Regional Conference on Population and Development for Latin America and the Caribbean, Montevideo, 2013.
- Law No. 836/1980, "Health Code."
- Law No. 1,032/1996, "Establishing the National Health System."
- Law No. 1,680/2001, "Establishing the Code on Children and Adolescents."
- Law No. 1,160/1997, the Penal Code, and Law No. 1,286/1998, the Code of Criminal Procedure.
- Decree No. 4,541/2015, "National Health Policy, 2015–2030."
- General Secretariat Resolution No. 597/2019, National Plan for Sexual and Reproductive Health, 2019–2023.
- Secretariat General Resolution No. 506/2016, National Adolescent Health Plan, 2016–2021.
- Resolution S. G. No. 064/2017, National Plan for Comprehensive Child Health, 2016–2021.
- Resolution S.G. No. 667/2019, Institutional Strategic Plan (PEI), 2019–2023.

CONCEPTUAL FRAMEWORK

DEFINITIONS

• **Live Birth (LB):** the complete expulsion or extraction from the mother's body—regardless of the duration of the pregnancy—of a product of conception that, following such separation, breathes or shows any other sign of life, such as: a heartbeat, umbilical cord pulsations, or effective movements of voluntary muscles, whether or not the umbilical cord has been cut and whether or not the placenta has been delivered. Every product of a birth that meets these conditions is considered a live birth.

• **Birth Weight (BW):** the first weight of the stillborn fetus or newborn (NB) measured after birth.

• **Gestational Age (GA):** is measured from the first day of the mother's last normal menstrual period. It is expressed in full days or weeks.

• **Adverse event:** the result of health care that unintentionally caused harm. Risk is defined as the probability that an incident or adverse event will occur.

• **Abortion:** the termination of a pregnancy before 22 weeks of gestation and/or with a fetal weight of less than 500 grams.

• **Fetal death (FD), stillbirth, or mortinato:** the death of a product of conception before its expulsion or complete removal from the mother's body, regardless of the duration of the pregnancy; Death is indicated by the fact that, after separation, the fetus does not breathe or show any other signs of life, such as a heartbeat, umbilical cord pulsations, or effective movements of voluntary contraction muscles.

• **Neonatal Death (ND):** refers to deaths occurring during the period between birth and 28 full days of life.

Based on the cause of death, it is classified as:

- Inevitable: due to an intrinsic condition of the newborn or conditions at admission.
- Potentially preventable: if any change in the diagnostic or therapeutic process could have altered the outcome.
- Timely or untimely: the timing of death was expected or unexpected.

• **Extremely Severe Maternal Morbidity (MMEG):** defined as a situation in which a woman nearly dies but survives a complication that occurs during pregnancy, childbirth, or within 42 days of the end of pregnancy.

• **Extreme Neonatal Morbidity (ENM):** Refers to any event occurring within the first 28 days of life that poses an imminent threat to life.

• **Obstetric Emergency (OE):** a complication affecting a woman's reproductive health during pregnancy, childbirth, or the postpartum period, with an imminent risk of long-term complications and/or death for the mother or fetus.

• **Neonatal Emergency (NE):** a complication that affects the health of the newborn.

• **Underlying Cause (UC):** the disease or injury that initiated the chain of pathological events leading directly to death, or the circumstances of the accident or violence that caused the fatal injury.

• **Direct Cause (DC):** a disease or pathophysiological condition that directly caused death.

• **Maternal Death (MD):** the death of a woman while pregnant or up to 42 days following the end of pregnancy, regardless of the duration and location of the pregnancy, due to any cause related to or aggravated by the pregnancy itself or its care, but NOT due to accidental or incidental causes (suicides, homicides, or traffic accidents).

• **Late Maternal Death (MMT):** the death of a woman from direct or indirect obstetric causes after 42 days, but within one year of the end of pregnancy.

• **Direct Maternal Death (MMD):** is the death resulting from obstetric complications of pregnancy, childbirth, or the postpartum period; from interventions, omissions, or incorrect treatment; or from a chain of events originating in any of the aforementioned circumstances.

• **Indirect Maternal Death (IMD):** is a death resulting from a pre-existing condition or a condition that develops during pregnancy, not due to direct obstetric causes, but aggravated by the physiological effects of pregnancy.

• **Hospital or Institutional Maternal or Neonatal Death (MMH or MNH):** occurs in a health care facility, regardless of the time elapsed between the patient's arrival and her death. The death of a patient while being transported by ambulance to a health care facility is considered a hospital death. Reporting, the issuance of the Death Certificate (DC), and the analysis of the case are the responsibility of the hospital that referred the patient.

• **Non-Hospital Maternal or Neonatal Death (MMNH or MNNH):** occurs at home or en route to the hospital, provided that the transport does not take place in an ambulance.

• **Maternal Death by Time of Occurrence:**

  • **During pregnancy:** before the onset of labor (even if the amniotic membranes have ruptured).
  • **During delivery:** occurs from the onset of labor until the delivery of the placenta.
  • **During the puerperium or postpartum period:** death occurs after the delivery of the placenta and up to 42 days after the event.

• **Fetal Death by Time of Occurrence:**

  • **During pregnancy:** before the onset of labor (even if the amniotic membranes have ruptured, but labor has not yet begun).
  • **During labor:** when it occurs from the onset of labor until the delivery of the placenta.

• **Delay:** A delay in a process or activity. It is classified as:

  • **First Delay or Type I:** This refers to the delay in deciding to seek health care, whether on the part of the woman or those around her (related to the ability to recognize complications of pregnancy, the postpartum period, newborn care, warning signs, health rights and responsibilities, where to go, among other factors).
  • **Second Delay or Type II:** This refers to the delay in identifying and accessing a health facility, related to geographic, social, cultural, and economic barriers; the availability and efficiency of transportation; or previous negative experiences with care for the pregnant woman and/or the newborn at health facilities.
  • **Third Delay or Type III:** delay in obtaining adequate, timely, and high-quality treatment once the pregnant woman and/or newborn have accessed health facilities (related to obstetric and neonatal medical care in accordance with current regulations, referral to another health facility, the capacity for communication and transportation to facilitate transfers, and/or managerial and administrative aspects).

• **Unsafe Condition (UC):** any sign or symptom based on the Obstetric Early Warning Scale identified prior to the occurrence of the adverse event.

• **Unsafe Action (UA):** These may be actions, care measures, or checks that were not performed or whose execution did not comply with the standards, regulations, or protocols of the MSPBS.

• **Universal Epidemiological Surveillance:** This is the study of all cases of maternal, fetal, and neonatal deaths, based on individual case reports occurring nationwide, regardless of the location of occurrence (whether in facilities within the National Health System or in non-institutional settings). It is conducted using the mandatory reporting form and death certificates.

• **Sentinel Epidemiological Surveillance:** This is the study of morbidity or mortality cases among population groups, areas, or health facilities from which information is collected; these are selected for their representativeness with respect to the population from which the results are intended to be inferred.

• **Sentinel Case:** Sentinel cases to be studied using the ACR methodology are those with MF or MN who have no major congenital defects incompatible with life and meet two or more of the following criteria:

  • Birth weight greater than or equal to 2,500 grams and less than 4,500 grams.
  • Gestational age of 34 weeks or more but less than 42 weeks.
  • CPN 4 or higher.

SURVEILLANCE OF MATERNAL, FETAL, AND NEONATAL MORBIDITY AND MORTALITY (VEMMMFN)

It is a continuous, timely, and systematic process of collecting, analyzing, and disseminating data related to the identification, reporting, and determination of the causes of maternal, fetal, and neonatal morbidity and mortality and their determinants. The goal is to transform this data into useful information in order to generate strategies, changes, and plans for continuous improvement in the quality of care at health facilities, in academic and research settings, in public policy planning, and in impact assessment throughout the National Health System (SNS).

OBJECTIVES

General Objective:

To develop a continuous and systematic process for generating timely, valid, and reliable information on the causes of maternal, fetal, and neonatal morbidity and mortality to inform decision-making, thereby guiding policies, plans, programs, projects, and actions aimed at reducing maternal, fetal, and neonatal morbidity and mortality.

Specific Objectives:

1. Strengthen a surveillance system for maternal, fetal, and neonatal morbidity and mortality.

2. Establish methodologies that facilitate case analysis through the use of validated tools at the national, regional, and local levels.

3. Identify the causes of maternal, fetal, and neonatal morbidity and mortality in order to guide institutional and community interventions aimed at reducing them.

4. Develop improvement plans, as well as effective monitoring and oversight to ensure their implementation.

FUNCTIONS OF THE VEMMMFN TECHNICAL COMMITTEE

The VEMMMFN is carried out through the Technical Committees: Local (CTL), Regional (CTR), and National (CTN), and its Operational Coordination (COCTN), whose composition is established in accordance with the current Resolution.

Local Technical Committee (CTL) of VEMMMFN

Functions:

1. Identify and mandatorily report all cases of maternal mortality (MM) at the health facility (Appendix 3) immediately upon the occurrence of the death. The health professional who attended to the case must notify the immediate superior authority of the CTL. The Hospital Epidemiology Coordinator will notify the Regional Epidemiological Unit (UER).

2. Identify and mandatorily report cases of MF and MN at the healthcare facility (Appendix 3) immediately upon the occurrence of the death. The healthcare professional who treated the case must report it to the immediate superior authority of the CTL. The CTL, through the General Directorate of the healthcare facility, must forward the report to the CTR (Head of Sexual and Reproductive Health (SRH)/Children and Adolescents/Health Programs).

3. Identify and mandatorily report cases of MMEG (Appendix 4) and MNE (Appendix 9) within 7 days of discharge at designated sentinel hospitals. The health professional who treated the case must notify the CTL's immediate superior. The CTL, through the General Directorate of the health facility, must forward the report to the CTR (Head of SRH/Children and Adolescents/Health Programs).

4. Verify that the Death Certificate (DC) (Appendix 13), completed by the healthcare professional who attended to the case, is filled out correctly, completely, and without corrections, and issue recommendations through the Improvement Plan.

5. Forward the DC through the Hospital Statistics Coordinator to the Regional Statistics Coordinator; together, they must verify that the DC has been completed correctly.

6. Collect data in cases of stillbirth (MM), fetal death (MF), and neonatal death (MN) immediately after the event occurs, and in cases of stillbirth with fetal remains (MMEG) and neonatal death with fetal remains (MNE) upon hospital discharge.

7. Initiate the case investigation using the Clinical Record (Medical History, Obstetric Early Warning Scale Forms, Partogram, Progress Notes, Indications, Nursing Notes, Discharge Summary, SIP PLUS (Appendix 8), CD, Verbal Autopsy (Appendix 7), RAC, Laboratory and Imaging Studies, and others).

8. Analyze adverse events using the methodological tools for all cases of MM, MMEG, and MNE from Sentinel Hospitals, as well as sentinel cases of MF and MN, in collaboration with the healthcare professionals who provided care.

9. Submit, through the General Directorate of the healthcare facility, the aforementioned documentation plus a copy of the Clinical Record (Medical History, Obstetric Early Warning Scale Sheets, Partogram, Progress Notes, Indications, Nursing Notes, Discharge Summary, SIP PLUS, CD, Verbal Autopsy, RAC, Laboratory and Imaging Studies, and others) in cases of MM, MF, and MN within 7 days of the event, and in cases of MMEG and MNE within 15 days after hospital discharge, to the corresponding Regional Directorate.

10. Ensure that the Hospital Discharge Form is completed correctly and in full, and issue recommendations as part of the Improvement Plan.

11. Conduct the Targeted Search and Reclassification of Maternal Deaths (BIRMM) monthly and upload the data to the BIRMM Form in Excel spreadsheet format (Appendix 5), for subsequent analysis in conjunction with the CTR.

12. Develop and implement the Local Improvement Plan (Appendix 6).

13. Participate in meetings convened by the CTR or by the Operational Coordination of the National Technical Committee (COCTN) for the analysis and study of adverse obstetric and neonatal events.

14. Schedule meetings, officially convene its members, and record proceedings in the corresponding Minutes Book.

15. Maintain the relevant documentation for the meetings, such as: the Minutes Book, the CTL Membership List, the documentation file on the analyzed adverse events, the meeting attendance sheet, and others. These documents must be properly safeguarded due to their medico-legal importance.

Regional Technical Committee (CTR) on VEMMMFN

Functions:

1. Implement and enforce VEMMMFN processes at the health facilities that make up the National Health System (SNS).

2. Verify the composition and operation of the CTLs in all health facilities that make up the National Health System (SNS).

3. Submit the mandatory and immediate notification through the UER of all cases of maternal mortality within 24 hours of the event occurring, to the DGVS email address:*analisis.dgvs2016@gmail.com* .

4. Submit mandatory and immediate reports through the Head of Children and Adolescents/SRH/Regional Health Programs regarding cases of maternal fever (MF) and maternal neonatal (MN) cases within 24 hours of the event occurring, to the COCTN email address:*vemmmfn@mspbs.gov.py* .

5. Submit the mandatory report through the Heads of SRH/Children and Adolescents/Regional Health Programs regarding cases of MMEG and MNE from Sentinel Hospitals within 15 days of hospital discharge to the COCTN email address:*vemmmfn@mspbs.gov.py* .

6. Submit the Death Certificate (CD) through the Regional Statistics Coordinator within 24 hours of the occurrence of the case, scanned and emailed to*reportematerna@gmail.com* at DIGIES; upload it to the SSIEV system; and within 72 hours, send the original to DIGIES.

7. Continue investigating the case using the Clinical Record (Medical History, Obstetric Early Warning Scale Forms, Partogram, Progress Notes, Indications, Nursing Notes, Discharge Summary, Hospital Discharge, SIP PLUS, Death Certificate, Verbal Autopsy Report, RAC, Laboratory and Imaging Studies, and others).

8. Analyze all cases of MM, cases of MMEG and MNE from the Sentinel Hospitals, and sentinel cases of MF and MN, using the tool corresponding to the adverse event, together with the CTL and the professionals who attended the event.

9. Submit the above documentation, along with a copy of the medical record (medical history, Obstetric Early Warning Scale forms, partogram, progress notes, indications, nursing notes, discharge summary, hospital discharge summary, SIP PLUS, CD, verbal autopsy report, RAC, laboratory and imaging studies, others), in digital format, in cases of MM, MF, and MN within 15 days of the event, and in cases of MMEG and MNE within 30 days after hospital discharge, to the COCTN email address:*vemmmfn@mspbs.gov.py* .

10. Submit the Babies Matrix and the corresponding Improvement Plan through the Regional Office on a quarterly basis to the COCTN email address:*vemmmfn@mspbs.gov.py* .

11. Monitor the implementation of the BIRMM for joint analysis with the CTL on a monthly basis.

12. Participate in meetings convened by COCTN for the analysis and final closure of the BIRMM during the first half of the year, and submit the fully completed BIRMM forms in Excel spreadsheets to COCTN at*vemmmfn@mspbs.gov.py* within 15 days following the closing meeting.

13. Support local-level efforts in the joint development and implementation of the Improvement Plan.

14. Monitor and supervise the Improvement Plans at the local level.

15. Develop the Regional Improvement Plan.

16. Monitor the local and regional analysis process using the indicators contained in this Guide.

Operational Coordination of the CTN (COCTN) of VEMMMFN

Functions:

1. Comply with and enforce VEMMMNF processes within the National Health System (SNS).

2. Consolidate regional reports and present the status of maternal, fetal, and neonatal morbidity and mortality to the relevant CTN authorities during regular sessions.

3. Support, monitor, and evaluate the functioning of the CTRs.

4. Promote professional and institutional accountability in VEMMMFN processes and recommendations based on current regulations and the MSPBS Code of Ethics.

5. Schedule, convene, and coordinate VEMMMFN meetings for the analysis and final closure of cases of maternal, fetal, and neonatal morbidity and mortality (MM, MF, and MN).

6. Schedule, convene, and coordinate meetings with the CTR during the first half of the year for the analysis and final closure of BIRMM cases.

7. Convene meetings with other MSPBS departments as appropriate for the adverse event under review.

8. Document activities in the Minutes Book.

9. Provide technical support to the CTRs to ensure compliance with surveillance processes.

10. Conduct quarterly monitoring of MMEG and MNE at sentinel hospitals.

11. Convene specialist consultants based on the case under review; these may include professionals in the following fields: Obstetrics and Gynecology, Neonatology, Perinatology, Critical Care Medicine, Anesthesiology, Hematology, Internal Medicine, General Surgery, Vascular Surgery, Neurology, Rheumatology, Cardiology, Infectious Diseases, Forensic Medicine, and others.

National Technical Committee (CTN) of VEMMMFN

Functions:

1. To implement and ensure compliance with VEMMMFN processes within the National Health System (SNS).

2. To hold regular biannual meetings to discuss the report on maternal, fetal, and neonatal morbidity and mortality.

3. Propose comprehensive interventions from each of the directorates that make up the CTN to prevent maternal, fetal, and neonatal morbidity and mortality and mitigate their impact nationwide, in accordance with current national regulations and international recommendations, throughout the National Health System (SNS).

4. Support the comprehensive intervention plans proposed by the various directorates that make up this committee.

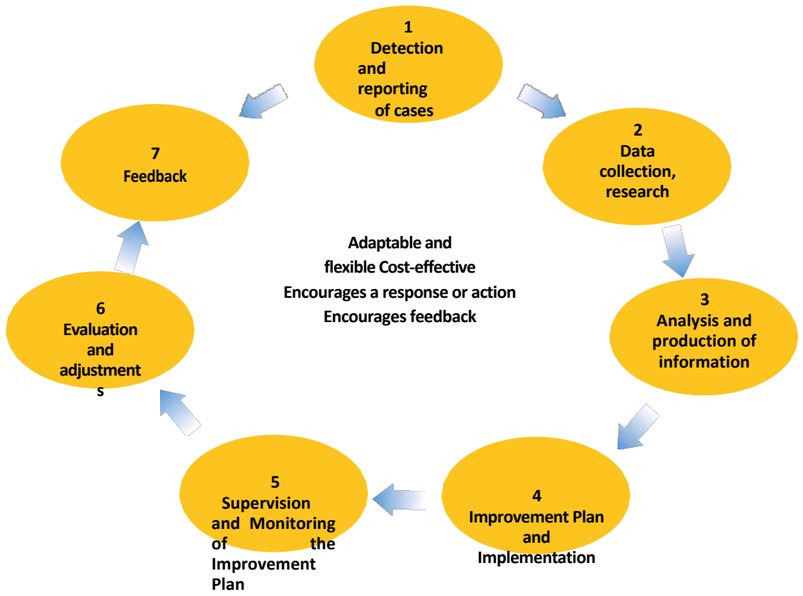
5. Propose research or new methodologies for the study and analysis of maternal, fetal, and neonatal morbidity and mortality based on the latest evidence.

6. To present comprehensive interventions for the continuous improvement of the quality of care at all levels of the National Health System (SNS).

7. To promote the exchange of best practices in VEMMMFN processes within the SNS.

COMPONENTS OF THE VEMMMFN

1. CASE DETECTION AND REPORTING.
2. DATA COLLECTION AND RESEARCH.
3. ANALYSIS AND REPORTING.
4. IMPROVEMENT PLAN AND IMPLEMENTATION.
5. SUPERVISION AND MONITORING OF THE IMPROVEMENT PLAN.
6. EVALUATION AND ADJUSTMENTS.
7. FEEDBACK.



Universal surveillance is the method to be used for MM, MF, and MN. Sentinel surveillance is the method to be used for MMEG and MNE. The current International Statistical Classification of Diseases and Related Health Problems (ICD-10) will be used for case coding.

The focus of the analyses is on the care process; therefore, they are NEVER PUNITIVE in nature (they do not seek to establish presumption of fault).

STEPS ACCORDING TO THE MM, MMEG, MF, MN, AND MNE COMPONENTS

STEP	ACTION	LOCAL RESPONSIBLE PARTY	REGIONAL RESPONSIBLE PARTY
A1-	**Reporting of MM is mandatory and must be submitted to the DGVS:** **- Within 24 hours of the case occurring:** Mandatory MM Notification Form (Appendix 3)	The healthcare professional who treated the case must notify the immediate superior authority of the CTL. The Hospital Epidemiology Coordinator will notify the Regional Epidemiology Unit (UER). *	The UER notifies the DGVS within 24 hours via email to: analisis.dgvs2016@gmail.com The DGVS forwards the report to the COCTN via email: vemmmfn@mspbs.gov.py
A2-	**Reporting of MF and MN is mandatory and must be submitted to the COCTN:** **- Within 24 hours of the case occurring:** Mandatory Notification Form for MF and MN. (Appendix 3)	The healthcare professional who treated the case must report it to the immediate superior authority of the CTL. The CTL, through the General Directorate of the health facility, must forward the report to the CTR (Head of SRH/Child and Adolescent Health/Regional Health Programs). *	The Head of SRH/Children and Adolescents/Regional Health Programs must notify the COCTN within 24 hours of the case occurring by email to: vemmmfn@mspbs.gov.py
A3-	**Reporting of MMEG and MNE is mandatory and must be submitted to the COCTN:** **- Within 7 days of hospital discharge:** Mandatory Notification Form for MMEG and MNE for Sentinel Hospitals. (Appendix 4)	The healthcare professional who treated the case must report it to the immediate superior authority at the CTL. The CTL, through the General Directorate of the health facility, must forward the case to the CTR (Head of SRH/Children and Adolescents/Regional Health Programs) within 7 days of hospital discharge.	The Head of SRH/Children and Adolescents/Regional Health Programs must report the case to the COCTN within 15 days of hospital discharge via email to: vemmmfn@mspbs.gov.py
B-	**The issuance of the Death Certificate (CD) is mandatory and must be submitted to the DIGIES:** **- Within 24 hours of the occurrence:** scanned and emailed toreportematerna@gmail.com and uploaded to the SSIEV. **- Within 72 hours of the occurrence:** the original **document**.	The DC must be prepared by the attending physician, a non-attending physician, a medical examiner, or authorized healthcare personnel. The Hospital Statistics Coordinator will forward the CD to the Regional Office.	The Regional Statistics Coordinator will forward the CD to DIGIES. DIGIES will forward the report to COCTN via email to: vemmmfn@mspbs.gov.py
C-	**Data collection for cases:** **- MM, MF, and MN:** immediately after the adverse event occurs. **- MMEG and MNE:** upon hospital discharge. Initiate the case investigation using the medical record (medical history, Obstetric Early Warning Scale forms, partogram, progress notes, indications, nursing notes, discharge summary, SIP PLUS, CD, verbal autopsy report, RAC, laboratory and imaging studies, and other relevant documents). **Conduct the analysis:** using the tool appropriate for the case.	CTL (General Directorate) will send this documentation, as well as the complete Clinical Record, to the CTR.	
D1-	**Investigation, Analysis, and Information Production** **Hospital (Institutional) Adverse Event:** - Conduct and submit the ACABAMM analysis in cases of MM and MMEG (for Sentinel Hospitals). - Prepare and submit the ACR in cases of MNE (for sentinel hospitals). - Prepare and submit the ACR for sentinel cases of MF or MN. - Prepare and submit the Improvement Plan.	CTL (General Directorate) of the healthcare facility: will submit these documents (ACABAMM, ACR, Improvement Plan) as well as the complete medical record and the SIP PLUS to the CTR, with whom they will jointly analyze each case.	CTR (Regional Directorate): will forward the aforementioned documents, along with a digital copy of the complete medical record, to the COCTN email address:vemmmfn@mspbs.gov.py - Cases of MM, MF, MN: within 15 days of the event occurring. - Cases of MMEG and MNE: within 30 days after hospital discharge.

D2-	**Investigation, Analysis, and Reporting** **Non-Hospital Adverse Event (at home, on the street):** - Conduct and submit the ACABAMM analysis (if the patient had prior contact with a health facility) and the Verbal Autopsy in cases of maternal mortality. - Complete and submit the ACR and the Verbal Autopsy in sentinel cases of MF or MN. - Prepare and submit the Improvement Plan.	CTL (General Directorate) of the health facility: will send these documents (ACABAMM, ACR, Improvement Plan) to the CTR, with whom they will jointly analyze each case. If necessary, the CTR will coordinate the conduct of the Verbal Autopsy.	CTR (Regional Directorate): will forward the above documents to the COCTN via email at vemmmfn@mspbs.gov.py. - Within 15 days of the event occurring.
D3-	**Grouped Analysis of MF and MN:** - Complete and submit the BABIES Matrix along with the analysis and the Improvement Plan.		CTR (Regional Office) will submit the above documentation on a quarterly basis to the COCTN via email atvemmmfn@mspbs.gov.py .
E1-	**BIRMM** **Cases of deaths of institutional MEFs:** - Analyze all MEF deaths (using the death certificate, the complete medical record, or the verbal autopsy report—the latter only if necessary).	CTL: Complete the BIRMM monthly using the data required in the BIRMM Form in the Excel spreadsheet for each case (Appendix 5), and then analyze and close the case in conjunction with the CTR.	CTR: - Monitors the completion of the BIRMM for joint analysis and closure. - It will meet with the COCTN during the first half of the year to complete the final closure of all cases. - It will submit the BIRMM forms from the Excel spreadsheets for each analyzed and closed case, within 15 days following the closure meeting, to the COCTN atvemmmfn@mspbs.gov.py .
E2-	**BIRMM** **Cases of non-institutional MEF deaths (at home or on the street):** - Create the CD. - Fill out the required information on the BIRMM Form (Appendix 5).	Medical examiners: They will prepare the CD and the BIRMM Form, which must be submitted monthly to the CTR of the corresponding Health Region.	CTR: - Monitors the implementation of the BIRMM and enters the data from the BIRMM Form into the Excel spreadsheet. - When required, it will conduct a verbal autopsy. - It will meet with the COCTN during the first half of the year to finalize the closure of all cases. - Submit the BIRMM forms from the Excel spreadsheets for each analyzed and closed case, within 15 days following the closure meeting, to the COCTN atvemmmfn@mspbs.gov.py .
F-	**Improvement Plan:** Plan how you will implement the changes at the healthcare facility. The form to be completed must identify who will be responsible for each proposed activity, how it will be carried out, where, and the timeframe for completing the proposed actions, noting the start and end dates of each activity (Appendix 6).	CTL: will submit this along with the other documentation to the CTR, with whom they will jointly analyze each case.	CTR (Regional Office) will submit the documents electronically to the COCTN via email atvemmmfn@mspbs.gov.py . - Cases of MM, MF, MN: within 15 days of the occurrence of the case. - Cases of MMEG and MNE: within 30 days after hospital discharge. - Cases of MB: on a quarterly basis.
G-	**Supervision and Monitoring:** Based on the Improvement Plan submitted by the CTLs and CTRs, the immediately superior level will conduct supervision and monitoring to verify compliance with the proposed actions.	The CTR will supervise the CTL.	COCTN will oversee the CTR.
H-	**Feedback:** This refers to the feedback provided following monitoring, supervision, and evaluation.	The CTR will provide it to the CTL. CTL will carry it out at the local level.	COCTN will oversee the CTR.

*In the case of a non-hospital or non-institutional maternal mortality (MM) or neonatal mortality (NM) (at home, on the street): the case notification must be prepared by the treating physician, a non-treating physician, a medical examiner, or authorized health personnel, and must be reported to the CTR (Head of SRH/Children and Adolescents).

1- CASE DETECTION AND REPORTING

Any person or entity in the health sector or elsewhere who becomes aware of an adverse event involving MM, MF, or MN must report it to the nearest MSPBS health facility, which must keep the community informed about how to effectively contact them to receive information.

If a death occurs at any facility within the National Health System—such as MSPBS, IPS, military or police health facilities, or private or independent facilities—the notification and analysis must be submitted to the corresponding Health Region.

• **Notification of each case of maternal mortality (MM) is mandatory and must be submitted to the DGVS: Within 24 hours of the occurrence of the case:** Mandatory Notification Form for MM, MF, and MN (Appendix 3).

The **healthcare professional** who treated the case at the local level must complete the Mandatory Notification Form in full and legibly and must report it to the immediate higher authority that is part of the CTL.

Subsequently, the **Hospital Epidemiology Coordinator**, or the responsible staff member at the local level, will notify the **Regional Epidemiology Unit (UER**), which in turn will notify the **DGVS** within 24 hours via email to: *analisis.dgvs2016@gmail.com*

The DGVS forwards the information to the **COCTN** via email: *vemmmfn@mspbs.gov.py*

• **Reporting of MF and MN cases is mandatory and must be submitted to the COCTN: Within 24 hours of the case occurring:** Mandatory Notification Form for MM, MF, and MN (Appendix 3).

The **healthcare professional** who treated the case at the local level must complete the Mandatory Notification Form in full and legibly and must report the case to the immediate higher-level authority within the **CTL.**

The CTL, through the General Directorate of the health facility, must notify the CTR. The CTR, through the Head of SRH/Children and Adolescents/Regional Health Programs, must notify the COCTN within 24 hours via email to: *vemmmfn@mspbs.gov.py*

• **Reporting of MMEG and MNE cases is mandatory and must be submitted to the COCTN: Within 7 days of hospital discharge:** Mandatory Notification Form for MMEG (Appendix 4) and MNE (Appendix 9) for Sentinel Hospitals.

The healthcare professional who treated the case will notify the immediate superior authority of the CTL.

The **CTL**, through the General Directorate of the health facility, will forward the report to **the CTR** within 7 days of hospital discharge.

