QUALITATIVE DATA ANALYSIS

A Resource Guide for MMRIA Users

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Enhancing Reviews and Surveillance to Eliminate Maternal Mortality

MATERNAL MORTALITY REVIEW INFORMATION APP

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PREFACE

This Resource Guide has been developed to empower Maternal Mortality Review Information Application (MMRIA) users to analyze qualitative data for the purpose of identifying the social, contextual, and community-level factors that influence maternal mortality and the potential strategies to prevent maternal mortality. This guide uses the terms “maternal mortality” and “pregnancy-associated deaths” interchangeably to encompass the topic of deaths during pregnancy, childbirth, and the postpartum period (up to one year after the end of pregnancy).

MMRIA qualitative data include interviews, case narratives, contributing factors, recommendations for prevention, and other free text notes and comments. These data provide an opportunity to understand aspects of a person’s life, pregnancy, and death that go beyond clinical diagnoses. MMRIA qualitative data can answer questions regarding the conditions, experiences, and events surrounding a pregnancy.

This guide does not include any guidance on methods for collecting qualitative data as the focus is on the analysis of data already contained in MMRIA. Use of trade names and commercial sources is for identification only and does not imply endorsement by the Centers for Disease Control and Prevention, the U.S. Public Health Service, or the U.S. Department of Health and Human Services. We relied on a number of key resources to inform the development of this qualitative analysis Resource Guide (See Appendix 2: Additional Resources).

Intended Audience and Learning Objectives

The intended users of this guide are MMRIA analysts, abstractors, and Maternal Mortality Review Committee (MMRC) members.

This Resource Guide enables users to:

- **Describe the value and role** of qualitative data
- **Describe the types** of MMRIA qualitative data
- **Describe the** qualitative analytical **process**
    - Develop an analysis question and plan
    - Develop and apply coding strategies to MMRIA data using basic tools
    - Identify themes from coded data
- **Describe strategies** for presenting findings

How to Use the Resource Guide

This Resource Guide is designed as an interactive workbook to teach the qualitative analytic process. Throughout the guide, there are exercises and opportunities for users to apply the information and practice. Taking the time to complete the exercises will enhance understanding of qualitative analysis. Each chapter includes an opportunity to reflect on what has been learned about each step of the qualitative analytic process and allows users to make notes about their qualitative practice. Reflective practice is a helpful part of qualitative analysis.

This Resource Guide is organized to provide a general overview of qualitative data and analysis in Chapters 1-3. Chapters 4-7 provide a step-by-step plan of how to conduct qualitative analysis using MMRIA data. Chapter 8 reviews sharing qualitative findings and Chapter 9 summarizes the guide and provides ideas for developing capacity in qualitative research. The appendix provides a glossary, background, resources, and Frequently Asked Questions (FAQ).

CONTENTS

CHAPTER 1: INTRODUCTION TO QUALITATIVE DATA

This chapter provides an overview of the nature and scope of qualitative data. Qualitative and quantitative data are compared to better understand the differences. Exercises help readers experience the nature of qualitative data. Specific types of qualitative methods are described, as well as the strengths and limitations of qualitative analysis.

Learning Objectives

After reviewing this chapter, MMRIA users will be able to:

- **Identify differences** between qualitative and quantitative data
- **Understand the role** of qualitative data in informing opportunities for action
- **Describe different sources** of qualitative data

Why Use Qualitative Data?

> **“Not everything that counts can be counted and not everything that can be counted counts.”**
>
> - **Albert Einstein**

Qualitative data provides the opportunity to understand the what, why, how, and where of phenomena beyond what can be counted. Even one of the most famous scientists, Albert Einstein, knew that information that could be quantified or counted was not the only way to understand what was occurring. If one relies only on quantifiable measures of a phenomenon, then important descriptive and meaningful information will be missed.

Different Sources of Qualitative Data

There are many different sources of qualitative data. The most common ways of generating qualitative data include interviews, focus groups, observation, document analysis, and open-ended or free-response questions. Multiple methods of collecting qualitative data may be employed depending on the analysis question, context, and particulars of the environment. The table below provides an overview of the different types of qualitative data.

Interviews	Focus Groups	Observation	Document Analysis	Free Response Questions
• Explore personal experience • Use for sensitive topics • Gauge expert opinion	• Identify a range of issues • Encourage discussion • Document group experience • Gauge expert opinion	• Understand a phenomenon in its environment • Can include a known observer or someone who is anonymous • Observed directly or via secondary source/information	• Understand programs and policies through analysis of written materials • Use reports, documents, art, brochures, records, ads	• Textual answers • Qualitative responses to understand thoughts outside of fixed questions

Exercise 1A: Answering Questions

To experience different ways of gathering data, find two co-workers, neighbors, or family members. Then, follow the exercise below to collect answers to the questions about where they live and record your answers in the space provided (you can also answer for yourself).

Section A: Ask your partner the following questions and record the responses:
• How many square feet is the place where you live? • How many bathrooms are there? • Who lives there? • How long have you lived there? • When was it built? • Which room is your favorite? • Rate on a scale of 1-10 (10 being the best) how much do you like the place you live?

Section B: Ask your partner the following questions and record the responses:
• Tell me about where you live. • What do you like most about living there? • Tell me about how you chose to live there. • Tell me what you wish you could change. • What words would you use to describe the feeling of living there?

Section A Responses:	Section B Responses:

Compare and Contrast: Quantitative and Qualitative Information

You can see from the exercise above how information varies depending on the types of questions. The answers from Section B likely give a richer and more complex picture of a person's living situation. Yet, if you only asked questions from Section B, you would never know potentially critical information, like the size and population of the house. This exercise illustrates how qualitative and quantitative inquiries generate different but potentially complementary information to describe a situation.

Section A:	Section B:
• Closed-ended • Short and specific • Types of answers will be specific (year built, number, yes or no) • Multiple people likely provide the same answer (e.g., 2 bathrooms)	• Open-ended • Potential for more details • Response category may vary (e.g., answers could describe physical features or the activities that happen there) • Each person could give very different answers

Differences in Qualitative and Quantitative Data and Analysis

Though qualitative inquiry stands on its own, it can be helpful to compare it to quantitative data and analysis. One purpose of qualitative analysis is to understand and interpret phenomena. The purpose of quantitative analysis is often to test a hypothesis, check the cause and effect, and develop predictions. Review the chart below to compare general assumptions of qualitative and quantitative data and analysis across several factors.

Comparing Qualitative and Quantitative Approaches

	Qualitative	Quantitative
Purpose	• Understand and interpret phenomena	• Test hypothesis, check the cause and effect, develop predictions
Studied Group	• Small group, selected intentionally	• Small to large group, reflective of target population
Data Type	• Words, images, objects	• Numbers, statistics
Data Form	• Open-ended responses, interviews, observations, field notes	• Precise measurements using validated instruments
Analysis	• Patterns, features, themes (textual analysis/relationships)	• Numbers, statistics (statistical inference)
Researcher	• Is present and interacts with participants	• Is not usually present, does not interact with participants
Findings	• Comprehensive, holistic, expansive	• Precise, objective, focused

Which Approach Should I Use? Qualitative vs. Quantitative Questions

Another way to think of the differences in qualitative and quantitative data is to consider the types of questions qualitative and quantitative data can answer. Both types of data are important for understanding complex problems. However, some questions clearly require qualitative or quantitative data. Complete the exercise below to reflect on those differences.

Exercise 1B: Asking Qualitative or Quantitative Questions

Review the questions below and indicate whether a question would be better answered by qualitative or quantitative analysis.

	Question	Qualitative	Quantitative
1	How many pregnancy-associated deaths indicated a contributing factor of substance use disorder?		
2	What is the experience of housing instability among pregnancy-associated deaths?		
3	What factors impacted accessing prenatal care among pregnancy-associated deaths?		
4	What was the most common form of insurance for pregnancy-associated deaths?		
5	What was the average age at death for all individuals in our dataset?		
6	What are the patterns of social and emotional stress for pregnancy-associated cases?		
7	What role does child protective services play in the lives of those who died?		

See the next page for answers

Answers to Exercise 1B: Asking Qualitative or Quantitative Questions

The questions in the prior exercise are all relevant for understanding causes of and factors driving maternal mortality. However, questions 2, 3, 6, and 7 are best answered using qualitative data.

Strengths and Limitations of Qualitative and Quantitative Data

Both qualitative and quantitative approaches can be important for understanding and describing a problem. Each has benefits and barriers.

	Strengths	Limitations
Qualitative	• Rich information about individual or group experience • Unravels complex phenomena • Provides context to explain trends • Does not depend on large sample size	• Time-consuming • Requires investment and resources (human and financial) • May not be generalizable
Quantitative	• Ability to measure precisely • Able to explore associations between variables/factors • Easy to compare the same measure across samples • Faster to collect large amounts of data	• Can miss underlying meaning and experience • Need a large enough sample size to generate meaningful findings

Chapter 1 Summary

This chapter offered a broad examination of the scope and nature of qualitative data and analysis. This chapter compared qualitative and quantitative data to help define the differences and clarify the uses of each approach. The next chapters address more specific types of MMRIA qualitative data and will begin to explore qualitative analytic techniques and tools.

Chapter 1 Notes

Take a moment to write any thoughts about qualitative data in general, about the differences between qualitative and quantitative data, and any issues or questions you want to document as you read the remainder of this Resource Guide.

CHAPTER 2: OVERVIEW OF MMRIA QUALITATIVE DATA

This chapter provides an overview of the sources of qualitative data in MMRIA.

