MATERNAL MORTALITY REVIEW COMMITTEES GUIDE

December, 2021

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INTRODUCTION

Maternal mortality review committees (MMRCs) have the critical task of determining whether individual maternal deaths were preventable and recommending specific and feasible actions to prevent future deaths. Objective and standardized reviews of *all* maternal deaths, and the implementation of recommendations for prevention, have had a positive impact on maternal health and outcomes around the world. Although maternal deaths are rare, the information from each case can contribute important information to prevent additional deaths, and all such deaths must be reviewed in a thorough and timely manner. Thus, each province and territory should have, at the minimum, an annual review of all deaths. Some jurisdictions may have committees for specific institutions or regions as well, depending on the volume of deaths that require review.

This guide is for members of a maternal mortality review committee, to help them maximize their committee's effectiveness and impact, and contribute important information to maternal health in the Canadian context, by establishing and consistently following comprehensive and sound formal processes. The review of maternal deaths is not about assigning blame but about learning how to improve care and circumstances to prevent future occurrences. The process is distinct from, but not a substitute for, hospital peer review committees, root-cause analysis, or complaint investigations.

A number of provinces and territories have established policies and practices related to maternal mortality review. They have also contributed to the information provided in this guide and the accompanying tools and resources, to share models, resources, and experiences, and to provide relevant, adaptable approaches meaningful to each province and territory (see Appendix A for a Maternal Mortality Review Committee Logic Model to guide processes and outcomes).

This guide is intended to share suggestions and best practices that will help MMRCs establish processes for standardized case review and reporting. The guide is structured in the general order of steps a committee might take in conducting an actual review committee meeting (see Appendix A for a logic model, Appendix B for an MMRC Terms of Reference Template and Appendix C for a sample MMRC Meeting Agenda). Committees may choose to do things differently, depending on resources, committee composition, and scope.

The content is this guide was adapted heavily from the Maternal Mortality Review Information Application of the U.S. Centers for Disease Control and Prevention, with permission.[1]

MATERNAL MORTALITY REVIEW CYCLE OVERVIEW

An overview of the Maternal Mortality Review Cycle is illustrated in Appendix D.

MATERNAL MORTALITY REVIEW COMMITTEE FACILITATION

1. Review the Authority and Protections Under Which the Committee Operates

- Are there specific legislative statutes that address the maternal mortality review process? If so, are there any directives provided for data collection, committee review, and public reporting?

[1] https://reviewtoaction.org/

- If there is broader legislation under which the MMRC operates, take steps to assure the entire process has adequate protections to foster full abstraction, review, and reporting.
- Are there specific privacy regulations guiding how personal health information should be protected and how it should be shared for review?

All members of the MMRC should be aware of existing protections and authority.

Case discussion by the MMRC must adhere to principles of confidentiality, anonymity, and objectivity.

See Appendix E for an example of the authorities and protections which can be provided to the committee members, as well as a Confidentiality Statement.

2. Review the Scope, Mission, Vision, and Goals Established by the Committee

When disseminating case information for review, and at the start of each committee meeting, review the scope, mission, vision, and goals established by the committee.

It is also helpful to define terms:
Pregnancy-related death: the death of a woman during pregnancy or within 1 year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.

Pregnancy-associated death: the death of a woman during pregnancy or within 1 year of the end of pregnancy from a cause that is not directly related to pregnancy.

The cases should be reviewed through the lens of established and prescribed authority and in conjunction with committee member input.

Prioritize cases to be abstracted and reviewed based on the committee's scope, mission, vision, and goals.

Review the committee's priorities periodically to make sure they are still relevant and applicable.

3. Review the Membership

MMRCs consider both medical and non-medical factors contributing to deaths. Thus, committees should comprise individuals representing multiple disciplines and organizations that can promote understanding of all factors contributing to maternal deaths and help advance recommendations for action. For example, midwives, nurses, family physicians, obstetrician-gynaecologists, anesthesiologists, pathologists, and coroners/medical examiners are standard members of the review team. Other expertise and disciplines are often useful in the membership and could include internal medicine specialists, sub-specialists, social workers, psychologists, and community health nurses, as well as experts outside of health care whose viewpoint might provide an important perspective (e.g., police, paramedics, firefighters). Outside experts can also be brought in ad hoc for specific expertise related to a case.

It is important to estimate the time commitment required by committee members — likely quarterly meetings in the larger provinces, or annual meetings in those provinces and territories with very few deaths per year.

4. Review the Case Identification Process

Many committee members find it beneficial to hear a brief overview of the process for identifying cases for abstraction and review. Such an overview fosters engagement of committee members in the entire maternal mortality review process and offers a system of checks and balances to the process of identifying and ascertaining cases. Items to consider for this discussion may include:

- Cases identified and the process used for identification
- Sources of information used and processes to identify cases (i.e., reported to coroners/medical examiners, hospitals, media, families, data linkages)
- Causes of death (COD) listed on death certificate
- Basic demographics of cases identified: i.e., mother's age, race, ethnic background, marital status, place of birth, education, occupation, entry into prenatal care
- If applicable, any preliminary classification of cases before abstraction (i.e., pregnancy-related death, pregnancy-associated death, death not pregnancy-related or –associated)
- Pregnancy outcomes, such as live birth or fetal death, and the number of surviving children

Sources and processes to ensure that every maternal death is identified and reported appropriately are key to ensuring that every maternal death is ascertained and reviewed.

5. Present the Cases

Cases should be presented by a designated person, such as the committee coordinator or chairperson. Regardless of who presents the case, it is beneficial to have a standard format and process to guide committee review and discussion.

Committees should identify what information will be shared with MMRC members before and during the case review meeting. All information shared must be via a safe, secure platform. Providing de-identified case information to committee members in advance of the meeting helps ensure that any identified gaps in information are addressed before the meeting and reduces time required during the meeting for members to become familiar with the cases.

If it is impossible to present case information before the meeting, allow members adequate time to read cases before beginning discussion. This avoids frustration and ensures informed decisions about each case.

Using a standardized format to develop case narratives promotes ease of reading and understanding (see Appendix F for Case Narrative Templates).

Using an MMRC Decisions Form can help to efficiently and comprehensively guide committee members as they make case decisions (see Appendix G for an MRCC Decisions Form).

Introduction of Case: Information to Share

How the Case Was First Identified

Discuss criteria used to select case for review by committee. (Does the case fit into the committee scope, or is there a special interest in reviewing this case?)

Case Overview

The designated person reads the case narrative that highlights the relevant information needed by the committee to make its decisions.

Before the meeting, decide who will lead each case discussion. Some committees ask the abstractor who worked on the case to present the case narrative, as he or she is most familiar with the case. Other committees choose to appoint a coordinator, chair, or other committee facilitator to read the case narrative. If the abstractor does not present the case, he or she should still be available at the meeting to answer questions and provide additional detail as needed.

Ensure that someone has been assigned responsibility for:

- Keeping the meeting within time parameters
- Keeping discussion on track
- Eliciting input from the entire committee membership
- Capturing and synthesizing committee decisions

It may be useful to have the individual who is assigned to record and synthesize committee deliberations enter notes directly into a form that is shared on screen during the meeting. This provides visual confirmation that committee recommendations are appropriately captured.

Provide copies of the MMRC Decision Form to members for each case and collect their notes to make sure that salient points are captured. This step has the added benefit of allowing quieter members to have their voices heard. The person responsible for documenting committee decisions — usually a committee coordinator or an abstractor — should then review the collected forms and integrate written comments into notes captured at the meeting. The information should be retained only by the staff supporting the committee's work.

6. Facilitate the Decision-Making Process

Designate a Facilitator

Regardless of who presents cases, an individual should have the role of Committee Facilitator to help guide the committee in its decision-making process. Facilitative leadership promotes efficiency, effectiveness, and engagement of the committee members. Facilitator responsibilities may include the following:

- Developing structured agendas for case review meetings
- Facilitating case discussions
- Ensuring minimal personal biases
- Ensuring data-driven recommendations
- Serving as the committee's representative at conferences and stakeholder meetings
- Engaging the participation of each group member

Facilitation is a unique skill. It requires effective management of committee dynamics, including a sense of how the group members interact as individuals and as a whole. The facilitator must be an effective communicator, an active listener (paraphrases, summarizes, reflects) who inquires and seeks clarification in a non-critical manner and encourages authenticity and maintains trust in the group.