The **CTR**, through the **Head of SRH/Children and Adolescents/Regional Health Programs**, must notify the **COCTN** within 15 days of hospital discharge via email to: *vemmmfn@mspbs.gov.py*

• The issuance of a Death Certificate (CD) is mandatory and must be submitted to the DIGIES:

- **Within 24 hours of the occurrence:** scanned and emailed to: *reportematerna@gmail.com* and upload it to the SSIEV.
- **Within 72 hours of the incident:** the original.

The MM, MF, and MN sections of the CD must be completed in full, be legible, and be filled out by the treating physician, a non-treating physician, a medical examiner, or authorized healthcare personnel in accordance with the current resolution.

The **Hospital Statistics Coordinator** will forward the CD **to the Regional Office.**
The Regional Office, in turn, will forward it to the DIGIES within the timeframes established above. The **DIGIES** will forward it to the **COCTN** via email: *vemmmfn@mspbs.gov.py*

2- DATA COLLECTION

The **CTL** collects data on cases of MM, MF, and MN immediately after the event occurs, while for cases of MMEG and MNE, data collection takes place upon hospital discharge. In addition, they initiate the case investigation using the relevant documentation, such as the Clinical Record (Medical History, Obstetric Early Warning Scale Forms, Partogram, Progress Notes, Indications, Nursing Notes, Discharge Summary, SIP PLUS, CD, Verbal Autopsy, RAC, Laboratory and Imaging Studies, and others) and conduct the analysis using the tool corresponding to each adverse obstetric and neonatal event.

They will send this documentation, as well as the complete Clinical Record, to the **CTR**.

3- RESEARCH, ANALYSIS, AND PRODUCTION OF INFORMATION

• Hospital (Institutional) Adverse Event:
The **CTL** must do the following:

- Conduct and submit the ACABAMM analysis in cases of MM and MMEG (as determined by the Sentinel Hospital).
- Complete and submit the ACR in cases of MNE (depending on whether it is a sentinel hospital).
- Complete and submit the ACR in sentinel cases of MF or MN.
- Prepare and submit the Improvement Plan.
- Submit this documentation, along with the complete medical record and the SIP PLUS, to the

CTR, with whom each case will be analyzed jointly.

The **CTR,** through the **Regional Office,** must submit the aforementioned documents plus a copy of the complete medical record in digital format within 15 days of the event occurring in cases of MM, MF, or MN, and within 30 days after hospital discharge in cases of MMEG and MNE, to the **COCTN** at the following email address: *vemmmfn@mspbs.gov.py*

• Non-Hospital Adverse Event (at home, on the street):
The **CTL** must do the following:

- Complete and submit the ACABAMM analysis (if the patient had prior contact with a healthcare facility) or the Verbal Autopsy in cases of MM.
- Complete and submit the ACR and the Verbal Autopsy in sentinel cases of MF or MN.
- Complete and submit the Improvement Plan.
- Submit these documents to **the CTR**, with whom they will jointly analyze each case.

The **CTR**, through the **Regional Office**, must forward the above documents to the **COCTN** within 15 days of the event occurring, via email to: *vemmmfn@mspbs.gov.py*

• Grouped Analysis of MF and MN:
The **CTR** must do the following:

- Prepare and submit the BABIES Matrix along with the analysis and the Improvement Plan.

The **CTR**, through the **Regional Office**, must submit the above documentation on a quarterly basis to the **COCTN** via email: *vemmmfn@mspbs.gov.py*

In cases of non-hospital or non-institutional MM, the ACABAMM is performed if the patient has had any contact with the health care system at any point during her pregnancy.

The CTR must conduct investigations at all levels of care based on the patient's place of residence and where the event occurred.

EXTREMELY SEVERE MATERNAL MORBIDITY – MMEG

Recommendations have been established to improve care for women, resulting in high-quality institutional care.

In this regard, the monitoring and analysis of MM cases, as well as MMEG or Near Miss cases, are important in the process of this improvement and the organization of the national network, considering that the number of MMEG cases exceeds the absolute number of MM cases by a factor of 5 to 20.

The discussion and analysis of MMEG cases are easier, as they are successful cases. MMEG cases must occur within a health facility.

Criteria for identifying near misses. Table 1.

• Clinical Criterion: This is associated with the presence of a specific disease (Mantel criterion); it uses the presence of a disease as its starting point, and a specific morbidity is defined for each disease (for example, the presence of preeclampsia with renal or cardiac dysfunction). This criterion is simple to apply but can be very nonspecific.

• Criterion Based on a Specific Intervention: Related to an intervention based on the diagnosed disease (e.g., admission to the ICU, need for a blood transfusion, and need for a postpartum hysterectomy). It is an easy-to-apply criterion, but one with considerable variability.

• Laboratory-Based Criterion: This is associated with organ or systemic dysfunction (Waterstone's criterion) and is based on the sequence of events leading from health to disease and death. It begins with a lesion that leads to a systemic inflammatory disease; this triggers a systemic response and results in organ dysfunction, though the patient survives (markers of organ dysfunction include hematological abnormalities, liver failure, and kidney failure, among others). This criterion is the most sensitive and specific for identifying severe cases.

It should be noted that the presence of just one of the criteria is sufficient to classify the condition as MMEG.

Table 1. Criteria for Defining Cases of MMEG

SYSTEM OR ORGAN AFFECTED	CLINICAL CRITERIA	LABORATORY CRITERIA	INTERVENTION-BASED CRITERIA
Cardiovascular	☐ Shock ☐ Cardiac arrest	☐ Severe hypoperfusion (lactate >5 mmol/L or >45 mg/dL) ☐ Severe acidosis (pH <7.1)	☐ Continuous administration of vasoactive agents ☐ Cardiopulmonary resuscitation
Respiratory	☐ Acute cyanosis Labored ☐ breathing Severe ☐ tachypnea (RR > 40 breaths per minute) ☐ Severe bradypnea (respiratory rate <6 breaths per minute)	☐ Severe hypoxia (oxygen saturation <90% for ≥60 minutes or PaO_2/FiO_2 <200)	☐ Intubation and ventilation not related to anesthesia
Renal	☐ Oliguria resistant to fluids or diuretics	☐ Severe acute azotemia (creatinine ≥ 300 mol/L or ≥3.5 mg %)	☐ Dialysis for acute renal failure
Hematologic	☐ Coagulation disorders	☐ Severe acute thrombocytopenia (<50,000 platelets/ml)	☐ Massive transfusion of blood products (≥3 units)
Hepatic	☐ Jaundice in the presence of preeclampsia	☐ Severe acute hyperbilirubinemia (bilirubin >100 µmol/L or >6.0 mg%)	
Neurological	☐ Loss of consciousness (>12 hours) / Coma ☐ Stroke Uncontrollable seizures ☐ / status epilepticus. ☐ Generalized paralysis*.		
Uterus			☐ Infection or hemorrhage leading to hysterectomy

Source: Recommendations for Establishing a National Surveillance System for MMEG in Latin America and the Caribbean—PAHO, 2021.
*Generalized paralysis: a condition of extreme global neuromuscular weakness associated with a critical illness.

Sentinel Hospital: refers to hospitals that are part of the sentinel surveillance system for MMEG, specifically:

1. SAN PABLO GENERAL MATERNAL AND CHILD HOSPITAL
2. OBRERO NEIGHBORHOOD GENERAL HOSPITAL

MMEG Identification Tool

MMEG identification is performed by a healthcare professional while providing patient care.

The tool to be used is the Perinatal Information System (SIP) (Appendix 8); its web-based version (SIP PLUS) includes modules for basic care and for MMEG or near misses during pregnancy, childbirth, and for the newborn during postnatal hospitalization—this is the NEO Perinatal Information System (SIPNEO).

MMEG Reporting

- **MMEG reporting is mandatory and must be submitted to the COCTN:**
MMEG Mandatory Reporting Form for Sentinel Hospitals (Appendix 4).

Steps:
- Fill in the reporter's information and the patient's personal details.
- Check the risk factors and maternal complications the patient presented.
- Record the patient's obstetric and gynecological history and details of care received at health facilities during the current pregnancy, delivery, or postpartum period.

TETÃ REKUÁI GOBIERNO NACIONAL — Paraguay de la gente

MINISTRY OF PUBLIC HEALTH AND SOCIAL WELFARE GENERAL
DIRECTORATE OF HEALTH PROGRAMS
EXTREMELY SEVERE MATERNAL MORBIDITY (MMEG) REPORT FORM

1- REPORTER'S INFORMATION											
Name of the reporter:								Date of notification: / /			
Facility:								Health Region:			
2- PATIENT INFORMATION											
First and Last Name:										ID No.:	
Age:	Marital Status: Married		Single		Common-law marriage		Other				
Education: None		Elementary		High school		College		No information			
Department:								District:			
3- MATERNAL RISK FACTORS AND COMPLICATIONS											
Hypertension		HIV/AIDS		Hemorrhage 1 TMT		Immune Disorders					
Preeclampsia		Cancer		Bleeding 2 TMT		Mental disorder					
Eclampsia		Infections		Bleeding 3 TMT		Chronic malnutrition					
HELLP syndrome		TB		Smoking		Obesity					
Heart disease		Diabetes		Alcoholism		No history					
Other:											
4- OBSTETRIC HISTORY											
Pregnancy:		Vaginal deliveries:				Cesarean sections:		Miscarriages:			
Live births:		Stillbirths:									
5- CURRENT CARE DURING PREGNANCY, LABOR, OR THE POSTNATAL PERIOD											
REFERRAL: YES		NO									
FACILITY 1:								DATE: / /			
SCHOOL 2:								DATE: / /			

- Check the clinical, laboratory, or intervention-based criteria, as listed in Table 1.

6- INCLUSION CRITERIA			
System or Affected System	**Clinical Criteria**	**Laboratory Criteria**	**Intervention-Based Criteria**
Cardiovascular	☐ Shock ☐ Cardiac arrest ☐	☐ Severe hypoperfusion (lactate >5 mmol/L or >45 mg/dL) Severe acidosis (pH <7.1) ☐	☐ Continuous IV vasoactive agents. Cardiopulmonary resuscitation ☐
Respiratory	☐ Acute cyanosis ☐ Severe tachypnea (RR >40 rpm) ☐ Severe bradypnea (FR < 6 rpm) ☐	Severe hypoxia (oxygen saturation <90% for ≥60 minutes or PaO_2/FiO_2 <200)	Intubation and ventilation not related to anesthesia
Renal	☐ Oliguria resistant to fluids or diuretics	☐ Severe acute azotemia (creatinine ≥ 300 mol/L or ≥ 3.5 mg %) ☐	☐ Dialysis using acute kidney injury.
Hematologic	☐ Abnormalities in coagulation	Severe acute thrombocytopenia (<50,000 platelets/mL) ☐	Massive transfusion of blood products (≥3 units)
Hepatic	Jaundice in the presence of preeclampsia	Severe acute hyperbilirubinemia (bilirubin >100 µmol/L or >6.0 mg%)	
Neurological	☐ Loss of consciousness (>12 hours) /Coma Stroke Uncontrollable epileptic seizures Uncontrollable / status epilepticus. Generalized paralysis*.		
Uterus			☐ Infection or hemorrhage leading to hysterectomy.

The **healthcare professional** who attended to the case at the local level must complete the Mandatory Notification Form in full and legibly and must report it to the immediate higher authority that is part of the **CTL.**

The **CTL**, through its general directorate, must forward the report to **the CTR** within 7 days of hospital discharge.

The Regional **Director of Sexual and Reproductive Health** shall notify the **COCTN** within 15 days of hospital discharge via email to: *vemmmfn@mspbs.gov.py*

Analysis of MMEG Cases

The **CTL** must do the following:

- Conduct and submit the ACABAMM analysis in cases of MMEG (as a sentinel hospital).
- Prepare and submit the Improvement Plan.
- Submit this documentation, along with the complete medical record and the SIP PLUS file, to the

CTR, with whom each case will be analyzed jointly.
The **CTR,** through the **Regional Office,** must submit the aforementioned documents plus a digital copy of the complete medical record within 30 days of hospital discharge in cases of MMEG to the **COCTN** at the following email address: *vemmmfn@mspbs.gov.py*

Implementation of the Improvement Plan

Once the weaknesses in each link of the patient care process have been identified and the delays acknowledged, an improvement plan must be developed at the local, regional, or national level, with interventions aimed at the continuous improvement of the quality of care (Appendix 6).

Management of MMEG Data and Indicators

To calculate the indicators, additional data are required, as shown in the tables below (Tables 2 and 3).

Table 2. Data required at the health facility level to conduct MMEG surveillance.

VARIABLE	POTENTIAL SOURCES
Number of live births	Live birth certificate registry
Number of maternal deaths	MM reporting, Death certificate
Number of women with maternal deaths due to complications	Reporting of extremely severe maternal morbidity (MMEG), SIP PLUS

Source: Recommendations for Establishing a National Surveillance System for Extremely Severe Maternal Morbidity in Latin America and the Caribbean. Washington, D.C.: Pan American Health Organization; 2021.

Table 3. Indicators related to extremely severe maternal morbidity.

INDICATOR	CALCULATION	LEVEL/ FREQUENCY/ RESPONSIBLE PARTIES	VERIFICATION METHODS
Ratio of Recorded MMEGs (RMMEG)	No. of MMEGs recorded / No. of NVs recorded × 1,000	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTR	- Registration of NV Certificates - MMEG Notification - SIP PLUS
List of MMEGs / MM	MMEG No. / MM No.	Local / Monthly / CTL Regional / Quarterly / CTR National / Semi-annual / CTN	- MM CD - MMEG Notification - SIP PLUS
Mortality Index	No. of MM / (No. of MMEG + No. of MM) per 100	Local / Monthly / CTL Regional / Quarterly / CTR National / Semi-annual / CTN	- MM CD - MMEG Notification - SIP PLUS

Source: Recommendations for Establishing a National Surveillance System for Extremely Severe Maternal Morbidity in Latin America and the Caribbean. Washington, D.C.: Pan American Health Organization; 2021.

EXTREME NEONATAL MORBIDITY (MNE)

This is a form of surveillance in which the population groups, cases, areas, or health facilities from which information is collected are selected based on their qualitative representativeness—rather than their statistical representativeness—with respect to the population from which the results are intended to be inferred.

EMN refers to any event occurring within the first 28 days of life that poses an imminent threat to life.

Sentinel Hospital: A sentinel hospital is one that is part of the sentinel surveillance system and must meet the following criteria:

a. The most comprehensive hospital in the region, equipped with a neonatal intensive care unit.
b. A hospital that handles the highest volume of deliveries and newborn care.
c. A hospital with more than 2,500 annual discharges and an epidemiology coordinator.

• Hospitals that meet the above criteria must be officially recognized as “sentinel hospitals” by the MSPBS through a designation of the health facility by ministerial resolution.

• In addition to fetal and neonatal deaths, sentinel hospitals are required to report cases of MNE on a monthly basis through the CTLs to the Regional Director of Children and Adolescents.

The following health facilities are designated as Sentinel Hospitals:

• SAN PABLO MATERNAL AND CHILD HOSPITAL
• BARRIO OBRERO GENERAL HOSPITAL
• SANTISIMA TRINIDAD MATERNAL AND CHILD HOSPITAL
• SAN LORENZO MATERNAL AND CHILD HOSPITAL
• LUQUE GENERAL HOSPITAL
• “REINA SOFÍA” MATERNITY AND CHILDREN’S HOSPITAL, PARAGUAYAN RED CROSS
• SANTA ROSA DEL AGUARAY DISTRICT HOSPITAL
• CAAGUAZÚ REGIONAL HOSPITAL
• CIUDAD DEL ESTE REGIONAL HOSPITAL
• ENCARNACIÓN REGIONAL HOSPITAL

Rationale

The objective of developing sentinel surveillance of extreme neonatal morbidity (VCMNE) is to enhance the epidemiological surveillance of the mother-child pair by identifying the factors that predominantly contribute to the occurrence of adverse events and which, when addressed through quality improvement strategies at different levels of complexity, have an impact on maternal and perinatal mortality. This system also facilitates the development of more sensitive indicators for perinatal and neonatal epidemiological surveillance, which allow for the evaluation of the quality of care, monitoring, and comparisons to target interventions with a focus on the safety of neonatal care.

Epidemiological surveillance of extreme neonatal morbidity (ENM) will contribute to:

• Identify factors associated with EM.
• Identify and define potential interventions that can reduce severe morbidity and, consequently, mortality.
• Facilitate the development of indicators to evaluate the quality of perinatal and neonatal care and measure the impact of these interventions.

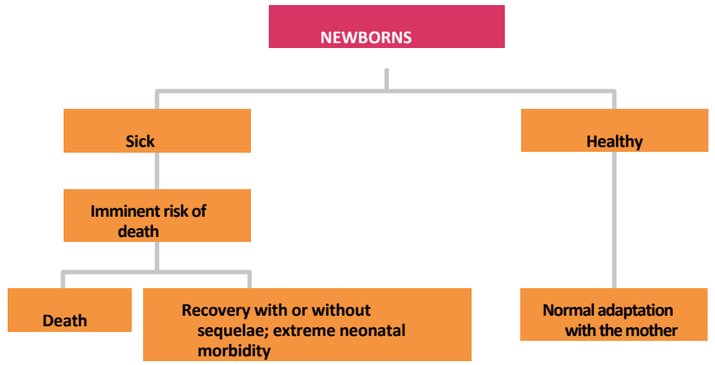
Flowchart of the Origin of EMN Cases

It is necessary to define which newborns will be classified as having EM and what the origin of the event is. Sentinel cases will be studied using the ACR methodology.

A pregnancy—whether complicated or not—may be associated with a healthy or unhealthy newborn. In either of these situations, neonatal mortality may occur, depending on the clinical course. Only severely ill newborns at imminent risk of death who survive will be classified as MNE.

The criteria for classifying a case are as follows:
The case must present specific signs or symptoms, or these must be related to a specific condition, organ failure, or the management required for the newborn to overcome the condition.

Course of the disease in newborns according to postnatal complications



Methodology for Monitoring Extreme Neonatal Morbidity

Epidemiological surveillance of extreme neonatal morbidity (VEMNE) is defined as the "component of the health information system that facilitates the identification of cases of extreme neonatal morbidity for reporting, determining, and quantifying the causes in specific geographic areas and time periods, with the aim of contributing to the development of the necessary measures for its prevention."

It is proposed that, in addition to neonatal mortality surveillance, surveillance of extreme neonatal morbidity (VEMNE) be conducted, since this allows for the analysis of a greater number of cases, provides a primary source of information—in this case, the surviving mother—and results in less reluctance or resistance on the part of health care teams to participate in the analysis due to the few legal implications associated with the management of each individual case.

The methodology involves, in order, the following steps:

- Case identification.
- Data collection.
- Identification of delays.
- Defining preventability.
- Developing an action plan.
- Data generation.
- Quantitative analysis of the information.
- Trends.
- Characterization by time, person, and place.
- Development of indicators.

Case identification

Case identification is based on definitions and criteria validated by expert groups, which are presented below:

a- Extreme neonatal morbidity (ENM)

An event occurring from birth through the twenty-eighth day of life that poses an imminent threat to the newborn's life and requires intervention to prevent death.

b- Criteria for Identifying Cases of ENM

As in the Surveillance System for Extreme Maternal Morbidity, the criteria for identifying cases of EM are grouped according to three characteristics or conditions:

1- Those related to a specific condition and/or particular signs and symptoms;

- Weight between 500 and 1,000 grams;
- An Apgar score of less than 7 at 5 minutes.
- Acute hemorrhage with hemodynamic decompensation.
- Seizures (sudden clinical event with a change in neurological function).
- Complex congenital heart disease.
- Major malformations requiring intervention: diaphragmatic hernia, intestinal atresias, and abdominal wall defects.

2- Those associated with organ failure;

- Neurological: Sarnat II–III.
- Respiratory: alveolar-arterial oxygen difference greater than 300.
- Metabolic: base excess less than or equal to 12.
- Oxygenation index greater than 25 (inspired oxygen fraction × mean arterial pressure × 100, divided by arterial oxygen pressure). An index greater than 25 is associated with a mortality rate of 50–80%.
- Genitourinary: oliguria with diuresis less than 0.5 centimeters per kilogram per hour (cc /kg/hour) persisting for 8 hours.

3- Those related to the management required for the newborn to overcome the condition;

- Advanced neonatal resuscitation (cardiac massage, intubation, use of medications included in the resuscitation protocol).
- Mechanical ventilation lasting more than seven days.
- Dialysis.
- Use of inotropes.
- Use of antiarrhythmic drugs and cardioversion.

Any newborn who meets one or more of the inclusion criteria listed above is considered a case of MNE.

Within each of these categories, a series of conditions indicative of a case of neonatal encephalopathy can be identified.

Data Collection and Case Identification

The analysis of MNE cases is conducted once the newborn has been discharged. For this analysis, clinical records generated during the care process—for both the mother and the newborn—must be available, starting from the first contact with the health care system, the interview with the mother, and any other records required to further identify the factors contributing to the occurrence of the event.

Clinical Records

Hospital records provide valuable information for identifying and analyzing the causes of neonatal mortality and serve as the foundation for the work of institutional surveillance committees. The quality of the records must allow for the timely use of the information. The maternal and newborn medical records, progress notes and medical orders, nursing notes, laboratory and diagnostic test results, and referral and counter-referral forms are, among others, the records most commonly used as sources of information. The maternal medical record is always required to supplement the information obtained from the newborn's medical record and is an essential requirement for a proper analysis of the case.

Interview with the Mother

Given that the postpartum woman or other family members are the primary source of information, the interview is key to identifying the human and psychosocial factors that caused or contributed to the event—factors that are difficult to obtain from hospital records. The purpose of this interview is to comprehensively assess conditions related to the environment, social, economic, and cultural aspects, access to health services, and the perceptions of the woman and her family members regarding these services—based on previous experiences, as well as knowledge of rights and responsibilities, risks, and warning signs and symptoms in the pregnant woman and the newborn that may have affected the mother's or her family's ability to seek timely medical care and that may have been determining factors in the occurrence of the event.

Definition of preventability:

Preventable neonatal mortality is defined in relation to available technology, obstetric and/or neonatal medical interventions, and patterns of service utilization that could have helped prevent the event from occurring. In newborns, deaths due to severe malformations incompatible with life and a birth weight of less than 500 grams are considered biologically inevitable; however, inevitability may also result from a lack of technology, adequate transportation, etc.

It is necessary to specify the context and scope within which the analysis for classifying an event as avoidable or preventable is conducted. Based on this clarification, critical points for intervention to prevent such deaths can be identified. The explanatory power depends on the participation in the analysis of one or more individuals, whose perspectives are shaped by their own knowledge. A death analysis conducted by a physician is not the same as one carried out by the entire healthcare team, or one conducted in an intersectoral setting; therefore, intervention proposals will have varying degrees of commitment and impact.

"In newborns, deaths due to severe malformations incompatible with life and a birth weight of less than 500 grams are considered biologically inevitable, but there is also inevitability due to a lack of technology, adequate transportation, etc."

In most cases, the management of birth-related complications does not require sophisticated high-tech equipment or specialized training to be carried out. However, newborns may face difficulties in accessing quality care if adequate resources are not available.

We cannot separate the biological causes of neonatal mortality from social, economic, and cultural factors, since deaths are also unavoidable due to a lack of technology and transportation.

The outcomes correspond to the effects on the patient and may include:

- Injury, structural or functional impairment of the body, and any adverse effect resulting from care.
- Illness, physiological or psychological dysfunction.
- Injury: damage to tissues caused by an agent or circumstance.
- Suffering: the experience of something subjectively unpleasant.
- Disability: any type of structural or functional alteration of the body, limitation of activity, and restriction of participation in society, associated with past or present harm.

However, when the harm does not originate from the care process, it is referred to as a complication, harm, or unexpected clinical outcome—not attributable to health care, but rather to the patient's disease or underlying conditions.

Since many factors may accompany each action, it is necessary to analyze one by one those considered unsafe, selected for study separately. For this analysis, one of the most widely used methods is the fishbone diagram, which allows for the analysis of each unsafe action along with its contributing factors.

"Its purposes are to demonstrate a commitment to safety, foster a cultural shift toward safety, identify opportunities for improvement, establish lines of communication regarding safety among leaders, executives, and healthcare staff, and verify improvements in patient safety."

Data Collection: Data collection involves completing the form provided in Appendix 9, which records—by topic—general information about the mother and the pregnancy, the newborn's details, data related to the inclusion criteria and diagnosis, and data related to the qualitative analysis. Data processing and case consolidation are performed in a Microsoft Excel database.

Quantitative Analysis of the Data

To conduct an analysis based on quantitative data, the following categories and variables must be taken into account:

Demographic analysis

Distribution of cases by age, ethnicity, marital status, educational level, and socioeconomic status.

Temporal analysis

- Distribution of cases by month or consolidated periods.
- Length of hospital stay.
- Time elapsed between admission and ICU admission.
- Length of stay in the ICU.

Location Analysis

- Source.
- Location where the event occurred.
- Referring department.
- Place of delivery.

Patient Analysis (Mother and Newborn)

- Prenatal care, parity, mode of delivery, gestational age, newborn weight, Apgar scores at 1 minute and 5 minutes.
- Pre-existing morbidity.
- Calculation of rates or ratios.
- Extreme neonatal morbidity.
- Neonatal mortality rate.
- Ratio of extreme neonatal morbidity to neonatal morbidity.

By georeferencing

- By place of origin.
- By place of delivery.
- By referral.

Development of indicators for monitoring and analyzing the quality of care

The use of indicators is an essential component for monitoring extreme neonatal morbidity, for defining policies and programs at the national, regional, or local levels, for addressing the problem, comparing results over time and across any of the analysis variables, as well as for verifying the effectiveness of the measures adopted in light of the country's goals and commitments. The VCMNE proposes a series of indicators that provide a comprehensive view and understanding of this phenomenon. The indicators, in turn, are classified as process indicators and severity indicators.

A. PROCESS INDICATORS

INDICATOR	CALCULATION	LEVEL/FREQUENCY/RESPONSIBLE PARTIES	VERIFICATION METHODS
Ratio of MNE in NICUs at sentinel hospitals	Number of certified MNE cases in a given period in the NICU of sentinel hospitals / Number of neonatal deaths during the same period in sentinel hospitals × 1,000	Local / Monthly / Regional CTL / Quarterly / National CTR / Semiannual / CTN	- Data Collection Form - Medical Record
Mortality rate due to neonatal encephalopathy in the NICU	Number of neonates admitted to the NICU due to neonatal asphyxia / Number of patients admitted to the NICU due to neonatal asphyxia × 100	Local / Monthly / Regional CTL / Quarterly / National CTR / Semiannual / CTN	- Data Collection Form - Medical History

B. SEVERITY INDICATORS

INDICATOR	CALCULATION	LEVEL/ FREQUENCY/ RESPONSIBLE PARTIES	VERIFICATION METHODS
Percentage of newborns meeting three or more inclusion criteria	Number of neonates meeting three or more inclusion criteria certified during a given period / Number of neonates certified during the same period × 100	Local/Monthly/CTL Regional/Quarterly/CTR National/Semiannual/CTN	- Data Collection Form - Medical Record

Purpose of the indicators

• The collective analysis of neonatal death and NEON events, based on outcome indicators (such as the mortality rate and the NEON/NW ratio) and severity indicators (case-to-criterion ratio or percentage [%] of newborns with 3 or more NEON inclusion criteria), facilitates the evaluation of the quality of care provided by medium- and high-complexity providers, primarily in NICUs and at delivery and newborn care facilities.

• These indicators make it possible to evaluate the "before" and "after" of services and to reflect on processes for continuous quality improvement. Additionally, they facilitate comparisons among providers and allow for the identification of institutions that ensure safe care for pregnant women and newborns.

• The provider with the lowest mortality rates (close to 0) and the highest morbidity-to-mortality ratio, among populations with similar severity indicators, will offer the highest quality of care.

4- ANALYSIS METHODS

ANALYSIS BY UNDERLYING CAUSE OF MATERNAL MORBIDITY AND MORTALITY (ACABAMM)

The ACABAMM is the tool used to transform information into strategic knowledge with the goal of preventing future incidents.

The current, pre-established Excel spreadsheet is used to develop the ACABAMM.

TECHNICAL RESEARCH:



The method consists of **4 stages,** and each stage includes a **tool** for evaluating the results:

1. Screening

2. Clinical performance

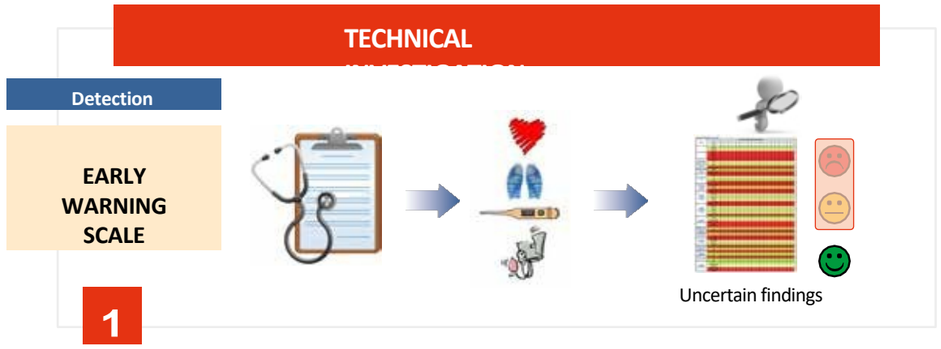
3. Organizational factor

4. Service Network

Stage 1: DETECTION

Use the Obstetric Early Warning Scale. (Appendix 15)

The **main objective** of this stage is to identify **unsafe conditions (UC)**, which are defined as vital signs falling within the yellow and red ranges on the Obstetric Early Warning Scale.