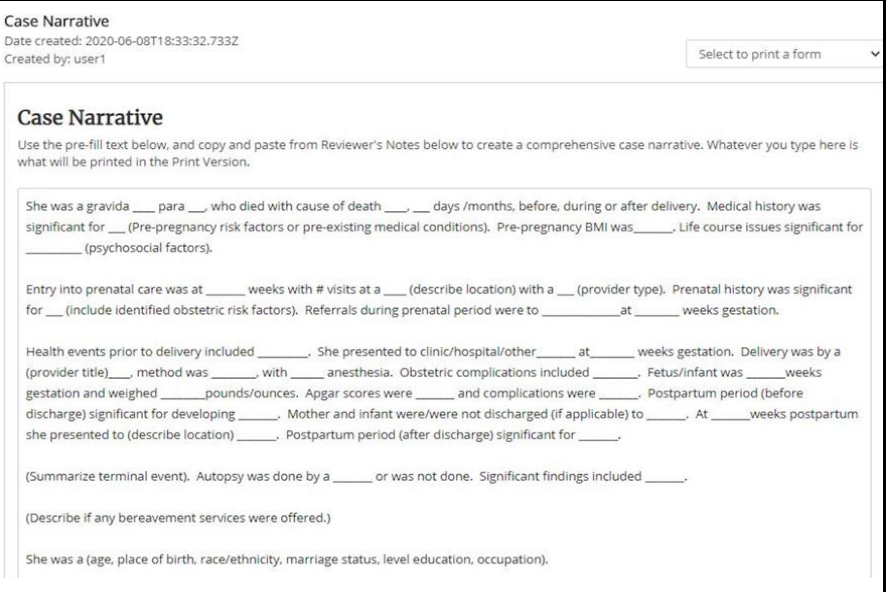
Learning Objectives

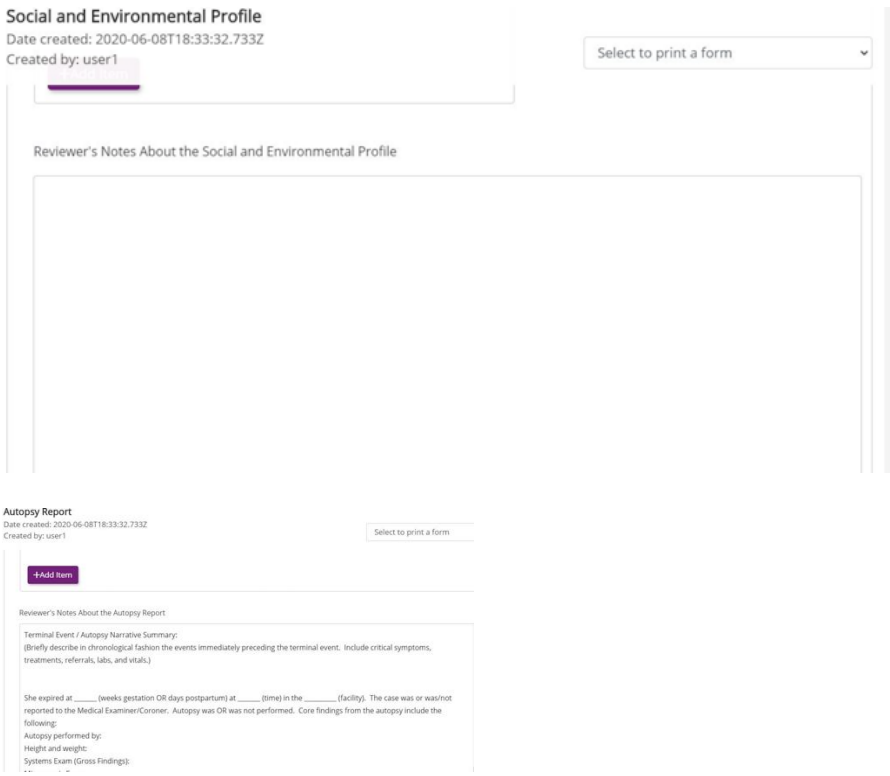
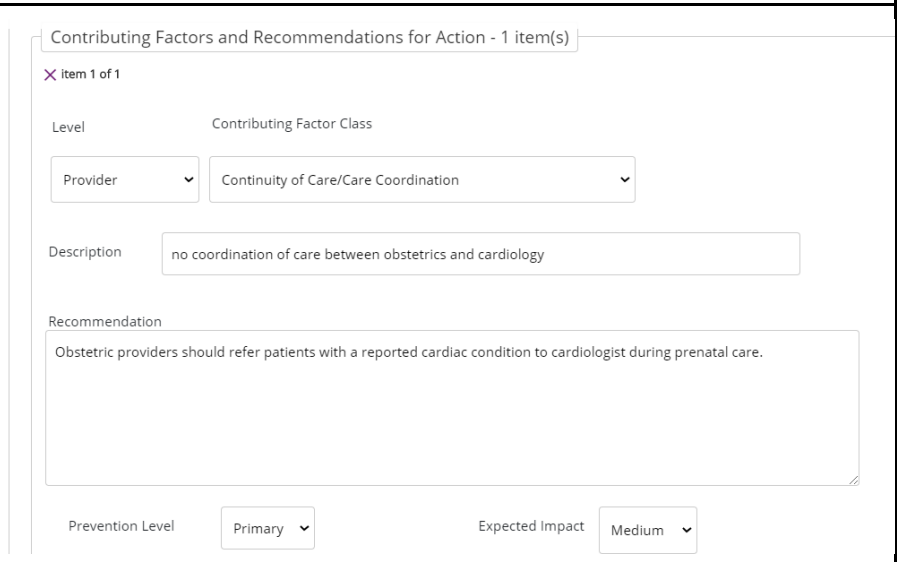
After reviewing this chapter, MMRIA users will be able to:

- **Describe the different sources** of MMRIA qualitative data

Sources of Qualitative Data in MMRIA

MMRIA includes multiple opportunities to capture qualitative data. The table below lists some of the potential sources of qualitative data and provides sample images from MMRIA. This Resource Guide will focus on the most widely available sources of qualitative data in MMRIA: case narratives and contributing factors and recommendations.

MMRIA Section	Snapshot of MMRIA Section
Case Narratives	

Reviewer's Notes	
Free text descriptions for Contributing Factors and Recommendations for Action	

Exercise 2A: Inventory of Qualitative Data in MMRIA for your Jurisdiction

To understand the data available for your qualitative analyses, you should conduct an inventory of the qualitative data available for deaths that your jurisdiction has entered into MMRIA. See below for a list of possible sources of MMRIA qualitative data and make a check mark if qualitative data are routinely available in these sources. For example, make a check mark if your MMRIA abstractor routinely enters textual data into the Reviewer's Notes section of the Prenatal Care form. It is expected the available data sources may vary between jurisdictions and between deaths. For example, if your MMRIA abstractor is not routinely able to access autopsy reports, you may not have qualitative data available from the MMRIA Autopsy Report form.

MMRIA Section with Qualitative Potential	Inventory
Informant Interviews	
Case Narratives	
Comments Fields (examples) below	
• Autopsy Report: Toxicology	
• Prenatal Care	
• Social and Environmental Profile	
Reviewer's Notes on MMRIA Forms	
• Death Certificate	
• Birth/Fetal Death Certificate – Parent Section	
• Birth/Fetal Death Certificate – Infant/Fetal Section	
• Autopsy Report	

• Prenatal Care Record	
• Emergency Room Visits and Hospitalizations	
• Other Medical Office Visits	
• Medical Transport	
• Social and Environmental Profile	
• Mental Health Profile	
• Informant Interviews	
Free-text descriptions of Contributing Factors	
Free-text descriptions of Committee Recommendations	

Chapter 2 Summary

This chapter outlined the different potential sources of qualitative data in MMRIA. It is important that you become familiar with these sources as you discuss with your team about opportunities to incorporate or further expand your analysis of qualitative data. Take a moment to complete this reflection.

Chapter 2 Notes

What are your thoughts about the qualitative data available in MMRIA? What surprised you during your qualitative data inventory?

CHAPTER 3: OVERVIEW OF THE QUALITATIVE DATA ANALYSIS PROCESS

This chapter provides an overview of the qualitative data analysis process that can be applied to a variety of qualitative data. Exercises help to illustrate the process. In the following chapters, you have the chance to go more in-depth in each step of the process.

Learning Objectives

After reviewing this chapter, MMRIA users will be able to:

- **Develop** an analysis question
- Use the analysis question to **identify an analysis plan**
- **Develop and apply qualitative coding strategies** to MMRIA data using basic tools
- **Identify themes** from coded data

Overview of the Qualitative Analysis Process

Qualitative analysis benefits from a rich academic tradition. There are many important theoretical approaches that guide its practice. Subsequent chapters provide more opportunity for practice.

Qualitative Analytical Approaches:

The most common analytical approaches applied to qualitative inquiry are:

- **Discourse Analysis:** Conversation analysis and exploration focused on the use of language
- **Grounded Theory:** Development of a theory from the data
- **Thematic Analysis:** Identifying, analyzing, and interpreting patterns of meaning

The focus in this Resource Guide is on thematic analysis, though the basic tools of organizing and coding the data are relevant across all analytical approaches. This guide recommends strategies to make qualitative analysis manageable and feasible to employ. Applying these strategies will result in important, critical, and valid insights. Additional resources for qualitative analysis are provided in Appendix 2: Additional Resources.

Qualitative analysis is a non-linear process, meaning that it does not follow a defined sequence of analytic steps. Qualitative analysis requires an iterative process of examining, organizing, and interpreting the data in a cyclical process to refine perspective and to establish patterns of association. Additionally, qualitative analysis requires consistent reflection of the relationship of the emerging findings to the study's key goals or objectives.

Qualitative Analysis Step by Step

Below is a basic outline of the qualitative analysis process and the important activities in each step. This chapter provides an overview of this process. Subsequent chapters will examine each step in more detail.