Designate a Facilitation Team

In addition to a strong facilitator, MMRCs need support positions. These positions could include a coordinator, abstractor(s), a database manager, and one or more epidemiologists, depending on the volume of reviews. Their responsibilities can vary between individual reviews. Partnerships could be established to obtain the expertise, including an epidemiologist at a local public health unit or college/university, a health records expert, etc.

For example, coordinators might take on some of the facilitation and agenda-setting responsibilities for review committee meetings. They may meet with case abstractors to prioritize cases and review the status of a case sent for abstraction. Coordinators also ensure that key committee documents, such as the policies and procedures, are updated and implemented. In addition, they may be responsible for coordinating activities to implement findings from review deliberations.

Database managers can help by ensuring that the data strategy of the MMRC adheres to the jurisdiction's data management policies. Epidemiologists may provide data analysis support for developing products from the reviews, such as fact sheets and reports. In most cases, these individuals are not exclusively dedicated to the review, but assist the review in addition to their other job duties.

Succession planning for leadership important and terms of reference that specify the roles of chairs and vice-chairs are helpful for succession planning.

7. Formalize Committee Decisions

Before beginning its work, the committee needs to decide how decisions are made. For each of the decisions, will a majority vote be sufficient? Or will consensus be required? Each process has its advantages and disadvantages.

Consensus decision-making requires discussion and supports each member having a voice, ensuring engagement of the full committee, but it can also be an inefficient use of committee time.

A majority vote can be a more efficient approach to decision-making, but minority voices can be lost. Members who feel their voices are not heard may disengage from the committee.

A committee may decide that some decisions are made by consensus, while others are by majority vote.

Use a Standard Process to Guide Decision-Making

Using a standard process has many benefits. A standard process:

- Promotes consistent and complete case review
- Provides direction and promotes efficiency of case review
- Keeps the committee focused and case discussions on track
- Uses case abstraction tools to ensure seamless conversion from abstraction to review
- Reminds members of priority data elements and their application

- Records committee findings and recommended actions in a standard format
- Involves collection of data that is consistent over time and with other reviews, to allow analysis over time and across reviews

Determine Whether the Death is Pregnancy-Related

Because the decision on whether the death is pregnancy-related is fundamental to the review and triggers a cascading pathway of decisions, this decision is one that should require consensus decision-making. Committee members determine whether the case was pregnancy-related or pregnancy-associated. If a consensus cannot initially be reached, it can be helpful to review the case discussion for committee members to facilitate reaching a consensus.

Committee members should know and understand the core definitions used for determining relatedness.

If committee is unsure, pose the following question: "If this woman had not been pregnant, would she still have died?"

- Answering "yes" indicates that this is a pregnancy-associated case, but not a pregnancy-related case
- Answering "no" indicates a pregnancy-related case

Determine the Underlying Cause of Death

The underlying cause of death is the initiating event in a chain of events that ultimately resulted in the woman's death. It is the focus for committee decision-making and analysis of data.

State the committee's determination of the underlying cause of death, as specifically as possible.

- The recommended data fields include a text field to capture the descriptive causes of death determined by the committee
- The descriptive underlying cause of death can be documented for both pregnancy-related and pregnancy-associated deaths.

Document whether the committee agrees with the cause of death listed on death certificate.

For a template for a MRCC Decisions Form, see Appendix G.

Other Factors Contributing to the Death

The following questions document other significant factors contributing to, and characteristics of, the death that may not be an underlying cause. Answer these 6 questions, regardless of whether the death was deemed pregnancy-related or pregnancy-associated. Questions can be revised annually but should be agreed upon by the other provinces/territories so that national-level information can be reported.

Did any of the following contributed to the death?

	Obesity	Maternal Mental Health	Substance Use	Violence	Discrimination
Yes					
Probably					
No					
Unknown					

If substance use was a factor, which substance(s)?

Alcohol ☐ Opiates ☐ Methadone ☐ Cocaine/crack ☐ Cannabis ☐ Methamphetamine ☐

Prescriptions ☐ Unknown ☐

Was this death a suicide? Yes ☐ No ☐

Was this death a homicide? Yes ☐ No ☐

If this was a homicide, was intimate partner violence a factor? Yes ☐ No ☐ Unknown ☐

Did other factors (i.e., social, systems, cultural, etc.) contribute to the death? Yes ☐ No ☐ Unknown ☐

8. Determine Preventability and Chances to Alter Outcome

The committee may not be ready to determine that a case is pregnancy-related or preventable when they reach these components on the MRCC Decisions Form. It is fairly common for committee members to want to jump ahead or to request to go back into the case to gain clarity on certain data points, review the flow of events, or further explore details. To ensure that all points are captured, the facilitator should repeat each decision that was made to ensure all thoughts have been captured before moving on to the next case.

Committee Determination of Preventability

A death is considered preventable if the committee determines that there was at least some chance that the death could have been averted by one or more reasonable changes to patient, family, provider, facility, system, and/or community factors.

The following 2 questions help drive the development of actionable recommendations and support priority-setting among recommended actions.

Was this death preventable? Yes ☐ No ☐ Unable to determine ☐

Was there a chance to alter outcome? Good chance ☐ Some chance ☐ No chance ☐

Unable to determine ☐

Some committees choose to only answer 1 question or the other. Each has its value. The first decision says nothing about the degree of preventability, and a "Yes" simply indicates there was at least some chance. The second decision speaks to the specific degree to which the death was potentially preventable. Either decision is useful alone but, when used together, can better support prioritizing areas where the committee should recommend action. The most frequent underlying causes of death may not be the most preventable, and within those that are the most preventable, there is a range of opportunity for prevention. Used together, these decisions help committees to identify the best opportunities for recommended action.

9. Determine Contributing Factors

Completion of this section should be guided by the mission and scope of the review committee.

A committee should decide whether to complete this section for pregnancy-related deaths only or for all pregnancy-associated deaths. This decision should be consistent with the committee's mission and scope.

Using the Contributing Factors list on the MRCC Decisions Form, identify all factors that the committee determines contributed to the death. Provide a description explaining each contributing factor. For each issue, describe any relevant recommendations, their level of implementation, the prevention type, and the expected impact. The worksheet below captures this information using drop-down menus.

Contributing Factors: Worksheet and Recommendations

CONTRIBUTING FACTORS

What were the factors that contributed to this death? Multiple contributing factors may be present.

RECOMMENDATIONS OF THE COMMITTEE

If there was at least some chance that the death could have been averted, what were the specific and feasible actions that, if implemented or altered, might have changed the course of events?

DESCRIPTION OF ISSUE	CONTRIBUTING FACTORS (choose as many as required below)	COMMITTEE RECOMMENDATIONS [Who?] should [do what?] [when?] Map recommendations to contributing factors	PREVENTION TYPE (choose below)	EXPECTED IMPACT (choose below)

10. Make Recommendations

This question can help review committees make case-specific recommendations:

If there was at least some chance that the death could have been averted, were there specific and feasible actions which, if implemented or altered, might have changed the course of events?

The committee should try to develop a recommendation for each contributing factor identified. Recommendations are most effective when they are specific and feasible. Recommendations should address who is responsible to act and when. The phrasing of recommendations should be in actionable terms.

For example:
If the underlying cause of death was determined to be a mental health condition and identified contributing factors were substance use disorder, and lack of provider assessment — specifically, the woman was not screened for substance use disorder during prenatal care, then:

- An *ineffective* recommendation would be: Better screening for substance use disorder.
- An *actionable* recommendation would be: Prenatal care providers should screen all patients for substance use disorder at their first prenatal visit.