In addition, the quality of the examinations performed on the patient is visually assessed using the obstetric early warning scale, taking into account:

- Which vital signs were monitored
- and the frequency with which they were recorded

Steps:

1. Identify all vital signs that were recorded in the medical record to be analyzed.
2. Record the identified vital signs on the early warning scale, taking into account the chronological order in which they appear (day-time).
3. Identify the vital signs that fall within the yellow and red ranges, which correspond to critical illness (CI).

DATE	OBSTETRIC EARLY WARNING SCALE																			
	DAY																			
	TIME																			
GENERAL APPEARANCE	Normal	X			X															
	Sweaty																			
	Pale																	X		
	Cyanotic																			
	Jaundiced																			
RESPIRATORY RATE (Breaths per minute)	22 or more																			
	20–21																			
	19–12	X																		
	11 or fewer																			
OXYGEN SATURATION (%)	100–95																			
	less than 95																			
TEMPERATURE (°C)	39 or higher																			
	38																			
	37–36	X																		
	35																	X		
HEART RATE (beats per minute)	100 or more																			
	99 to 60	X			X															
	59 or less																			
SYSTOLIC BLOOD PRESSURE (mmHg)	160 or higher																			
	159–140																			
	139 to 90	X			X				X											
	89 to 71												X							
	70 or less																	X X		
DIASTOLIC BLOOD PRESSURE (mmHg)	110 or higher																			
	109–90																			
	89 to 60	X			X				X											
	59 to 51												X							
	50 or less																	X X		
NEUROLOGICAL RESPONSE	Alert																			
	Disoriented																			
	Responds only to pain																			
	Unconscious																			
HAS URINATED IN THE LAST 6 HOURS or >30 cc/h	YES																			
	NO																			
PROTEINURIA (Test strip)	+																			
	++ or higher																			
GENITAL BLEEDING	Heavy																			
	Spotting																			
	Absent																			
PURULENT VAGINAL DISCHARGE	YES																			
	No																			
HEADACHE AND VISUAL AND/OR HEARING CHANGES:	YES																			
	No																			
SEIZURES	Yes																			
	No																			
ABDOMINAL PAIN	NO																			
	No peritoneal irritation																			
	With peritoneal irritation																			

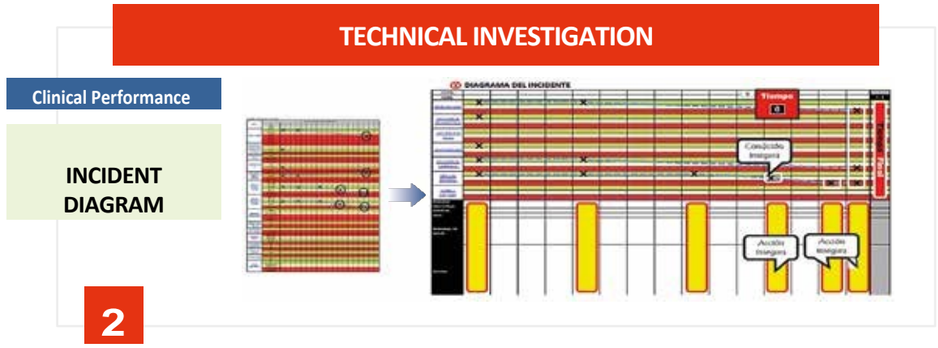
DATE	OBSTETRIC EARLY WARNING SCALE																			
	DAY																			
	TIME																			
GENERAL APPEARANCE	Normal	X			X															
	Sweaty																			
	Pale																	X		
	Cyanotic																			
	Jaundiced																			
RESPIRATORY RATE (Breaths per minute)	22 or more																			
	20–21																			
	19–12	X																		
	11 or fewer																			
OXYGEN SATURATION (%)	100–95																			
	less than 95																			
TEMPERATURE (°C)	39 or higher																			
	38																			
	37–36	X																		
	35																			
HEART RATE (beats per minute)	100 or more																			
	99 to 60	X																X		
	59 or less				X															
SYSTOLIC BLOOD PRESSURE (mmHg)	160 or higher																			
	159–140																			
	139 to 90				X															
	89 to 71	X							X											
	70 or less											X						X	X	
DIASTOLIC BLOOD PRESSURE (mmHg)	110 or higher																			
	109–90																			
	89 to 60				X				X											
	59 to 51	X										X								
	50 or less																			
NEUROLOGICAL RESPONSE	Alert																			
	Disoriented																			
	Responds only to pain																	X	X	
	Unconscious																			
HAS URINATED IN THE LAST 6 HOURS or >30 cc/h	YES																			
	NO																			
PROTEINURIA (Test strip)	+																			
	++ or higher																			
GENITAL BLEEDING	Heavy																			
	Spotting																			
	Absent																			
PURULENT VAGINAL DISCHARGE	YES																			
	No																			
HEADACHE AND VISUAL AND/OR HEARING CHANGES:	YES																			
	No																			
SEIZURES	Yes																			
	No																			
ABDOMINAL PAIN	NO																			
	No peritoneal irritation																			
	With peritoneal irritation																			

It is important to remember that each of the identified vital signs was extracted from the medical record.

Stage 2: CLINICAL PERFORMANCE

Use the Incident Diagram.

The **main objective** of this stage is to identify **unsafe actions (UA)** that may have been performed. Each **clinical intervention (CI)** must involve a therapeutic action or management strategy, which becomes **an UA** when the MSPBS standards and protocols for that specific situation are not followed.



In addition, an assessment is made of whether the following were identified, recorded, and what actions were taken:

• **The underlying cause (UC)** of extreme morbidity or death*: this is **time ZERO.**
The RC is defined as the disease or injury that initiated the chain of pathological events leading directly to severe morbidity or death, or the circumstances of the accident or act of violence that caused the fatal injury.

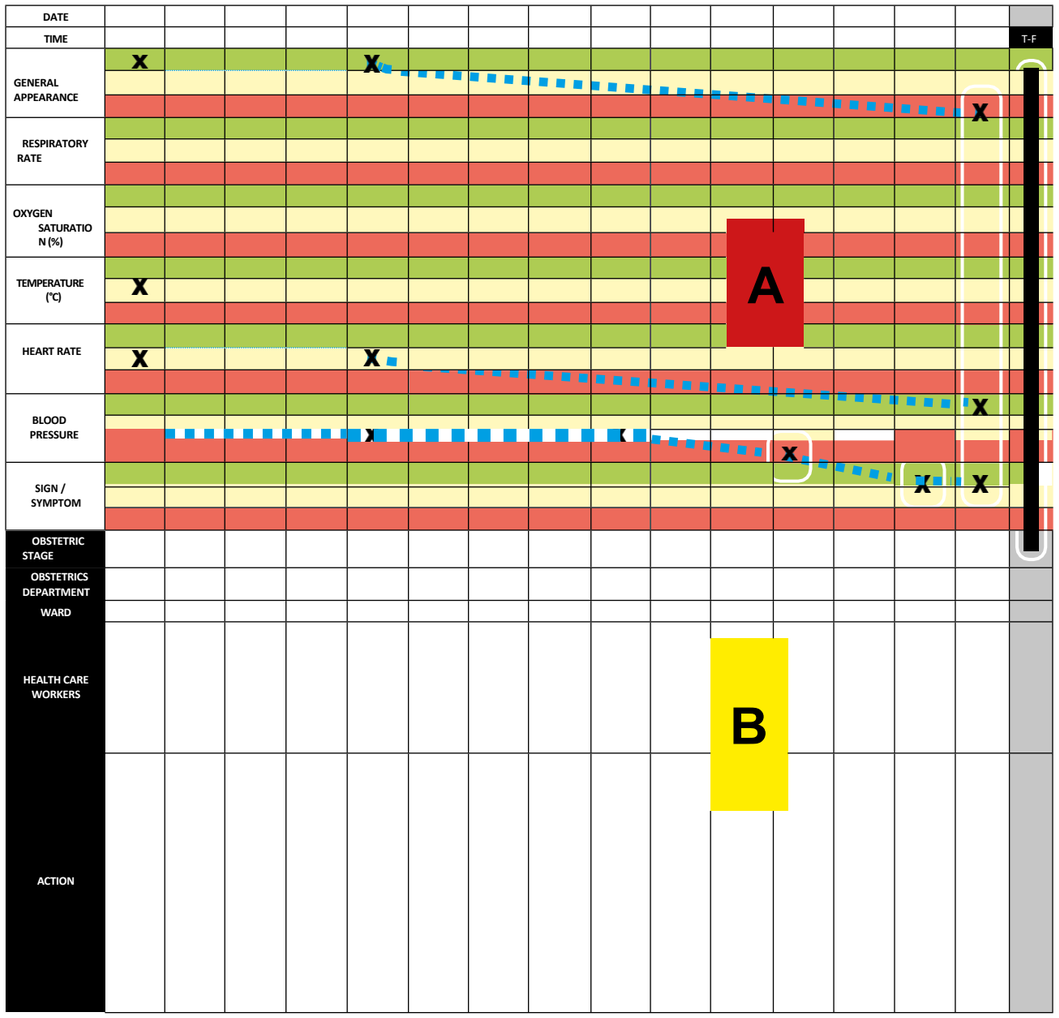
• The **direct cause (DC)** of extreme morbidity or death*: this is the **END time.**

This data is obtained from the current Death Certificate issued by the MSPBS.

To take the online course on how to properly fill out the CD, click the following link: *https://www3.paho.org/relacsis/index.phd/es/webinars-relacsis/411-gt4-de-la-red-cur-so-virtual-sobre-el-correcto-llenado-del-certificado-de-defuncion*

Parts of the Incident Diagram:

A	Summary of the Obstetric Early Warning Scale
B	Clinical performance assessed in time and space

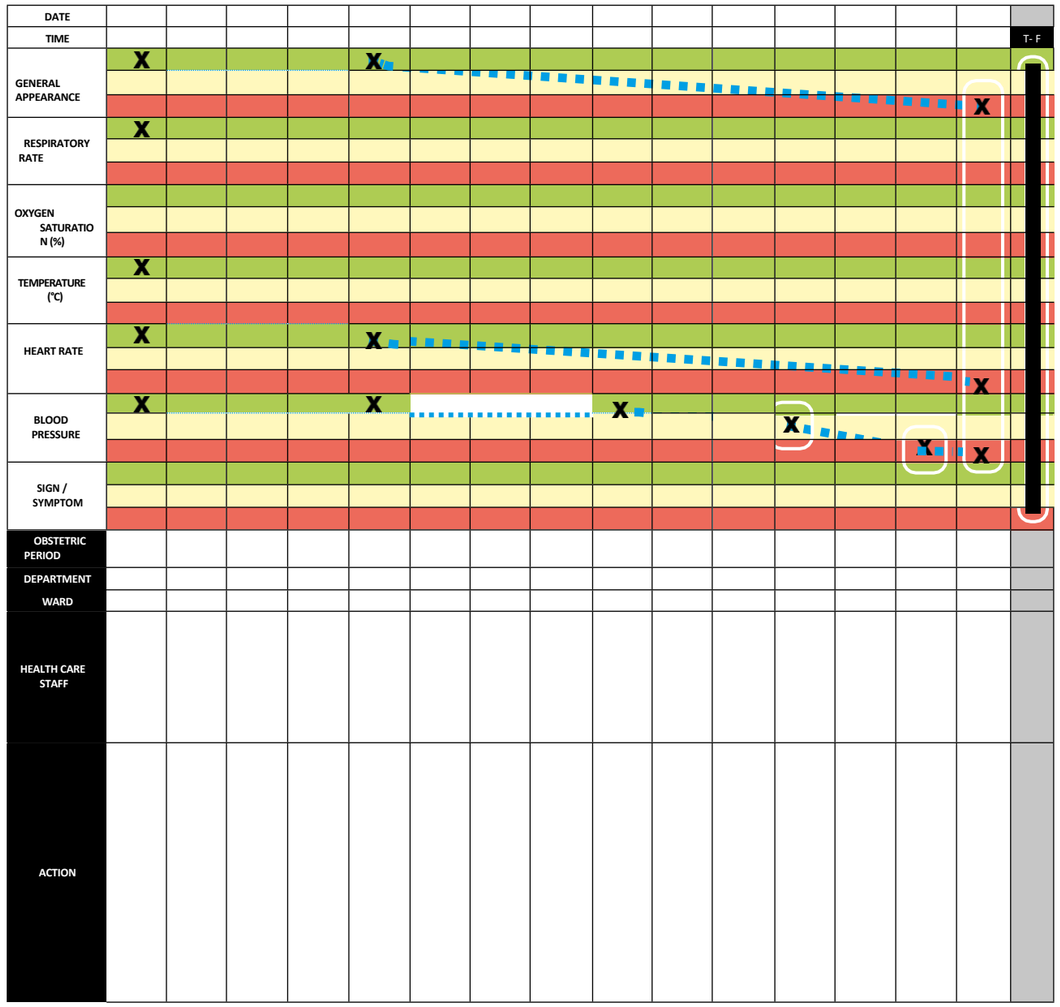


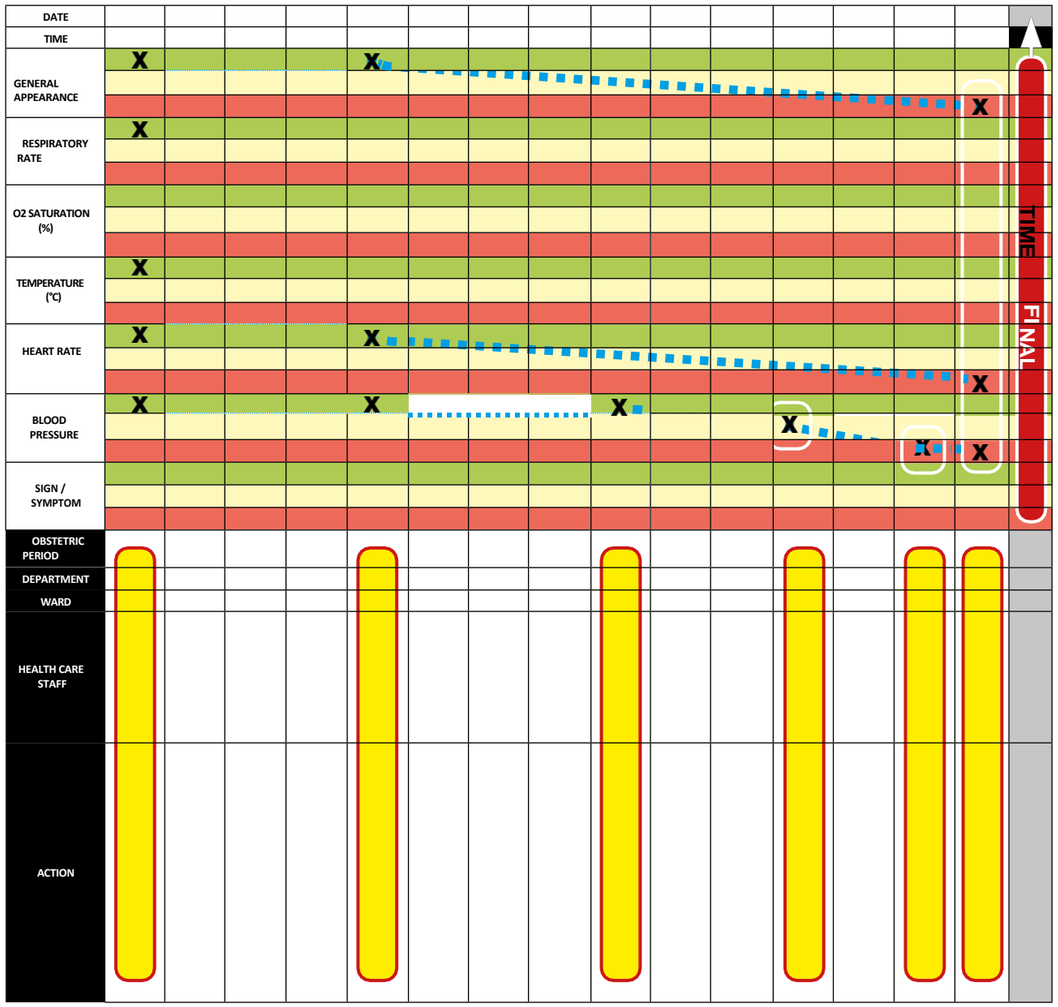
A	Record the data obtained from the early warning scale in **summary** form in chronological order (day and time).
B	Under each column used in the early warning scale in **Section A**, record the following data: • **Obstetric period** (pregnancy, vaginal delivery, cesarean section, dilation and curettage, other procedures, postpartum period). • Health care **service** or facility. • **Ward** or unit. • Healthcare **personnel** who attended to the case (physician, nurse, obstetrician, others). • Indicated and performed monitoring **actions**. This data is obtained directly from the patient's medical record (medical history, evaluation, orders, nursing notes, partogram, monitoring, discharge summary, others) and is assessed to determine whether **they coincide in time** with the vital signs recorded in **Section A**.

Steps:

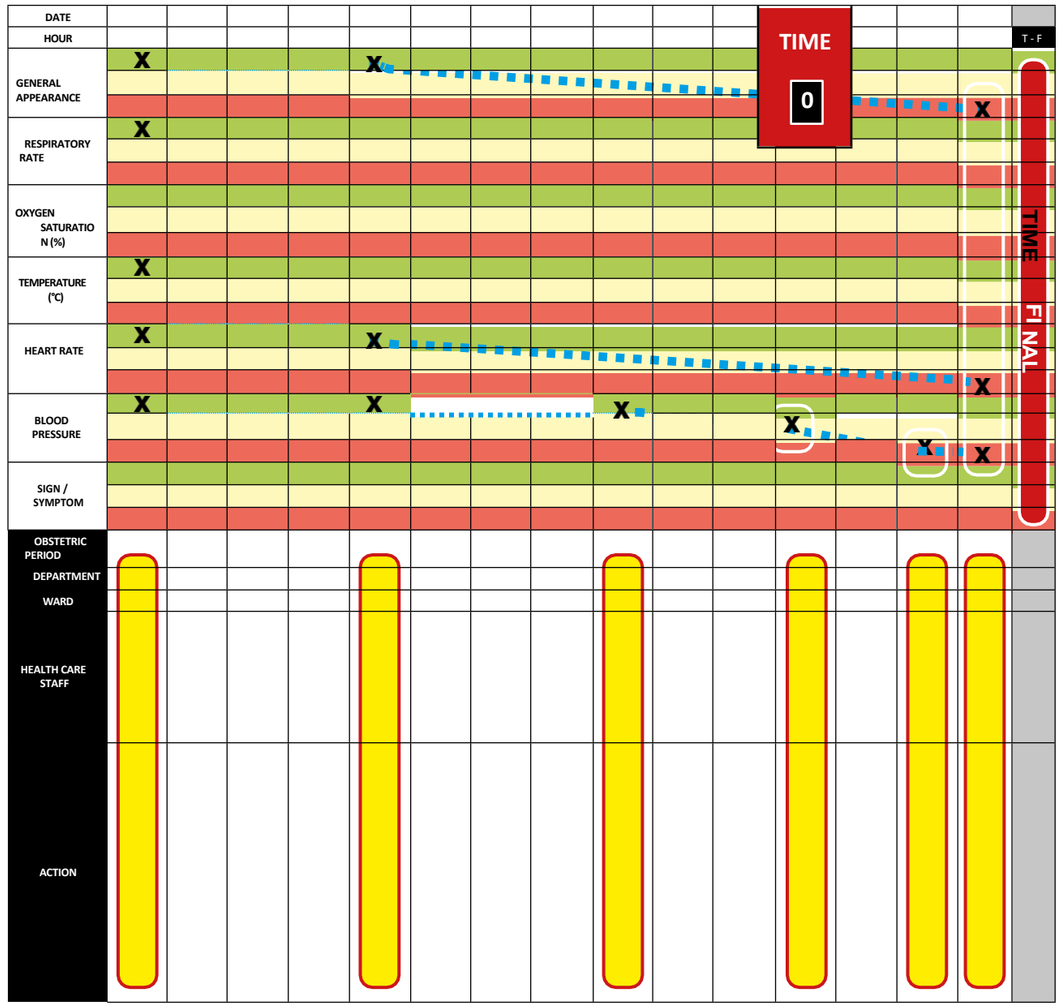
1. Transfer the data chronologically from the obstetric early warning scale to **Section A** of the incident diagram. **Circle** all **critical incidents.**

2. Record the requested data in **Section B**, below each column used in Section A, and assess whether **they coincide in time.**

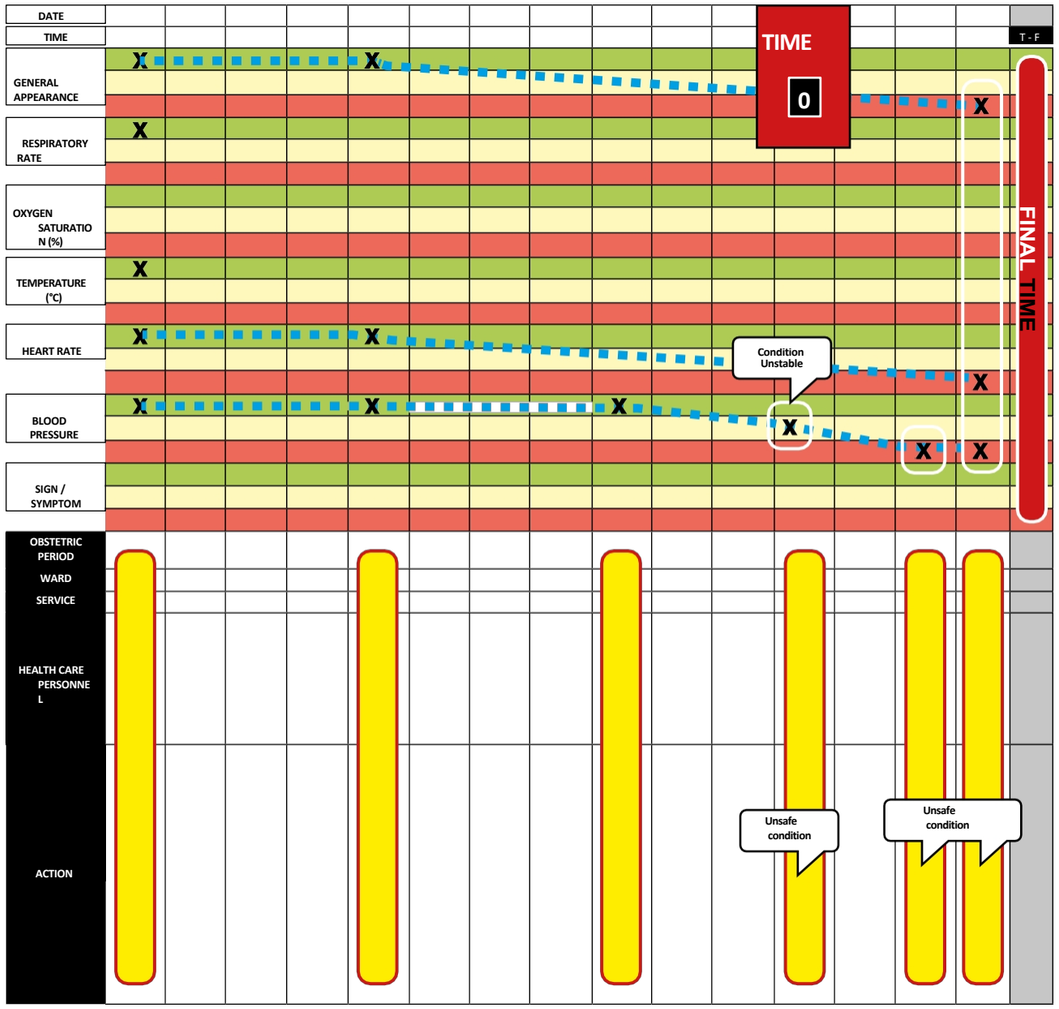




3. In Section A, record the time at which Time Zero and Final Time were identified based on the data obtained from the current death certificate issued by the MSPBS or from the patient's medical record.



4. Record the **AI**, if applicable. To do so, review the medical records and determine whether the MSPBS standards and protocols for that specific situation are being followed.

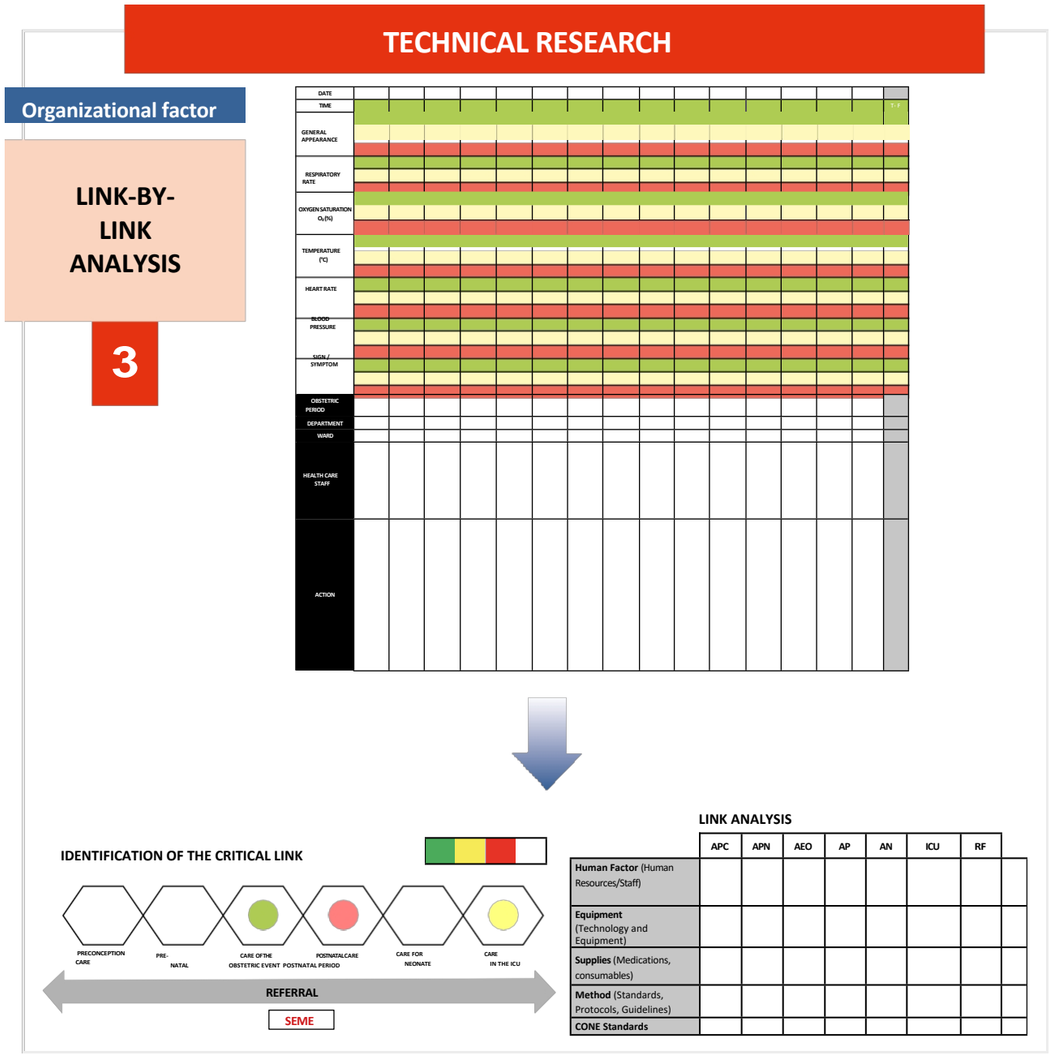


Stage 3: ORGANIZATIONAL FACTOR

Conduct a link-by-link analysis.

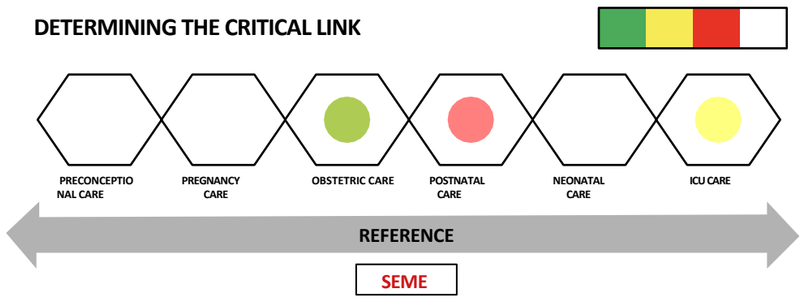
The **main objective** of this stage is to identify the warning and critical links and to assess any potential gaps that may exist in those links.

Each link represents a process in the continuum of care: preconception, prenatal, obstetric event (vaginal delivery, cesarean section, dilation and curettage, etc.), postpartum, newborn, ICU, and referral system.