Analysis Step	Activities
Step 1: Develop an analysis question	• Identify an analysis topic • Gather background information • Construct an actionable analysis question
Step 2: Develop an analysis plan	• Identify WHAT data will be used • Establish WHO will be involved in the analysis • Determine WHEN and HOW the analysis will be conducted • Create and maintain process notes
Step 3: Prepare and organize textual data	• Clean and de-identify data • Organize data for coding
Step 4: Develop codes and codebook	• Read up from the data • Memo the data • Identify preliminary codes • Develop and maintain codebook • Code the data
Step 5: Identify Themes	• Review codes and combine into themes • Analyze patterns in the data

An Iterative Process

The table above shows the analysis process as linear. In reality, the analysis process is iterative. Looping back to other steps is a part of the process. Analysts will use information from one step to revisit and refine other parts. Each part of the process connects and links with other phases. The image of gears illustrate how each step connects with the other.

Analysis Step	Activities
Step 1: Develop an analysis question	• Identify an analysis topic • Gather background information • Construct an actionable analysis question

Identify an Analysis Topic

At the heart of your qualitative inquiry is a topic you want to know more about - a gap you see in the understanding of an issue. For MMRIA users, the challenge is to understand what factors contributed to a death during pregnancy, childbirth, or in the postpartum period. Your area of interest for qualitative analysis may focus broadly on this topic or, more specifically, on areas where additional understanding would be helpful. One example of a specific analysis topic is the experience of domestic or intimate partner violence among persons who experienced a pregnancy-associated death.

Gather Background Information

Prior to finalizing an analysis question, it can be useful to consider what is already known in the scientific literature about a topic to provide context, identify gaps in understanding, and guide the way you review the data. Background information could include trends, statistics, or some contextual understanding. Some qualitative researchers might go deeper to investigate theory of a phenomenon. This guide assumes that as a MMRIA user, you have already spent time with and are familiar with the data. You can enhance your analysis by including background information to expand your understanding of a topic. For example, if you were planning to analyze suicide deaths, you would review the statistics on suicide in your dataset, including demographic variables of those suicide deaths, and then you would review the literature on maternal suicide. This background will help guide your analysis question and enhance your approach to data analysis.

Construct an Actionable Analysis Question

Since you have now identified an analysis topic, identified a gap in your understanding, and collected some background information, you can refine your analysis question. To focus on an actionable question, work with questions that can be addressed with the data and resources available to you. Your questions can be broad or specific.

Broad: A broad question might be to understand a phenomenon generally without a specific focus. For MMRIA users, the broad question is already well-defined by the role and goal of the work. That is, for MMRIA users, the broad question may be:

- *What factors contributed to maternal mortality in this individual or in this population?*
- *What can be done to prevent future deaths?*

Specific: Qualitative analysis can be specific. You can refine your analysis question to focus on a more specific area. For MMRIA users, specific questions can center on a variety of factors that contribute to pregnancy-associated deaths. Potential questions include:

- *What were the experiences of housing instability among women and other persons who experienced maternal mortality in our state?*
- *What was the experience of prenatal or postpartum care for those with a pregnancy-associated death?*
- *What were the sources of social support for those with a pregnancy-associated death in our state?*
- *What were the experiences of substance use during and after pregnancy for those with a pregnancy-associated death?*
- *How did discrimination and/or structural racism manifest in the prenatal care experiences of women and other persons who had a pregnancy-associated death in our state?*

Before you make a plan for your analysis, take some time to reflect on your potential questions.

Reflection:

What are risk factors for maternal mortality that you want to better understand to inform potential prevention strategies? What do you observe from your data that could make an informative area for qualitative inquiry? What topics might you be interested in learning more about from analyzing your qualitative data? Make notes here. We will use these notes in a later chapter.

Making a Plan: Identifying the Data and Documenting the Process

Step 2: Develop an analysis plan	• Identify WHAT data will be used • Establish WHO will be involved in the analysis • Determine WHEN and HOW the analysis will be conducted • Create and maintain process notes

Your analysis plan establishes the WHAT, WHEN, HOW, and WHO of your analysis. As you prepare for your analysis, you will identify WHAT data you plan to use. This Resource Guide does not instruct on how to **collect** qualitative data. For MMRIA analysts, the data have already been collected and entered into MMRIA. However, you may find that your analysis plan and overall results of your analysis can inform future data collection strategies of your maternal mortality review program. For instance, you may wish to analyze qualitative data on social support systems but do not currently have sufficient data entered into MMRIA to be able to support an analysis. This is an important area for discussion with abstractors and coordinators about seeking records during the abstraction process that may give information on social support systems, and to emphasize the importance of capturing and entering this information from abstracted records into MMRIA.

Qualitative analysis is ideally conducted in teams. Your analysis plan will establish WHO will be involved in the analysis. Chapter 6 provides more detail on team coding. The WHEN of your analysis establishes key deadlines or timelines. The HOW of your analysis documents what software you will use and as well as any theoretical approaches that will guide your analysis.

Whatever data you use, it is important to establish and maintain process notes that describe and document your choices and analytical thoughts throughout your process. Documenting your process helps ensure the validity of your work and allows teams to work together on the analysis. More details on validity and reliability can be found in Chapter 6. Review the key questions of an analysis plan below.

Analysis Plan	
Key Questions for Your Plan	**Key Elements to Consider**

WHAT data will you use?	• What is the timeframe for inclusion of pregnancy-associated deaths?
	  ○ All available?
	  ○ Most recent?
	• All deaths or only deaths that meet certain criteria?
	  ○ Will you select deaths by age, race/ethnicity, county, or other factors that narrow your sample?
	• Which qualitative components of MMRIA will you use?
	  ○ Case Narratives
	  ○ Contributing Factors and Recommendations
	  ○ Reviewer's Notes
	  ○ Other data

HOW will you do the analysis?	• Which software or computer program will you use? • Are there any theories or strategies you will use to guide your analysis?
WHEN will you do the analysis?	• Create a timeline • Is there a particular deadline or key deliverable (for a report)?

WHO will be involved?	• Will you be the sole analyst of the qualitative data?
	  ○ If not, who are your team members?
	  ○ Will everyone assist with analysis? Are there specific roles for the analysts?

Prepare and Organize Textual Data

Step 3: Prepare and organize textual data	• Clean and de-identify data • Organize data for coding

Clean and De-Identify Data

When performing qualitative analyses, you will need to de-identify data and manage confidentiality. Ensure that any specific dates or real names of persons or places are replaced with a pseudonym or alternate identifier. Also, you may need to clean your qualitative data by removing or correcting incomplete and incorrect information.

Organize Data

Your analysis can be enhanced by organizing your data. In particular, it may be helpful to create paragraphs, include text breaks, or further organize the data to make it more readable.

Maintain Process Notes

As you proceed in your analysis, it is important to maintain process notes about what steps you have taken with the data. What was the source(s) of your data? Where are you storing it? What steps did you take to clean or prepare it? What are your plans for tracking changes in the process? Process notes begin with documenting your analysis plan and continues throughout the qualitative analysis project.

Developing Codes and Codebook

Step 4: Develop codes and codebook	• Read up from the data • Memo the data • Identify preliminary codes • Develop and maintain codebook • Code the data

The task of coding is often what people think of when they think of qualitative analysis. This part of the process can be time consuming, as it is very iterative, and requires tools and strategies to execute successfully. This section's introductory exercises use paper and pencil to teach the concepts of coding and codebook development. Later chapters will address computer software options to manage qualitative data.

Read Up and Memo the Data

Qualitative analysis requires you to be very familiar with and get close to the data. In this part of the analysis process, you start by immersing yourself with the data - reading and re-reading BEFORE the process of categorizing and coding. We call this first component of familiarizing yourself with the data "reading up." You read through the data to see what is "bubbling up," to understand the data broadly, and begin to explore what you see and "hear."

As you read through the data, ask these questions:

- What is interesting about these data?
- What is surprising/not surprising about these data?
- Do these data provide new insight into my study?
- Do these data answer my research question(s)?
- Do I "hear" any patterns from other transcripts/data points?
- Can I start linking these ideas together to form themes?

As you read up from the data, you will need to start making memos of these preliminary thoughts.

This effort of "memoing" continues throughout the analysis process and may include:

- Preliminary thoughts about codes and categories
- Hunches, insights, and observations
- Notes about your process
- Areas for further reflection or inquiry
- Use of outside resources to augment/inform ideas

Exercise 3A: Reading-up and Developing Memos

The next few sections will use a sample **case narrative** from MMRIA. Assume your analysis question is to explore the factors that contribute to maternal mortality in your jurisdiction. Memos have been added to this analysis. Add your own memos with these steps:

1. **"Read-up"** by reading through the case narrative
2. **"Memo"** by making notes based on the key topics for memoing listed above

Case Narrative Data	Memo
Case 1 25 yrs 43-365, 12 wks postpartum Live birth Suicide Mixed Drug Intoxication Urban Death certificate, birth certificate, hospital, prenatal, autopsy **Summary of Events:** The decedent was a 25 yr old Caucasian, Hispanic G2P2 at the time of her death. She was found expired at home following an evening of drinking and arguing with her husband. There was reportedly a history of domestic violence and a previous suicide attempt.	**Add your Memos here** *Within "fourth trimester," what was her insurance status at time of death? Did she have coverage for behavioral health counseling/treatment?* *Potential to do a separate study on suicide deaths.* *How did birth trigger the reemergence of violence?*