Level of Prevention

For each recommendation that the committee makes, determine the level of prevention that would be achieved if the recommendation were implemented. Like preventability decisions, this decision helps support the community in setting priorities for recommendations to translate into action:

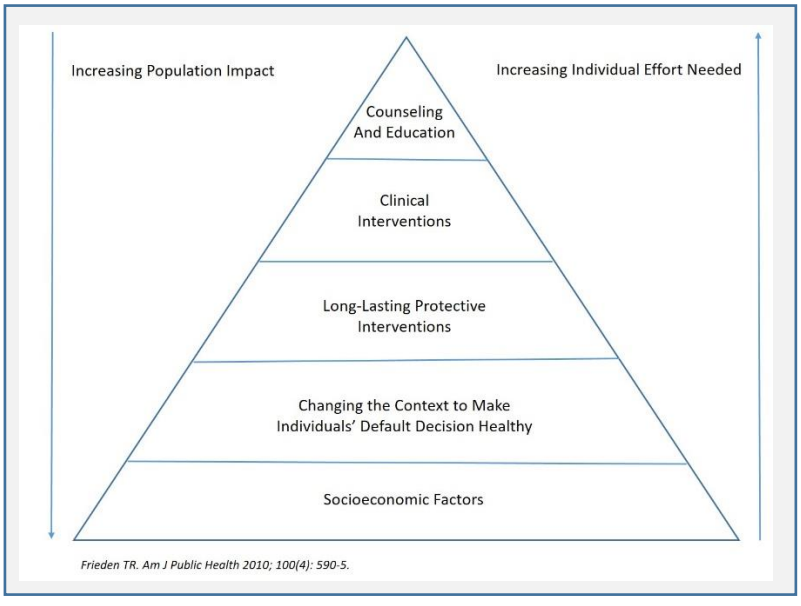
- *Primary*: Prevents the contributing factor before it occurs.
- *Secondary*: Reduces the impact of the contributing factor once it has occurred (i.e., treatment).
- *Tertiary*: Reduces the impact or progression of an ongoing contributing factor once it has occurred (i.e., management of complications).

Recommendations that support primary prevention may be prioritized over those that support secondary or tertiary prevention. The committee should not, however, always or only think of primary or secondary prevention opportunities, as these are uncommon.

Expected Impact

For each recommendation the committee makes, determine the expected impact level if the recommendation were implemented.

Use the following as a guide (adapted from the Health Impact Pyramid[2]):



This determination helps committees to prioritize their recommendations, to determine which should be translated to action. The base of the pyramid addresses social determinants of health. Actions aimed toward the base of the pyramid have greater impact population-wide and require less individual effort. However, they require a large and sustained amount of political will and are thus often difficult to enact.

Actions aimed toward the top of the pyramid help individuals, rather than entire populations, and depend on person-by-person individual behavioural change. However, they require less political commitment and are often easier to enact.

A comprehensive strategy to reduce maternal mortality would include interventions at multiple levels of the pyramid. Some examples of recommended interventions at each level:

Small:

Education/Counselling:

- Community- or provider-based health promotion and education activities

Medium:

Clinical intervention and coordination of care across continuum of well-woman visits through obstetrics, observed in:

- Protocols
- Prescriptions

Large:

Long-lasting protective intervention:

- Improve readiness, recognition, and response to obstetric emergencies

Extra Large:

Change in context:

- Improve public transportation
- Reduce vehicle carbon emissions
- Promote environments that support healthy living
- Ensure available and accessible services

Giant:

Address social determinants of health:

- Poverty
- Inequality
- Systemic racism

Disseminating Recommendations

Specific recommendations should be disseminated to the relevant organizations in a timely manner. At the end of each meeting, the Committee should discuss who should receive the recommendations: hospitals, health professional organizations, governments, research organizations, regulatory agencies, etc. Recommendations should be sent with the redacted case narrative attached, with a request for acknowledgement and a follow-up on actions in 6 months, and a report on any measureable impact in 12 months.

Following Up on Recommendations

Track to which organizations specific recommendations were sent, and follow up on action in 6 months' time. Ideally, committee staff should measure the impact of the recommendations and ask any outcomes and organizations about impacts after 1 year. The committee should have links with relevant data organizations to identify important data variables to be added to their holdings and tracked.

11. Recapitulate Cases Reviewed

After cases have been reviewed and before the meeting is adjourned, consider recapping the accomplishments of the meeting with committee members by projecting a simple summary statement, such as the following:

> *Today we reviewed ___ (NUMBER) cases. We determined ___ (NUMBER) were pregnancy-related, (NUMBER) were pregnancy-associated but not pregnancy-related, ___ (NUMBER) were (OTHER). We determined (NUMBER) to be preventable, and we made the following recommendations: _____. We are sharing our recommendations with ____.*

12. Facilitate a Successful Committee

Committee Member Compensation and Incentives

Most jurisdictions do not pay committee members to participate in the review proceedings. However, they may reimburse travel costs to attend meetings or provide meals for in-person meetings, or they may apply to be an accredited continuing medical education (CME) provider so that committee members can receive CME credits through their participation.

Budget for Printing and Office Supplies

Printing and mailing costs should be included in an MMRC budget. The documents generated may include confidentiality agreements, case narratives, case review forms, and other handouts. The MMRC must also keep key materials confidential and may invest in lockable briefcases, file cabinets, or web-based secure file storage and file transfer services that can be tracked in a virtual environment. The costs of server space for data storage should also be considered.

Disseminating Findings and Taking Action

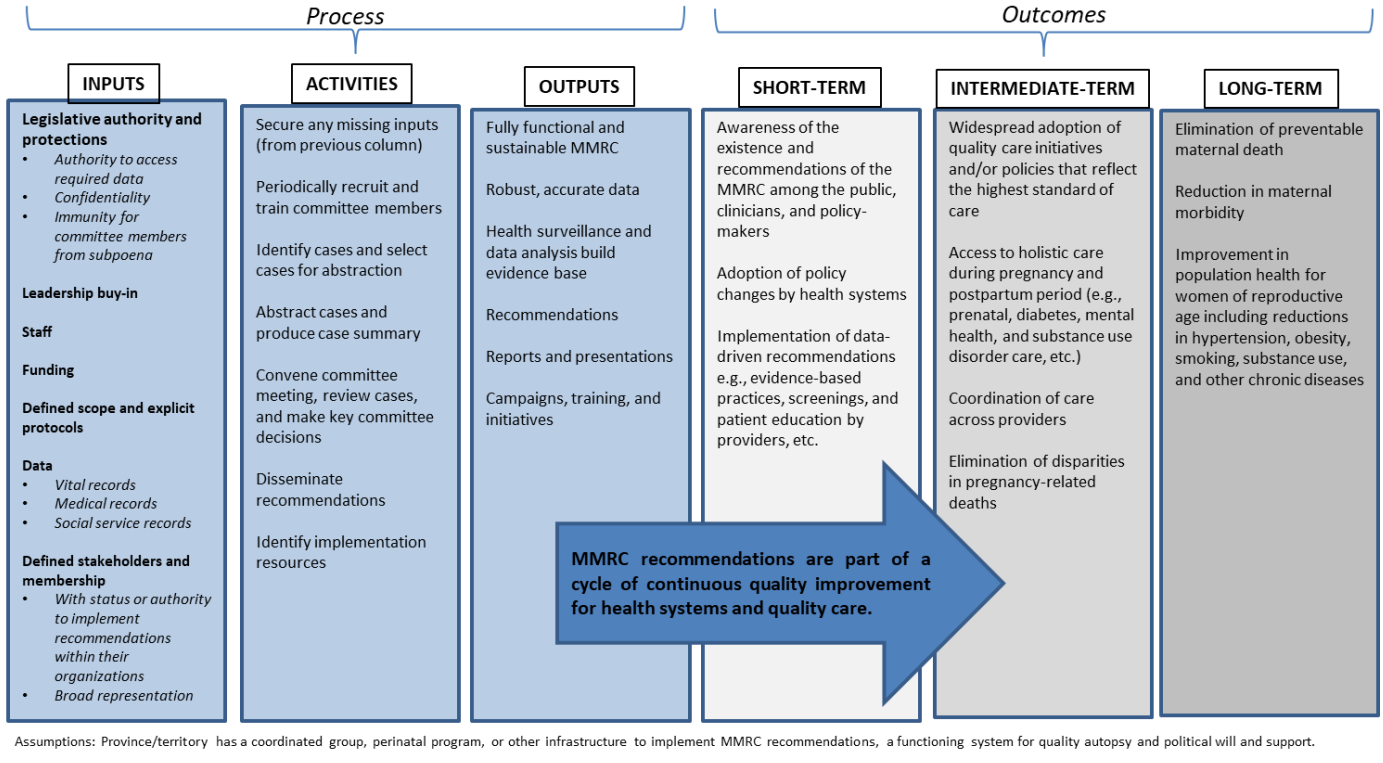
Holding meetings of stakeholders to present the findings of the MMRC can help accelerate their implementation. Committees often overlook the funding required to disseminate findings (e.g., travel to present committee process and findings at professional conferences, printing reports, staff time to follow up, etc.) or the program funding needed to implement a key finding from the review, turning it into population-based action.