Parts of the Chain Diagram: It consists of two parts

A	Determine the alert link and the critical link • **ALERT LINK (AL)**: This is the point in the obstetric period where the **CI and/or AI** was identified in the incident diagram. • **CRITICAL LINK (CL)**: This is the point in the obstetric period where the **CB** was identified **or time zero was identified** in the incident diagram.
B	Analyze by stages: evaluate the requested data according to the **CONE** for the identified stages.



A

B

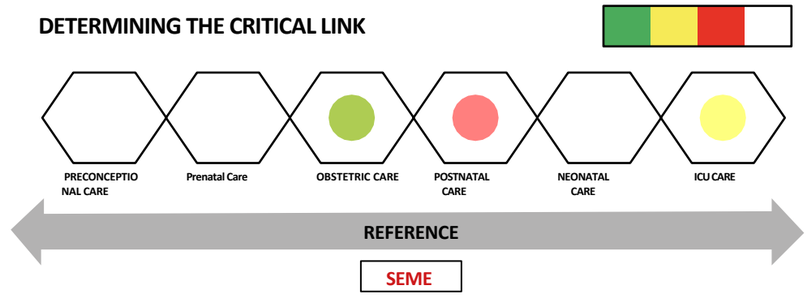
LINK ANALYSIS

	APC	APN	AEO	AP	AN	ICU	RF	
Human Factor (Human Resources/Staff)								
Equipment (Technology and Equipment)								
Supplies (Medications, Supplies)								
Methods (Standards, Protocols, Guidelines)								
CONE Standards								

Steps:

1. Highlight the identified alert links in YELLOW.
This corresponds to the point in the obstetric period where the CI and/or AI was identified on the incident diagram.

2. Highlight the identified critical link in RED.
This corresponds to the point in the obstetric period where the CB or time zero was identified in the incident diagram.



3. Evaluate the identified components, indicating whether they meet √ or do not meet X the current criteria established by CONE, using the data listed below:

- Human Factor (Human Resources/Staff)
- Equipment (Technology and Equipment)
- Supplies (Medications, Consumables)
- Methods (Standards, Protocols, Guidelines)
- CONE Standards

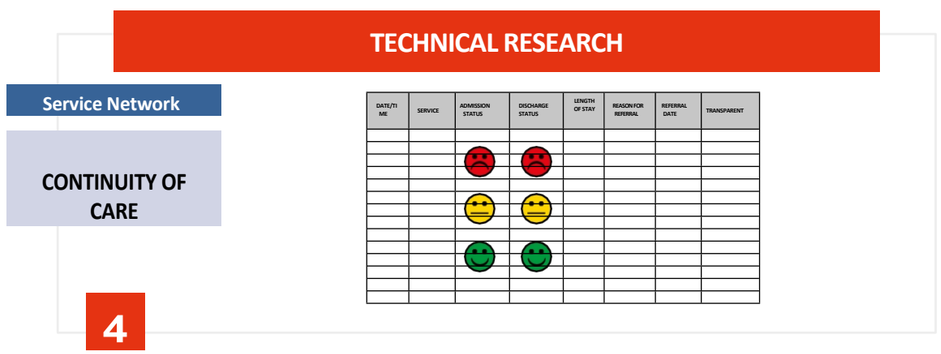
LINK ANALYSIS

	APC	APN	AEO	AP	AN	ICU	RF	
Human Factor (Human Resources/Staff)								
Equipment (Technology and Equipment)								
Supplies (Medications, Supplies)								
Methods (Standards, Protocols, Guidelines)								
CONE Standards								

Stage 4: SERVICE NETWORK

Assess the continuity of care.

The **main objective** is to assess the continuity and quality of care received when the patient was treated at more than one health service or facility.



Steps:

1. Enter the requested information:

DATE/TIME	SERVICE	ADMISSION STATUS	DISCHARGE STATUS	LENGTH OF STAY	REASON FOR REFERRAL	TIME OF REFERRAL	TRANSPORTATION

2. In the **ADMISSION and DISCHARGE status** section, assess the patient based on the hemodynamic evaluation performed, using the early warning scale. If, upon admission, the patient presents any signs or symptoms in the red or yellow range, record it as YELLOW or RED.

The data is extracted from the patient's medical record, from each of the health services or facilities where she received care, and/or from the current MSPBS referral and counter-referral form.

Upon completion of Stage 4, the information from this analysis will be used to create the Ishikawa Cause-and-Effect Diagram or Root Cause Analysis (RCA).

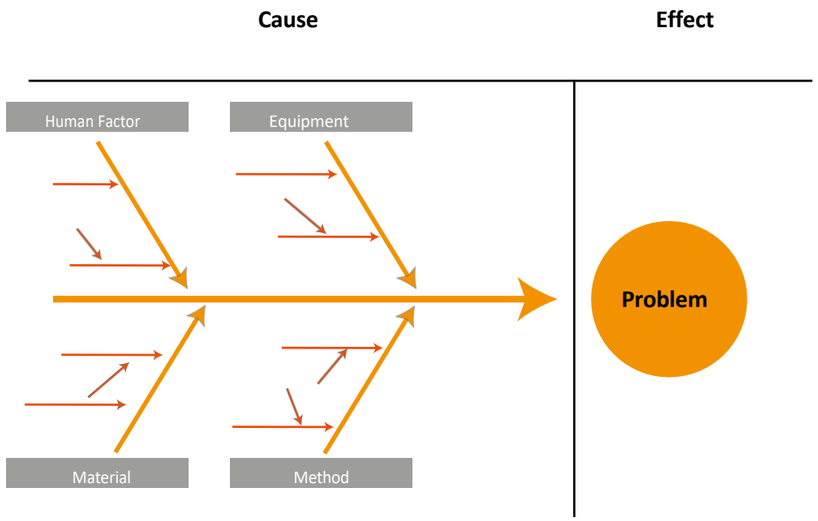
FISHBONE DIAGRAM (ISHIKAWA DIAGRAM)

The Ishikawa Diagram is a useful tool for categorizing and visualizing the various types of causes that contributed to the occurrence of MM, MF, or MN.

It helps to understand how chains of organizational factors contribute to whether or not a clinical procedure is performed in a timely manner and with the quality required by current regulations.

Creating the cause-and-effect diagram:

1. Draw a blank diagram or use the one provided in the ACA-BAMM Excel spreadsheet.
2. Briefly and clearly describe the problem to be analyzed.
3. Identify the categories (human factors, equipment, materials, methods) that are considered appropriate for describing the problem and write them on the diagram.
4. Brainstorm and note the causes within the corresponding category.
5. Identify the secondary causes resulting from the primary causes.
6. Conduct a detailed analysis of each cause, select those that can be corrected immediately, and refer those that are beyond your scope to the appropriate person for resolution.



Guiding questions:

Human Factor (Human Resources/Staff):

- Is there sufficient staff available at all times? If not, specify which staff members and why.
- Are they trained, competent, and qualified? If not, specify which staff members and why.
- Are staff members fulfilling their responsibilities? If not, explain why.
- Are they committed and do they have a positive attitude?
- Other questions as needed.

Equipment (Technology and Tools):

- Is there enough? If not, specify which items and how many are missing, and why.
- Are they always available? If not, describe which items are unavailable and why.
- Are they suitable and safe for use? If not, specify which ones and why they are not in proper and safe condition.
- Is the infrastructure sufficient and appropriate to provide safe and adequate care? If not, identify which areas are affected and why.

Supplies (Medications, Medical Supplies):

- Are they available when needed? If not, specify which ones are unavailable and why.
- Are they sufficient? If not, which ones and how many are missing? Why are they missing?
- Are they safe? If not, which ones are not in proper condition and why?

Method (Standards, Protocols, Guidelines):

- Are they available, accessible, and well-known? If not, specify which ones and why they are not available.
- Are they consistent and up to date?
- Are they applied consistently and correctly? If not, specify which ones are not being applied and why.

MATERNAL MORTALITY INDICATORS

A. PROCESS INDICATORS

Indicator	Calculation	Level/ Frequency/ Responsible Parties	Verification Methods
Percentage of MMs analyzed using the ACABAMM methodology by RS	Number of MM analyzed using the ACABAMM methodology by RS / Total MM by RS	Local / Monthly / Regional CTL / Quarterly / National CTR / Semiannual / CTN	- ACABAMM Report - CD
Percentage of pregnant women cared for by EO in the MSPBS	No. of EO treated / Number of pregnant women treated × 100	Local / Monthly / Regional CTL / Quarterly / National CTR / Semiannual / CTN	- SIP PLUS - Hospital Discharge - SAA - HIS
Percentage of correctly completed medical records* in cases of MM	No. of correctly completed discharge summaries / total number of discharge summaries × 100	Local / Monthly / Regional Vital Statistics Committee / Quarterly / National Vital Statistics Committee / Semiannual / Vital Statistics Committee	- CD

*Correct completion: Ensure that the CD is complete and filled out correctly.

B- OUTCOME INDICATORS (IMPACT)

Indicator	Calculation	Level/ Frequency/ Responsible Parties	Verification Methods
Maternal Mortality Ratio	Number of recorded maternal deaths / Number of live births recorded × 100,000	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- MM CD - Live Birth Certificate
Percentage of MM by Direct Causes	Number of MM from direct causes / Total number of recorded MM cases × 100	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- COCTN Reports - MM CD - NV Certificate
Percentage of MM by Indirect Causes	No. of MM from indirect causes / Total number of recorded MM cases × 100	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- COCTN Reports - MM CD - NV Certificate
Percentage of Late MM	No. of Late MM / Total No. of MMs recorded × 100	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTN	- COCTN Reports - MM CD - NV Certificate
Percentage of Miscarriages Related to Pregnancy (external causes)	No. of pregnancy-related maternal deaths / Total no. of Miscarriages recorded × 100	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTR	- COCTN Reports - Miscarriage CD - Miscarriage Certificate
Percentage of miscarriages occurring during pregnancy	No. of miscarriages occurring during pregnancy / Total no. of miscarriages × 100	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- COCTN Reports - MM CD - Certificate of NV
Percentage of MM occurring during childbirth	No. of MM occurring during delivery / Total number of MM × 100	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- COCTN Reports - MM CD. - Certificate of NV
Percentage of MM Occurring During the Postpartum Period	No. of MM occurring during the postpartum period / Total number of MM × 100	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- COCTN Reports - MM CD - Certificate of NV
Percentage of MM per occurrence in healthcare facilities	No. of MM per occurrence in healthcare facilities / Total No. of MM × 100	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- COCTN Reports - MM CD - NV Certificate
Percentage of MM per occurrence at home	No. of MM per occurrence at home / Total number of MM × 100	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- COCTN Reports - MM CD - NV Certificate
Percentage of MM by occurrence at other sites	No. of MM per occurrence at locations other than healthcare facilities or home / Total No. of MM × 100	Local/ Monthly/ Regional CTL/ Quarterly/ National CTR/ Semiannual/ CTN	- COCTN Reports. - MM CD - NV Certificate

INDIVIDUAL ANALYSIS (SENTINEL CASES) – ACR

The ACR is a systematic and comprehensive methodology for identifying failures in care processes and hospital systems. These failures, which are not immediately apparent, contribute to the occurrence of an adverse event and/or near miss.
The objective of an ACR is to determine: What happened? Why did it happen? And what can be done to prevent it from happening again?

For the analysis of sentinel cases of fetal death and neonatal death, the methodology to be used is **Root Cause Analysis (RCA)**, which seeks **to identify** weaknesses in care processes and **generate** opportunities for quality improvement, ensuring the safety of patients and healthcare professionals in the performance of their duties.

Newborn care is the final link in a chain of interlinked, life-course-oriented processes; therefore, the analysis of sentinel cases of FDM and NDM involves an individualized and systematic review of each of these processes:

- PRECONCEPTIONAL CARE
- PRENATAL CARE
- DELIVERY CARE
- NEWBORN CARE

STEPS FOR IMPLEMENTING THE ACR BY CARE PROCESSES

Step 1. Organize the team.

Step 2. Define the event.

Step 3. Investigate the event. Step

4. Determine what happened. Step

5. Determine why it happened.

Step 6. Examine the barriers.

Step 7. Develop and implement an improvement plan.

STEP 1: ORGANIZE THE TEAM

Convene the health care professionals involved in the care processes for the investigation.

• Healthcare professionals directly involved in the event or in the care of the deceased mother or newborn.

• Professionals from various disciplines and professions indirectly related to the event.

Decision-makers and those professionals who will be responsible for implementing the identified improvements should also participate in the ACR process.

It is of the utmost importance to ensure the confidentiality of the results and to emphasize that the purpose is never punitive, but rather to identify opportunities for improvement and develop a plan.

STEP 2: DEFINE THE EVENT

The sentinel cases to be studied using the ACR methodology will be those maternal or neonatal deaths whose cause is not related to the presence of major congenital defects incompatible with life and that also meet two of the following criteria:

• Birth weight greater than or equal to 2,500 grams and less than or equal to 4,500 grams.
• Gestational age at birth greater than or equal to 34 weeks and less than or equal to 42 weeks.
• CPN of 4 or higher.

STEP 3: INVESTIGATE THE EVENT

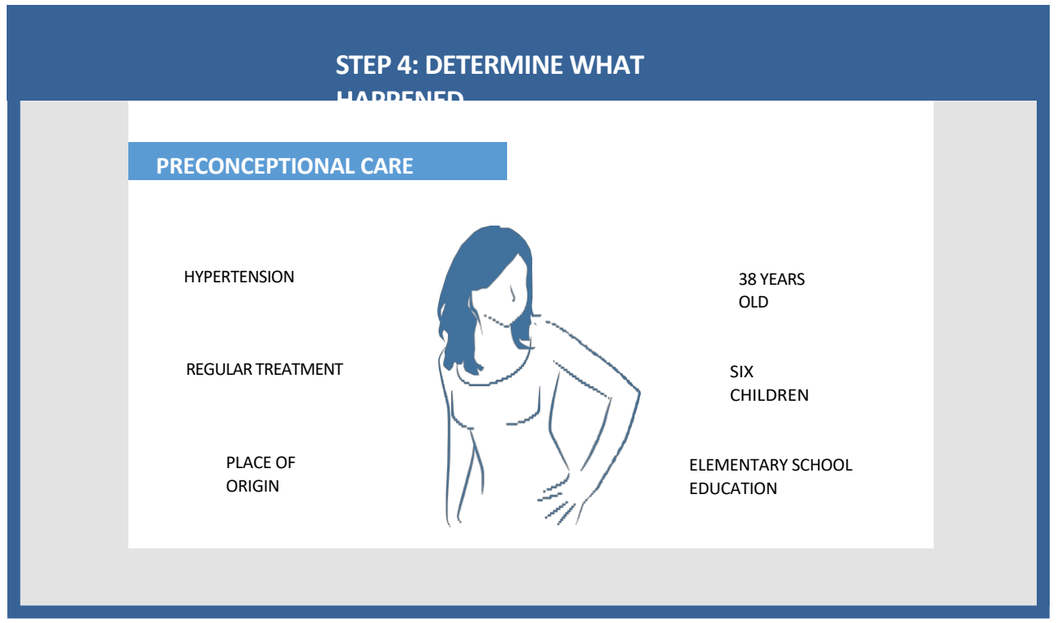
This involves gathering information in a clear and objective manner to understand what happened, by conducting a thorough review of all collected data (the mother's and newborn's medical records, physical evidence, interviews with family members and healthcare professionals, etc.).

STEP 4: DETERMINE WHAT HAPPENED

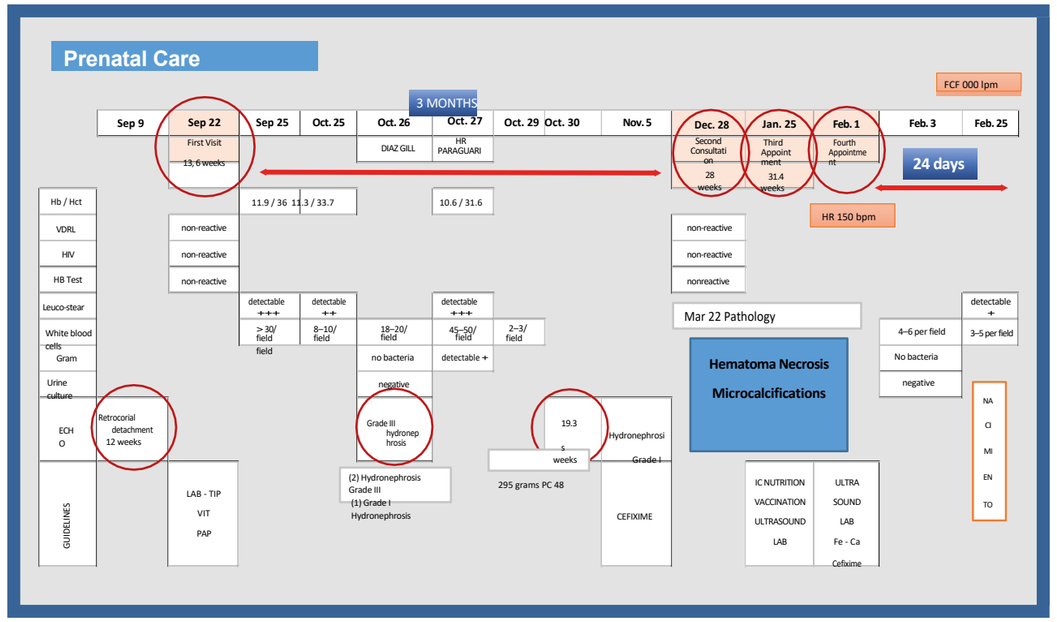
The question that will guide this investigation is: **WHAT HAPPENED?** To answer this, a detailed, chronological, and objective description of the event must be provided—without passing judgment—including when, where, and how it occurred.

Visual representations help in understanding what occurred. Some of the most commonly used tools are **flowcharts** and **timelines**.

DETAILED DATA COLLECTION

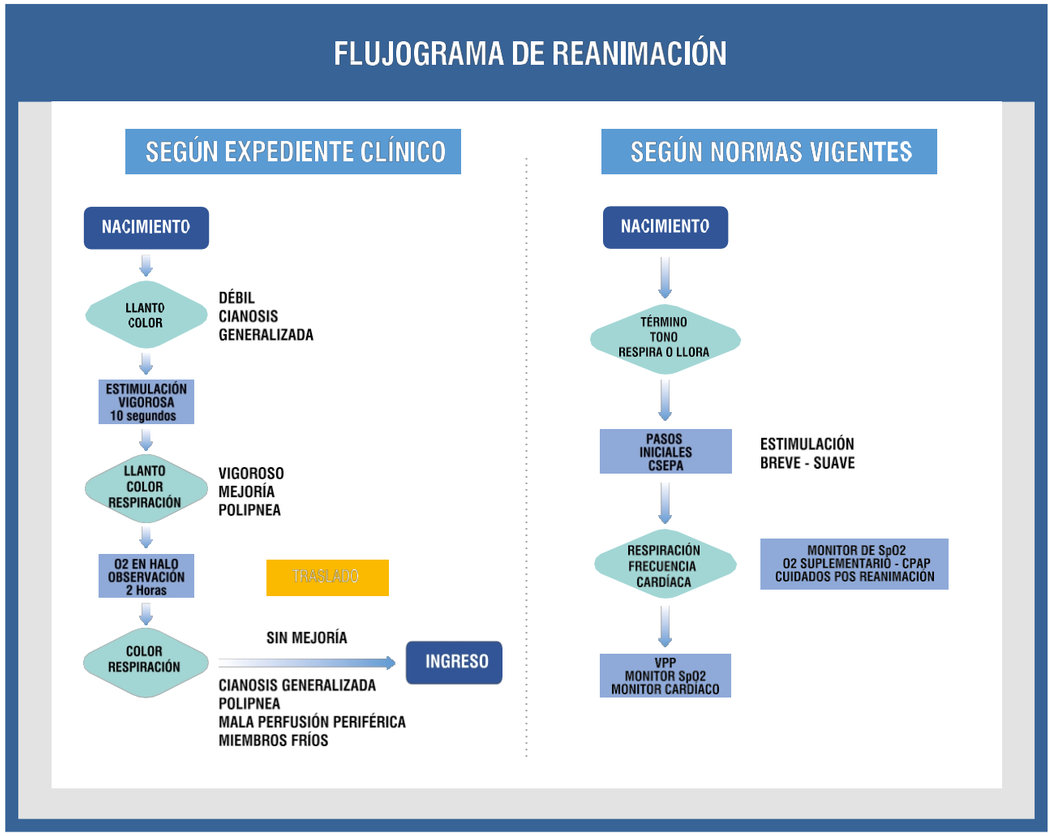


TIMELINES





PROCESS FLOWCHART



STEP 5: DETERMINE WHY IT HAPPENED

The guiding question for this step: **WHY DID IT HAPPEN?**

Use the **"brainstorming"** technique to identify potential causes that lead to an unsafe condition.

Using the causes identified during the brainstorming session, construct a Fishbone Diagram (Ishikawa Diagram).

Each cause must be analyzed according to the corresponding dimension.

To determine the root cause of each cause, ask the following three questions:

1. If cause **X** had not been present, would the sentinel event have occurred?
2. If cause **X** is removed or resolved, will the sentinel event recur?
3. If cause **X** is removed or resolved, will the conditions that led to the event's occurrence reappear?

A negative answer to all three questions indicates the presence of a root cause.

WHAT HAPPENED	WHY	WHY	WHY	WHY	WHY
Woman of reproductive age with a risk factor who is not using any form of family planning despite having had 6 institutional deliveries	Because she was not offered post-event contraception, nor during the follow-up visits she had for her underlying condition	Because there is only one professional assigned to provide family planning counseling, and that person does not come in every day	Because she is the only one who participated in the training sessions conducted by the central office and did not share what she learned	Because she was not asked to share what she had learned	Because it didn't seem necessary
High-risk pregnancy (with an underlying medical condition) has her first prenatal visit and then her second visit 3 months later	Because she couldn't get an appointment	Because prenatal clinics aren't open every day and are only available in the morning	Because there is no designated prenatal care provider; so on-call providers handle them during their shifts	Because there is no possibility of new contracts	
Childbirth care that does not comply with current standards and current protocols (oxytocin drip)	Because the delivery room staff come from different training programs and have different approaches	Because they are unaware of the Ministry's standards and protocols for standardizing approaches	Because new hires are not trained on the standards and protocols, nor is there supervision of their implementation by existing staff	Because it is not part of the activities planned in the Regional Action Plan	
Untimely assessment of at-risk newborns	Because immediate care for the newborn was provided by a professional without prior training	Because residents do not receive training in ACORN and CPR before rotating	Because it is not part of the established schedule of activities for their pediatrics rotation	Because that aspect was not taken into account	

STEP 6: EXAMINE IMPROVEMENT ACTIONS

The questions that will guide this step are**: What will be the result of implementing this action? and What would be the result of not implementing this action?**

Use **"brainstorming"** to generate proposals for improvement actions aimed at correcting and strengthening service processes.

All proposals are recorded—without criticizing them or evaluating their feasibility—then analyzed and selected to create a list of potentially recommendable solutions that will serve as the basis for the improvement plan.

Once the root cause has been identified, brainstorming is used to propose improvement actions.

Root Cause = Resident: The resident (R) assigned to receive the newborn in the delivery room lacks the required competencies.

Proposed Improvement Actions

- Training for residents in ACORN and CPR prior to their rotation in the neonatal unit
- Training for residents in ACORN and CPR upon completion of the first year of residency
- Training for registered nurses and midwives in ACORN and neonatal CPR
- On-call physician accompaniment of residents during all patient admissions
- Incorporation of ACORN and Neonatal CPR into the Pediatric Residency curriculum, including during the internship
- Monitoring of the mother-infant pair in the postpartum unit by a single healthcare professional

		through the delivery room			

STEP 7: DEVELOP AND IMPLEMENT AN IMPROVEMENT PLAN

The improvement plan describes the identified actions as well as the recommended measures and timelines for evaluating their effectiveness. (Appendix 6).

The improvement plan must include the following aspects:

- What actions will be taken to resolve the problem (ACTIVITIES).
- Who will be responsible for carrying out the actions (RESPONSIBLE PARTIES).
- When will these actions be carried out (TIMELINE)?
- Where will they be implemented (LOCATION and STAFF INVOLVED)?
- Which patients might benefit (IMPACT).

The team in charge of implementation can use the defined plan as a “roadmap.”

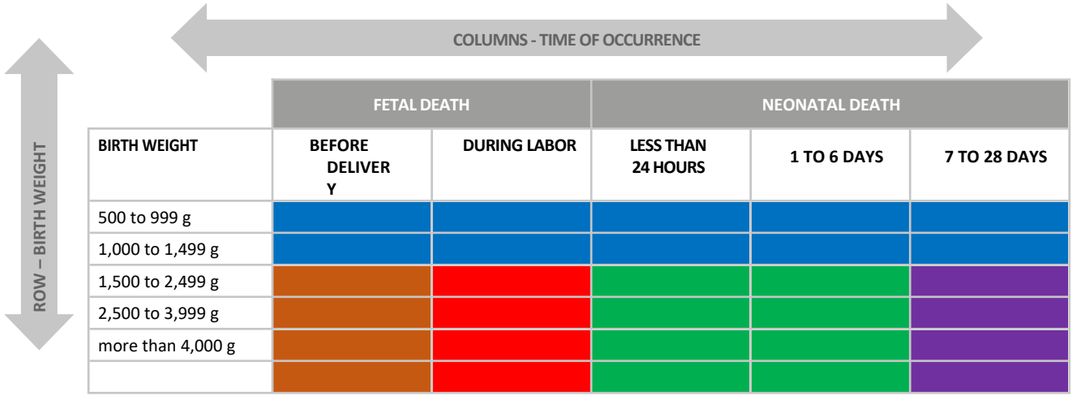
The planning, implementation, and evaluation of the improvement plan must be systematic in order to make this analytical methodology useful and effective.

UNIVERSAL ANALYSIS - BABIES MATRIX (MB)

For the comprehensive analysis covering ALL reported cases of MF and MN, our country adopts and adapts the epidemiological surveillance model for maternal and perinatal health developed at the WHO Collaborating Center for Maternal and Perinatal Health, based at the CDC in Atlanta, known as the BABIES Matrix (MB). This model uses key variables in perinatal health surveillance, such as birth weight and age at death. Birth weight is a predictor of survival in newborns and an indicator of a community’s economic and social development. Age at death is a useful indicator for targeting interventions based on the period of death.

BIRTHWEIGHT (birth weight)
AGE OF DEATH
B OXES (boxes) **I**
NTERVENTIONS **E**
VALUATION
SYSTEM

The **MB** is a spreadsheet structured into columns and rows, which intersect to form 25 boxes grouped into 5 color-coded cells. The COLUMNS indicate the TIME OF OCCURRENCE and distinguish 5 (five) time points. The ROWS indicate BIRTH WEIGHTS and are divided into 5 (five) weight ranges. The CELLS (color-coded) allow us to view the reproductive process as a continuum with intra- and extrauterine stages consisting of key periods or perinatal risk areas, which are categorized as preconception, prenatal, delivery, newborn care at the health facility, and newborn care at home. See Figure 1.



HIGH-RISK PERINATAL AREA	IDENTIFICATION COLOR
Preconception Care	Blue
Prenatal care	Orange
Childbirth Care	Red
Newborn Care (Inpatient)	Green
Newborn Care (Follow-up)	Purple

The **BABIES matrix** will be prepared by the **CTR** on a quarterly basis using updated data from the corresponding Health Region and submitted to the **CTN Operational Coordination Office** via the current email address:*vemmmfn@mspbs.gov.py* , according to the following schedule:

Time Period (Quarter)	Submission Date
January–February–March	First Friday in April
April–May–June	First Friday in July
July–August–September	First Friday in October
October–November–December	First Friday in January

The sources of information to be used to obtain the data are:

- DEATH CERTIFICATE (DC) (Appendix 13) and
- LIVE BIRTH CERTIFICATE (LBC) (Appendix 14) or
- SSIEV (Vital Statistics Information Subsystem)

CONSTRUCTION AND ANALYSIS OF THE

DATASET STEP 1:

Obtain the **death certificates** (either in hard copy or digital format) for all deaths (MF) and stillbirths (MN) that occurred during the defined time period and **identify** the total number of deaths (MF), stillbirths (MN), and live births during the same time period. Record the total number of live births in the corresponding box as shown in Figure No. 1.

STEP 2:

Classify and tally the cases of stillbirths and neonatal deaths, taking into account the time of occurrence (columns) and birth weights (rows), in order to fill in the different boxes. **Count** how many fetal deaths that occurred before and during delivery had a birth weight between 500 and 999 grams, and record the result in the corresponding box. Repeat the process for each group as shown in the example in Figure No. 1.

	FETAL DEATH (30)		NEONATAL DEATH (20)					
BIRTH WEIGHT	BEFORE DELIVERY (20)	DURING LABOR (10)	LESS THAN 24 HOURS (10)	1 TO 6 DAYS (5)	7 TO 28 DAYS (5)	NUMBER OF CASES	LIVE BIRTHS	TOTAL ALIVE + CASES
500 to 999 g	10							
1,000 to 1,499 g	5							
1,500 to 2,499 g		5						
2,500 to 3,999 g	3	5						
more than 4,000 g	2							
							254	

Figure No. 1. Recording in the MB the number of cases of MF by time of occurrence and birth weight

Also **count** how many neonatal deaths occurring within the first 24 hours of life had a birth weight between 500 and 999 grams and record the result in the corresponding box. Repeat the process for each age group as shown in the example in Figure No. 2.