Medical and Pregnancy History: • SI joint and thoracic back pain • One previous full-term delivery 3 yrs prior	
Labor and Delivery: • Induction of labor at 38 weeks for preeclampsia "without severe features" • Progressed rapidly with two doses of Cytotec • Spontaneous vaginal birth of 2722 gm (7 lb ½ oz) female, Apgars 8, 9 • C/O severe cramps with breastfeeding requesting something stronger for pain • Discharged postpartum day 3 with oxycodone 5 mg q6hr	*Discharged with medications. Was this first strong pain medication in a while?* *Good prenatal care pattern.* *No mention of how violence resolved. (Intervention)*
Prenatal Care: • Began care in the 1st trimester with reportedly 14 visits • Reported domestic violence in early pregnancy which resolved by end of pregnancy • B/Ps in the mild range and all blood work was normal; P/L 0.92 with a repeat value of 0.28	*Potential to code around relationships/violence. Social support beyond husband?*
Mental/Behavioral Health History: • Previous history of depression and anxiety, onset in teen years. Improved with BH counseling • Anxiety and panic attacks returned with the recent birth and increased in frequency to every other day with shortness of breath, increased heart rate, and feelings of desperation. At the same time, she denied any depression, sleep problems, or drug use. • Went on hydroxyzine 25 mg, i-ii tabs Q12hr and cyclobenzaprine 5 mg TID (for back pain) at 7 ½ wks postpartum and had an appt for behavioral health counseling • Denied alcohol and drug use • History of past suicide attempts, most recently 7 yrs ago – involving alcohol intoxication and hanging attempt	*Does birth trigger mental health episode?* *Review literature -* *https://www.cell.com/trends/neurosciences/pdf/S0166-2236(16)30177-1.pdf* *Are medications given with understanding of past suicide? What providers were caring for her at time of death?*

Social History: • The V was a 25-year-old female who was found dead at home by neighbor. By investigative report, the V was involved in a domestic altercation with her husband earlier in the evening. The V made several threats via text message to her husband's mother and her husband that she was going to kill herself. Based on the text messages, the death appeared to be an overdose, but evidence of drug use could not be found at the scene. By family report, the V and her husband have a long history of both verbal and physical violence. By autopsy, the cause of death was mixed drug intoxication (hydroxyzine, cyclobenzaprine, ethanol, cocaine, alprazolam), the manner suicide. • She lived with her husband and two children. She indicated that the domestic violence was no longer an issue. She also stated that her suicide ideation and depression were "long, long ago." **Autopsy and Coroner's Report:** • Ethanol – 174 mg/dL • Blood alcohol concentration – 0.184 • Caffeine, naloxone – positive • Alprazolam – 17 ng/mL • Cocaethylene – 110 ng/mL • Benzoylecgonine – 300 ng/mL • Hydroxyzine – 1200 ng/mL • Cyclobenzaprine – 1400 ng/mL • Metabolites and benzodiazepines presumptive positive in urine • Pulmonary edema and congestion; right pleural effusion; several parallel and linear. Up to approx 2-inch, haphazard scars on one wrist • See NVDRS write up above **Other:** She came to clinic for 3-week postpartum and 6-week postpartum visits. At the 3-week visit she denied depression, said she was doing	*There seems to be complex interactions with her anxiety and depression. Was she not screened for either during or after the delivery?* *Lots of contact with healthcare. Opportunity for case management or home visiting nurse to care for mental health concerns?*

well and had an Edinburgh scale of 9. At 6 weeks postpartum she was c/o of hip pain and sciatica and was dispensed Vicodin #20 pills. At that visit her Edinburgh scale was 7. Eleven days later she was seen by clinical social worker as a referral from the midwife due to increasing anxiety and a request for medication for panic attacks. Since she had an upcoming appt for her back pain she was advised to talk about the panic attacks and ask for medication. That visit occurred the next day and she was prescribed hydroxyzine for anxiety and cyclobenzaprine for back pain/spasms. She had an appt for BH counseling 2 weeks later. She committed suicide 5 days before that appt.	

Summary of Exercise 3A: Reading-up and Developing Memos

Hopefully, you were able to develop some memos. Memoing is an important step at the beginning of qualitative analysis, but it is also something you continue throughout the analysis. After creating your memos, you continue to analyze, summarize, and review the memos to begin the process of finding meaning from the data (more detail provided in subsequent chapters).

If your work has primarily focused on quantitative analysis, you may find yourself a bit uncomfortable with some of these steps. There are no proofs or recalculations to perform to check your work. Keep working through these qualitative analysis steps and, perhaps, return to Chapter 1 to remind yourself of the value of qualitative data. It is a different experience than quantitative analysis, but it is an important analysis that yields a different perspective. Discomfort does not mean you are doing it incorrectly.

Reading up and memoing is the start of Step 4. The next activity within Step 4 is to develop codes.

Developing Codes

Codes are tags or labels given to segments of text of qualitative data. Assigning codes allows analysts to organize qualitative data for the purpose of analysis. Imagine you have hundreds of pages of data with dozens of memos: you need a system for tagging and labeling the data so you can extract and analyze the data in a systematic way. Qualitative analysis is the effort to simplify the data, and coding is the strategy to start that simplification.

The coding **process** can be conducted inductively, deductively, or a mixture of both. The coding **purpose** can be to describe, label, and/or interpret the data into themes.

Deductive versus Inductive Codes

Deductive Codes:

Use topics derived from the analysis question

- Incorporate topics or findings from the scientific literature
- Leverage professional experience
- Develop from key domains used in data collection instruments

Inductive Codes:

- Emerge organically from the data
- Derive from actively reading and re-reading the data to "hear" new ideas of codes
- Pull words, language, or phrases that come from participants (*in-vivo* codes)
- Explore underlying concepts

Example Analysis Question: How does substance use (SU) affect pregnant and/or postpartum women in our sample?	
Examples of Deductive Codes	**Examples of Inductive Codes**
• SU treatment • SU history • SU during pregnancy • SU in the postpartum period	• Treatment beliefs • Childhood trauma • Economic impact

Code Purposes

Descriptive

- A code to describe something
- Assigns an attribute to the text
- Informed by key aspects of the analysis purpose (e.g., age of person)

Topic

- Involves labeling text according to its subject
- Allocates certain passages to topics and usually involves little interpretation
- Requires “putting the data where they belong”

Analytical

- Requires the most detailed examination of the text
- Requires interpretation and meaning
- Requires more time and thought to “read and reflect”

Example Analysis Question: How does substance use (SU) affect pregnant and/or postpartum women in our sample?		
Examples of Descriptive Codes	**Examples of Topic Codes**	**Examples of Analytic Codes**
• Gender • Race • Age • Geographic location • Insurance status	• Prenatal care • Substance use history • Substance use treatment • Violence	• Social support network • Housing instability • Loss of child

Overview of Coding

What is coding?	• Codes are tags or labels given to segments of text or qualitative data
	• Code for process
	  ○ Deductive codes
	  ○ Inductive codes
	• Code for purpose
	  ○ Descriptive, Topic, and Analytical codes

Why code?	• Allows analysts to engage in data reduction and **simplification** • Allows analysts to see **themes** and make **connections** between ideas and concepts • Applying codes to raw data enables the analyst to begin examining how their data **supports** or **contradicts** the question or theory guiding their analysis

When to code?	• Code development is an **iterative process**
	  ○ Create preliminary codes after memoing
	  ○ Finalize codes and apply to data
	  ○ Develop and maintain your codebook throughout the process

Who codes?	• In addition to the main analyst, **team coding** can help increase validity and reliability (find more detail in Chapter 6)

You may have noticed that one important question is missing from the overview above – **HOW** to code! The following pages provide a simple description on how to code, and technical detail is provided in Chapter 6.

How to Code

For most MMRIA analysts, it is likely that your projects will start with at least some deductive guidance to construct your codes. You will consider your analysis question, the background context you have developed, and the memos you've made. With all of this in mind, you are ready to begin coding. Keep in mind that coding is iterative - you need to work through it a few times to define the list of codes that you will apply to your data.

Before high-tech qualitative software existed, coding was literally the process of tagging and sorting data with colored markers, sticky notes, and cut up papers. These different bits of data would be labeled and sorted manually. Now, however, there are multiple high-tech strategies to mark and sort the data. Later chapters identify strategies using basic software, but the following exercises focus on using pen and paper.

Segmenting

When you code, you select a segment of data to label or tag. Applying a code to only one word is unlikely enough information to code. You might understand what that one word means when you see it in a sentence. However, later if you sort on that code alone and are only able to review that code and the data that it is attached to, that one word will not make much sense. Yet, a full paragraph may be too much information and may require too many codes. There is no one right amount of data needed in a segment for a code. Your goal is to select enough data and label it, so that when you look at it later you can understand why you coded it the way you did.

Exercise 3B: Coding and Labeling the Data

Go through the text below and code or label the data. Think about what you noted in the memos, your analysis question, and how you will want to be able sort and analyze data. In this practice example, assume a broad research question seeking to understand factors that contributed to a death during pregnancy, childbirth, and the postpartum period (up to 365 days from the end of pregnancy). Later chapters describe how to use spreadsheets to sort and code data. For this example, use pen and pencil or colored markers to select text and label it with a code. If you have a co-worker also working through this guide, consider doing this exercise simultaneously and comparing notes. We provide an example below of what your coding might reflect.