CONCLUSION

Clear processes and guidance for the committee to review cases are essential to an MMRC's success. This guide was developed to help committees implement a strong foundation, considering each committee's scope, composition, and jurisdiction. Each committee can consistently conduct effective reviews by establishing and following reliable structures and processes. Their careful work, through recommendations, has the potential to impact a wide range of factors, from the care a woman receives from her providers to the environmental determinants of health in her community.

This work is critical. Maternal mortality review has the potential to save many mothers' lives and, in so doing, to help keep families together, to help communities raise healthier children, and to improve health and well-being across Canada.

Appendix A: MMRC Logic Model



https://reviewtoaction.org/national-resource/mmrc-logic-model

Appendix B: Maternal Mortality Review Committee Sample Terms of Reference

1.0 Purpose

The Maternal Mortality Review Committee (MMRC) is a multidisciplinary committee focused on reviewing causes of maternal death and making recommendations to help prevent future occurrences. The committee and associated efforts are housed within the [_____] at the [_____]. The purpose of the review is to determine the causes of maternal mortality in [_____] and identify both *medical* and *non-medical* interventions and recommendations to prevent future maternal deaths.

Maternal mortality includes deaths occurring during pregnancy, up to 42 days following the end of pregnancy, but deaths up to 365 days following the end of pregnancy should ideally be identified and reviewed. Information is gathered from death certificates, birth certificates, health records, autopsy reports, and other pertinent sources. Records are reviewed by a clinical expert, and de-identified case narratives are reviewed by a committee of experts from diverse disciplines.

The scope of cases for committee review is all deaths of women with indication of pregnancy up to 42 days, and ideally 365 days, following the end of pregnancy, regardless of cause (i.e., motor vehicle accidents during pregnancy, motor vehicle accidents postpartum, suicide, homicide). Deaths may be identified by a number of processes, depending on the existing infrastructure and legislation in each jurisdiction.

The goals of committee review and associated work are to:

- Determine the annual number of maternal deaths related to pregnancy (pregnancy-related mortality ratio)
- Identify trends and risk factors
- Develop actionable strategies to eliminate preventable maternal deaths
- Follow up on the committee's recommendations to determine any change in practices and rates of mortality

This review process is intended to be educational and prevention-oriented. The following steps should be taken to ensure an effective review of each case:

- Share, question, and clarify all case information
- Determine whether the death was pregnancy-related, the underlying cause of death, and whether the death could have been prevented
- Identify contributing factors
- Develop recommendations to decrease, modify, or eliminate contributing factors to help prevent future deaths and improve maternal health in general
- Disseminate recommendations to relevant facilities, organizations, and governments

2.0 Membership

The Maternal Mortality Review Committee (MMRC) comprises health care and social service providers from across the province/territory, as well as other relevant experts from other disciplines. Representation includes:

- Coroner/medical examiner (Chair with authority to have access to documents)
- Obstetrics and gynaecology

- Pathology
- Midwifery
- Maternal fetal Medicine
- Anesthesiology
- Nursing
- Family practice
- Other specialties relevant to the case (i.e., emergency services, critical care, nursing, psychiatry, mental/behavioural health)

Wherever possible, a representative of the coroner/medical examiner will serve as the committee chair.

Committee members are appointed by [_____].New MMRC members will be recruited as needed, unless a specific type of expertise is required specifically for a case review (for example, domestic violence); in this case *ad hoc* members may be invited to attend for that case.

Interested individuals must complete a membership application that will be reviewed by [_____]. This application will be revised annually, as needed, to reflect current vacancies within the committee. The Department will engage the MMRC to identify and recruit interested individuals; however, the Department will maintain the authority to appoint the membership.

All MMRC members will serve in a volunteer capacity and will not receive compensation for their participation in the review process. Members will be reimbursed for travel expenses approved in advance that are incurred to attend in-person meetings as per [_____] Policy.

3.0 Terms of Membership

The expiration of terms for MMRC members should be staggered, with the recommended length of terms being 5 years. This provides others the opportunity to contribute and build capacity for experience related to the review process.

4.0 Confidentiality

All MMRC members must sign the MMR Confidentiality Statement (Attachment E: MMRC Confidentiality Statement) at the start of each year. Forms will be electronically retained and considered effective as long as the relevant case files exist. Committee members will be reminded at the start of each meeting that all information discussed in the reviews must remain confidential and may not be used for reasons other than for the maternal mortality review.

All MMRC members must abide by the *Personal Information Protection and Electronic Documents Act* (PIPEDA), or other similar provincial/territorial legislation (i.e., *Personal Health Information Protection Act; Personal Information Protection Act; Personal Health Information Privacy and Access Act; Personal Information International Disclosure Act*), ensuring appropriate safeguards to protect the privacy of personal health information.

MMRC members will have access to the specific information and records according to the legislation of their jurisdiction.

To ensure the protection of privacy and confidentiality for committee members, individuals, families, and providers, the MMRC will adhere to the following processes:

- All MMRC meetings will be held in private.
- Members of the public or press will not be allowed at MMRC meetings. If members of the public or press show up uninvited at a meeting they will be notified that the MMRC meetings are not open to the public and will be asked to leave.
- Agendas and meeting notes will be shared via a secure online system.
- MMRC members must meet in person or by a secure virtual platform to review information.
- All case summaries reviewed will be redacted per confidentiality standards.
- An MMRC member may request to review a de-identified record for additional information pertinent to the case review. The record(s) will be de-identified by Department staff.

5.0 Conflict of Interest

An MMRC member may recognize a case regardless of the compliance with confidentiality standards. If this should happen, the member must disclose that they recognize or were involved with the case, should recuse themselves from the discussion, and may not discuss the committee's discussion of the case outside of the MMRC meeting or with non-MMRC members. The member may choose to provide additional information that is pertinent to the case review but must adhere to confidentiality standards, including ensuring that no identifying information is relayed.

6.0 Decision-Making Process

Whenever possible, decision making by the MMRC will be by consensus. If a vote is necessary, the outcome will be determined by a simple majority of committee members in attendance at the meeting, with chairs having a second or casting vote in the event of a tie.

A majority of the voting members of the MMRC (50% plus one) shall constitute quorum.

Advice and recommendations proposed by the MMRC will be based on available evidence and will be in the best interest of the system of maternal, newborn, and child services rather than the interests of any single organization or component of that system.

7.0 Frequency and Location of Meetings

Meetings of the MMR will be held [_____], either in person or via a secure virtual platform.

8.0 Committee Functions

As its main functions, the Maternal Mortality Review Committee will:

- Review all maternal death cases
- Use all possible sources of information, including health records, pathology reports, vital statistics data, social service records, coroner/medical examiner reports, and interviews to understand the factors that influence maternal death
- Determine whether the death was preventable
- Establish trends, patterns, and risk factors, and develop recommendations for the prevention of maternal death
- Disseminate findings and make recommendations to policy-makers, health care providers and facilities
- Promote public awareness of the incidences and causes of maternal deaths, including recommendations for their reduction
- Identify system problems that must be addressed
- Identify strengths in the systems of care that should be supported or expanded
- Keep the information confidential in order to protect the privacy of women who have died and their families
- Protect information, ensuring that findings are non-discoverable

Note: There is no legal authority to revoke licensure, take disciplinary action, or judge the qualifications of health care or social service providers

9.0 Staff tasks

Staff from [_____] will act as the Secretariat for the MMRC. They will gather all documents, co-ordinate all meetings and communications, produce reports from the Committee and disseminate them. They will also:

- Use standard definitions, processes, and tools
- Examine surveillance data
- Perform broad case identification
- Abstract case data from all sources
- Summarize case data for review
- Summarize findings and recommendations
    - Translate information/recommendations for action (directly/indirectly)
        - Specify dissemination and follow-up

10.0 Review of Terms of Reference

Terms of Reference will be reviewed annually.