	FETAL DEATH (30)		NEONATAL DEATH (20)					
BIRTH WEIGHT	BEFORE DELIVERY (20)	DURING LABOR (10)	LESS THAN 24 HOURS (10)	1 TO 6 DAYS (5)	7 TO 28 DAYS (5)	NUMBER OF CASES	LIVE BIRTHS	TOTAL ALIVE + CASES
500 to 999 g	10		3					
1,000 to 1,499 g	5		2		3			
1,500 to 2,499 g		5		3				
2,500 to 3,999 g	3	5	3		2			
more than 4,000 g	2		2	2				
							254	

Figure 2. MB records of the number of stillbirths by time of occurrence and birth weight

STEP 3:

Add up the number of recorded cases by row to obtain the total number of cases, as shown in Figure No. 3.

	FETAL DEATH (30)		NEONATAL DEATH (20)					
BIRTH WEIGHT	BEFORE DELIVERY (20)	DURING LABOR (10)	LESS THAN 24 HOURS (10)	1 TO 6 DAYS (5)	7 TO 28 DAYS (5)	NUMBER OF CASES	LIVE BIRTHS	TOTAL ALIVE + CASES
500 to 999 g	10		3			13		
1,000 to 1,499 g	5		2		3	10		
1,500 to 2,499 g		5		3		8		
2,500 to 3,999 g	3	5	3		2	13		
over 4,000 g	2		2	2		6		
						50	254	

Figure No. 3. Recording the sum of cases by row (birth weight) in the MB

STEP 4:

Add the total number of cases to the total number of live births, as shown in Figure No. 4.

	FETAL DEATH (30)		NEONATAL DEATH (20)					
BIRTH WEIGHT	BEFORE DELIVERY (20)	DURING LABOR (10)	LESS THAN 24 HOURS (10)	1 TO 6 DAYS (5)	7 TO 28 DAYS (5)	NUMBER OF CASES	LIVE BIRTHS	TOTAL ALIVE + CASES
500 to 999 g	10		3			13		
1,000 to 1,499 g	5		2		3	10		
1,500 to 2,499 g		5		3		8		
2,500 to 3,999 g	3	5	3		2	13		
more than 4,000 g	2		2	2		6		
						50	254	304

Figure No. 4. Record in the MB of the sum of total cases (deaths) plus live births

STEP 5:

Add up all cases occurring in cells of the same color (perinatal risk areas) and record the result in the MB as shown in Figure No. 5.

	FETAL DEATH (30)		NEONATAL DEATH (20)					
BIRTH WEIGHT	BEFORE DELIVERY (20)	DURING LABOR (10)	LESS THAN 24 HOURS (10)	1 TO 6 DAYS (5)	7 to 28 DAYS (5)	NUMBER OF CASES	LIVE BIRTHS	TOTAL ALIVE + CASES
500 to 999 g	23					13		
1,000 to 1,499 g						10		
1,500 to 2,499 g	5	10	10		2	8		
2,500 to 3,999 g						13		
more than 4,000 g						6		
						50	254	304

Figure No. 5. Recording in the MB of the sum of cases by colored cells

In order to select which cells contribute significantly to perinatal mortality and identify the strategy with the greatest potential for reducing it, the following step must be taken.

STEP 6:

Calculate the proportional mortality rate by birth weight (PMRBW), which is calculated by dividing the number of deaths occurring in each cell by the total number of live births plus cases[1]. Record the result in the MB as shown in Figure No. 6.

	FETAL DEATH (30)		NEONATAL DEATH (20)		
BIRTH WEIGHT	BEFORE DELIVERY (20)	DURING LABOR (10)	LESS THAN 24 HOURS (10)	1 TO 6 DAYS (5)	7 TO 28 DAYS (5)
500 to 999 g	75.7				
1,000 to 1,499 g					
1,500 to 2,499 g	16.4	32.9	32.9		6.6
2,500 to 3,999 g					
more than 4,000 g					

Figure No. 6. Recording the sum of cases by color-coded cells in the MB

Using an Excel spreadsheet, it is possible to automatically calculate the TMPP result.

STEP 7:

Identify the perinatal risk cell or area that contributes significantly to perinatal mortality, as shown in Figure No. 7.

Perinatal Risk Period	January through March 2021
PRECONCEPTIONAL	75.7
PRENATAL	16.4
CHILDBIRTH	32.9
RN INPATIENT	32.9
OUTPATIENT FOLLOW-UP	6.6

Figure 7. Identification of Perinatal Risk Areas According to TMPP

Develop an Improvement Plan with activities aimed at strengthening the perinatal and neonatal areas identified as having a high impact on perinatal mortality. To this end, the same sentinel case Improvement Plan model—ACR—will be used. (Appendix 6).

1. *Management Model for Decision-Making in Perinatal Health. Jorge Mejía López, Marta Cecilia Jaramillo Mejía, Management Studies 2006.*

Preconception Care: Interventions in this care process should focus on improving the overall health of women of childbearing age, their partners, and their social environment in order to achieve a planned pregnancy when conditions ensure a risk-free or low-risk pregnancy.

Care during the prenatal period: Actions in this care process should be focused on improving the overall health of the pregnant woman, identifying risk factors, and implementing timely interventions by establishing early, periodic, comprehensive, and widely accessible prenatal care in accordance with current guidelines.

Care during labor and delivery: Actions in this care process should focus on providing skilled care during labor and the timely resolution of obstetric emergencies in accordance with current standards.

Newborn care at the health facility: Actions in this care process should focus on comprehensive care for at-risk newborns and the management of neonatal emergencies in accordance with current standards.

Newborn care at home (follow-up): Actions in this care process should focus on comprehensive follow-up for at-risk newborns in accordance with current standards.

Through the BABIES Matrix, it is possible to:

1. Understand the importance of integrating the newborn's health with the mother's health and the factors that could improve child survival and adult health.

2. Develop an integrated approach to the care of the mother and the newborn.

3. Observe trends in perinatal and neonatal mortality based on the timing of occurrence and birth weight.

4. Guide, prioritize, or refocus public health actions during key periods of the life course to have a significant impact on the health of the mother and the newborn.

MONITORING INDICATORS

A- INDICATORS OF FETAL AND NEONATAL MORBIDITY AND MORTALITY IN HOSPITALS

Indicator	Calculation	Level / Frequency / Responsible Parties	Verification Methods
Hospital Perinatal Mortality Rate	No. of stillbirths + No. of early neonatal deaths (<7 days of life) / Total number of births (live and stillbirths) × 1,000	Local/ Monthly/ CTL Regional/ quarterly/ CTR National/ semi-annual/ CTN	- CD - Birth Certificates
Hospital Late Fetal Mortality Rate	Number of late fetal deaths (stillbirths weighing > or = 1,000 grams) / Total number of births (live and stillbirths) weighing 1,000 grams or more × 1,000	Local/ Monthly/ CTL Regional/ quarterly/ CTR National/ semi-annual/ CTN	- CD - Live Birth Certificates
Hospital early neonatal mortality rate	Number of preterm births (< 7 days) / Total number of NV cases × 1,000	Local/ Monthly/ CTL Regional/ quarterly/ CTR National/ semi-annual/ CTN	- CD - Neonatal Death Certificates
Late Neonatal In-Hospital Mortality Rate	Number of late neonatal deaths (7–27 days) / No. of neonatal deaths per 1,000	Local/ Monthly/ CTL Regional/ quarterly/ CTR National/ semi-annual/ CTN	- CD - Live Birth Certificates
Incidence rate of low birth weight	Total number of live newborns weighing less than 2,500 grams / Total number of live births × 1,000.	Local/ Monthly/ CTL Regional/ quarterly/ CTR National/ semi-annual/ CTN	- Birth Certificates
Incidence rate of preterm birth	Total number of live preterm newborns (<37 weeks gestational age) / Total number of live births × 1,000	Local/ Monthly/ CTL Regional/ quarterly/ CTR National/ semi-annual/ CTN	- Birth Certificates
Neonatal Mortality in Preterm Infants	Number of neonatal deaths among preterm infants (<37 weeks gestational age, who died within 28 days) / Number of preterm live births × 100	Local/ Monthly/ CTL Regional/ quarterly/ CTR National/ semi-annual/ CTN	- CD - Neonatal Death Certificates
Neonatal mortality among low birth weight infants	No. of low birth weight infants (<2500 g, deceased within 28 days) / No. of low birth weight infants × 100	Local/ Monthly/ CTL Regional/ quarterly/ CTR National/ semi-annual/ CTN	- CD - Newborn Death Certificates
Neonatal sepsis case-fatality rate	No. of newborns with neonatal sepsis who died (clinical or laboratory) / No. of newborns with neonatal sepsis hospitalized × 100	Local/ Monthly/ CTL Regional/ quarterly/ CTR National/ semi-annual/ CTN	- CD

B- REGIONAL FETAL AND NEONATAL MORBIDITY AND MORTALITY INDICATORS

Indicator	Calculation	Level/ Frequency/ Responsible Parties	Verification Methods
Perinatal Mortality Rate	No. of stillbirths + No. of early neonatal deaths (<7 days of life) / Total number of births (live and stillbirths) × 1,000	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- CD - Birth Certificates
Late Fetal Mortality Rate	No. of late fetal deaths (weight > or = 1,000 g)/ Total number of births (live and stillbirths) weighing 1,000 g) × 1,000	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTN	- CD - Birth Certificates
Neonatal Mortality Rate	No. of MN (0–27 days) / Total No. of NV × 1,000	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- CD - Neonatal Death Certificates
Early Neonatal Mortality Rate	No. of MN (0–6 days)/Total No. of NV × 1,000	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTN	- CD - Neonatal Death Certificates
Late neonatal mortality rate	No. of late neonatal deaths (7–27 days)/Total number of live births × 1,000	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- CD - Neonatal Death Certificates
Neonatal mortality rate for infants weighing less than 2,500 g	No. of newborns (< 2,500 g) / Total number of newborns weighing < 2,500 g × 1,000	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- CD - Live Birth Certificates
Neonatal mortality rate among adolescent mothers	Number of newborns (0 to 27 days) born to mothers (ages 10 to 19) / Total number of newborns born to mothers (ages 10 to 19) × 1,000	Local/ Monthly/ CTL Regional/ Quarterly/ CTR National/ Semiannual/ CTN	- CD - Live Birth Certificates
Incidence Rate of Low Birth Weight	Total number of live newborns weighing less than 2,500 g / Total number of live births × 1,000	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTN	- Birth certificates
Incidence rate of preterm birth	Total number of live preterm newborns (<37 weeks' gestational age)/ Total number of live births × 1,000	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTN	- Birth certificates

C- INDICATORS FOR EVALUATING THE FETAL AND NEONATAL MORTALITY SURVEILLANCE SYSTEM

Indicator	Calculation	Level/ Frequency/ Responsible Parties	Verification Methods
OUTCOME INDICATORS			
Percentage of Reported MF	No. of reported MF / Total No. of MF × 100	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTN	- CD - Mandatory MF and MN Notification Form
Percentage of MNs Reported	Number of MNs reported / Total number of MNs × 100	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTN	- CD - Mandatory MF and MN Notification Form
PROCESS INDICATORS			
Percentage of sentinel cases with MF occurring in hospitals, with clinical and epidemiological investigation	Number of sentinel cases of MF occurring in hospitals, with clinical and epidemiological investigation / Number of MF cases occurring in hospitals × 100	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTN	- CD - Mandatory MF and MN Notification Form CD - Medical Record
Percentage of MN among sentinel cases occurring in hospitals, with clinical-epidemiological investigation	No. of neonatal deaths among sentinel cases occurring in hospitals, with clinical-epidemiological investigation / No. of neonatal deaths occurring in hospitals × 100	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTN	- CD - Mandatory MF and MN Notification Form CD - Medical Record
Percentage of hospitals that have implemented improvement plans based the findings of clinical epidemiological research	Number of hospitals that have implemented improvement plans based on clinical epidemiological research/ Number of hospitals that have reported deaths of neonatal sentinel cases	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTN	- Improvement plan report
Percentage of hospitals that have implemented improvement plans based on the findings of clinical epidemiological research	Number of hospitals that have implemented improvement plans based on clinical epidemiological investigation/ Number of hospitals that have reported deaths of fetal sentinel cases	Local / Monthly / CTL Regional / Quarterly / CTR National / Semiannual / CTN	- Improvement plan report
Percentage of health regions reporting the "Babies with Improvement Plan" matrix	Number of regions that have completed the BABIES matrix with an improvement plan / Number of health regions × 100	Regional/quarterly/National CTR/semiannual/CTN	- BABIES Matrix Report

TARGETED SEARCH AND RECLASSIFICATION OF MATERNAL DEATHS (BIRMM)

BIRMM is a method for the targeted search for unreported maternal deaths, which uses the database of all deaths among women of childbearing age (WCA) (ages 10 to 54) that occurred during a given year, in which all cases are investigated descriptively and retrospectively, and those confirmed as maternal deaths are reclassified and incorporated into the statistics to improve the quality of the records obtained by the Vital Statistics Information Subsystem (SSIEV).

General objective:

To determine the actual number of maternal deaths as well as their causes over a given period.

Specific objectives:

- To confirm or reclassify the cause of death (COD) for confirmed MM deaths.
- To confirm or reclassify the cause of death (COD) for all deaths classified as MEF.
- Strengthen the VEMMMFN to improve the quality of information.

The Technical Committees are established by ministerial resolution.

Steps:

• The BIRMM is a procedure that includes investigation, documentation, analysis, and co-coding with the International Classification of Diseases (ICD-10) for both confirmed cases of MM and cases of MEF deaths.

• Record the following on the BIRMM Form (Appendix 5): the form number (1, 2, 3… according to the case sheet), personal information (first and last name, ID number, age, marital status, educational level), and demographic data (department, district, neighborhood, date of death, death certificate number, and place of death).

• Record the gynecological and obstetric history: pregnancies, deliveries, abortions, cesarean sections, prenatal care number, date of last menstrual period (LMP), and contraceptive method (CM) used up until the time of death; note where the last obstetric event (delivery, abortion) took place and the date of care for the last delivery or abortion.

• List the health care facilities where the woman received care, noting the name of each institution.

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BÚSQUEDA INTENCIONADA Y RECLASIFICACIÓN DE MUERTES MATERNAS

Nro. De formulario			
Nombre		Apellido	
Nro. de Doc.	Edad	Estado Civil	Nivel Educativo
Departamento	Distrito	Barrio	
Fecha defunción	Certificado defunción	Lugar de defunción	
/ /			
Gestas	Partos	Abortos	Cesareas
Control Prenatal	Número de Consultas	FUM	Método Anticonceptivo
SI NO			
Dónde se atendió el parto o aborto			
Fecha de atención del último parto o aborto		Institución	

Unidad que atendió complicación	Institución	Nombre
Primera		
Segunda		
Tercera		

- Indicate which documents were received and reviewed to conduct the case analysis.

Documents Received and Reviewed

Form 1 ☐	Form 2 ☐	Form 3 ☐	Form 4 ☐
Notification Form ☐	Death Certificate ☐	Medical Record ☐	Verbal Autopsy Report ☐
Necropsy ☐	Hospital Discharge ☐	Other (specify) ☐	

Pregnant ☐	Pregnant, last 6 weeks ☐	Pregnant, 12 months ☐

- List the causes of death recorded on the death certificate (A, B, C, D, Other) in the same order.

Causes recorded on the death certificate

Cause A	ICD-10	Time
Cause B	**ICD-10**	**Time**
Cause C	**ICD-10**	**Time**
Cause D	**ICD-10**	**Time**

Other Causes

- Record a brief summary of the case that led to the death, and the method used to determine whether or not it was a maternal death (FUM, MAC, BHCG, ultrasound, others).

Resumen del Caso y cómo se descarta o no una Muerte Materna

FUM: MAC: BHCG:
Ecografía:

- Record the causes of death, whether or not they have been reclassified.
- Indicate whether a cause of death is confirmed or ruled out, or if there is insufficient data to rule out a cause of death (when no supporting documentation was found), and whether it was reclassified or not in the causes of death.

Based on the review of the documents, the causes of death are duly recorded

Cause A	ICD-10	Time
Cause B	**ICD-10**	**Time**
Cause C	**ICD-10**	**Weather**
Cause D	**ICD-10**	**Time**

Other Causes Final

Underlying Cause

Confirmed MM ☐	**Ruled Out MM** ☐	**No Data to Rule Out MM** ☐

Reclassified ☐	**Not Reclassified** ☐

• Record the first and last names, along with the positions, of the participants in the analysis of each case.

• Each analyzed case must be entered into the BIRMM Form in the Excel spreadsheet, to be used in meetings convened by the COCTN.

Cases of in-hospital (institutional) MEF deaths:

The BIRMM must be conducted by the **CTL** to analyze all MEF deaths (using the death certificate, medical record, or verbal autopsy report—the latter only if necessary). The BIRMM form in the Excel spreadsheet must be completed for each case, and the resulting information must be analyzed with the **CTR**.

Cases of non-institutional MEF deaths (at home or on the street):

The BIRMM must be conducted by **medical examiners**, in addition to the issuance of the Death Certificate.

Completed BIRMM forms must be submitted monthly to **the CTR** of the corresponding health region.

If the required information is not available, a **verbal autopsy** must be conducted through the **CTR**.

• If it is necessary to correct the CD, use the corresponding form before submitting it to the regional level.

• The **CTR** will monitor the implementation of the BIRMM at the **CTL** for joint analysis and closure.

• The **CTR** will meet with the COCTN, on dates set by the latter, during the first half of the year, to analyze and close out all cases.

• Upon completion, the **CTR** must submit the BIRMM forms in Excel spreadsheets (available in the health region, provided by the **COCTN)**, with each case analyzed and closed, through the **Regional Directorate,** within 15 days following the closure meeting, to the **COCTN** at the following email address: *vemmmfn@mspbs.gov.py*

Data source: Vital Statistics Information Subsystem (SSIEV), including birth certificates and death certificates, managed by DIGIES.

Required documents:

a. Death certificates.

b. BIRMM form (Excel spreadsheet) (Appendix 5).

c. Medical record (medical history, EAPO forms, progress notes, medical orders, nursing notes, discharge summaries, auxiliary laboratory and imaging studies, etc.).

d. Other documents: Summary of emergency logs, RAC, forensic autopsy reports.

e. Verbal autopsy report (only if necessary).

Data Processing

The information collected via the BIRMM Form in the Excel spreadsheet must be processed using a statistical analysis system at the Central Level under the responsibility of the **COCTN.**

BIRMM INDICATORS

Indicator	Calculation	Level/Frequency/Responsible Parties	Verification Methods
Percentage of MEF Deaths Reclassified by Health Region	Number of MEF deaths studied and reclassified by Health Region / Total MEF deaths by Health Region × 100	Local / Monthly / Regional CTL / Quarterly / National CTR / Semiannual / CTN	- MM CD - BIRMM Excel Spreadsheet - MEF Death Database
Percentage of MM identified by the BIRMM method by Health Region	No. of MM identified by BIRMM from MEF (ages 10–54) / Total MEF deaths (ages 10–54) × 100	Local / Monthly / Regional CTL / Quarterly / National CTR / Semiannual / CTN	- MM CD - BIRMM Excel Spreadsheet - MEF Death Database

4- IMPROVEMENT PLAN

This is the set of actions that the **CTL** and the **CTR** agree to carry out, based on the analysis of morbidity and mortality cases, in order to plan how these changes will be implemented at the healthcare facility.

The Improvement Plan Form must identify the activities to be carried out, who will be responsible for each proposed activity, how it will be carried out, where, and the expected timeframe for completion, noting the start and end dates for each activity. (Appendix 6)

The **CTL** will send the Improvement Plan Form, along with the other documentation, to **the CTR**, with whom they will jointly analyze each case; the CTR will then send the documents digitally to the COCTN at the following email address: *vemmmfn@mspbs.gov.py*

- MM, MF, and MN cases: within 15 days of the occurrence.
- MMEG and MNE cases: within 30 days after discharge.
- MB cases on a quarterly basis.

IMPROVEMENT PLAN INDICATOR

Indicator	Calculation	Level / Frequency / Responsible Parties	Verification Methods
Percentage of improvement plans implemented in cases of maternal, fetal, and/or neonatal deaths by Health Region	Number of improvement plans implemented for cases of maternal, fetal, and/or neonatal deaths by Health Region / Total number of planned improvement plans by health region × 100	Local / Monthly / Regional CTL / Quarterly / National CTR / Semiannual / CTN	- Improvement Plan Form

5- SUPERVISION AND MONITORING

Based on the Improvement Plan presented by the technical committees, the next higher level will oversee and monitor the process to ensure compliance with the proposed actions.

INDICATOR

Indicator	Calculation	Level/ Frequency/ Responsible Parties	Verification Methods
Percentage of monitoring and oversight of the improvement plan implemented in cases of maternal deaths by Health Region	Number of monitoring and supervision activities for the Improvement Plan carried out in cases of maternal deaths by Health Region / Total planned monitoring and supervision activities by health region × 100	Local / Monthly / Regional CTL / Quarterly / National CTR / Semiannual / CTN	- Improvement Plan Form

6- EVALUATION AND ADJUSTMENTS

These must be conducted at the end of each fiscal year and must include an analysis of goal achievement (outcome indicators) and an evaluation of process indicators.

This will allow for an evaluation of the achievement of goals and processes, as well as the functionality of the VEMMMFN system.

It must conclude with interventions or actions directly related to reducing MM, MF, and MN.

To measure the indicators, use the tables found on the pages for: MM, MMEG, MNE, and BIRMM.

7- FEEDBACK

This is the feedback provided following monitoring, supervision, and evaluation.

The **COCTN** will provide this feedback to **the CTR** (Regional Office).

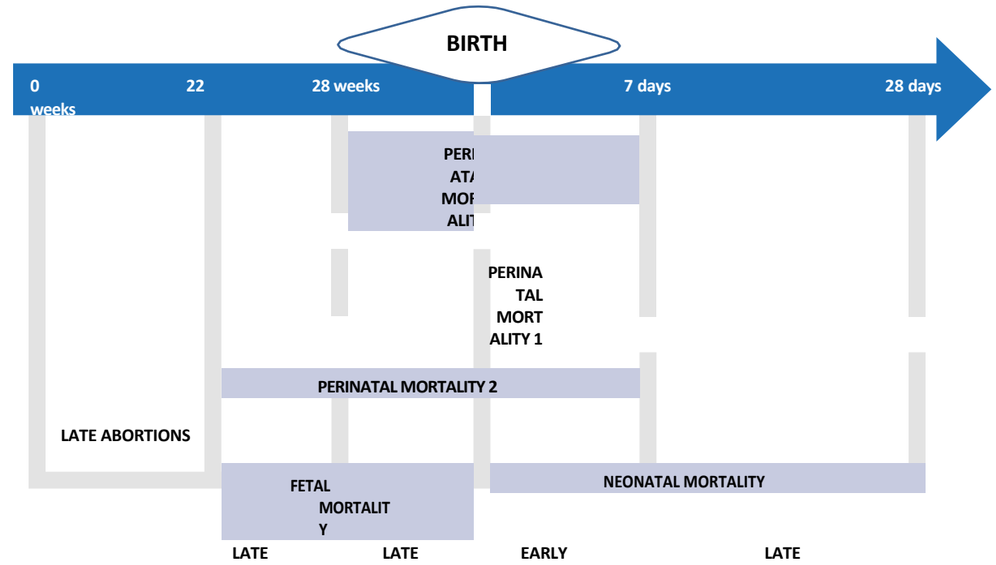
The **CTR** will provide this feedback to **the CTL,** and the **CTL** will carry it out internally at the health facility.

The Live Birth Certificate (Annex 14) must be uploaded to the SSIEV so that the data is available in a timely and proper manner when evaluating the indicators.

APPEND ICES

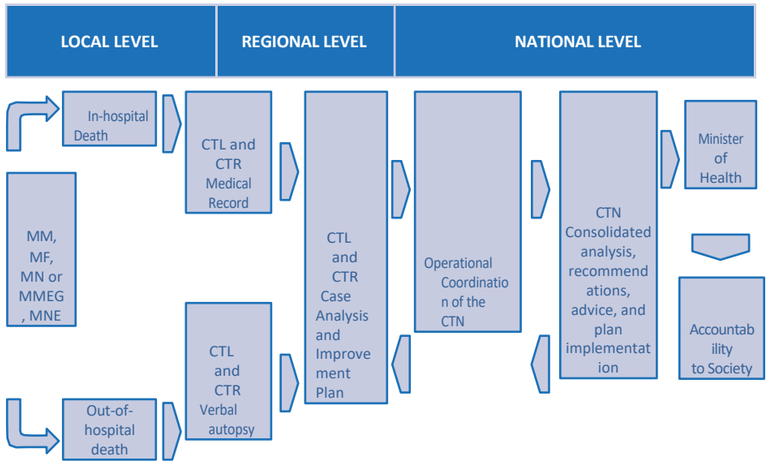
APPENDIX 1

PERIODS OF FETAL AND NEONATAL MORTALITY



APPENDIX 3

MMMFN REPORT FLOWCHART





APPENDIX 3

MM and MN NOTIFICATION FORM

PUBLIC HEALTH AND SOCIAL WELFARE • GOVERNMENT ■ NATIONAL — Paraguay de la gente — DGVS Dirección General de Vigilancia de la Salud

MATERNAL AND NEONATAL MORTALITY NOTIFICATION FORM

1- DATOS DEL NOTIFICANTE

Name of Reporter: _____ Date of Report: ...../...../.....
Facility: _____ Health Region: _____

2- DATOS DE LA DEFUNCION

Maternal Death: YES @ NO @
Date of Death: ...../...../.....
Time: _____Death Certificate No.: _____
Place of Death: Health Care Facility @ ICU @ Public Street @ During medical transport @ Home @ Other (specify).....
Underlying cause of death: _____
ICD-10: _____
Fetal death: YES @ NO @ Pregnancy: Single @ Multiple

Neonatal death: YES @ NO
Typeof Death _____ ..‹number of deaths' No._____
Place of death: Healthcare ICU @ zpub: a During medical transport @ Home @ Other @ Specify.....
Underlying cause of death: _____
ICD-10: _____

3- DATOS DE LA MADRE

First and Last Name: _____ID No.: _____
Age: _____ Date of birth: ...../...../..... Marital status: Married Single Common-law marriage Other
Department: _____District: _____Neighborhood: _____
Address: _____ Phone: _____

4.- ANTECEDENTES MATERNOS

Pregnancy No.: _____Number of vaginal deliveries: __Number of Cesarean Sections: _____Subscriptions No.: _____Less: _____vivos: _____

Education: None Elementary High School College No Information

5.- DATOS DEL NEONATO

First and Last Name: _____Date of Birth: ...../...../..... ID: ID No.: _____ HC No.: _____ Age: ____days/ ___hours Sex: M & F
Birth weight: _____grams. Gestational age: _____ weeks Apgar (1 and 5 min): /

6 - FACTORES DE RIESGO Y COMPLICACIONES

Risk Factors / Maternal Complications:		Neonatal history/complications	
No history & Chronic hypertension, heart disease, diabetes Hydatidiform mole & Immune disorders Cancer Gestational diabetes Chronic malnutrition @ HELLP syndrome @ Preeclampsia @ Eclampsia @ Mental disorder	& First-trimester bleeding Second-trimester bleeding & Third-trimester bleeding Interval between pregnancies of 2 years or more STIs other than HIV HIV — AIDS Other infections* Smoking @ Alcoholism @ Psychoactive substances @ Obesity @ Other complications" @ Healthcare-associated infection (HAI) Specify site: _____	Preterm newborn, Low-birth-weight newborn, Macrosomic newborn Metabolic disorders Sepsis Infectious disease* Rh incompatibility Prolonged or traumatic @ Healthcare-associated infection (HAI): Specify type: _____	Cephalopelvic disproportion Intrauterine growth restriction Autoimmune disease Congenital anomalies Major Perinatal asphyxia @Other complications*

*If you checked **"Other complications" or "Infectious disease,"** Which ones? _____

'If you checked **"Other complications" or "Infectious disease,"** Which ones? _____

7- ANTECEDENTES DE EMBARAZO PARTO Y PUERPERIO (en el momento de la muerte)

Time of death: Gestation & Delivery & Postpartum <24 hours Postpartum period > 24 hours
Week of gestation: _____Type of delivery: Vaginal Cesarean No. of prenatal visits during the last pregnancy: _____
Delivery attended by: Physician Obstetrician Nurse Midwife Other

8 – CIERRE DEL CASO (Posterior a la investigación)

Case Closure: Final Diagnosis of Primary Cause of Death: Maternal: _____CIEIO: _____
Final Diagnosis of Primary Cause of Neonatal Death: _____CIEIÓ: _____

APPENDIX 4

MMEG NOTIFICATION FORM

TESÃI HA TEKO PORAVE MOTENONDEHA MINISTERIO DE SALUD PÚBLICA Y BIENESTAR SOCIAL

TETÃ REKUÁI GOBIERNO NACIONAL

Paraguay de la gente

MINISTRY OF PUBLIC HEALTH AND SOCIAL WELFARE
GENERAL DIRECTORATE OF HEALTH PROGRAMS
EXTREMELY SEVERE **MATERNAL MORBIDITY** (MMEG) **NOTIFICATION FORM**

1- **REPORTER'S** INFORMATION	
Name of Reporter:	Date of notification: / /
Facility:	Health Region:

2- PATIENT INFORMATION			
First and Last Name:			ID No.:
Age:	Marital Status: Married ☐	Single ☐	Common-law marriage ☐
Education Level: None ☐	Elementary ☐	High School ☐	Other College ☐ No ☐
State:		information	
District:			

3- MATERNAL RISK FACTORS AND COMPLICATIONS							
Hypertension	☐	HIV/AIDS	☐	Bleeding 1 TMT	☐	Immune Disorders	☐
Preeclampsia	☐	Cancer	☐	Bleeding 2 TMT	☐	Mental disorder	☐
Eclampsia	☐	Infections	☐	Bleeding 3 TMT	☐	Chronic malnutrition	☐
HELLP	☐	TB	☐	Tobacco use	☐	Obesity	☐
Syndrome	☐	Diabetes	☐	Alcoholism	☐	No history	☐
Heart disease							
Other:							

4- **OBSTETRIC HISTORY**			
Pregnancies:	Na d u .	Cesarean sections:	
Live births:	Miscarriages:		

5- CARE DURING PREGNANCY, CHILDBIRTH, OR THE CURRENT POSTNATAL PERIOD				
REFERRAL: YES	☐	NO	☐	

FACILITY 1: DATE: / /
FACILITY 2: DATE: / /

6- INCLUSION CRITERIA			
Affected System or Organ	Clinical Criteria	Laboratory Criteria	Intervention-Based Criteria
Cardiovascular 0	Shock Cardiac arrest	Severe hypoperfusion (lactate >5 mmol/L or >45 mg/dL) 0 Severe acidosis (pH <7.1)	Continuous administration of vasoactive agents. ☐ Cardiopulmonary resuscitation
Respiratory	☐ Acute Cyanosis Labored ☐ Breathing Severe ☐ Tachypnea (RR >40 bpm) 0 Severe bradypnea (RR < 6 rpm)	☐ Severe hypoxia (oxygen saturation of oxygen saturation <90% for 60 minutes ventilation or PaO_2/FiO_2 <200)	☐ Intubation and unrelated under anesthesia
Renal	O Oliguria resistant to fluids or diuretics	Severe acute azotemia (creatinine ≥ 300 µmol/L or ≥ 3.5 mg %)	OR Dialysis due to acute renal failure.
Hematology	Coagulation disorders	OR Severe acute thrombocytopenia (<50,000 platelets/mL)	Massive transfusion of blood products (up to 3 units)
Hepatic	Jaundice in the presence of preeclampsia	Severe acute hyperbilirubinemia (bilirubin >100 pmol/l or >6.0 mg%)	

APPENDIX 5

BIRMM FORM

TESÃI HA TEKO PORAVE MOTENONDEHA MINISTERIO DE SALUD PÚBLICA Y BIENESTAR SOCIAL

DGVS Dirección General de Vigilancia de la Salud

DGPS DIRECCIÓN GENERAL DE PROGRAMAS DE SALUD

DIGIES Dirección General de Información Estratégica en Salud

PROACTIVE SEARCH AND RECLASSIFICATION OF MATERNAL DEATHS

Form No.