Case Data	Preliminary Codes
Mental/Behavioral Health History: • Previous history of depression and anxiety, onset in teen years. Improved with behavioral health counseling • Anxiety and panic attacks returned with the recent birth and increased in frequency to every other day, with shortness of breath, increased heart rate and desperate feelings of desperation. At the same time, she denied any depression, sleep problems or drug use. • Went on hydroxyzine 25 mg, i-ii tabs Q12hr and cyclobenzaprine 5 mg TID (for back pain) at 7 ½ wks postpartum and had an appt for behavioral health counseling. • Denied alcohol and drug use • History of past suicide attempts, most recently 7 yrs ago – involving alcohol intoxication and hanging attempt **Social History:** • The V was a 25-year-old female who was found dead at home by neighbor. By investigative report, the V was involved in a domestic altercation with her husband earlier in the evening. The V made several threats via text message to her husband's mother and her husband that she was going to kill herself. Based on the text messages, the death appeared to be an overdose, but evidence of drug use could not be found at the scene. By	Long term mental health (MH) Mental health treatment Postpartum mental health experiences Postpartum mental health experiences Experiences with pain Denial/avoidance Mental health treatment Denial/avoidance Long term Mental health Age

family report, the V and her husband have a long history of both verbal and physical violence. By autopsy, the cause of death was mixed drug intoxication (hydroxyzine, cyclobenzaprine, ethanol, cocaine, alprazolam), the manner suicide. • She lived with her husband and two children. She indicated that the domestic violence was no longer an issue. She also stated that her suicide ideation and depression were "long, long ago."	Living situation

Review: List the codes you created above and enter in the table below			
	Descriptive	**Topic**	**Analytical**
Example	Age	Mental health treatment	Long term mental health
Practice			

Developing a Codebook

The exercise above started to identify the codes that could be used to analyze the data. After reviewing codes by yourself, and ideally in collaboration with a colleague, you will eventually arrive at a set of codes that makes sense for the data and that you will use throughout your analysis. In order to keep the codes clear and well-documented, the next step is to create a codebook. The codebook is an important analytic tool to describe and organize the project's codes. The codebook serves the following functions:

- Provides a definition of a code, the inclusion and exclusion criteria, an example, and any

comments that guide application and further analysis.

- Helps keep your codes organized (even if you are not working with a team).
- Ensures reliability between team members. One person can pick up a codebook and begin to use it to work with the data even if they did not create it.

The coding example above provided several potential codes. The codebook on the following page describes them further. Pick another potential code from Exercise 3B: Coding and Labeling the Data and complete the codebook columns for that code.

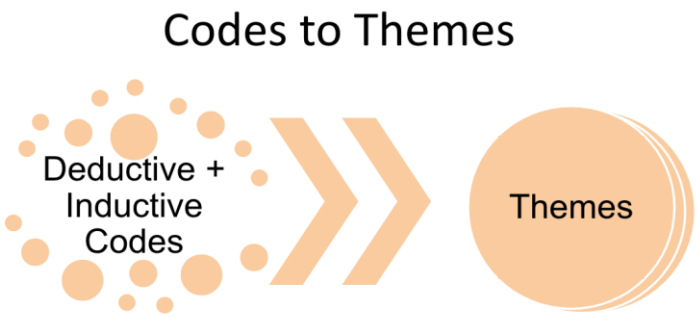
Code	Definition	Inclusion Criteria	Exclusion Criteria	Example	Comments
Age (Descriptive Code)	Describes the age of mother	Numerical age of mother at death	Excludes any other demographic factor (e.g., race)	27-year old	Expect to stratify by age in analysis
Long-term (LT) Mental Health (MH) (Deductive; Analytical Code)	Describes MH issues prior to the sentinel pregnancy	Any history of MH issues, such as depression or more serious conditions	Does not include diagnosis during pregnancy or postpartum of the sentinel pregnancy	"Previous history of depression and anxiety onset in teen years"	Analyze Perinatal immediate MH and LT MH to identify relationships
Mental Health (MH) Treatment	Describes any MH treatment	Inpatient, outpatient, MH treatment and/or prescriptions	Excludes MH screening and referrals	"Improved with BH counseling"	
Practice:					

Working with the Data

Step 5: Identify Themes	• Review codes and combine into themes • Analyze patterns in the data

Finding Patterns and Moving from Codes into Themes

Once you have your data tagged and labeled with codes, you will be able to sort and organize it in ways that allow you to identify important patterns. From these patterns, you can identify emerging themes. It is important to note that codes are not the same as themes. Themes seek to make order and meaning from the codes in order to describe what is happening in the data. Themes emerge iteratively after codes are developed. Themes are identified through careful consideration of memos and codes, and through discussion within the team and in connection with the research question. The visual above represents how multiple codes may combine to themes. Identifying these themes and working with the codes takes time, is iterative, and is ideally done with a team. Further strategies for identifying themes are reviewed in Chapter 7.



Chapter 3 Summary

This chapter reviewed the five main steps of the data analysis process. This process is iterative, meaning that as you work through one step, you may need to revisit prior steps to refine your analysis. Throughout the process, you will make notes to document your analysis. The next chapters will go deeper into each step, provide more tools, and give you a chance to do more hands-on practice.

Analysis Step	Activities
Step 1: Develop an analysis question	• Identify an analysis topic • Gather background information • Construct an actionable analysis question
Step 2: Develop an analysis plan	• Identify WHAT data will be used • Establish WHO will be involved in the analysis • Determine WHEN and HOW the analysis will be conducted • Create and maintain process notes
Step 3: Prepare and organize textual data	• Clean and de-identify data • Organize data for coding
Step 4: Develop codes and codebook	• Read up from the data • Memo the data • Identify preliminary codes • Develop and maintain codebook • Code the data
Step 5: Identify Themes	• Review codes and combine into themes • Analyze patterns in the data

Chapter 3 Notes

Take a moment to write any thoughts about the data analysis process. What aspects may be hardest for you?

What do you find easiest?

CHAPTER 4: GETTING STARTED WITH AN ANALYSIS QUESTION AND PLAN

This prior chapters provided an overview of qualitative data, the value of qualitative analysis, and an introduction to the qualitative analysis process. The next chapters go more in-depth into each step of the qualitative analysis process. Chapter 4 examines the first two steps in conducting qualitative analysis:

1. Developing an analysis question
2. Developing an analysis plan

Throughout the upcoming chapters, you can take the opportunity to practice each step with your own data using the space provided.

Learning Objectives

After reviewing this chapter, MMRIA users will be able to:

- **Identify strong and weak** analysis questions
- Describe how your questions can **influence the analysis plan**

Getting Started with an Analysis Question

Analysis Step	Activities
Step 1: Develop an analysis question	• Identify an analysis topic • Gather background information • Construct an actionable analysis question

Identify an Analysis Topic

Return to Chapter 3 and the notes you made regarding potential analysis topics. Build an analysis question from an identified gap in your understanding of pregnancy-associated deaths that you want to explore in the MMRIA data.

The following topics may be of interest to your analysis team:

- Housing
- Interpersonal violence
- Mental health
- Obesity
- Prenatal care
- Racial bias
- Social structure
- Substance use

Working through the Analysis Steps

As noted, Chapters 4-7 of this Resource Guide provide an opportunity to use your own data to practice all steps of the analysis process. In the table below, the left column provides an example of an analysis topic and specific analysis questions within that topic. Use the right column as a space for you to identify your own analysis topic.

Example Analysis Topic	Your Analysis Topic

• Relationships/social support
  ○ How can social support or the lack thereof affect a person's risk for maternal mortality?
  ○ What are different types of social support?
  ○ Which types of social support are most important for preventing maternal mortality?	

Gather Background Information

Prior to finalizing an analysis question, it can be useful to consider what you already know about a topic. Background could include trends, statistics, published studies, or other contextual understanding from your state or community. Some qualitative researchers might go deeper by investigating the theory of a phenomenon. The table below provides examples of background information on the left. Use the space on the right to list background information for your practice analysis question.

Example Background:	Your Background:
Some potential research on issues of social support and maternal health. • The link between postpartum depression and social support is evident • Connection between intimate partner violence and negative maternal health outcomes • Research provided through other sources, such as the National Institute of Mental Health, Substance Abuse and Mental Health Agency, Postpartum Support International, etc. • Further examine other sources of data to provide some quantitative measure of the problem	Make your notes here:

Construct an Actionable Analysis Question

Once you have identified an analysis topic and considered relevant background, you will need to use this information to construct an analysis question that reflects your scope and purpose. To begin, we suggest you consider the following criteria for a strong analysis question.

1. **Focus on a clear problem or gap in understanding**
2. **Feasible to answer within the timeline and data available**
3. **Specific enough to answer thoroughly**
4. **Complex enough to provide insight**
5. **Use neutral, non-directional language**
6. **Define the sample and setting**

For practice, consider the list of questions below. Review the questions with the criteria. Which questions seem like strong questions and which ones seem like weak questions? You can make a note about the criteria not met.

Exercise 4A: Strong and Weak Questions

	Question	Strong	Weak	Notes
1	What types of housing did sample persons live in?			
2	What were the experiences of prenatal care among those who experienced a pregnancy-associated death during or after their first pregnancy?			
3	How did interpersonal violence affect pregnant and postpartum non-Hispanic Black persons who experienced a pregnancy-associated death?			
4	How badly does substance use affect people?			
5	How did housing affect the pregnancy and postpartum experience for those who experienced a pregnancy-associated death?			
6	What are the factors affecting pregnancy-associated deaths in our state?			
7	What role did child protective services play in the lives of those who experienced a pregnancy-associated death?			

See the next page for answers

Review of Exercise 4A: Strong and Weak Questions

Review your answers from the worksheet on developing an analysis question from the previous page. See the answers and notes about how the proposed questions did not meet important criteria.

	Question	Strong	Weak	Notes
1	What types of housing did sample persons live in?		X	• Not complex enough (just one list would answer the question) • Not specific enough – which persons? • See Question 5 – for an improved housing question
2	What were the experiences of prenatal care among those who experienced a pregnancy-associated death during or after their first pregnancy?	X		• Specific, feasible, defines sample, complex enough to provide insight
3	How did interpersonal violence affect pregnant and postpartum non-Hispanic Black persons who experienced a pregnancy-associated death?	X		• Specific, feasible, defines sample, complex enough to provide insight
4	How badly does substance use affect people?		X	• Not specific enough – which persons? • Uses directional language (badly) • Option: What experiences and relationships were important to the initiation and ongoing substance use for persons who experienced a pregnancy-associated death?
5	How did housing affect the pregnancy and postpartum experience for those	X		• Specific, feasible, defines

	who experienced a pregnancy-associated death?			sample, complex enough to provide insight
6	What are the factors affecting pregnancy-associated deaths in our state?	X		• Broad but feasible, complex, focusing on a clear problem
7	What role did child protective services play in the lives of those who experienced a pregnancy-associated death?	X		• Specific, feasible, defines sample, complex enough to provide insight

Using what you learned from the review on strong and weak questions, construct an analysis question to use in the exercises in the following chapters.