Date of Approval of Terms of Reference _____

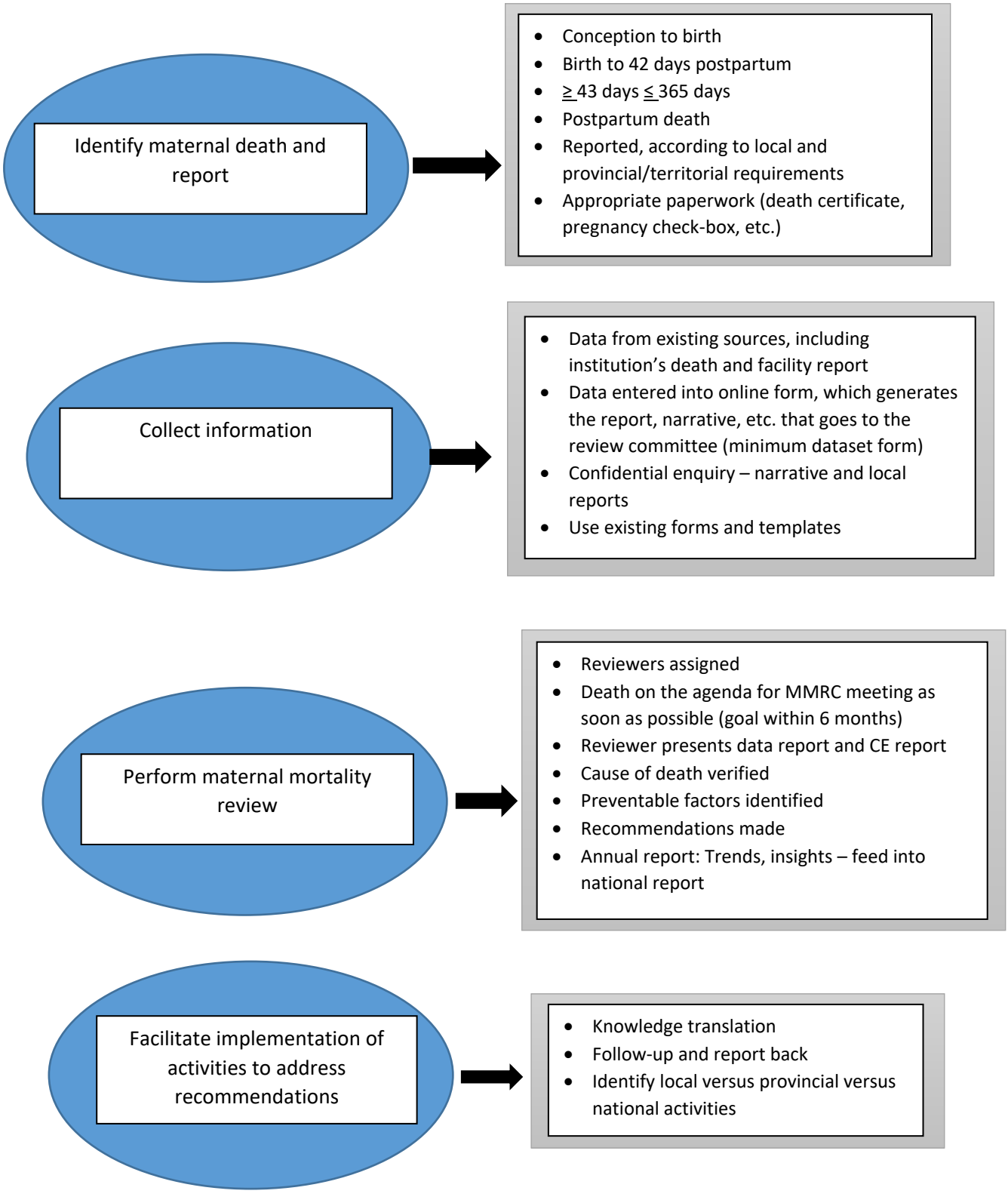
Appendix C: Maternal Mortality Review Committee Meeting Sample Agenda

<<MM/DD/YYYY>>, <<00:00 a.m. to 00:00 p.m.>>

<<Location>>, <<Street Address>>, <<City>>, <<Province/Territory>> <<Postal Code>>

Open meeting/introductions		Co-chair	9:00 – 9:10 a.m.
Topic-specific updates	Present and discuss	Staff member, other, i.e., subject matter expert	9:10 – 9:15 a.m.
Recommendations to action update	Share and discuss	Group	9:15 – 9:30 a.m.
Sign or review confidentiality statement	*All case information, including decedent names, provider names and facility names **must remain anonymous**.*	Coordinator or lead abstractor	9:30 – 9:45 a.m.
Overview of cases identified for review that are within scope from preliminary review of vital records	Present	Coordinator or lead abstractor	9:45 – 10:00 a.m.
Case reviews *20–30 minutes per case*	Review case narratives and core elements summaries Complete committee decisions forms	Group	10:00 a.m. – 12:00 p.m.
Lunch			12:00 – 12:30 p.m.
Case reviews *20–30 minutes per case*	Review case narratives and core elements summaries Complete committee decisions forms	Group	12:30 – 3:00 p.m.
Synopsis and conclusion	*Today we reviewed ___ (NUMBER) deaths. We determined ___ were pregnancy-related, ___ (NUMBER) were pregnancy-associated (but not pregnancy-related), ___ (NUMBER) were (UNABLE TO BE DETERMINED). We determined ___ (NUMBER) to be preventable, and we made the following recommendations: _____.*	Coordinator or other staff member	3:00 – 3:15 p.m.
Discussion, next meeting dates		Co-chair	3:15 – 4:00 p.m.
Adjournment		Co-chair	4:00 p.m.

Appendix D: Maternal Mortality Review Cycle



Appendix E: Authorities, Protections, and Confidentiality Statement

Maternal Mortality Review Committee: Key Components to Support Authorities and Protections

Efforts to establish or strengthen a maternal mortality review committee (MMRC) should include a review of the existing protections and authorities. The purpose of the MMRC is not to assign blame to individual providers or hospitals but to look for opportunities to prevent maternal deaths within and across cases for population-level action. It is distinct from, and not a substitute for, hospital peer review committees, root-cause analysis, or complaint investigations. Authority and protections for MMRCs must protect the intent of the public health surveillance process and are found in the federal, provincial, or territorial legislation.

What are some key components to consider?

Component	Rationale and Objective	Example
1. Authority to access data	The committee co-ordinator, from the provincial territorial department, should be able to collect, at a minimum, vital statistics records, hospitalization and prenatal care records, and autopsy reports. Other desirable data sources include interviews with family members or police reports. Pointing to clear authority in legislation can facilitate compliance with data requests.	
2. Confidentiality and protection of collected data, proceedings, and activities	Confidentiality for MMRCs refers to the legal protection of information collected as part of the review process and the protection of the MMRC's discussions and findings from discovery or subpoena. Strong confidentiality protections can facilitate participation in reviews and the sharing of data and information.	
3. Immunity for committee members	Immunity protects MMRC members as well as any witnesses or others providing information from personal liability based on activities during the review process. Immunity facilitates full participation in the review process.	
4. Regular reporting and	Specifying how often and to whom or to what entity the MMRC will report its findings and recommendations helps keep	

dissemination of findings	MMRC as a public health priority for the province/territory and facilitates dissemination of best practices.	
5. Multidisciplinary committee with local input	The MMRC members should represent a variety of clinical and psychosocial specializations and members working in and representing diverse communities and from differing geographic regions in the province/territory. Specifying committee membership facilitates diversity and inclusion of key stakeholder groups.	
6. Ability to share de-identified data and findings locally and regionally	Flexible authority for limited access to MMRC data for research and to collaborate with other jurisdictions helps MMRCs overcome challenges presented by identification of trends from small caseloads or cases in which the place of residence and place of death are in different provinces/territories, and participate in activities to advance regional or national priorities in maternal mortality prevention.	

Maternal Mortality Review Committee Confidentiality Statement

The purpose of the Maternal Mortality Review Committee is to conduct a full examination of all maternal deaths up to 42 days post-pregnancy termination, and up to 365 days where possible, in <_____>. To assure a coordinated response that fully addresses all systemic concerns surrounding a particular incident, the Maternal Mortality Review Committee must review all pertinent information on each death. This includes reviewing de-identified autopsy reports, coroner's reports, law enforcement reports, hospital and prenatal care records, and other information that may have a bearing on the involved family. The records provided to Maternal Mortality Review Committee members will be de-identified, and the information available will be compliant with the relevant privacy legislation. The committee will follow policies and procedures as specified in its Terms of Reference.

With this purpose in mind, I, the undersigned, as a representative of

_____,

agree to the following:

__ I shall maintain the confidentiality of all information secured and discussed in the maternal mortality review, and I will not use the information provided for reasons other than maternal mortality review;

__ I will follow the specified requirements for secure access, storage, and dissemination of information pertaining to the work of the committee;

__ I will not take materials with case-identifying information from the meetings; and

__ I will not discuss confidential review committee information outside of a review committee meeting with individuals who are not part of the Maternal Mortality Review Committee.