First Name	Last Name

Doc. No.	Age	Marital Status	Education Level

Department	District	Neighborhood

Date of death	Death certificate	Place of death
/ /		

Births	Childbirth Miscarriages	Cesarean sections	

Prenatal Care YES NO	Number of FUM		Contraceptive method

Consultations Where the delivery or abortion took place

Date of last delivery or abortion	Institution

Department that treated the patient complication	Institution	Name
First		
Second		
Third		

Documents Received and Reviewed

☐
☐

Neurological	0 Loss of consciousness (>12 hours) / Coma ☐ Stroke 0 Uncontrolled epileptic seizures / status epilepticus. OR Generalized paralysis*.		
Uterus			☐ Infection or hemorrhage leading to a hysterectomy.

APPENDIX 4

Form 1	Form 2	Form 3	Form 4
Notification Form	Death Certificate	Medical Record	Verbal Autopsy Report
Necropsy	Hospital Discharge	Other (specify)	

Pregnant	Pregnant, 6 weeks.	Pregnant 12m.

APPENDIX 5



Causes recorded on the death certificate

Cause A	ICD-10	Time

Cause B	ICD-10	Time

Cause C	ICD-10	Time

Cause D	ICD-10	
		Weathe

Other Causes

Case Summary and How to Determine Whether or Not a Maternal Death Occurred

FUM: MAC: BHCG:
Ultrasound:

Based on a review of the documents, the causes of death are properly recorded

Case A	ICD-10	Time

Reason B	ICD-10	Time

Cause C	ICD-10	Time

Cause D	ICD-10	Time

Other Causes

Final Underlying Cause

Confirmed MM ☐	Ruled Out MM ☐	No Data to Rule Out MM ☐

Reclassified ☐	Not Reclassified ☐

APPENDIX 6

IMPROVEMENT PLAN

Ministerio de SALUD PÚBLICA Y BIENESTAR SOCIAL — GOBIERNO NACIONAL — Paraguay de la gente

IMPROVEMENT PLAN FORM

First and Last Name of the patient:				Date of Death:				
Health Care Facility:				Health Region:				
Identified Weaknesses:	Activities:	Required Resources:	Person in Charge:	Timeline		Compliance		
				Start Date	End Date	YES	NO	Reasons for Non-Compliance

Date this form was completed:	
Signature and stamp of the person(s) who completed this form:	

APPENDIX 7

AUTOPSIA VERBAL

Ficha de Investigación de Defunción. Causa Mal Definida

Region Sanitaria: **Numero de caso:**

Este formulario se usa con las personas a cargo del cuidado de la persona fallecida o con la persona que haya estado presente durante la enfermedad o situacion que llevo a la muerte.

IDENTIFICACION DE LA PERSONA FALLECIDA

1. Nombre (s) y Apellido (s) del fallecido (a):
Nombre (s) Apellido (s)

2. Documento de identificación:
1. ○ C. Identidad 2. ○ Pasaporte Nº ☐☐☐☐☐☐☐☐☐☐ 3. ○ No tiene

3. Lugar de nacimiento_____ Fecha de nacimiento __/___/___	4. Lugar de defunción_____ Fecha de defunción ___/___/___	5. Edad 1. Menor de un día (horas) ☐☐ (00-23) 2. Menor de un mes (días) ☐☐ (01-29) 3. Menor de 1 año (meses) ☐☐ (01-11) 4. De 1 o más años (años cumplidos) ☐☐
6. Sexo 1. ○ Masculino 2. ○ Femenino 3. ○ Indeterminado	7. Etnia 1. ○ No Aplica 2. ○ Aplica (especificar) _____	8. Estado Civil 1. ○ Soltero (a) 2. ○ Casado (a) 3. ○ Viudo (a) 4. ○ Unido (a) 5. ○ Separado (a) 6. ○ Divorciado (a) 7. ○ No Aplica 8. ○ Se desconoce

9. Nivel Educativo: C I Año Cursado (C: completo; I: incompleto. Si es "I", anote dentro del paréntesis el último año cursado)
1 ○ Ninguno
2. Educación Inicial ○ ○ (_____)
3. Primaria ○ ○ (_____)
4. Secundaria ○ ○ (_____)
5. Esc. Básica ○ ○ (_____)
6. Esc. Media ○ ○ (_____)
7. Universitario ○ ○ (_____)
8. Sup. No Universitario ○ ○ (_____)
9. ○ No Aplica 10. ○ Ignorado

10. ¿Se emitió el certificado de nacido vivo?	Sí	Nº del certificado de nacido vivo	No	No sabe
11. ¿Se emitió el certificado de defunción?	Sí	Nº del certificado de defunción	No	No sabe
12. ¿Tiene certificado del acta de defunción (emitido por Registro Civil)?	Sí		No	No sabe

IDENTIFICACIÓN DE LA MADRE (PREGUNTAR SOLO EN CASO DE MENORES DE 18 AÑOS)

13. Nombre (s) y Apellido (s) de la madre:
Nombre (s) Apellido (s)

14. Documento de Identificación:
1. ○ C. Identidad 2. ○ Pasaporte Nº ☐☐☐☐☐☐☐☐☐☐ 3. ○ No tiene
4. ○ No porta

15. Edad: ☐☐ años cumplidos

16. Nivel Educativo: C I Año Cursado (C: completo; I: incompleto. Si es "I", anote dentro del paréntesis el último año cursado)
1 ○ Ninguno
2. Educación Inicial ○ ○ (_____)
3. Primaria ○ ○ (_____)
4. Secundaria ○ ○ (_____)
5. Esc. Básica ○ ○ (_____)
6. Esc. Media ○ ○ (_____)
7. Universitario ○ ○ (_____)
8. Sup. No Universitario ○ ○ (_____)
9. ○ No Aplica 10. ○ Ignorado

LUGAR DE LA ENTREVISTA

17. Departamento	Distrito	Área 1. ○ Urbana 2. ○ Rural
Compañía_____ Barrio_____	Calle y Nº	
Punto de referencia		

IDENTIFICACION DEL ENTREVISTADO (A)

18. Nombre (s) y Apellido (s) del entrevistado (a)
Nombre (s) Apellido (s)

19. Documento de Identificación:
1. ○ C. Identidad 2. ○ Pasaporte Nº ☐☐☐☐☐☐☐☐☐☐ 3. ○ No tiene 4. ○ No porta

20. Su relación con el fallecido (a): 1. ○ Madre 2. ○ Padre 3. ○ Hermano (a) 4. ○ Otro (especificar)
_____

DEFUNCIÓN DEBIDA A CAUSA EXTERNA

21. ¿Sufrió alguna herida, accidente o un acto de violencia?	Sí ¿Cuál?_____	No	No sabe
22. ¿La persona falleció debido a lesiones, un accidente o actos de violencia?	Sí, pase a preg. **108.**	No	No sabe

FACTORES DE RIESGO ASOCIADOS DEL FALLECIDO/A (PREGUNTAR SOLO EN CASO DE 1 AÑO Y MÁS)

23. Biológico - genético:	Tóxico y/o dependencia	Tiempo de uso	Frecuencia
1. ○ HTA	1. ○ Droga (especificar)_____	1. ○ Meses 2. ○ Años 3. ○ No sabe	1. ○ __Veces por _____ 2. ○ No sabe
2. ○ Diabetes Mellitus	2. ○ Alcohol	1. ○ Meses 2. ○ Años 3. ○ No sabe	1. ○ __Veces por _____ 2. ○ No sabe
3. ○ Infecciosos	3. ○ Tabaco	1. ○ Meses 2. ○ Años 3. ○ No sabe	1. ○ __Veces por _____ 2. ○ No sabe
4. ○ Otros (especificar) _____	4 ○ Otros (especificar)_____	1. ○ Meses 2. ○ Años 3. ○ No sabe	1. ○ __Veces por _____ 2. ○ No sabe
5 ○ Ninguno	5 ○ Ninguno	1. ○ Meses 2. ○ Años 3. ○ No sabe	1. ○ __Veces por _____ 2. ○ No sabe
6 ○ No sabe	6 ○ No sabe	1. ○ Meses 2. ○ Años 3. ○ No sabe	1. ○ __Veces por _____ 2. ○ No sabe

24. Medicamentos de uso continuo (anotar nombre y si es posible dosis y tiempo de uso)
_____
_____
_____
_____

SIGNOS Y SINTOMAS DE LA ENFERMEDAD QUE LLEVÓ A LA MUERTE

25. ¿Cuánto tiempo estuvo enfermo antes de morir?
1. ○ Horas 2. ○ Días 3. ○ Meses 4. ○ Años 5. ○ No sabe Especificar cuánto tiempo:
_____

26. ¿Tuvo fiebre? Si la respuesta es "NO" o "NO SABE" pase a preg. **27.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
26.1 ¿La fiebre fue constatada por termómetro?	Sí	No	No sabe
26.2 La fiebre era: 1. ○ Alta (más de 39º C) 2. ○ Continua 3. ○ Discontinua 4. ○ No sabe			
26.3 Tuvo fiebre solamente por la: 1. ○ Tarde 2. ○ Noche 3. ○ No sabe			
26.4 ¿Tuvo escalofríos (chuchos)?	Sí	No	No sabe
27. ¿Bajó de peso durante la enfermedad?	Sí, ¿En cuánto tiempo?____ Kilos_____	No	No sabe
28. ¿Tuvo dolores de cabeza? Si la respuesta es "NO" o "NO SABE" pase a preg. **29.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
28.1 El dolor era: 1. ○ Fuerte 2. ○ Contínuo 3. ○ Pulsátil 4. ○ No sabe			
28.2 ¿Vomitaba cuando tenía dolores de cabeza?	Sí	No	No sabe
29. ¿Tuvo confusión mental?	Sí ¿Por cuánto tiempo?_____	No	No sabe
30. ¿Tuvo convulsiones (ataques)?	Sí ¿Por cuánto tiempo?_____ _____veces por día	No	No sabe

	_____veces por semana _____veces por mes		
31. ¿Llegó a quedar inconsciente (desmayado)?	Sí ¿Por cuánto tiempo?_____	No	No sabe
32. ¿Se le puso el cuello curvado hacia atrás?	Sí ¿Por cuánto tiempo?_____	No	No sabe
33. ¿Se le puso el cuello rígido?	Sí ¿Por cuánto tempo?_____	No	No sabe
34. ¿Tuvo rigidez en todo el cuerpo?	Sí ¿Por cuánto tiempo?_____	No	No sabe
35. ¿Presentó parálisis? Si la respuesta es "NO" o "NO SABE" pase a preg. **36.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
35.1 ¿Dónde?			
LAS PREGUNTAS 36 Y 37, REALIZAR SOLO EN 1 AÑO Y MÁS			
36. Presentó dificultades al caminar? 1. ○ Arrastra el pie 2. ○ Rengueo 3. ○ Otro (especificar) _____ 4. ○ No sabe			
37. ¿Se caía al caminar?	Sí	No	No sabe
38. ¿Tuvo los ojos hundidos?	Sí ¿Por cuánto tiempo?_____	No	No sabe
39. ¿Estuvo pálido o descolorido?	Sí ¿Por cuánto tiempo?_____	No	No sabe
40. ¿Tuvo dificultades o dolor al tragar? 1. ○ Líquidos 2. ○ Sólidos 3. ○ Líquidos y sólidos 4. ○ No sabe			
41. ¿Tuvo tos? Si la respuesta es "NO" o "NO SABE" pase a preg. **42.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
41.1 La tos: 1. ○ Era frecuente 2. ○ Se presentaba cuando estaba acostado 3. ○ Era con catarro (Si la respuesta es "SI" pase a preg. **41.2**) 4. ○ No sabe			
41.2 ¿Cuál era el color o aspecto del catarro? 1. ○ Amarillo 2. ○ Sangre 3. ○ Blanco 4. ○ Verde 5. ○ Otro (especificar) _____ 6. ○ No sabe			
41.3 Sudaba por la: 1. ○ Mañana 2. ○ Tarde 3. ○ Noche 4. ○ sabe			
42. ¿Vomitaba? Si la respuesta es "NO" o "NO SABE" pase a preg. **43.**	Sí ¿ Por cuánto tiempo?_____	No	No sabe
42.1 ¿Cuántas veces por día?	Veces_____		No sabe
42.2 ¿Vomitó parásitos?	Sí	No	No sabe
42.3 Cual era el color o aspecto del vómito? 1. ○ Sangre 2. ○ Verde 3. ○ Marrón 4. ○ Contenido alimentario 5. ○ Otro (especificar)_____ 6. ○ No sabe			
Este número preguntar solo en **MENORES DE 1 AÑO**. 42.4 ¿Cuánto tiempo después del nacimiento comenzó a vomitar? 1. ○ Horas 2. ○ Días 3. ○ Meses 4. ○ No sabe			
43. ¿Respiraba más rápido de lo normal?	Sí ¿Por cuánto tiempo?_____	No	No sabe
44. ¿Tuvo dificultades para respirar? Si la respuesta es "NO" o "NO SABE" pase a preg. **45.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
44.1 ¿Hacía ruido al respirar? 1. ○ Sí, roncus (ronquidos) 2. ○ Sí, sibilancias (chillidos) 3. ○ No 4. ○ No sabe			
44.2 Cada vez que respiraba, ¿presentaba tiraje (se le contraía la barriga cerca de las costillas)?	Sí	No	No sabe
45. ¿Se puso cianótico (morado) alguna vez? Si la respuesta es "NO" o "NO SABE" pase a preg. **46.**	Sí	No	No sabe
45.1 Tuvo cianosis: 1. ○ Alrededor de la boca 2. ○ En las manos y pies 3. ○ En todo el cuerpo 4. ○ Otro (especificar)_____ 5. ○ No sabe			
46. ¿Tuvo dolor en el pecho? Si la respuesta es "NO" o "NO SABE" pase a preg. **47.**	Sí	No	No sabe
46.1 ¿Cuánto tiempo duraba? 1. ○ Menos de 5 minutos. 2. ○ Menos de media hora 3. ○ De media hora a 24 hs. 4. ○ Más de 24 hs 5. ○ No sabe			

46.2 ¿Dónde se localizaba el dolor? Pedir al entrevistado que indique en su cuerpo con el dedo índice			No sabe
46.3 El dolor: 1. ○ Era continuo 2. ○ Era discontinuo 3. ○ Empeoraba cuando tosía o respiraba 4. ○ Empeoraba cuando hacía esfuerzo 5. ○ No sabe			
46.4 ¿Sentía el corazón acelerado al mismo tiempo?	Sí	No	No sabe
46.5 ¿Se ponía pálido o sudaba?	Sí	No	No sabe
47. ¿Tuvo diarrea? Si la respuesta es "NO" o "NO SABE" pase a preg. **48.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
47.1 La diarrea era: 1. ○ Frecuente 2. ○ Espaciada 3. ○ No sabe			
47.2 ¿Cuántas veces iba de cuerpo por día?	_____Veces		No sabe
47.3 Cual era el color o aspecto de la deposición? 1. ○ Líquida 2. ○ Con sangre 3. ○ Con flema 4. ○ Fétida (olor muy fuerte) 5. ○ Negra 6. ○ Otro (especificar) _____ 7. ○ No sabe			
48. ¿Tuvo dolores o cólicos abdominales? Si la respuesta es "NO" o "NO SABE" pase a preg. **49.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
48.1 El dolor o los cólicos eran: 1. ○ Fuertes 2. ○ Frecuentes 3. ○ Espaciados 4. ○ No sabe			
49. ¿Tuvo la barriga hinchada? Si la respuesta es "NO" o "NO SABE" pase a preg. **50.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
49.1 ¿Con cuánta rapidez se le hinchó? 1. ○ Rápidamente (días) 2. ○ Lentamente (meses) 3. ○ No sabe			
49.2 ¿Estuvo sin defecar (ir de cuerpo?	Sí ¿Por cuántps _____dias?	No	No sabe
50. ¿Tuvo un tumor, (bola o bulto duro) en abdomen o tórax? Si la respuesta es "NO" o "NO SABE" pase a preg. **51.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
50.1 ¿Dónde se localizaba el tumor? Pedir al entrevistado que indique en su cuerpo con el dedo índice			No sabe
51. ¿Tuvo dificultades para orinar?	Sí ¿Por cuánto tiempo?_____	No	No sabe
51.1 ¿Orinaba gota a gotas?	Sí	No	No sabe
51.2 ¿Tuvo dolor al orinar?	Sí	No	No sabe
52. ¿Hubo algún cambio en el color de la orina? Si la respuesta es "NO" o "NO SABE" pase a preg. **53.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
52.1 ¿Cuál era el color o aspecto de la orina? 1. ○ Clara 2. ○ Concentrada 3. ○ Amarronada 4. ○ Con sangre 5. ○ Con pus 6. ○ Otro (especificar)_____ 7. ○ No sabe			
53. ¿Hubo algún cambio en la cantidad de orina por día? Si la respuesta es "NO" o "NO SABE" pase a preg. **54.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
53.1 ¿Cuál? 1. ○ Aumentó 2. ○ Disminuyó 3. ○ Dejó de orinar 4. ○ No sabe			
54. ¿Tuvo lesiones (manchas, ampollas, pápulas, heridas) **en la piel?** Si la respuesta es "NO" o "NO SABE" pase a preg. **55.**	Sí ¿Por cuánto tiempo?_____	No	No sabe
54.1 ¿Dónde? 1. ○ Rostro 2. ○ Boca 3. ○ Brazos y piernas 4. ○ Tronco 5. ○ Otro (especificar)_____ 6. ○ No sabe			
54.2 Cómo eran? 1. ○ Manchas moradas 2. ○ Manchas rojas 3. ○ Ampollas con pus 4. ○ Ampollas con líquido transparente 5. ○ Pápulas o nódulos (bulto) 6. ○ Heridas con pus 7. ○ Heridas líquido transparente 8. ○ Otro (especificar)_____ 9. ○ No sabe			
55. ¿Tuvo prurito (picazón)?	Sí ¿Por cuánto tiempo?_____ Localización_____	No	No sabe

56. ¿Tuvo algún sangrado durante la enfermedad que llevó a la muerte? Si la respuesta es "NO" o "NO SABE" pase a preg. **57**.	Sí ¿Por cuánto tiempo?_____	No	No sabe
56.1 ¿Dónde? 1. ○ Nariz 2. ○ Boca 3. ○ Ano 4. ○ Genitales 5. ○ Otro (especificar) 6. ○ No sabe			
57. ¿Tuvo edema (hinchazón)? Si la respuesta es "NO" o "NO SABE" pase a preg. **58**.	Sí ¿Por cuánto tiempo?_____	No	No sabe
57.1 ¿Dónde? 1. ○ En las piernas 2. ○ En las manos 3. ○ En el rostro 4. ○ En todo el cuerpo 5. ○ En las articulaciones 6. ○ Otro (especificar)_____ 7. ○ No sabe			
58. ¿Tuvo ganglios? Si la respuesta es "NO" o "NO SABE" pase a preg. **59**.	Sí ¿Por cuánto tiempo?_____	No	No sabe
58.1 ¿Dónde? 1. ○ Cuello 2. ○ Axila 3. ○ Ingle 4. ○ Otro (especificar)_____ 5. ○ No sabe			
59. ¿Tuvo ictericia (coloración amarillenta)? Si la respuesta es "NO" o "NO SABE" pase a preg. **60**.	Si Por cuánto tiempo?_____	No	No sabe
59.1 Donde? 1. ○ Ojos 2. ○ Palma de manos 3. ○ Planta de pies 4. ○ Piel 5. ○ Todo el cuerpo 6. ○ Otros (especificar) 7. ○ No sabe			
LAS PREGUNTAS 59.2 Y 59.3, REALIZAR SOLO EN MENORES DE 1 AÑO			
59.2 ¿Cuánto tiempo después del nacimiento comenzó la ictericia? 1. ○ Horas 2. ○ Días 3. ○ No sabe			
59.3 Cuándo el bebé murió, ¿todavía tenía ictericia?	Sí	No	No sabe
PREGUNTAR SOLO EN CASO DE MUJER EN EDAD FÉRTIL (10 a 54 AÑOS) ○ Aplica ○ No Aplica En caso de No aplica pase a pregunta **92** ó **108**. En madres de fallecidos de **MENORES DE 1 AÑO**, realizar las preguntas **67** al **91**.			
Antecedentes gineco-obstétricos			
60. Menarca _____ (Edad en años de la primera menstruación) ○ No sabe FUM___/___/___ (Fecha de última menstruación) ○ No sabe FUP___/___/___ (Fecha de último parto) ○ No sabe FUC___/___/___ (Fecha de última cesárea) ○ No sabe FUA___/___/___ (Fecha de último aborto) ○ No sabe Menopausia ____ (Edad en años de la última menstruación) ○ No sabe Terapia Anticonceptiva: 1. ○ Si 2. ○ No 3. ○ No sabe (Si la respuesta es "NO" o "NO SABE" pase a preg. **61**.) ¿Qué Método?_____ ○ No sabe ¿Desde cuándo? _____ ○ No sabe			

61. Partos vaginales (PV) ☐☐ Cesáreas (C) ☐☐ Abortos (A) ☐☐ Embarazos ectópicos (EE) ☐☐ Embarazo molar (EM) ☐☐	62. Nacido Vivos ☐☐ Nacidos Muertos ☐☐	**63. Nº de: Embarazos** ☐☐ El n° de embarazos: suma de PV + C + A + EE + EM. También es: suma de NV y NM.	
64. ¿Tuvo flujo vaginal?	Sí ¿Por cuánto tiempo?_____	No	No sabe
64.1 ¿Cómo era el flujo? 1. ○ Olía mal 2. ○ Amarillento 3. ○ Verdoso 4. ○ Sanguinolento 5. ○ Amarronado 6. ○ Otro (especificar)_____ 7. ○ No sabe			
65. ¿La mujer menstruaba? Si la respuesta es "NO" o "NO SABE" pase a preg. **66**.	Sí	No	No sabe
65.1¿Sangraba mucho durante la menstruación	Sí ¿Por cuánto tiempo?_____	No	No sabe
65.2 ¿Sangraba entre los periodos menstruales?	Sí ¿Por cuánto tiempo?_____	No	No sabe
66. ¿Tuvo alguna alteración en la mama? Si la respuesta es "NO" o "NO SABE" pase a preg. **67**.	Sí ¿Por cuánto tiempo?_____	No	No sabe
66.1 ¿Qué tipo de alteración? 1. ○ Lesión 2. ○ Bola/bulto/nódulo 3. ○ Hinchazón 4. ○ Infección 5. ○ No sabe			
Embarazo, parto, aborto y puerperio. Investigar también en madres de fallecidos de **MENORES DE 1 AÑO**			
67. Patologías: Pre-existentes: 1. ○ Hipertensión Crónica 2. ○ Diabetes Mellitus 3. ○ Cardiopatías 4. ○ Nefropatías 5. ○ Epilepsia 6. ○ Psiquiátricas 7. ○			

Inmunológicas 8. Otros, especificar_____ 9. ○ Ninguno 10. ○ No sabe
Durante el Embarazo: 1. ○ Pre eclampsia 2. ○ Eclampsia 3. ○ Amenaza de parto prematuro 4. ○ Diabetes Gestacional
5. ○ Infección (especificar)_____
6. ○ Hemorragia: ___antes del trabajo de parto; ___ durante el trabajo de parto; ___después del trabajo de parto. 7. ○ Otros (especificar)_____
8. ○ Ninguno 9. ○ No sabe

68. Ingesta de medicamentos	Si Especificar_____	No	No sabe
69. Ingesta de tóxicos	Si Especificar_____	No	No sabe
70. Corticoides en el prenatal: 1. ○ Si 2. ○ No 3. ○ No sabe		71. Nº de: Partos vaginales ☐☐ Cesáreas ☐☐ Abortos ☐☐	
72. ¿El embarazo fue considerado de riesgo?	Sí	No	No sabe
73. Si fue de riesgo: ¿Acudió al hospital para su mejor atención?	Sí	No	No sabe
74. ¿Fue internada durante el embarazo? Si la respuesta es "NO" o "NO SABE" pase a preg. **75**.	Sí	No	No sabe
74.1 ¿Cuántas veces?	----------veces		No sabe
74.2 ¿Por cuánto tiempo?	_____		No sabe
74.3 ¿Por qué motivo?			No sabe
74.4 ¿Con cuantas semanas ó meses de embarazo?	_____semanas o meses: subrayar		No sabe
75. Nº de Controles Prenatales del embarazo del niño fallecido ☐☐ 1. ○ No sabe	76. Primera Consulta Prenatal ☐☐ (en semanas ó meses: subrayar) 1. ○ No sabe		77. Grupo sanguíneo y Rh___ 1. ○ No sabe
78. Recibió la madre vacuna contra el tétanos en este embarazo? Solicitar carnet. Si la respuesta es "NO" o "NO SABE" pase a preg. **79**.	Si	No	No sabe
78.1 ¿Cuántas dosis? 1. ○ Primera dosis 2. ○ Segunda dosis 3. ○ Refuerzo_____ 4. ○ No sabe			

79. Lugar de parto: 1. ○ Institucional 2. ○ Domiciliario 3. ○ Otro_____ 4. ○ No sabe	**80. Tipo de Nacimiento:** 1. ○ Único 2. ○ Múltiple 3. ○ No sabe	**81. Tipo de Parto:** 1. ○ Vaginal 1.1 ○ Instrumental_____ 2. ○ Cesárea Motivo _____ 3. ○ No sabe	**82. Asistido por:** 1. ○ Médico/a (especialidad)_____ 2. ○ Obstetra 3. ○ Enfermero/a 4. ○ Auxiliar 5. ○ Otro_____ 6. ○ No sabe

83. El día del parto, la madre tuvo:
1. ○ Presión alta 2. ○ Fiebre 3. ○ Confusión mental 4. ○ Convulsiones 5. ○ Mucho sangrado 6. ○ Ninguno 7. ○ No sabe

84. ¿Cuál era el estado de salud de la madre cuando nació el bebé?
1. ○ Bueno 2. ○ Estaba enferma 3. ○ Falleció durante el parto 4. ○ No sabe

85. ¿Cuánto tiempo duró el trabajo de parto?
1. ○ Menos de 12 horas 2. ○ De 12 a 24 horas 3. ○ 24 horas o más 4. ○ No sabe