Example Analysis Question:	Your Analysis Question:
How does social support affect the pregnancy and postpartum experience of persons who experienced a pregnancy-associated death?	

Making a Plan: Identifying the Data and Documenting the Process

Step 2: Develop an analysis plan	• Identify WHAT data will be used • Establish WHO will be involved in the analysis • Determine WHEN and HOW the analysis will be conducted • Create and maintain process notes

Now that you have defined your analysis question, it is time to document the analysis plan. Refer back to Chapter 3 for an outline of an analysis plan. Review this sample plan and then draft a potential plan of your own.

Analysis Plan	
Key Questions for your Plan	**Key Elements to Consider**

WHAT data will you use?	• MMRIA Data Sources: Case Narratives, Contributing Factors, Recommendations for Action
	• Case Narratives:
	  ○ 10 Case Narratives from 2019
	  ○ Pregnancy-associated deaths
	  ○ No demographic constraints
	• 60 entries of Contributing Factors and Committee Recommendations

HOW will you do the analysis?	• Combination of Microsoft Word and Excel • Open document “MMRIA Relationship Study 2020” folder in j:drive and begin process notes/work plan
WHEN will you do the analyses?	• Begin August 2020 • Preparation for November 2020 Conference

WHO will be involved?	• Team-coding with code-analyst
	  ○ Will work simultaneously with common notes
	  ○ See meeting schedule
	  ○ Review with supervisor weekly

Complete the worksheet for your project:

Analysis Plan	
Key Questions for your Plan	**Key Elements to Consider**
WHAT data will you use?	
HOW will you do the analysis?	
WHEN will you do the analyses?	
WHO will be involved?	

Chapter 4 Summary

This chapter examined Step 1 of refining an analysis question and Step 2 of developing an analysis plan.

Chapter 4 Notes

Take a moment to write any thoughts about developing your analysis question and plan. What feels unclear? What aspects feel promising?

CHAPTER 5: PREPARING AND ORGANIZING QUALITATIVE DATA

This chapter reviews preparing and organizing data from MMRIA for qualitative analysis.

Learning Objectives

After reviewing this chapter, MMRIA users will be able to:

- **Describe how to clean and de-identify** qualitative data
- **Identify factors important for preparing and organizing** qualitative data for analysis
- **Maintain** process notes

Step 3: Prepare and organize textual data	• Clean and de-identify data • Organize data for coding

Tools to Manage Qualitative Analysis

Chapter 3 explained that prior to the development of qualitative software programs, analysts used paper, colored pens, and other basic methods to label, sort, and categorize data. While this simple approach is still used for smaller projects, there are now many complex, robust, and often expensive, qualitative analysis programs. Some analysts also use advanced features of non-qualitative software programs such as Microsoft Word, Excel, or Access to organize and code their data. There is more information on qualitative analysis tools in Appendix 2: Additional Resources.

This Resource Guide describes how to use basic capabilities of spreadsheet programs to conduct your analysis. While word processing and spreadsheet programs have significant limitations for

this task, you can utilize elements of their basic functionality to apply the qualitative analysis concepts presented in this guide. As you develop as a qualitative analyst, you may find other strategies that work for you to apply these concepts.

While qualitative analysis can be aided with the help of advanced tools, such as qualitative software programs, you and your team members are the most important part of analysis. In other words, you are the drivers of the analysis. While the tools used to organize and manage the data vary, those tools do not perform the analysis; only you can do that.

Clean and De-Identify Data

When performing qualitative analyses, you will need to follow your typical internal process for de-identifying data and managing confidentiality. Ensure that any specific dates or real names of persons or places are replaced with a pseudonym or alternate identifier. Also, you may need to clean your qualitative data by removing or correcting incomplete and incorrect information.

In preparing the MMRIA data for analysis, you will need to use both Microsoft Excel (or other spreadsheet software) and Word (or other word processing software). Contributing Factors and Committee Recommendations data are already in a spreadsheet that is created when you export your data from MMRIA. You can continue your analysis in the spreadsheet by eliminating columns that are not relevant. If you are using Case Narrative data, you will need to pull each narrative from the MMRIA output into Word in order to organize the data. However, after some basic tasks in Word, you need to transfer the data into a spreadsheet to further analyze and see patterns. The next chapters address strategies for analysis using these tools.

Preparing the textual data in the absence of using qualitative software programs involves organizing the narrative data so it is ready to code.

Organize Data for Coding

For Contributing Factors, Committee Recommendations, and Case Narrative data:

- Delete cases with minimal data or blanks (Note: you keep track of which cases had to be removed in your process notes)
- Review data for accuracy and errors
- Assign each segment of data to identify the original case and desired descriptors (see below for the examples)

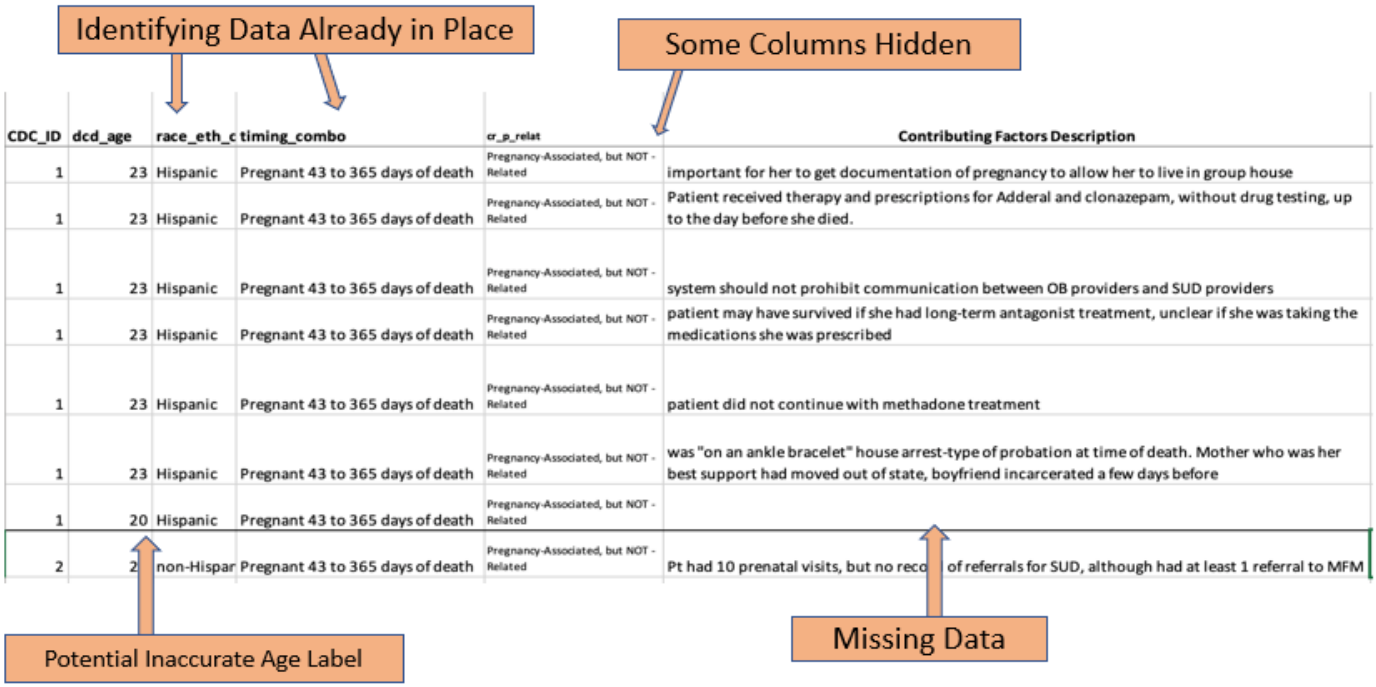
For Case Narrative data, you need create small segments of data to code (for Contributing Factors and Committee Recommendations, textual data is already comparatively brief):

- Create a separate file for each Case Narrative file
- Organize the Case Narrative by inserting hard returns to create multiple segments or paragraphs throughout data to separate the text (to make it easier to put in a table and have smaller segments of data)

Example of Data Cleaning for Contributing Factors and Committee Recommendations

Below is an example of cleaning and organizing data for a Contributing Factors and Committee Recommendations spreadsheet.

- One of the entries has no data so remove that line from the analysis dataset
- One line for case 1 has the age as “20” but looking at the data, it is clear that it is likely a mislabel given the rest of case 1 has age at “23.” This error should be checked and corrected in the dataset to ensure accuracy
- Each line of data is already labeled with a case number and important demographics
- Consider “hiding” columns not relevant for your analysis to make the spreadsheet more manageable



Example of Data Cleaning for Textual Data/Case Narratives

Here is an example of cleaning and organizing data from a Case Narrative in Microsoft Word. The important steps include:

- Review data to identify the details needed to label the case
- Insert spaces or reorganize the text to make more sense of the data (by topic, for example)
- Insert a hard return or paragraph between segments of data to prepare to convert to table format

Review below the examples of:

1. Case Narrative in Microsoft Word
2. Case Narrative put into a table in Microsoft Word and key data identified
3. Data put into a Microsoft Excel spreadsheet with important data included in each line of data

Case Narrative Data

This is an example of the Case Narrative data without formatting in Word.