_____

Print Name

_____

Signature

_____

Date

Appendix F: Case Narrative Templates

The following case narrative templates provide overviews of the pertinent details of the case and are useful tools for introducing a case to the review team. Narrative templates specific to the variety of sources in medical records (prenatal, labour and birth, emergency department/hospital visits, transport, and autopsy) are designed to help guide you collect critical information and construct a narrative story for ease of reading and review.

You may find it useful to develop the case narrative for the specific sources of information immediately after completing the data entry for that source.

Once all records have been abstracted and the narrative templates completed, you can then copy and paste all of the separate narratives into a single case narrative form.

Core Narrative Template

She was a (AGE, PLACE OF BIRTH, RACE/ETHNIC BACKGROUND, MARITAL STATUS, LEVEL of EDUCATION, OCCUPATION). She was a gravida ___para ___, who died with cause of death documented as ___, ___DAYS /MONTHS, BEFORE, DURING, OR AFTER DELIVERY.

Medical history was significant for ___(PRE-PREGNANCY RISK FACTORS OR PRE-EXISTING MEDICAL CONDITIONS). Pre-pregnancy BMI was___. Life course issues were significant for _____(PSYCHOSOCIAL FACTORS). Entry into prenatal care was at ___ weeks with ___(#) visits at a ___ (DESCRIBE LOCATION)with a ___ (PROVIDER TYPE).

Prenatal history was significant for ___ (INCLUDE IDENTIFIED OBSTETRIC RISK FACTORS). Referrals during prenatal period were to _____on ___ (DATE). Health events before delivery included _____.

She presented to CLINIC/HOSPITAL/OTHER_____at ___weeks gestation. Delivery was by a (PROVIDER TITLE)___, method was ___, with ___ anesthesia.

Obstetric complications included ___. Fetus/infant was LIVEBIRTH OR STILLBIRTH at ___ weeks gestation and weighed ___ pounds/ounces; Apgar scores were ___, and complications were ___. The postpartum period was significant for the mother developing ___. Mother and infant WERE/WERE NOT DISCHARGED (IF APPLICABLE) to___.

At ___weeks postpartum, she presented to (DESCRIBE LOCATION)_____. Postpartum period significant for _____.(SUMMARIZE TERMINAL EVENT). On ___(DATE) and ___TIME, she had the following symptoms and test results: (INCLUDE CRITICAL SYMPTOMS, VITALS, LABS, TREATMENTS).

Autopsy was done by a ___ OR WAS NOT DONE.

Significant findings included _____.

DESCRIBE IF ANY BEREAVEMENT SUPPORT OFFERED_____.

Prenatal Care Record: Narrative Summary

She was a gravida___para___ with a past obstetric history of _____(IDENTIFY ANY COMPLICATIONS OR HIGH RISK FACTORS) OR STATE NO SIGNIFICANT PAST OBSTETRIC HISTORY. Previous surgical history included _____. Her family medical history was positive for _____. Pre-existing medical conditions included _____. She was ___ (HEIGHT) and weighed _____. Her pre-pregnancy BMI was___.

In the sentinel pregnancy, she entered care at ___ weeks gestation and weighed ___. She attended ___ (#) visits at a _____(DESCRIBE CLINIC SETTING) with a _____(PROVIDER TYPE) and (DID/DID NOT) have adequate prenatal care.

Screening was/was not performed for substance use and was _____(POSITIVE/NEGATIVE) for_____. Screening was/was not performed for domestic violence and was found to be _____(POSITIVE/NEGATIVE; DESCRIBE IF POSITIVE). Additional social determinant factors identified include_____.

The pregnancy was complicated by _____(DESCRIBE ANY COMPLICATIONS OR HIGH-RISK FACTORS). She was referred to a(n) _____(DESCRIBE SPECIALIST) for_____. Diagnostic procedures during pregnancy included_____. Abnormal labs during pregnancy included _____. Abnormal vital signs during pregnancy included_____. During the sentinel pregnancy, she was taking_____(IDENTIFY ALL MEDICATIONS).

Emergency Department/Hospital Visit Narrative Summary Template

Fill out a separate summary for each hospital visit and label each facility by a different number or letter. If the woman was admitted to the hospital, provide brief chronological synopsis of events during the hospital stay, including condition and vital signs when discharged.

She presented at ___(WEEKS GESTATION) to the _____(ED OR L&D TRIAGE OR OTHER) in a _____(HOSPITAL LEVEL OF OBSTETRIC CARE OR TRAUMA/TRAUMA LEVEL) via _____(METHOD OF TRANSPORTATION) on ___(DATE) at ___(TIME). Her chief concern was_____. Her weight on admission was _____, and her presenting vital signs were_____.

She was screened for _____(DESCRIBE TYPE OF SCREENING – EMBOLISM, HEMORRHAGE,ECTOPIC PREGNANCY, INFLUENZA, DOMESTIC VIOLENCE, ETC.)

Physical examination on admission found_____. Labs performed included _____with the following abnormal findings noted: _____. Diagnostic tests performed included_____, with the following abnormal findings noted: _____.

Her diagnosis was_____, and she was admitted to _____(DESCRIBE UNIT) OR was transferred to_____ OR was discharged to_____.

Labour and Birth Narrative Summary

Labour was (SPONTANEOUS OR INDUCED BY _____) She laboured for _____hours and delivered via _____(METHOD – IF CESAREAN SECTION, DESCRIBE REASON) by a(n) _____ (PROVIDER TYPE) under _____(ANESTHESIA TYPE).

Medications administered during labour and delivery or postpartum included _____. She received _____units of blood products (DELETE IF NOT APPLICABLE). Infant weighed___.

Complications during labour, birth, or the postpartum period included _____. She was discharged home on day___. Vitals signs at discharge included___.

She was instructed to _____(SPECIAL EDUCATION OR FOLLOW-UP APPOINTMENTS).

Transport Narrative Summary

Transport was notified on ___(DATE) at ___(TIME) for_____(REASON).

Upon arrival at _____(PLACE OF ORIGIN) she was found to be ___ weeks gestation with _____(BRIEFLY DESCRIBE CONDITION).

Procedures during transport included _____.

She was taken to_____(DESCRIBE DESTINATION, INCLUDING LEVEL OF CARE).

Autopsy Narrative Summary

She died on ___(DATE) at ___(TIME) in the _____(FACILITY).

The case WAS OR WAS NOT reported to the medical examiner/coroner.

Autopsy WAS OR WAS NOT performed.

Core findings from the autopsy include the following:

Autopsy performed by_____

- Height and weight
- Systems examination (gross findings)
- Microscopic examination
- Toxicology results
- Cause of death, per autopsy: _____

References

Berg C, Danel I, Atrash H, Zane S, Bartlett L, editors. Strategies to reduce pregnancy-related deaths: from identification and review to action. Atlanta, GA: Centers for Disease Control and Prevention; 2001.

Nahm, M. Data accuracy in medical record abstraction. [dissertation]. UT SBMI Dissertations (OpenAccess). Houston, TX: University of Texas School of Health Information Sciences; 2010. http://digitalcommons.library.tmc.edu/uthshis_dissertations/15.

Appendix G: MMRC Decisions Form

Note: Ensure that someone has been assigned responsibility for capturing, synthesizing, and documenting committee decisions.

The Maternal Mortality Review Committee Decisions Form serves as a guide to ensure that your standard process addresses all key points needed to make 6 key decisions for each death reviewed:

1. Was the death pregnancy-related?

2. What was the cause of death?

3. Was the death preventable?

4. What were the critical contributing factors to the death?

5. What are the recommendations and actions that address those contributing factors?

6. What is the anticipated impact of those actions if implemented?

If available, the following additional information should be captured and included in case presentations to prompt reflection on these influences:

- Did obesity contribute to the death?
- Did mental health conditions contribute to the death?
- Did substance use disorder contribute to the death?
- Did violence contribute to the death?
- Was the death a suicide?
- Was the death a homicide?
- Did other factors contribute to the death (i.e., social, systems, or cultural factors)?

The MRCC Decisions Form may be printed and distributed with case review materials to facilitate committee discussion.

MMRC Decisions Form

Review Date _____ Record ID _____

Pregnancy-Relatedness

Select One

- ☐ Pregnancy-related
  A death during pregnancy or within 1 year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of on unrelated condition by the physiologic effects of pregnancy.

- ☐ Pregnancy-associated, but not -related
  The death of a woman during pregnancy or within 1 year of the end of pregnancy from a cause that is not related to pregnancy.