86. Operación efectuada:
1. ○ Curetaje 2. ○ Cesárea 3. ○ Fórceps 4. ○ Histerectomía 5. ○ Salpinguectomía 6. ○ Revisión de cavidad uterina 7. ○ Otro (especificar)_____ 8. ○ No sabe

87. En el post parto o aborto presentó:
1. ○ Sangrado vaginal 2. ○ Dolor abdominal 3. ○ Flujo vaginal fétido 4. ○ Fiebre 5. ○ Dificultades para orinar o defecar 6. ○ Falta de apetito o náuseas 7. ○ Mareos/desmayos 8. ○ Tristeza o depresión 9. ○ Otro (especificar) _____ 10. ○ Ningún problema 11. ○ No sabe

88. ¿Fue dada de alta después del parto o aborto?	Sí	No	No sabe
89. ¿Fue hospitalizada nuevamente?	Sí	No	No sabe

90. Control perinatal (solicitar carnet):
1. ○ Bueno 2. ○ Malo 3. ○ Sin control 4. ○ No porta 5. ○ No sabe

91. Infecciones perinatales	Laboratorio		Fecha	Resultados	Tratamiento		Fecha
Sífilis	Sí	No			Completo	Incompleto	
VIH							
Toxoplasmosis							
Citomegalovirus							
Hepatitis (especificar)_____							
Chagas							
Rubéola							
Dengue							
Tuberculosis							
Otros (especificar) _____ _____							

CONDICIONES DEL NACIMIENTO (PREGUNTAR SOLO EN MENORES DE 1 AÑO)

92. ¿Qué parte del bebé salió primero?
1. ○ Cabeza 2. ○ Brazo/mano 3. ○ Pies 4. ○ Nalgas 5. ○ No sabe

93. ¿El cordón umbilical salió antes que el bebé naciera?	Sí	No	No sabe
94. ¿El bebé nació con circular del cordón (enlazado)?	Sí	No	No sabe
95. ¿El bebé aspiró líquido durante el parto?	Sí	No	No sabe
96. ¿Necesitó ayuda para respirar?	Sí	No	No sabe
97.¿Tardó en llorar?	Sí, ¿Cuánto tiempo?_____	No	No sabe
98. ¿Qué peso tuvo el bebé al nacer?	Gramos _____		No sabe
99. ¿Tuvo huesos fracturados como consecuencia del parto?	Sí	No	No sabe

100. ¿Qué color tuvo la piel del bebé cuando nació?
1. ○ Normal 2. ○ Rojizo 3. ○ Azulado 4. ○ Pálido 5. ○ No sabe

101. ¿Tuvo alguna malformación? Si la respuesta es "NO" o "NO SABE" pase a preg. **102.**	Sí	No	No sabe

101.1 Dónde?
1. ○ Manos o pies 2. ○ Espalda (chichón u hoyo) 3. ○ Corazón 4. ○ Cabeza (muy grande) 5. ○ Cabeza (muy pequeña)
6. ○ Labio o paladar 7. ○ Otro (especificar)_____ 8. ○ No sabe

102. ¿Tuvo lesiones en la piel cuando nació? Si la respuesta es "NO" o "NO SABE" pase a preg. **103.**	Sí	No	No sabe

102.1 Dónde?
1. ○ Rostro 2. ○ Brazos y piernas 3. ○ Tronco 4. ○ Otro (especificar)_____ 5. ○ No sabe

102.2 Cómo eran?
1. ○ Manchas moradas 2. ○ Manchas rojas 3. ○ Ampollas con pus 4. ○ Ampollas con líquido transparente
5. ○ Pápulas o nódulos (bulto) 6. ○ Heridas con pus 7. ○ Heridas líquido transparente 8. ○ Otro (especificar)_____ 9. ○ No sabe

103. ¿Llegó a alimentarse?
1. ○ Sí, lactancia materna 2. ○ Sí, lactancia materna y otros 3. ○ Sí, con biberón 4. ○ Sí, por sonda 5. ○ Sí, otro (especificar)_____ 6. ○ No 7. ○ No sabe

Si la respuesta es "NO" o "NO SABE" pase a preg. **104.**

103.1 ¿Cuánto tiempo después de nacer comenzó a alimentarse?
1. ○ Horas:_____ 2. ○ No sabe

103.2 ¿El bebé dejó de alimentarse antes de morir?	Sí ¿Por cuánto tiempo?_____	No	No sabe

104. ¿El ombligo era?
1. ○ Normal 2. ○ Rojo 3. ○ Con secreción 4. ○ Con sangrado 5. ○ No sabe

105. ¿Se usó algo para curar el ombligo?	Sí ¿Cuál?_____	No	No sabe
106. ¿El bebé crecía normalmente?	Sí	No	No sabe

107. ¿Tuvo la fontanela?
1. ○ Abombada. Por cuánto tiempo?_____ 2. ○ Hundida. Por cuánto tiempo?_____ 3. ○ No 4. ○ No sabe

ANTECEDENTES DE LESIONES, ACCIDENTES O VIOLENCIA

108. Especificar la lesión, accidente o un acto de violencia antes de morir:
1. ○ Accidente de tránsito 2. ○ Herida 3. ○ Ahogamiento 4. ○ Envenenamiento o intoxicación 5. ○ Asfixia 6. ○ Quemaduras 7. ○ Caída 8. ○ Golpe 9. ○ Otro (especificar)_____ 10. ○ No sabe

108.1 ¿Cómo, cuándo y dónde sucedió?

109. ¿Sufrió una mordedura o picadura de algún animal o insecto?	Sí, ¿Cuál?_____ Localización_____ _____ Tiempo transcurrido_____ _____	No	No sabe

SERVICIOS DE SALUD Y CUIDADO O TRATAMIENTO UTILIZADOS DURANTE LA ENFERMEDAD QUE LLEVÓ A LA MUERTE

110. ¿Fue internado durante la enfermedad que llevó a la muerte? Si la respuesta es "NO" o "NO SABE" pase a **111.**	Sí	No	No sabe
110.1 ¿Dónde y cuándo fue la última internación?			No sabe
110.2 ¿Algún profesional de salud informó sobre la enfermedad?	Sí	No	No sabe
110.3 ¿Qué dijo?			No sabe
110.4 ¿Cuál fue el tratamiento indicado?			No sabe
111. ¿Fue atendido en otro establecimiento de salud durante la enfermedad que llevó a la muerte (USF, PS, consultorio)? Si la respuesta es "NO" o "NO SABE" pase a **112.**	Sí	No	No sabe
111.1 ¿Dónde y cuándo recibió atención por última vez?			No sabe
111.2 ¿Algún profesional de salud informó sobre la enfermedad?	Sí	No	No sabe
111.3 ¿Qué dijo?			No sabe
111.4 ¿Cuál fue el tratamiento indicado?			No sabe
112. ¿Fue operado a causa de la enfermedad? Si la respuesta es "NO" o "NO SABE" pase a **113.**	Sí	No	No sabe
112.1 ¿Cuánto tiempo antes de morir fue operado?			No sabe

112.2 ¿Qué parte del cuerpo se operó?			No sabe
112.3 ¿En qué establecimiento de salud se operó?			
113. Si no recibió tratamiento en un servicio de salud, ¿Cuál fue el motivo? 1. ○ No creía que necesitaba atención 2. ○ No llegó a tiempo al centro de atención 3. ○ Llegó al lugar pero no le atendieron 4. ○ No quiso/no aceptó 5. ○ Lo encontró muerto 6. ○ Otro (especificar)_____ 7. ○ No sabe			
NOTAS COMPLEMENTARIAS			
114. Resultados de los exámenes más importantes relacionados con la enfermedad que llevó a la muerte, si los hubiera			
115. Información más importante del resumen del alta del hospital sobre la enfermedad que llevó a la muerte, si lo hubiera			
116. ¿Fue vacunado/a? Pida el carnet de vacunación del fallecido/a. Si la respuesta es "NO" o "NO SABE" pase a **117.**	Sí	No	No sabe
116.1 ¿Qué vacunas recibió?	**1ª dosis**	**2da dosis**	**3ra dosis Refuerzo**
1. ○ BCG			
2. ○ **OPV (Sabin) y PENTAVALENTE**			
3. ○ DPT			
4. ○ SRP (Sarampión, Rubeola y Papera)			
5. ○ **ROTAVIRUS**			
6. ○ **ANTI INFLUENZA**			
7. ○ AA (Fiebre Amarilla)			
8. ○ Otra (especificar)_____ **9. ○Tétanos___**			
10. ○. No sabe			

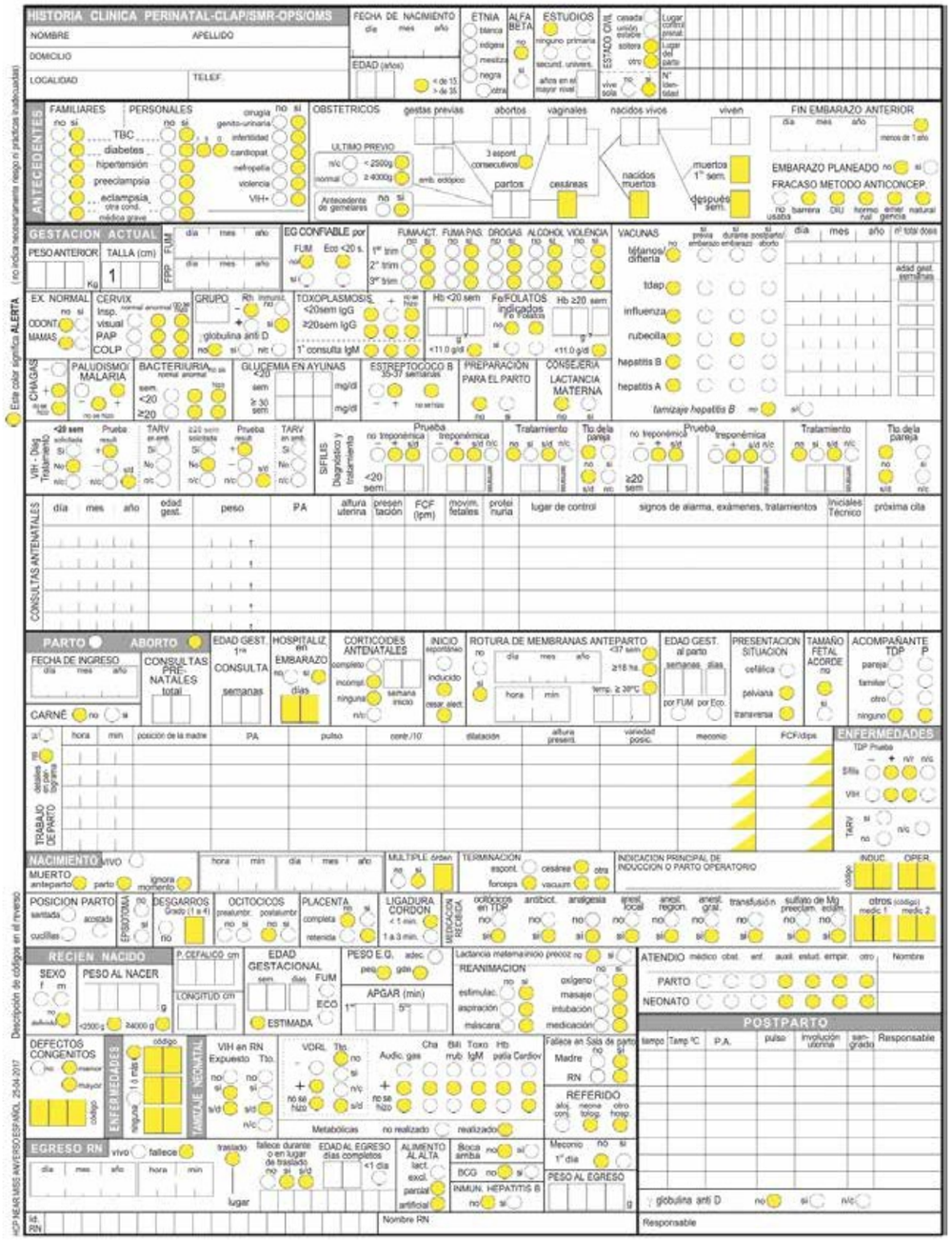
117. Observaciones del entrevistador

Sobre las condiciones de vida y de vivienda de la persona fallecida, sobre la calidad de la entrevista (si el entrevistado colaboró o no, si tenía dificultades para expresarse) y sobre cualquier circunstancia de la muerte que considere relevante.

ESTA PARTE SERÁ LLENADA POR EL MÉDICO CERTIFICADOR		
CONCLUSIONES DE LA INVESTIGACION DE LA AUTOPSIA VERBAL		
CAUSAS DE LA MUERTE DESPUES DE LA ENTREVISTA		
CIE – 10		
CAUSAS		
(CONSIGNE UNA CAUSA POR LINEA)		Tiempo aproximado entre el comienzo de cada causa y la muerte
I. CAUSA DIRECTA Enfermedad o estado fisiopatológico que produjo la muerte directamente. CAUSAS ANTECEDENTES Estados morbosos, si existiera alguno, que produjeron la causa consignada en a), mencionándose en último lugar la causa básica o fundamental.	a)---------- Debido a	
	b)---------- Debido a	
	c)---------- Debido a	
II. OTROS ESTADOS PATOLOGICOS IMPORTANTES Que contribuyeron a la muerte, pero no relacionados con la enfermedad o estado morboso que la produjo		**Causa básica**
Fecha de la entrevista	Fecha del análisis	
Entrevistador	**Profesional médico que analizó la información**	
Nombre y apellidos:	Nombre y apellidos:	
C I:	C I:	RP Nº :
Firma:	Firma:	

APPENDIX 8

SIP PLUS



APPENDIX 9

FORMATO DE RECOLECCIÓN DE DATOS PARA CASOS DE MORBILIDAD NEONATAL EXTREMA

INFORMACIÓN GENERAL DE LA MADRE Y EL EMBARAZO

No. de historia clínica | No. de identidad

Reg. San. | Institución que atendió el parto | Fecha del parto

Procedencia | Área | Edad

Nivel de educación | Años cursados | Estado civil

Ocupación | R. Afiliación | Entidad aseguradora

Gestas | Partos | Cesáreas | Abortos

Mortinatos | Per. Interg. | No. CPN | Trim 1er. CPN

Edad gestacional | Terminación embarazo

Morbilidad materna | Causa principal morbilidad materna | Ninguna

Otra causa/asoc. Morb. Materna 1 | Ninguna

Estado madre alta | Otra causa/asoc. Morb. Materna 2 | Ninguna

DATOS RECIÉN NACIDO

Nº de historia clínica RN | Nº de identidad RN

Reg. San. | Inst.que atiende la morbilidad | Fecha de ingreso

Sexo | Edad Exam. Fisico | Apgar min 1

Peso(g) | Reanim. Neonatal avanz. | Apgar min 5

Inst.de Referencia | Lugar donde ocurre el evento | Fecha del evento

Fecha de egreso | Total días de Hospitalización: 0 | Estado recien nacido al alta

Edad al evento(días): 1 | Edad al egreso (días): 0

DATOS RELACIONADOS CON LOS CRITERIOS DE INCLUSIÓN Y EL DIAGNÓSTICO

CRITERIOS DE INCLUSIÓN RELACIONADOS CON

Condición específica y/o signos síntomas

- Hemorragia aguda
- Convulsiones
- Cardiop cong. Compl.
- Cirugías mayores

Falla orgánica

- Sarnat II-III
- Alvéolo arterial de O2 <300
- Base exceso <-12
- Oliguria con diuresis < 0.5 cc/k/h x 8h
- Índice de oxigenación >de 25

Manejo

- Diálisis
- Ventilación mecánica≥ a 7 días
- Inotrópicos
- Antiarrítmicos y cardioversión

Total Nº de criterios: 0

APPENDIX 10

PLANILLA DE MUERTE NEONATAL, GENERADA POR EL CERTIFICADO DE DEFUNCIÓN (SSIEV)

PLANILLA MENSUAL DE INFORME DE *MUERTE NEONATAL* GENERADA CON EL CERTIFICADO DE DEFUNCIÓN

INFORME CORRESPONDIENTE AL MES DE

REGION SANITARIA

RESPONSABLE

FECHA DE REMISION

Total nacidos vivos en el mes

Total MN en el mes

Nº	DATOS DE LA MADRE						DATOS DEL PARTO							DATOS DEL RECIEN NACIDO												CAUSA DE LA MUERTE			
Nº de certificado de defuncion	Nombres	Apellidos	Nº de Documento de Identidad	Distrito de Residencia	Edad	Nº de CPN	Tipo de parto		Parto as				Lugar del parto	Nombres	Apellidos	Fecha de Nacimiento	Fecha de Defunción	Edad	Sexo	Peso	Edad gestacional	Rn asist				Lugar de defuncion	Causa a	Causa b	Causa c	Causa d
							VAG	CES	MED	OBST	ENF	OTROS										MED	OBST	ENF	OTROS					
OBSERVACIÓN																													

APPENDIX 11

ROOT CAUSE ANALYSIS FORM

Ministerio de Salud Pública y Bienestar Social

Dirección General de Programas de Salud

Comité de VEMMMFN

FORMULARIO DE ANÁLISIS CAUSA RAIZ

Complete el formulario al terminar el análisis de cada proceso de atención

Factor Humano (Talento Humano/personal):	**En cada pregunta con respuesta NEGATIVA aclare el POR QUE**
¿Está disponible y es suficiente, todo el tiempo? ○ SI ○ NO	
¿Está capacitado, es competente/calificado? ○ SI ○ NO	
¿Está el personal cumpliendo con sus responsabilidades? ○ SI ○ NO	
¿Está comprometido, con una actitud positiva? ○ SI ○ NO	
Dimensión Equipamiento (Tecnologías y equipos)	**En cada pregunta con respuesta NEGATIVA aclare el POR QUE**
¿Son suficientes? ○ SI ○ NO	
¿Están disponibles siempre? ○ SI ○ NO	
¿Son adecuados y su uso es seguro? ○ SI ○ NO	
¿La infraestructura es suficiente y apropiada para brindar una atención segura? ○ SI ○ NO	
Dimensión Materiales (medicamentos e insumos)	**En cada pregunta con respuesta NEGATIVA aclare el POR QUE**
¿Están disponibles cuando se necesitan? ○ SI ○ NO	

¿Son suficientes? ○ SI ○ NO	
¿Son seguros? ○ SI ○ NO	
Dimensión Método (Normas, Protocolos, Guías)	**En cada pregunta con respuesta NEGATIVA aclare el POR QUE**
¿Están disponibles, son accesibles y conocidos? ○ SI ○ NO	
¿Son consistentes y están actualizados? ○ SI ○ NO	
¿Se aplican continua y correctamente?○ SI ○ NO	
Otras dimensiones	

CLASIFIQUE LA CAUSA DE MUERTE	**EVITABLE**	**○ SI ○ NO**
	REDUCIBLE	**○ SI ○ NO**

Clasificación de la causa de muerte

- **Evitable**: podrían evitarse a través de intervenciones en salud pública como: promoción de la salud, prevención de la enfermedad, medidas de protección específica e implementación de políticas públicas sectoriales y extrasectoriales
- **Reducible**: pueden evitarse a través del diagnóstico y tratamiento médico oportuno y de calidad

APPENDIX 12

FORMULARIO 1: ANÁLISIS DE MORTALIDAD FETAL Y NEONATAL EN HOSPITALES

Región Sanitaria	
Establecimiento	
Responsable	
Semana epidemiológica	
Fecha de análisis	

IDENTIFICACION DEL CASO

6. Nombre _____ (Apellido Paterno / Apellido Materno / Nombre)

7. Nombre y apellidos de la madre _____ 8. CI de la madre _____ 9. Dirección

10. La madre vive: 1. Sí ☐ 2. No ☐

11. Sexo del recién nacido: 1. Masc. ☐ 2. Fem. ☐ 3. Indeterm. ☐

12. Momento de la muerte: 1. Fetal ☐ 2. Neonatal temprana (0-6d) ☐ 3. Neonatal Tardia (7-27 d) ☐

CIRCUNSTANCIA DE LA MUERTE

13. Muerte neonatal: Fecha y hora de la defunción ☐☐ ☐☐ ☐☐☐☐ (Día Mes Año) ☐☐ ☐☐ (Hs. Min.)

14. Hospitalización previa: 1. Sí ☐ 2. No ☐

14. 1 Días de la hospitalización ☐☐ días

15. Diagnósticos de hospitalización (ingreso)

1. _____

2 _____

ANTECEDENTES OBSTÉTRICOS

16. Edad de la madre ☐☐

17. Embarazos ☐☐

18. Nacidos vivos ☐☐

19. Nacidos muertos ☐☐

20. Abortos ☐☐

21. Muerte neonatal: 1. SI ☐ 2. NO ☐

22. Antecedente de partos pretérmino: 1. SI ☐ 2. NO ☐

23. Antecedentes de Malf. Congénita: 1. SI ☐ 2. NO ☐

24. Control Prenatal: 1. SI ☐ 2. NO ☐

25. Número de Controles ☐

26. Primer control realizado en el: 1. Primer trimestre ☐ 2. Segundo trimestre ☐ 3. Tercer trimestre ☐

27. Controles realizados en: 1.PS ☐ 2.CS ☐ 3. Hospital ☐ 4. Domicilio ☐

28. Intervalo intergenésico: 1. Sin gestación previa ☐ 2.<de 24 meses del último nacimiento ☐ 3. 24 o más meses del último nacimiento ☐

29. Patología materna relacionada con el embarazo: 1. Si ☐ 2. No ☐

30. Tipo de patología (marcar las que aplican): Hemorragia ☐ Fiebre ☐ Infección urinaria ☐ Corioamnionitis ☐ Otras infecciones ☐ Hipertensión ☐ Convulsiones ☐ Amenza de parto Prematuro ☐ Diabetes gestacional ☐ Otras ☐

31. Patología materna previa: 1. Si ☐ 2. No ☐

32. Tipo de patología materna previa (marcar las que aplican): Tuberculosis ☐ Diabetes ☐ Cáncer ☐ Cardiopatía ☐ Nefropatía ☐ Otras ☐

33. Fue referida de otro establecimiento? 1. Si ☐ 2. No ☐ Establecimiento de refrencia: _____ Motivo de referencia _____

TRABAJO DE PARTO Y PARTO

34. Fecha de nacimiento
☐☐ ☐☐ ☐☐☐☐
Día Mes Año

35. Tipo de trabajo de parto
1. Espontáneo ☐
2. Inducido ☐
3. Cesárea ☐

36. Duracion del trabajo de parto
☐☐ ☐☐
Hs. Min.

37. Duración del período expulsivo
☐☐ ☐☐
Hs. Min.

38. Uso de anestesia
1. Sí ☐
2. No ☐
Tipo de anestesia _____

39. Persona que controló el Trabajo de parto
1. Médico ☐
2. Enfermera ☐
3. Aux. ☐
4. Otros ☐

40. Evolucion de fetocardia
1. Normal ☐
2. Bradicardia ☐
3. Sin latidos ☐
4. No se controló ☐

41. Tipo de parto
1. Vaginal normal ☐
2. Vaginal complicado ☐
3. Cesárea de urgencia ☐
4. Cesárea programada ☐

42. Persona que atendió el parto
1. Médico ☐
2. Enfermera ☐
3. Aux. ☐
4. Otros ☐

43. Persona que atendió al recién nacido
1. Médico ☐
2. Enfermera ☐
3. Aux. ☐
4. Otros ☐

44. Caracteristicas del Liquido Amniótico
1. Claro ☐
2. Verde oscuro, café ☐
3. Hemorrágico ☐
4. No se sabe ☐

45. RPM mayor a 6h
1. Sí ☐
2. No ☐

46. Corticoides prenatales
1. Sí ☐
2. No ☐

47. Complicación durante parto o cesarea
1. Sí ☐
2. No ☐
Cúal? _____

MUERTE FETAL

48. Edad gestacional
☐☐
Semanas

49. Reanimacion
1. Sí ☐
2. No ☐

50. Peso al nacer
☐☐☐☐ g

51. El producto fue
1. Único ☐
2. Gemelar ☐
3. Múltiple ☐

52. Aspecto
1. Fresco ☐
2. Macerado ☐

53. Malformaciones congénitas
1. Sí ☐ Cuál? _____
2. No ☐

MUERTE NEONATAL

54. Edad gestacional
☐☐
Semanas

55. Apgar
☐☐ ☐☐
1 min. 5 min

56. Reanimacion cardiopulmonar
1. Sí ☐
2. No ☐

57. Peso al nacer
☐☐☐☐ g

58. El producto fue
1. Único ☐
2. Gemelar ☐
3. Múltiple ☐

59. Malformaciones congénitas
1. Sí ☐ Cuál? _____
2. No ☐

60. Complicaciones durante la hospitalización
Sepsis neonatal ☐
Dificultad respiratoria ☐
Dificultad para alimentarse ☐
Fiebre/hipotermia ☐
Ictericia ☐
Convulsiones ☐
Otras ☐
Cuáles? _____

61. Tratamiento recibido _____

MUERTE FETAL Y NEONATAL

62. Se realizó necropsia?
1. Sí ☐
2. No ☐
Conclusiones _____

63. Se completó el formulario de autopsia verbal y social?
1. Sí ☐
2. No ☐

CONCLUSIONES DEL COMITÉ HOSPITALARIO DE ANALISIS

64. Causas biológicas de muerte fetal (CIE-10)
Causa Básica (principal) _____ ☐☐☐☐
No se sabe ☐
Condición materna _____ ☐☐☐☐
No se sabe ☐

65. Causas biológicas de muerte neonatal temprana (menor de 7 días) CIE-10
Causa Básica (principal) _____ ☐☐☐☐
No se sabe ☐
Condición materna _____ ☐☐☐☐
No se sabe ☐

66. Causas biológicas de muerte neonatal tardia (7-<28 días], CIE-10
a. Directa _____ ☐☐☐☐
b. Básica _____ ☐☐☐☐
No se sabe ☐
c. Contribuyente _____ ☐☐☐☐
No se sabe ☐

67. Causa sociales de muerte fetal o neonatal
a. Demora o no reconocimiento del problema en el hogar ☐
b. Tratamiento inadecuado en el hogar ☐
c. Demora en la búsqueda de ayuda ☐
d. Falta de acceso a la atención adecuada ☐
e. Falta de dinero ☐
f. Costumbres que influyeron en la muerte ☐
g. Mala Calidad de la atención ☐
h. Otras, especificar ☐
i. No se sabe ☐

68. Tiene certificado defunción
1. Sí ☐
2. No ☐

69. Las causas del certificado defunción coinciden
1. Sí ☐
2. No ☐

70. La muerte pudo ser evitada? Sí ☐ No ☐
¿Cómo? _____

71. Conclusiones adicionales _____

72. Recomendaciones _____

Personas que participaron en el análisis	FIRMAS

APPENDIX 13

REPÚBLICA DEL PARAGUAY
MINISTERIO DE SALUD PÚBLICA Y BIENESTAR SOCIAL
CERTIFICADO DE DEFUNCIÓN **N°**

(Consulte instrucciones al dorso)

I. INFORMACIÓN GENERAL

1. NOMBRE (S) Y APELLIDO (S) DEL FALLECIDO (A)
Nombre (s) / Apellido (s)

2. DOCUMENTO DE IDENTIFICACIÓN
1 ☐ C. Identidad 2 ☐ Pasaporte 3 ☐ No Tiene
Nº

3. FECHA DE DEFUNCIÓN
Día / Mes / Año

4. HORA DE DEFUNCIÓN
Hora / Minutos / No Sabe

5. SEXO
1 ☐ Masculino 2 ☐ Femenino 3 ☐ Indefinido

6. LUGAR DE DEFUNCIÓN
Región Sanitaria
Distrito
Departamento
Barrio o Compañía

7. ÁREA DE DEFUNCIÓN
1 ☐ Urbana
2 ☐ Rural

8. PUEBLO INDÍGENA
1 ☐ No Aplica
2 ☐ Aplica
Especificar

9. SITIO DE DEFUNCIÓN
1 ☐ Institución del MSPyBS 2 ☐ IPS 3 ☐ Institución Privada
4 ☐ Domicilio 5 ☐ Calle
6 ☐ Otro, especificar

10. INSTITUCIÓN
Nombre
Dirección

SI LA MUERTE ES FETAL PASE A LA PREGUNTA 21

11. ESTADO CIVIL
1 ☐ Soltero(a) 2 ☐ Casado(a) 3 ☐ Viudo(a)
4 ☐ Unido(a) 5 ☐ Separado (a) 6 ☐ Divorciado(a)
7 ☐ No sabe

12. EDAD
1 Menor de un día (horas) 2 Menor de un mes (días) (01-29)
3 Menor de 1 año (meses) (01-11) 4 De 1 o más años (años cumplidos) (01-99)

13. NIVEL EDUCATIVO
1 ☐ Ninguno 2 ☐ Primaria Incompleta
3 ☐ Primaria Completa 4 ☐ Esc. Básica Completa
5 ☐ Secundaria Completa 6 ☐ Esc. Media Completa
7 ☐ Universitaria o Superior Completa 8 ☐ No Sabe

14. LUGAR DE RESIDENCIA HABITUAL
Departamento
Distrito
Barrio o Compañía
Calle y Nº

15. ÁREA DE RESIDENCIA
1 ☐ Urbana
2 ☐ Rural

16. PROBABLE CAUSA DE MUERTE
1 ☐ No Violenta 2 ☐ Violenta o Causa Externa 3 ☐ En estudio

17. CERTIFICADO EXPEDIDO POR
1 ☐ Médico tratante 2 ☐ Médico no tratante 3 ☐ Médico Forense 4 ☐ Personal de salud autorizado

II. MUERTES VIOLENTAS

18. PROBABLE MANERA DE MUERTE
1 ☐ Suicidio 2 ☐ Homicidio
3 ☐ Accidente de tránsito 4 ☐ Otro accidente
5 ☐ En estudio (sólo Medicina Legal)

19. ¿CÓMO OCURRIÓ EL HECHO? Si herido (clase de arma), ahogado (lugar), atropellado (clase de vehículo), otros (veneno, etc.)