Case 1

The decedent was a 20-year-old gravida 2, now para 2, who died with cause of death noted as “probable mixed drug intoxication” 5.5 months after delivery. She had some high school education without completing her diploma and was working as a retail cashier. Medical history was significant for substance use and previous preterm birth. Her pre-pregnancy BMI was 32.

Life course issues were significant for substance use and recurrent sexually transmitted infections. She entered prenatal care at 24 weeks with 10 visits at a medical clinic with an OB/GYN. Prenatal history was significant for preterm labor and delivery with her first child exactly one year prior to this most recent delivery.
Of note, an open adoption had been arranged for this birth. She presented to the delivering hospital at 39 weeks gestation in active labor. Delivery was by an OB/GYN and method was vaginal, with epidural anesthesia. Obstetric complications included Group B streptococcus infection (she was treated prior to delivery), anemia, and pica as described above. Her urine drug screen was positive on admit. Female infant was 38 weeks gestation and weighed 6 pounds 12 ounces. Apgar scores were 8/9 and complications were unremarkable. Postpartum period also unremarkable. Mother was discharged to home with family and infant was released to adoptive parents. At 5 weeks postpartum she presented to OB/GYN’s office for insertion of Implanon/etonogestrel implant for contraception. Postpartum period is otherwise unknown for significant findings.

The events surrounding the death remain unknown. Her body was found at a friend’s home where she was staying. No foul play was suspected. The body was not transported to a hospital due to obvious signs of death, and law enforcement did not conduct an investigation. An autopsy was not done, but the coroner described the death as a “probable mixed drug intoxication” with an unknown manner of death. It is unknown if any bereavement services were offered.

Narrative Data Formatted into a Table

Below is an example of the Case Narrative converted into a table in Microsoft Word

- Summary details are identified (Case label, Age, Timing of death, Race/Ethnicity)
- Text is organized into smaller chunks
- Text is put into a table

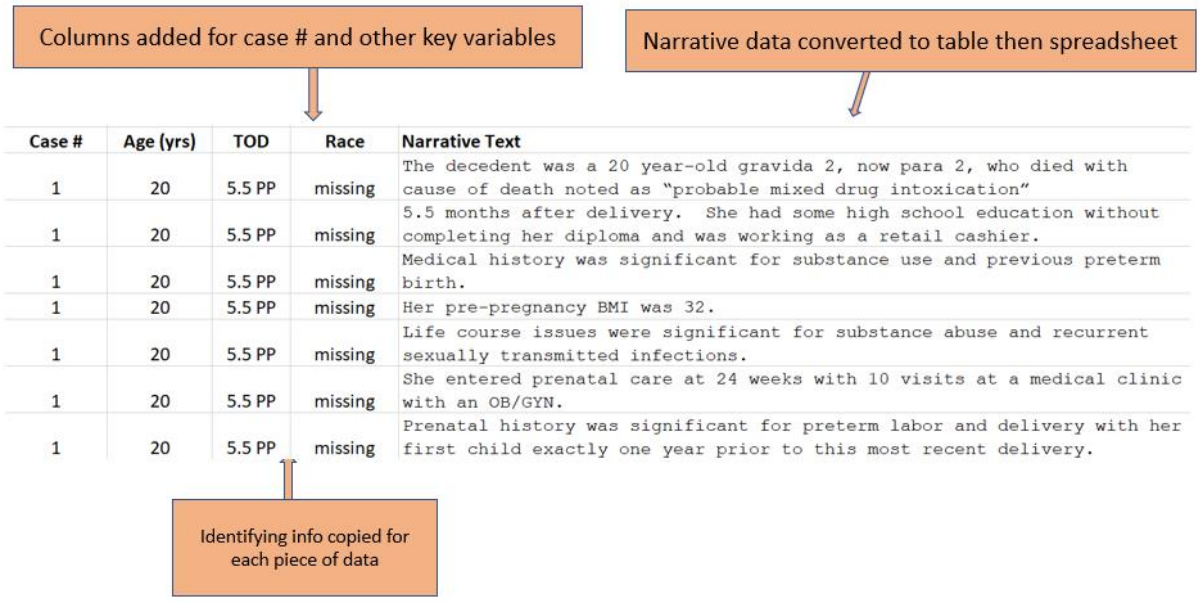
Case 1 /Age 20/Timing: 5.5 mo pp/Race/Ethnicity: Missing
The decedent was a 20-year-old gravida 2, now para 2, who died with cause of death noted as “probable mixed drug intoxication.”
5.5 months after delivery. She had some high school education without completing her diploma and was working as a retail cashier.
Medical history was significant for substance use and previous preterm birth.
Her pre-pregnancy BMI was 32.
Life course issues were significant for substance use and recurrent sexually transmitted infections.
She entered prenatal care at 24 weeks with 10 visits at a medical clinic with an OB/GYN.
Prenatal history was significant for preterm labor and delivery with her first child exactly one year prior to this most recent delivery.
Of note, an open adoption had been arranged for this birth.
She presented to the delivering hospital at 39 weeks gestation in active labor.
Delivery was by an OB/GYN and method was vaginal, with epidural anesthesia.
Obstetric complications included Group B streptococcus infection (she was treated prior to delivery), anemia, and pica as described above.
Her urine drug screen was positive on admit.
Female infant was 38 weeks gestation and weighed 6 pounds 12 ounces. Apgar scores were 8/9 and complications were unremarkable.
Postpartum period also unremarkable. Mother was discharged to home with family and infant was released to adoptive parents.
At 5 weeks postpartum she presented to OB/GYN’s office for insertion of Implanon/etonogestrel implant for contraception.

Postpartum period is otherwise unknown for significant findings.
The events surrounding the death remain unknown.
Her body was found at a friend's home where she was staying. No foul play was suspected.
An autopsy was not done, but the coroner described the death as a "probable mixed drug intoxication" with an unknown manner of death.
It is unknown if any bereavement services were offered.

Case Narrative Data Further Prepared for Analysis

For your analysis, you need to be able to label, sort, and review your data. Putting the data into Microsoft Excel or another spreadsheet program makes that easier. The table above divided segments of data into rows. In the spreadsheet, you want each segment of data to be identified with the case label and any other variables that are critical for your analysis. Thus, next steps involve:

- Copying the table from Microsoft Word into Microsoft Excel
- Adding columns to the left for important identifying information
- Copying the important information for every segment of data



Case #	Age (yrs)	TOD	Race	Narrative Text
1	20	5.5 PP	missing	The decedent was a 20 year-old gravida 2, now para 2, who died with cause of death noted as "probable mixed drug intoxication"
1	20	5.5 PP	missing	5.5 months after delivery. She had some high school education without completing her diploma and was working as a retail cashier.
1	20	5.5 PP	missing	Medical history was significant for substance use and previous preterm birth.
1	20	5.5 PP	missing	Her pre-pregnancy BMI was 32.
1	20	5.5 PP	missing	Life course issues were significant for substance abuse and recurrent sexually transmitted infections.
1	20	5.5 PP	missing	She entered prenatal care at 24 weeks with 10 visits at a medical clinic with an OB/GYN.
1	20	5.5 PP	missing	Prenatal history was significant for preterm labor and delivery with her first child exactly one year prior to this most recent delivery.

Make Process Notes and Summarize

As you proceed in your analysis, it is important to return to your process notes and document what you did to clean and organize your data. Key issues to keep track of include:

- Source(s) of your data
- Location/storage of data
- Steps taken to clean or prepare
- Plans for notes

You may develop a brief summary of some components of data. For example, in long interviews, researchers may create a small summary of the interview to keep track of the data.

Review the sample of project process notes below and then make your own notes.

Sample Project Process Notes

Data summary and cleaning steps	• Case Narratives
	  ○ 6 Case Narratives identified
	  ○ Stored on j:drive
	  ○ Pulled into Microsoft Word - On 8/15/2020
	  ○ 2 eliminated for being incomplete and sparse
	  ○ Inserted page breaks for each narrative
	  ○ Reviewed each case to identify key labels
	  ○ Created breaks/returns in data prior to converting into a table and copying into Microsoft Excel
	  ○ Further cleaned data for analysis by adding needed columns and formatting data in Microsoft Excel
	• Contributing Factors
	  ○ 43 Entries of Contributing Factors and Committee Recommendations
	  ○ Removed 1 entry that had no data
	  ○ 3 Cases had no race/ethnicity information - reviewed file and added

Key analytical activities	Aug. 15 - Read through narratives Aug. 17 - Created small summary for each narrative (age, timing of death, any marital status) Aug. 20 - Memo notes made by both researchers Aug. 25 - Discussed memos as a research team Aug. 30 - Reviewed all contributing factors and committee recommendations Aug. 30 - Made notes on preliminary thoughts on contributing factors and committee recommendations Sept. 2 - Reviewed potential codes with team

Exercise 5A: Preparing and Organizing Data for Analysis

Spend some time preparing your data for analysis and complete your Project Process Notes.

Project Process Notes

Data summary and cleaning steps	
Key analytical activities	

Chapter 5 Summary

This chapter went into more depth on the steps to prepare and organize your data for analysis. This process is an important element of qualitative analysis. Documenting these steps is critical for a robust process, particularly when working with teams.

Chapter 5 Notes

Take a moment to write any thoughts about preparing and organizing qualitative data. Does it feel familiar or different from how you have managed quantitative data? What challenges do you predict?

CHAPTER 6: CODING QUALITATIVE DATA

This chapter will provide an opportunity to practice developing codes for your data. Analysis begins with reading up, memoing, and developing codes. You will then code qualitative data based on your analysis questions. You will also practice developing a codebook.

Learning Objectives

After reviewing this chapter, MMRIA users will be able to:

- **Memo data** and develop analytic memos
- **Develop and apply codes** to MMRIA data
- **Prepare** a codebook

The Coding Process

Coding is an important component of the qualitative analysis process, as described above. You may be managing large amounts of data, so you will need to organize it in ways that will allow you to sort and manage the data to see the patterns and develop findings. This chapter describes the strategies for coding your data using basic tools.