- ☐ Pregnancy-associated but unable to determine whether it was pregnancy-related

Estimate the status of relevant information (records) available for this case:

- ☐ Complete (*all records necessary for adequate review of the case were available)*
- ☐ Mostly complete *(minor gaps; information that would have been beneficial but was not essential to the review of the case)*
- ☐ Somewhat complete *(major gaps; information that would have been crucial to the review of the case)*
- ☐ Not complete *(minimal records available for review)*
- ☐ Not applicable

Does the Committee agree with the underlying cause of death[2] listed on the death certificate?

- ☐ Yes
- ☐ No

[2] Underlying cause of death refers to the disease or injury that initiated the chain of events leading to death or the circumstances of the accident or violence that produced the fatal injury.

MRCC Determination of Cause(s) of Death

If the death was *pregnancy-related*, what is the committee's determination of underlying cause of death?

Hemorrhage (Excludes Aneurysms or CVA)
10.1- Hemorrhage – Uterine Rupture
10.2- Placenta Abruption
10.3- Placenta Previa
10.4- Ruptured Ectopic Pregnancy
10.5- Hemorrhage- Uterine Atony / Postpartum Hemorrhage
10.6- Placenta Accreta/Increta/Percreta
10.7- Hemorrhage due to Retained Placenta
10.10- Hemorrhage – Laceration/Intra-Abdominal Bleeding
10.9- Other Hemorrhage/NOS

Infection
20.1- Postpartum Genital Tract (e.g., of the Uterus/ Pelvis/ Perineum/ Necrotizing Fasciitis)
20.2- Sepsis/Septic Shock
20.4- Chorioamnionitis
20.6- Urinary Tract Infection
20.7- Influenza
20.8- Covid-19
20.10- Pneumonia
20.11- Other Non-Pelvic Infection (e.g.,TB, Meningitis, HIV)
20.9- Other Infections/NOS

Embolism-Thrombotic (Non-Cerebral)
30.1- Embolism-Thrombotic (Non-Cerebral)
30.9- Other Embolism (Excludes Amniotic Fluid Embolism)/NOS

Amniotic Fluid Embolism
31.1- Embolism – Amniotic Fluid

Hypertensive Disorders of Pregnancy
40.1- Preeclampsia
50.1- Eclampsia
60.1- Chronic Hypertension with Superimposed Preeclampsia

Anesthesia Complications
70.1- Anesthesia Complications

Cardiomyopathy
80.1- Postpartum/Peripartum Cardiomyopathy
80.2- Hypertrophic Cardiomyopathy
80.9- Other Cardiomyopathy/ NOS

Hematologic

82.1- Sickle Cell Anemia
82.9- Other Hematologic Conditions including Thrombophilias/TTP/HUS/NOS

Collagen Vascular / Autoimmune Diseases
83.1- Systemic Lupus Erythematosus (SLE)
83.9- Other Collagen Vascular Diseases/ NOS

Conditions Unique to Pregnancy
85.1- Conditions Unique to Pregnancy (e.g., Gestational Diabetes, Hyperemesis, Liver Disease of Pregnancy)

Injury
88.1- Intentional (Homicide)
88.2- Unintentional
88.9- Unknown Intent/NOS

Cancer
89.1- Gestational Trophoblastic Disease (GTD)
89.3- Malignant Melanoma
89.9- Other Malignancy/NOS

Cardiovascular Conditions
90.1- Coronary Artery Disease/ Myocardial Infarction (MI)/ Atherosclerotic Cardiovascular Disease
90.1a- Artheroma or coronary dissection
90.2- Pulmonary Hypertension
90.3- Valvular Heart Disease Congenital and Acquired
90.3a- Valve, native and type, tissue, mechanical
90.4- Vascular Aneurism/ Dissection (Non-Cerebral)
90.4a- Aortic Dissection
90.5- Hypertensive Cardiovascular Disease
90.6- Marfan Syndrome
90.7- Conduction Defects/ Arrhythmias
90.8- Vascular Malformations Outside Head and Coronary Arteries
90.9- Other Cardiovascular Disease, including CHF, Cardiomegaly, Cardiac Hypertrophy, Cardiac Fibrosis, Non-Acute Myocarditis/NOS
90.9a- PPCM

Pulmonary Conditions (Excludes ARDS-Adult Respiratory Distress Syndrome)
91.1- Chronic Lung Disease
91.2- Cystic Fibrosis
91.3- Asthma
91.9- Other Pulmonary Disease/NOS

Neurologic/ Neurovascular Conditions (Excluding CVA)
92.1- Epilepsy/ Seizure Disorder
92.9- Other Neurologic Disease/ NOS

Renal Disease
93.1- Chronic Renal Failure/ End-Stage Renal Disease (ESRD)

93.9- Other Renal Disease/ NOS

Cerebrovascular Accident not secondary to Hypertensive Disorders of Pregnancy
95.1- Cerebrovascular Accident (Hemorrhage/Thrombosis/Aneurysm/Malformation) not Secondary to Hypertensive Disorder of Pregnancy

Metabolic/ Endocrine
96.2- Diabetes Mellitus
96.9- Other Metabolic/ Endocrine Disorder/ NOS

Gastrointestinal Disorders
97.1- Crohn's Disease/ Ulcerative Colitis
97.2- Liver Disease/ Failure/ Transplant
97.9- Other Gastrointestinal Disease/ NOS

Mental Health Conditions
100.1- Depressive Disorder
100.2- Anxiety Disorder (including Post-Traumatic Stress Disorder)
100.3- Bipolar Disorder
100.4- Psychotic Disorder
100.5- Substance Use Disorder
100.9- Other Psychiatric Condition/ NOS

Unknown COD
999.1- Unknown COD

TYPE	OPTIONAL: CAUSE (DESCRIPTIVE)
Underlying	
Contributing	
Immediate	
Other significant	

Did any of the following contribute to the death?

	OBESITY	MATERNAL MENTAL HEALTH	SUBSTANCE USE	VIOLENCE	DISCRIMINATION[3]
Yes					
Probably					
No					
Unknown					

[3] Encompasses discrimination, interpersonal racism, and structural racism, as defined below.

If substance use was a factor, which substance(s) did the woman use?

Alcohol ☐ Opiates ☐ Methadone ☐ Cocaine/crack ☐ Cannabis ☐ Methamphetamine ☐

Prescriptions ☐ Unknown ☐

Was this death a suicide? Yes ☐ No ☐

Was this death a homicide? Yes ☐ No ☐

If this was a homicide, was intimate partner violence a factor? Yes ☐ No ☐ Unknown ☐

Did other factors (i.e., social, systems, or cultural factors) contribute to the death? Yes ☐ No ☐ Unknown ☐

Committee Determination of Preventability

A death is considered preventable if the committee determines that there was at least some chance that the death could have been averted by one or more reasonable changes to patient, family, provider, facility, system, and/or community factors.

Was this death preventable? Yes ☐ No ☐ Unable to determine ☐

Was there a chance to alter outcome? Good chance ☐ Some chance ☐ No chance ☐ Unable to determine ☐

Contributing Factors and Recommendations

Contributing Factors Worksheet

What were the factors that contributed to this death? Multiple contributing factors may be present at each level.

Recommendations of the Committee

If there was at least some chance that the death could have been averted, what were the specific and feasible actions that, if implemented or altered, might have changed the course of events?

DESCRIPTION OF ISSUE	CONTRIBUTING FACTORS (choose as many as required below)	LEVEL	COMMITTEE RECOMMENDATIONS [Who?] should [do what?] [when?] Map recommendations to contributing factors	LEVEL	PREVENTION TYPE (choose below)	EXPECTED IMPACT (choose below)

*Definitions for contributing factors, Level, Prevention Type and Expected Impact are below.

Contributing Factors

- Access/financial
- Adherence
- Assessment
- Chronic disease
- Clinical skill / quality of care
- Communication
- Continuity of care / care coordination
- Cultural/religious
- Delay
- Discrimination
- Environmental
- Equipment/technology
- Interpersonal racism
- Knowledge
- Law enforcement
- Legal
- Mental health conditions
- Outreach
- Policies/procedures
- Referral
- Social support / isolation
- Structural racism
- Substance use disorder
- Tobacco use
- Trauma

Unstable housing
Violence
Other

Contributing Factor Descriptions

Lack of **access/financial** resources
Systemic barriers, e.g., lack of access to care or financial duress, as opposed to non-compliance, affected the person's ability to care for themself (e.g., they did not seek services because unable to miss work or afford postpartum visits after insurance expired). Other barriers to accessing care include provider shortage in their geographical area, and lack of public transportation.