20. LUGAR O DIRECCIÓN DE OCURRENCIA DEL HECHO

III. DEFUNCIÓN FETAL O NEONATAL

21. LA MUERTE OCURRIÓ CON RELACIÓN AL PARTO
1 ☐ Antes 2 ☐ Durante 3 ☐ Después
4 ☐ No sabe

22. PARTO
1 ☐ Normal 2 ☐ Cesárea
3 ☐ Instrumentado 4 ☐ No Sabe

23. EMBARAZO
1 ☐ Único 2 ☐ Múltiple

24. PESO AL NACER
Gramos

25. NOMBRE (S) Y APELLIDO (S) DE LA MADRE
Nombre (s) / Apellido (s)

26. DOCUMENTO DE IDENTIFICACIÓN DE LA MADRE
1 ☐ Cédula de Identidad 2 ☐ Pasaporte Nº 3 ☐ No Tiene

27. LUGAR DE RESIDENCIA HABITUAL DE LA MADRE
Departamento
Distrito
Barrio o Compañía
Calle y Nº

28. ÁREA DE RESIDENCIA
1 ☐ Urbana
2 ☐ Rural

29. EDAD (En años cumplidos a la fecha del parto)

30. ESTADO CIVIL
1 ☐ Soltera 2 ☐ Casada 3 ☐ Viuda
4 ☐ Unida 5 ☐ Separada 6 ☐ Divorciada
7 ☐ No sabe

31. NIVEL EDUCATIVO
1 ☐ Ninguno 2 ☐ Primaria Incompleta 3 ☐ Primaria Completa
4 ☐ Esc. Básica Completa 5 ☐ Secundaria Completa 6 ☐ Esc. Media Completa
7 ☐ Universitaria o Superior Completa 8 ☐ No Sabe

32. NÚMERO DE HIJOS
Nacidos Vivos / Nacidos Muertos (Incluyendo el presente)

33. TIEMPO DE GESTACIÓN
1 ☐ Semanas 2 ☐ No sabe

34. ASISTIÓ A CONTROL DEL EMBARAZO
1 ☐ Si, escriba el Nº de veces 2 ☐ No

IV. DEFUNCIÓN DE MUJERES EN EDAD FÉRTIL (10 A 54 AÑOS)

35. ¿ESTABA EMBARAZADA CUANDO FALLECIÓ?
1 ☐ Si (pase al 38) 2 ☐ No 3 ☐ No sabe

36. ¿ESTUVO EMBARAZADA EN LAS ULTIMAS 6 SEMANAS?
1 ☐ Si (pase al 38) 2 ☐ No 3 ☐ No sabe

37. ¿ESTUVO EMBARAZADA EN LOS ÚLTIMOS 12 MESES?
1 ☐ Si 2 ☐ No 3 ☐ No sabe

V. CAUSAS DE DEFUNCIÓN

38. CÓMO DETERMINÓ LA CAUSA DE MUERTE
1 ☐ Historia Clínica 2 ☐ Pruebas de laboratorio 3 ☐ Necropsia-autopsia 4 ☐ Interrogatorio a familiares o testigos

39. ¿RECIBIÓ ASISTENCIA MÉDICA DURANTE EL SUCESO QUE LO LLEVÓ A LA MUERTE?
1 ☐ Si 2 ☐ No 3 ☐ No sabe

40. CAUSAS (en caso de muerte de menores de 28 días, informe también las causas maternas directas o indirectas en c) y d)
(CONSIGNE UNA CAUSA POR LÍNEA)

Tiempo aproximado entre el comienzo de cada causa y la muerte

I- CAUSA DIRECTA
Enfermedad o estado fisiopatológico que produjo la muerte directamente.
a)
CAUSAS ANTECEDENTES
Estados morbosos, si existiera alguno, que produjeron la causa consignada en a); mencionándose en último lugar la causa básica o fundamental.
Debido a:-
b)
Debido a:
c)
Debido a:
d)

II. OTROS ESTADOS PATOLÓGICOS IMPORTANTES
Que contribuyeron a la muerte, pero no relacionados con la enfermedad o estado morboso que la produjo.

Causa básica

41. MUERTE SIN CERTIFICACIÓN MÉDICA
Causa Probable de muerte

42. ¿QUIÉN EXPIDE EL CERTIFICADO?
1. ☐ Médico 2. ☐ Otro, escriba en la siguiente línea quién

43. NOMBRE DE QUIEN EXPIDE EL CERTIFICADO
Nombre (s) y Apellido (s) / Firma y Sello / Nº de Registro

44. LUGAR DE EXPEDICIÓN

45. FECHA DE EXPEDICIÓN
Día / Mes / Año

INSTRUCCIONES PARA LLENAR EL CERTIFICADO DE DEFUNCIÓN

El Certificado de Defunción tiene como propósito recoger información estadística sobre la mortalidad. Constituye además el requisito para la expedición de la autorización de inhumación y para la inscripción del hecho vital en el Registro Civil.

LA VALIDEZ DEL CERTIFICADO DE DEFUNCIÓN LA GARANTIZA LA FIRMA DE LA PERSONA QUE LO LLENA, QUIEN A LA VEZ SERÁ RESPONSABLE DEL CONTENIDO DEL MISMO.

INSTRUCCIONES GENERALES

1. El certificado debe ser llenado con letra clara y legible, sin borrones, ni enmendaduras.
2. No se deben utilizar **ABREVIATURAS** o **SIGLAS** en ninguno de los espacios del certificado.
3. Es indispensable hacer las preguntas necesarias para obtener la información completa y veraz, pues todos los datos son importantes para los servicios de salud y el Registro Civil.
4. Para efecto de garantizar la calidad, brindar confiabilidad y evitar duplicaciones, el certificado se halla prenumerado, por tal razón, **NO SE ACEPTAN CERTIFICADOS LLENADOS EN FOTOCOPIAS**.
5. Cuando un formato de certificado se dañe por borrones, enmendaduras o mal llenado, éste debe ser anulado y no destruirse, para ser remitido a la respectiva Región Sanitaria que lo enviará a la Dirección de Estadísticas en Salud – DIGIES del MPSyBS.

QUIEN DEBE LLENAR EL CERTIFICADO

El certificado de Defunción debe ser llenado, en su orden, por el médico tratante, el médico no tratante, el médico forense o por personal de salud autorizado, en aquellos lugares en donde no se cuente con médico.

Cuando la Defunción sea confirmada por un médico, dicho profesional está **OBLIGADO** a llenar el certificado de defunción en su totalidad. Si la defunción no es comprobada por un médico, el numeral 40 que hace referencia a las causas de defunción **NO DEBE LLENARSE**; en este caso se llenarán los espacios correspondientes a los numerales 1 al 39 (Según corresponda) y el 41 al 45.

Para los casos de muerte violenta, el certificado debe ser llenado en lo posible por un médico forense.

CONTENIDO

El Certificado de Defunción está dividido en cinco partes:

a) La primera parte I INFORMACIÓN GENERAL (preguntas 1 a 17), está destinada a registrar los datos relacionados con la defunción y el fallecido.
b) La segunda parte II MUERTES VIOLENTAS (preguntas 18 a 20) es de uso específico para los casos de muertes violentas o por causas externas.
c) La tercera parte III DEFUNCIÓN FETAL O NEONATAL (preguntas 21 a 34), contempla aspectos relacionados con las defunciones fetales o neonatales y datos de la madre.
d) La cuarta parte IV DEFUNCIÓN DE MUJERES EN EDAD FÉRTIL (10 A 54 AÑOS) (preguntas 35 a 37), contempla aspectos relacionados con las defunciones de mujeres en edad fértil, con el fin de captar la mortalidad materna durante el embarazo, el parto, el puerperio y la tardía.
e) La quinta parte V CAUSAS DE DEFUNCIÓN (preguntas 38 a 45), está destinada a consignar las causas generales de la defunción, o la causa probable de la defunción en los casos constatados por el personal no médico (de salud autorizado), y datos de la persona que expide el Certificado de defunción.

INSTRUCCIONES ESPECIALES

A continuación se detallan algunas de las preguntas del Certificado de Defunción que requieren especial atención durante su llenado.

I. INFORMACIÓN GENERAL

8. Pueblo Indígena: si el/la fallecido/a no es originario de un pueblo indígena no corresponde la indicación de pueblo indígena, marque con una X la casilla "No Aplica". Si el/la fallecido/a es originario de un pueblo indígena, marque con una X la casilla "Aplica", pregunte a los familiares de que pueblo indígena es y especifique.
9. Sitio de la defunción: marcar con una equis (X) en la casilla correspondiente al sitio donde ocurrió la defunción. En caso de elegir la alternativa "Otro", escriba en la línea, el sitio donde ocurrió la defunción. Ejemplo: en el río, etc.
10. Institución: si en la casilla 9 (Sitio de la defunción) seleccionó la opción 1 ó 2 ó 3, registrar el nombre del organismo de salud, incluyendo el sello de la institución y su respectiva dirección.
15. Área de residencia: marcar con una equis (X) en la casilla correspondiente, según el área ciudad (urbana) o en el campo (rural) de la residencia habitual de la persona que falleció.
16. Probable manera de muerte: con la información disponible, especificar si la defunción fue de origen natural (No violenta) o violenta (causa externa). La casilla "En estudio", se usa solo cuando al momento de llenar el certificado no se ha podido establecer la causa de la muerte por estar pendiente el resultado de la necropsia.
17. Certificado expedido por: marcar con una equis (X) la opción que corresponda.

II. MUERTES VIOLENTAS

La casilla correspondiente a muerte "En estudio", solamente puede ser utilizada por médicos de Medicina Legal. (Médico forense).

III. DEFUNCIÓN FETAL O NEONATAL

Llenar las preguntas del 21 a la 34, que corresponden a datos de la madre y del feto ó recién nacido.

IV. DEFUNCIÓN DE MUJERES EN EDAD FÉRTIL

Llenar las preguntas 35, 36 y 37 si la defunción corresponde a una mujer entre 10 y 54 años.

V. CAUSAS DE DEFUNCIÓN

Causas de la defunción: para esta información se utiliza el modelo Internacional del Certificado Médico de Defunción de la OPS/OMS, el cual permite seleccionar la **causa básica** de la defunción y producir estadísticas de mortalidad comparables entre los diferentes países.

La **causa básica** de la muerte se define como: "La enfermedad o lesión que **INICIO** la cadena de acontecimientos patológicos que condujeron directamente a la muerte o las circunstancias del accidente o violencia que produjo la lesión fatal".

Esta información sólo podrá ser diligenciada por un **MEDICO**, quien está en mejor condición que cualquier otra persona para decidir qué causa patológica condujo directamente a la muerte, y para señalar las enfermedades antecedentes, si existen, que dieron lugar a dicha causa.

El modelo utilizado consta de dos partes:

Parte I: tiene cuatro renglones (a, b, c y d) donde debe aparecer **UN SOLO DIAGNÓSTICO O TÉRMINO EN CADA UNO DE ELLOS:**

Renglón a): debe escribirse la causa o estado patológico que directamente produjo la muerte. Renglón b): debe ser llenado cuando se considere que la causa informada en a), se debió o fue originada por una causa previa. Renglón c): debe ser llenado cuando se considere que en la defunción estuvieron involucradas tres causas, de modo que la registrada en el renglón a), se debió a la informada en el renglón b) y ésta, a su vez, fue originada por la que se escribe en el renglón c).
Ejemplos:

1. **Septicemia. Duración 8 días.**
2. **Gangrena. Duración 27 días.**
3. **Diabetes. Duración 5 años.**

Renglón d): debe ser llenado cuando se considere que en la defunción estuvieron involucradas cuatro causas, de modo que la registrada en el renglón a), se debió a la informada en el renglón b), ésta, a su vez, fue originada por la que se escribe en el renglón c) y ésta, a su vez, fue originada por la que se describe en el renglón d).

Cuando aparece más de una causa en el certificado, debe tener una secuencia lógica, de abajo hacia arriba, que se inicia en el último renglón llenado, que bien puede ser b), c) o d), pero que invariablemente terminará en el renglón a); **DE OTRA FORMA EL CERTIFICADO ESTA MAL LLENADO**.

De esta manera, la **causa básica**, registrada en el último renglón de la Parte I, es la que origina algunas complicaciones (consecuencias de la causa básica) que deben ser registradas en las líneas de arriba (a, b y c). La última de las complicaciones o consecuencias, registrada en la línea a), es llamada causa **terminal** o **inmediata** o **causa directa** de la muerte.

No es estrictamente necesario llenar todos los renglones de la Parte I. Si la causa que aparece en a), describe por completo la defunción y no se debió a ninguna otra causa antecedente, **en este caso, deje en blanco los renglones b), c) y d)**.

Parte II: se debe anotar cualquier otro u otros estados patológicos importantes que pudieron contribuir a la muerte, pero que no estuvieron relacionados con la causa básica informada en la Parte I, renglones a), b), c) o d).

La columna "Tiempo aproximado entre el comienzo de cada causa y la muerte" (minutos, horas, días, semanas, meses o años), ayuda al médico a establecer correctamente la cadena de acontecimientos que condujeron a la muerte y facilita después al codificador la selección de la causa básica de la defunción. Lógicamente la causa que aparezca en a) tendrá menos tiempo que la de b) y la de c) y d).

41. Muerte sin certificación médica: esta casilla debe ser llenada en los casos en que el certificado sea expedido por personal de salud autorizado, debiéndose registrar la causa probable de la muerte.

La firma del médico o personal de salud que expide el certificado, conlleva su responsabilidad civil, penal y ética.

MINISTERIO DE SALUD PÚBLICA Y BIENESTAR SOCIAL
SISTEMA ESTADÍSTICO DE DEFUNCIÓN

N°

Para uso del Registro Civil
Autorización de Inscripción para el Registro Civil de Defunción

Causa de la Defunción _____

Lugar de Defunción _____ Fecha de Defunción ☐☐ ☐☐ ☐☐ (Día Mes Año) Hora:____:____

Sexo Masculino ☐ Femenino ☐ Indefinido ☐ Edad _____

Nº de Cédula de Identidad del/la Fallecido/a _____ Pueblo Indígena _____

Nombres y Apellidos del/la Fallecido/a _____

Nombres y Apellidos de la Madre _____ Edad _____

Nombres y Apellidos del Padre _____ Edad _____

Nombre y Apellidos del Profesional que asistió _____ Título_____ Nº de Reg._____ Firma y sello _____

Nombre del Informante_____ Parentesco con el fallecido_____ C.I. Nº_____ Firma _____

Nombre y Apellido del Funcionario del Establecimiento de Salud _____ Firma y Sello _____

Distrito / Ciudad _____ Fecha de Expedición ☐☐ ☐☐ ☐☐ (Día Mes Año)

APPENDIX 14

Live Birth Certificate

REPÚBLICA DEL PARAGUAY
MINISTERIO DE SALUD PÚBLICA Y BIENESTAR SOCIAL
CERTIFICADO DE NACIDO VIVO

N°

PRIMERA PARTE: PARA USO EXCLUSIVAMENTE ESTADÍSTICO POR PARTE DEL MSP&BS
(Consulte instrucciones al dorso)

I. DATOS DEL NACIMIENTO

1. SEXO 1. ☐ Masculino 2. ☐ Femenino 3. ☐ Indefinido
2. PESO (al nacer) ☐☐☐☐ Gramos
3. TALLA (al nacer) ☐☐ Centímetros
4. FECHA DE NACIMIENTO ☐☐ Día ☐☐ Mes ☐☐ Año
5. HORA DE NACIMIENTO ☐☐ Hora ☐☐ Minutos ☐ No Sabe
6. LUGAR DE NACIMIENTO
Región Sanitaria ☐☐ Departamento ☐☐
Distrito ☐☐ Barrio o Compañía
7. ÁREA DE NACIMIENTO 1 ☐ Urbana 2 ☐ Rural
8. PUEBLO INDÍGENA 1 ☐ No Aplica 2 ☐ Aplica Especificar ☐☐
9. NACIÓ EN 1 ☐ Institución del MSPyBS 2 ☐ IPS 3 ☐ Institución Privada 4 ☐ Domicilio 5 ☐ Otro En la siguiente línea escriba donde 6 ☐ No Sabe
10. INSTITUCIÓN ☐☐☐ Nombre Dirección
11. EL PARTO FUE ATENDIDO POR 1. ☐ Médico 2. ☐ Obstetra 3. ☐ Enfermera(o) 4. ☐ Auxiliar 5. ☐ Empírica 6. ☐ Otro. En la siguiente línea escriba quien
12. TIEMPO DE GESTACIÓN 1 ☐☐ Semanas 2 ☐ No sabe
13. ASISTIÓ A CONTROL DE EMBARAZO 1 ☐ Si, en la siguiente línea escriba el N.º de veces 2 ☐ No
14. TIPO DE PARTO 1 ☐ Normal 2 ☐ Cesárea 3 ☐ Instrumentado 4 ☐ No Sabe
15. TIPO DE NACIMIENTO 1 ☐ Único 2 ☐ Doble 3 ☐ Triple 4 ☐ Cuádruple o más

II. DATOS DE LA MADRE

16. NOMBRE(S) Y APELLIDO(S) Nombre(s) Apellido(s)
17. DOCUMENTO DE IDENTIFICACIÓN 1. ☐ Cédula de Identidad 2. ☐ Pasaporte No ☐☐☐☐☐☐☐☐☐ 3. ☐ No tiene
18. EDAD (en años cumplidos a la fecha del parto) ☐☐
19. ESTADO CIVIL 1 ☐ Soltera 2 ☐ Casada 3 ☐ Viuda 4 ☐ Unida 5 ☐ Separada 6 ☐ Divorciada 7 ☐ No sabe
20. NIVEL EDUCATIVO 1 ☐ Ninguno 2 ☐ Primaria Incompleta 3 ☐ Primaria completa 4 ☐ Esc. Básica Completa 5 ☐ Secundaria completa 6 ☐ Esc. Media Completa 7 ☐ Universitaria o Superior Completa 8 ☐ No sabe
21. LUGAR DE RESIDENCIA HABITUAL DE LA MADRE
Departamento ☐☐ Distrito ☐☐
Barrio o Compañía Calle y No.
22. ÁREA DE RESIDENCIA 1 ☐ Urbana 2 ☐ Rural
23. NÚMERO DE EMBARAZOS, INCLUIDO EL PRESENTE ☐☐
24. NÚMERO DE HIJOS NACIDOS VIVOS QUE HA TENIDO, INCLUIDO EL PRESENTE ☐☐
25. ¿CUANTOS HIJOS QUE NACIERON VIVOS HAN MUERTO? ☐☐
26. ¿CUANTOS HIJOS NACIERON MUERTOS? ☐☐

III. DATOS DE QUIEN LLENA EL CERTIFICADO

27. QUIEN EXPIDE EL CERTIFICADO 1 ☐ Médico 2 ☐ Enfermera 3 ☐ Obstetra 4 ☐ Auxiliar 5 ☐ Otro, escriba quien en la siguiente línea
28. NOMBRE DE QUIEN EXPIDE EL CERTIFICADO Nombre(s) y Apellido(s) Nº de Registro Firma y Sello
29. LUGAR DE EXPEDICIÓN
30. FECHA DE EXPEDICIÓN ☐☐ Día ☐☐ Mes ☐☐ Año

MINISTERIO DE SALUD PÚBLICA Y BIENESTAR SOCIAL **N°**
CERTIFICADO DE NACIDO VIVO

Para uso del Registro Civil
Autorización de Inscripción para el Registro Civil de Nacido Vivo

Lugar de Nacimiento_____ Fecha de Nacimiento ☐☐ ☐☐ ☐☐ Hora:____:____
Día Mes Año

Sexo Masculino ☐ Femenino ☐ Indefinido ☐ Pueblo Indígena _____

Nombre de la Institución _____

Nombres y Apellidos de la Madre_____ C.I _____

Nombres y Apellidos del Padre _____

Nombre de la persona
que asistió al parto _____ Título_____ Nº de Reg._____ Firma y Sello _____

Nombre del Informante_____ Parentesco_____ C.I_____ Firma _____

Nombre y Apellido del Funcionario del Establecimiento de Salud_____ Firma y Sello _____

Distrito / Ciudad _____ Fecha de Expedición ☐☐ ☐☐ ☐☐
Día Mes Año

INSTRUCCIONES PARA LLENAR EL CERTIFICADO DE NACIDO VIVO

El certificado de nacido vivo tiene como propósito primordial recoger información sobre la natalidad. Constituye además, el documento antecedente para la inscripción del nacimiento en el Registro Civil.
LA VALIDEZ DEL CERTIFICADO DE NACIDO VIVO LA GARANTIZA LA FIRMA DE LA PERSONA QUE LO LLENA, QUIEN A LA VEZ SERÁ RESPONSABLE DEL CONTENIDO DEL MISMO.

INSTRUCCIONES GENERALES

1. El certificado debe ser llenado con letra clara y legible, sin borrones, ni enmendaduras.
2. No se deben utilizar **ABREVIATURAS** o **SIGLAS**, en ninguno de los espacios del certificado.
3. Es indispensable hacer las preguntas necesarias para obtener la información completa y veraz, pues todos los datos son importantes para los servicios de salud y el Registro Civil.
4. Para efecto de garantizar la calidad, brindar confiabilidad y evitar duplicaciones, el certificado esta prenumerado; por tal razón, **NO SE ACEPTAN CERTIFICADOS LLENADOS EN FOTOCOPIA.**
5. Cuando el formulario se dañe por borrones, enmendaduras o mal llenado, este debe ser anulado y no se puede destruir, será remitido posteriormente a la Región Sanitaria correspondiente, que lo enviará a la Dirección de Estadísticas en Salud – DIGIES del MSPyBS.

QUIEN DEBE LLENAR EL CERTIFICADO

El certificado de nacido vivo debe ser llenado por el médico, la enfermera o la obstetra que asistió el parto; en las áreas del país en donde no exista este recurso humano, el MSPyBS ha autorizado a las auxiliares de enfermería, para el llenado. En el evento en que el parto haya sido asistido por empírica u otra persona, estas deberán informar al centro de salud del área, para que allí se avale la información y se llene el respectivo certificado. El certificado deberá llevar el sello del profesional que asistió al parto.

CONTENIDO

El formato del certificado esta dividido en cuatro partes:

1. La primera I DATOS DEL NACIMIENTO (preguntas 1 a 15), corresponde a los datos propios del nacimiento, información indispensable para el sistema de salud.
2. La segunda II DATOS DE LA MADRE (preguntas 16 a 26), están destinadas a registrar algunos datos de la madre del recién nacido.
3. La tercera III DATOS DE QUIEN EXPIDE EL CERTIFICADO (preguntas 27 a 30), contiene los datos de quien expide el Certificado.

INSTRUCCIONES ESPECIALES

A continuación se detallan algunas de las preguntas del certificado de nacido vivo que requieren especial atención cuando se este llenando. El formulario debe incluir el sello de la institución, en la 1ra., y 2da., parte del certificado.

I. DATOS DEL NACIMIENTO

1. Sexo: Marcar con una equis (X) el caso que corresponda. La opción "Indefinido" son aquellos casos en que no es posible determinar el sexo como ser nacidos con malformaciones congénitas, prematuros extremos, siameses, hermafroditas.

4. Fecha de nacimiento: llenar las casillas con números ordinales (1, 2, 3,...) día, mes y los dos últimos dígitos correspondientes al año en que ocurrió el nacimiento.

5. Hora de nacimiento: llenar la casilla hora y minutos del nacimiento con números ordinales. La casilla "No sabe" se marca únicamente en aquellos casos en los que no sea posible obtener esta información.

8. Pueblo Indígena: si el recién nacido no es originario de un pueblo indígena no corresponde la indicación de pueblo indígena, marque con una X la casilla "No Aplica". Si el recién nacido es originario de un pueblo indígena, marque con una X la casilla "Aplica", pregunte a la madre de que pueblo indígena es y especifique.

9. Nació en: marcar con una equis (X) en la casilla correspondiente el sitio donde ocurrió el nacimiento. La casilla "Otro" se utiliza para casos cuando el nacimiento haya sido en automóvil, avión, calle, etc.

10. Institución: si en la casilla 9 (Nació en) selecciono las opciones 1 o 2 o 3, registrar el nombre del organismo de salud y su respectiva dirección.

11. El parto fue atendido por: seleccionar, marcando con una equis (X), el tipo de personal de salud que atendió el parto; si escogió la opción seis (6) "Otro", especifique la persona que atendió el hecho (policía, azafata, familiar, etc.).

12. Tiempo de gestación: llenar las casillas semanas de gestación con números ordinales. La casilla "No sabe" sólo debe ser llenada cuando se desconozca o no sea posible determinar el tiempo de gestación.

14. Tipo de parto: marcar con una equis (X), si el parto fue normal, cesárea, o instrumentado (*). La casilla "No sabe" sólo debe ser llenada cuando se desconozca o no sea posible determinar el tipo de parto.

(*) Cuando se utilizaron instrumentos obstétricos tales como fórceps, espátulas, etc.

15. Tipo de nacimiento: marcar con una equis (X) si el recién nacido, a que se refiere el certificado, es producto de un parto único o múltiple.

II. DATOS DE LA MADRE

16. Nombre (s) y Apellido (s): se recomienda solicitar el documento de identificación de la madre, al momento de llenar el certificado y anotar el(los) nombre(s) y apellido(s) según como aparezcan en éste.

17. Documento de Identificación: marque con una equis (X) la casilla correspondiente y escriba el nro. si escogió la opción 1 o 2 pero no sabe el nro. de identificación se marca, además, la opción 3 "No sabe".

20. Nivel Educativo: se considerara el ultimo nivel aprobado íntegramente. Ej.: si la mama hizo o esta cursando el 4to. curso, se marcara la primaria completa, o Esc. Básica completa, teniendo en cuenta la reforma educativa.

23. Número de embarazos, incluido el presente: escribir en el espacio correspondiente, el número de embarazos de la madre incluyendo el presente, independientemente del producto del embarazo.

24. Número de hijos nacidos vivos que ha tenido, incluido el presente: escribir en el espacio correspondiente el número de hijos nacidos vivos que la madre ha tenido, incluyendo el presente.

25. Cuántos hijos que nacieron vivos han muerto?: escribir en el espacio correspondiente, el número de hijos que nacieron vivos y han muerto. Si la respuesta en negativa, llenar las casillas con 00.

26. Cuántos hijos nacieron muertos?: escribir en el espacio correspondiente, el número de hijos que nacieron muertos. Si la respuesta en negativa, llenar las casillas con 00.

III. DATOS DE QUIEN EXPIDE EL CERTIFICADO

Suministrar la información correspondiente de la persona que expide el certificado, señalando el nombre completo, nro. de registro y la firma con el sello correspondiente. Adicionalmente, se deberá indicar el lugar y fecha de expedición del mismo.

La firma del médico o personal de salud que expide el certificado, conlleva su responsabilidad civil, penal y ética.

APPENDIX 15

CODIGO ROJO

NOMBRE Y APELLIDO:

		ESCALA DE ALERTA PRECOZ OBSTETRICA												
FECHA:	DIA/HORA:													
ASPECTO GRAL	Normal													
	Sudorosa													
	Palida													
	Cianotica													
	Icterica													
FRECUENCIA RESPIRATORIA (Respiraciones por minuto)	22 o mas													
	21a 20													
	19-12.													
	11 o menos													
SATURACION DE 02 (%)	100-95													
	menos de 95													
TEMPERATURA (C°)	40 o mas													
	39 - 38													
	37 - 36													
	35													
FRECUENCIA CARDIACA (latxmin)	100 o mas													
	99 a 60													
	59 o menos													
PRESION SISTOLICA (mmHg)	160 o mas													
	159 - 140													
	139 a 90													
	89 a 71													
	70 o menos													
PRESION DIASTOLICA (mmHg)	110 o mas			X										
	109 - 90													
	89 a 60													
	59 a 51													
	50 o menos													
RESPUESTA NEUROLÓGICA	Alerta													
	Desorientada													
	Reacciona solo al dolor													
	Inconciente													
ORINÓ EN LAS ULTIMAS 6 HRS o >30cc/h	SI													
	NO													
SANGRADO GENITAL	Abundante													
	Manchado													
	Ausente													
FLUJO GENITAL PURULENTO	SI													
	No													
CEFALEA Y ALT. VISUAL Y/O AUDITIVA:	SI													
	No													
CONVULSIONES	SI			X										
	No													
DOLOR ABDOMINAL	NO													
	SIN IRRITACION PERITONEAL													
	CON IRRITACION PERITONEAL													

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