Adherence to medical recommendations
The provider or patient did not follow protocol or failed to comply with standard procedures (i.e, non-adherence to prescribed medications).

Failure to screen/inadequate **assessment** of risk
The provider did not screen or assess adequately, placing the individual at risk of a poor clinical outcome, and the individual was not transferred or transported to a provider who could provide a higher level of care.

Chronic disease
One or more significant pre-existing medical conditions (e.g., obesity, cardiovascular disease, or diabetes).

Clinical skill / quality of care (provider or facility perspective)
Personnel were not appropriately skilled for the situation or did not exercise clinical judgment consistent with standards of care (e.g., error in the preparation or administration of medication or unavailability of translation services).

Poor **communication** / lack of case coordination or management/lack of continuity of care (system perspective)
Care was fragmented (i.e, uncoordinated or not comprehensive) among or between health care facilities or units (e.g., records not available between inpatient and outpatient or among units within the hospital, such as Emergency Department and Labour and Delivery).

Lack of **continuity of care / care coordination** (provider or facility perspective)
Care providers did not have access to individual's complete records or did not communicate their status sufficiently. Lack of continuity can be among prenatal, labour and delivery, and postpartum providers.

Cultural/religious or language factors
The provider or patient demonstrated that any of these factors (cultural, religious, or language) was a barrier to care due to lack of understanding or led to refusal of therapy due to beliefs (or belief systems).

Delay
The provider or patient was delayed in referring or accessing care, treatment, or follow-up care or action.

Discrimination
Treating someone less or more favourably based on the group, class, or category they belong to resulting from biases, prejudices, and stereotyping. It can manifest as differences in care, clinical communication, and shared decision-making.

Environmental factors
Factors related to weather or social environment.

Inadequate or unavailable **equipment /technology**
Equipment was missing, unavailable, or not functional (e.g, absence of blood tubing connector).

Interpersonal racism
Discriminatory interactions between individuals based on differential assumptions about the abilities, motives, and intentions of others and resulting in differential actions toward others based on their race. Interpersonal racism can be conscious or unconscious, and it includes acts of commission and acts of omission. It manifests as lack of respect, suspicion, devaluation, scapegoating, and dehumanization.

Lack of **knowledge** regarding importance of event or of treatment or follow-up
The provider or patient did not receive adequate education or lacked knowledge or understanding regarding the significance of a health event (e.g., shortness of breath as a trigger to seek immediate care) or lacked understanding about the need for treatment or follow-up after evaluation for a health event (e.g., needed to keep appointment for psychiatric referral after an ED visit for exacerbation of depression).

Inadequate **law enforcement** response
Law enforcement response was not timely or was not appropriate or thorough in scope.

Legal
Legal considerations that impacted outcome.

Inadequate community **outreach** or resources
Lack of coordination between health care system and other outside agencies/organizations in the geographic/cultural area that work with maternal health issues.

Lack of standardized **policies/procedures**
The facility lacked basic policies or infrastructure relevant to the individual's needs (e.g., response to high blood pressure, or a lack of or outdated policy or protocol).

Lack of **referral** or consultation
Specialists were not consulted or did not provide care; referrals to specialists were not made.

Social support / isolation — lack of family / friend or support system
Social support from family, partner, or friends was lacking, inadequate, and/or dysfunctional.

Structural racism
The systems of power based on historical injustices and contemporary social factors that systematically disadvantage people of colour and advantage white people through inequities in housing, education, employment, earnings, benefits, credit, media, health care, criminal justice, etc.

Substance use disorder — alcohol, illicit or prescription drugs
Recurring use of alcohol and/or drugs causing clinically and functionally significant impairment, such as health problems or disability. The committee may determine that substance use disorder contributed to the death when the disorder directly compromised the individual's health status (e.g., acute methamphetamine

intoxication exacerbated pregnancy-induced hypertension, or made the individual more vulnerable to infections or medical conditions).

Tobacco use
The patient's use of tobacco directly compromised the patient's health status (e.g., long-term smoking led to underlying chronic lung disease).

Trauma
The individual experienced trauma: i.e., loss of child (death or loss of custody), rape, molestation, or one or more of the following: sexual exploitation during childhood (persuasion, inducement, or coercion of a child to engage in sexually explicit conduct), or other physical or emotional abuse during childhood.

Unstable housing
Individual lived on the street, in a homeless shelter, or in transitional or temporary circumstances with family or friends.

Violence including intimate partner violence (IPV)
Physical or emotional abuse perpetrated by current or former intimate partner, family member, friend, acquaintance, or stranger.

Other
Contributing factor not otherwise mentioned. Please provide description.

Definitions of Levels

Patient/family: An individual before, during, or after a pregnancy, and their family, internal or external to the household, with influence on the individual.

Provider: An individual with training and expertise who provides care, treatment, and/or advice.

Facility: A physical location where direct care is provided — ranges from small clinics and urgent care centres to hospitals with trauma centres.

System: Interacting entities that support services before, during, or after a pregnancy — ranges from health care systems to public services and programs.

Community: A grouping based on a shared sense of place or identity — ranges from physical neighbourhoods to a community based on common interests and shared circumstances.

Definitions of Prevention Types

Primary: Prevents the contributing factor before it occurs.

Secondary: Reduces the impact of the contributing factor once it has occurred (i.e., treatment).

Tertiary: Reduces the impact or progression of an ongoing contributing factor once it has occurred (i.e., management of complications).

Definitions of Expected Impact

Small: Education/counselling (community or provider-based health promotion and education activities)

Medium: Clinical intervention and coordination of care across continuum of well-woman visits through obstetrics, observed in protocols and prescriptions

Large: Long-lasting protective intervention (improve readiness, recognition and response to obstetric emergencies/Long Acting Reversible Contraception)

Extra large: Change in context (promote environments that support healthy living, ensure available and accessible services)

Giant: Address social determinants of health (poverty, inequality, systemic racism, etc.)

Frequently Asked Questions

1. Should the checkboxes be completed for all pregnancy-associated deaths or just those determined to be pregnancy-related?

The checkboxes should be completed for all pregnancy-associated deaths reviewed by your committee, regardless of whether they are pregnancy-related. If your committee does not review a woman's death because it is considered out of your scope, there is no need to complete the checkboxes.

2. Should the checkboxes be completed in reference to the woman, or in reference to the broader context surrounding her death?

The checkboxes refer to the woman's own experience. For example, if a woman had a substance use disorder or used substances which contributed to her death, the checkbox should be marked "yes." In contrast, if the death was a homicide where the perpetrator had a substance use disorder, but the woman did not, the checkbox should be marked "no."

3. **For the substance use and mental health conditions checkboxes, is a formal diagnosis required?**

Ideally, a diagnosis should be indicated in the woman's medical records. However, checking the box only if there is a diagnosis may underestimate the number of women with substance use disorder or mental health conditions, since women may be unable to access care or treatment. Refer to your subject matter experts (e.g., psychiatrist, psychologist, licensed counsellor) on your review committee to determine whether the criteria for a diagnosis of substance use disorder or another mental health condition are met based on the available information, or whether those factors contributed to the death.

4. If certain deaths are not reviewed by our committee (for example, suicides and homicides), should we still complete the checkboxes?

No. These checkboxes are intended to the capture the committee decisions. If a death is not reviewed by the committee, the checkboxes should not be completed.

5. What should we do if our determination of the manner of death does not match the manner indicated on the death record?

The checkboxes are intended to capture the decisions of the review committee, and sometimes these decisions may differ from the death record. For example, for an overdose, the death certificate may indicate the manner of death as "unknown," but relevant subject matter experts (e.g., medical examiner) could review additional information and determine that the overdose was intentional. The committee would then check "yes" for the suicide checkbox. There is also a question on the Committee Decisions Form to indicate whether the committee agrees with the cause of death listed on the death certificate.

6. Are there opportunities for quality improvement using the checkbox data?

Yes, there are lots of opportunities using checkbox data. One opportunity for quality improvement is to compare the obesity checkbox with the women's actual BMI, calculated using the height and weight provided in her records. Are there instances where your committee selected "yes" when the BMI suggests she was at a healthy weight? Please note that this checkbox is intended to capture whether obesity contributed to the death, not whether the woman was obese.

REFERENCES

Centers for Disease Control and Prevention. Review to Action. https://reviewtoaction.org/

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