Step 4: Develop codes and codebook	• Read up from the data • Memo the data • Identify preliminary codes • Develop and maintain codebook • Code the data

Reading up and Memo

The first step in developing codes is to become familiar with the data by reading through the data and beginning to understand the data in more depth. You want to develop a process that immerses you in the data. As you read through the data, ask yourself these questions:

- What is interesting about these data?
- What is surprising or not surprising about these data?
- Do these data provide new insight into my study?
- Do I “hear” or detect any patterns in the data?
- Can I link these ideas together to form themes?

After getting close to the data by “reading-up,” you will begin memoing. As described above, memoing is the process of capturing your thoughts and ideas about what you are learning from the data. Memoing continues throughout the analysis. You begin memoing in this early stage and continue to revisit, add, and refine memos throughout your analytical process. You can put your memos in a separate document and/or a designated column with the data you are analyzing. Your research question guides the focus of your memoing. Memos can be analytic, thematic, and descriptive.

Memoing can include:

- Preliminary thoughts about codes and categories
- Hunches, insights, and observations
- Notes about your process
- Areas for further reflection or inquiry
- Links or resources to elucidate ideas

Memoing Example

Below, you will find memos created from sample data. Take time to review these examples. Then, memo your own data. Make sure your memo is meaningful and complete in thought. You want to include a memo that you and your coding partner will understand. Writing memos as complete thoughts and ideas means you or a partner can return to the notes and review your memos.

Return to your memos throughout your analysis to develop your thinking and analytical insights.

Example of Memos

Here are memos made alongside the narrative data.

Case Narrative	Memos
Case 1 /Age 20/Timing: 5.5 mo pp/Race: Missing	
The decedent was a 20-year-old gravida 2, now para 2, who died with cause of death noted as “probable mixed drug intoxication”	*She is a very young mother of two.*
5.5 months after delivery. She had some high school education without completing her diploma and was working as a retail cashier.	*She has consistent work - what was support at work?* *Had she returned to work?* *Review the role of employment and social support*
Medical history was significant for substance use and previous preterm birth.	*Where are the other children?* *Is substance use intervention noted?*
Her pre-pregnancy BMI was 32.	*Mother’s BMI is very high - obesity could have been a major risk factor.*

Life course issues were significant for substance use and recurrent sexually transmitted infections.	*Mother had recurrent sexually transmitted infections at young age. Her early sexual relationships are important to consider. No information about other interventions.*
She entered prenatal care at 24 weeks with 10 visits at a medical clinic with an OB/GYN.	*Mother entered late to prenatal care but had consistent visits-was there any substance use referral/screening?*
Prenatal history was significant for preterm labor and delivery with her first child exactly one year prior to this most recent delivery.	*Note the close birth spacing of mother's children and potential for added stress. Important to know if she has any family planning in the interconception period.*
Of note, an open adoption had been arranged for this birth.	*Who supported the arrangement? Does this indicate she had some support?*
She presented to the delivering hospital at 39 weeks gestation in active labor.	*Did she deliver alone?*
Obstetric complications included Group B streptococcus infection (she was treated prior to delivery), anemia, and as described above.	
Her urine drug screen was positive on admit.	*Was there any prenatal drug screening? Treatment or referrals?*
Female infant was 38 weeks gestation and weighed 6 pounds 12 ounces. Apgar scores were 8/9 and complications were unremarkable.	
Postpartum period also unremarkable. Mother was discharged to home with family; infant was released to adoptive parents.	*This is the first mention of family. How was family engaged?*
At 5 weeks postpartum she presented to OB/GYN's office for insertion of Implanon/etonogestrel implant for contraception.	*Mother attended postpartum appointment so there may have been some capacity to make and keep commitment.*
Postpartum period is otherwise unknown for significant findings.	*Did she have any postpartum care?*
The events surrounding the death remain unknown.	

Her body was found at a friend's home where she was staying. No foul play was suspected.	*This is the first mention of the housing situation in the postpartum period.* *How much does the housing situation align with social support?*
The body was not transported to a hospital due to obvious signs of death, and law enforcement did not conduct an investigation.	
An autopsy was not done, but the coroner described the death as a "probable mixed drug intoxication" with an unknown manner of death.	
It is unknown if any bereavement services were offered.	*Where is the other child?*

Memoing Contributing Factors and Committee Recommendations

When memoing data from the Contributing Factors and Committee Recommendations, you can add a column to the spreadsheet to capture your memos or create another document to record important memos.

Memoing Your Own Data

Take some time to memo your prepared data. How did memoing compare to other ways you have reviewed the MMRIA data? Make note of any questions you have about this step.

Review of Memos

The process of reviewing memos is an opportunity to work with the data and begin to analyze and find meaning in the data. Analysts can create summaries of their memos to help create potential codes. Additionally, a review of memos can serve as the foundation for further analytical documentation that will contribute to the identification of themes or findings.

Example of Memo Review

This mother was young (20) delivering her second child just 1 year after her first child. Several elements point to her potentially difficult childhood (social structures did not seem to be protective). Recurrent sexually transmitted infections, substance use, obesity (BMI -32). While these conditions are noted, there is no mention of any interventions. There is little information on the conditions in her family or interpersonal relationships that influenced the emergence of these health conditions.

In the effort to understand the social support for this mother, it is notable that she had a job at a retail store, she successfully attended 10 prenatal appointments though was late (24 weeks) to prenatal care, and her 5-week postpartum visit (with long-acting reversible contraception administration). These details indicate some of her engagement in community, connection to groups/institutions, even with her struggles. It is not clear how social support might have contributed to her engagement.

Her child was put up for adoption. Was this due to economic constraints or specific to her mental health/substance use difficulties? We do not know who supported her through that process or made it possible, but it is likely that she found some support to be able to manage this. We know she was discharged with “her family.” There is no mention of the mother’s housing situation prior to her death when her body was found at the “friend’s house” where she was staying. Explore further in data how housing instability and social support are connected.

No autopsy was completed but mixed drug intoxication was assumed. There is no mention of drug screening during prenatal visits.

Potential Codes: Obesity, mental health history, social support, prenatal care, postpartum care, postpartum stressors (adoption of child, unemployment), housing

Analysis Issues: Revisit file to assess if any interventions offered, substance assessment during prenatal care or any behavioral health referrals.

Note: This analysis example is with one case, however, your analysis will review multiple cases. Your analysis process would review memos within cases and across cases. You could also organize your memos by topic and do further analysis within that topic. Memos and summaries of memos are an important step of the qualitative analysis process.

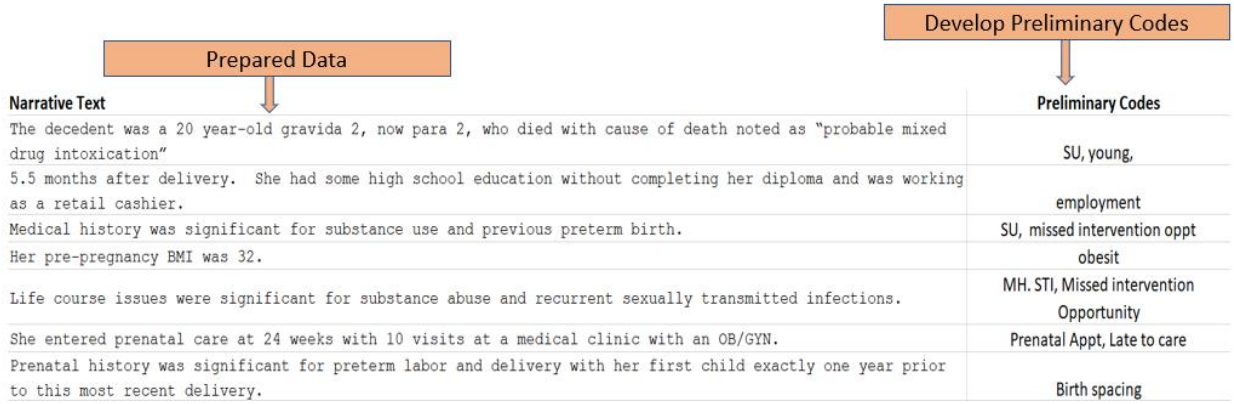
Reviewing your Memos

Take some time to review your memos, make summaries and identify emerging themes, analytical next steps.

Preliminary Codes

The next step in coding is to develop a preliminary list of codes. These codes are grounded in your analysis question and guided by your analysis of memos. You may have a variety of different types of codes.

To start coding, review your memos, your early analysis preparation, and your analysis questions. Then revisit your data and make preliminary codes.



Use these preliminary codes to develop a more complete list of codes and the codebook. Below is an example of a code list that may be developed from this preliminary coding and will then be developed into a codebook. Recall that your focus in developing codes should be grounded in your designated analysis question. For this example, our analysis question is: ***How does social support affect the pregnancy and postpartum experience of persons who had a pregnancy-associated death?***

	Descriptive	Topic	Analytical

Codes	• Age, Race/Ethnicity, Timing of death already included
	  ○ Obesity
	  ○ Employment status
	  ○ Birth details
		• Substance use history
		• Prenatal care
		• Engagement with child protective service
		• Birth spacing
			• Long term mental health
			• Social support network
			• Social support substance use
			• Childhood trauma
			• Unstable housing

Coding as a Team

Partnering to analyze qualitative data is very valuable. It can be very productive to discuss with a colleague and allow different perspectives that enhance analysis. **Analyzing qualitative data as a team helps increase the validity and reliability of findings.** Clear and updated process notes, methodical data organization, and documentation will assist a team in working effectively.

Team coding necessitates an effort to assess intercoder reliability. Assessing intercoder reliability involves a process whereby team members compare the coding of a selection of the data to observe similarities and differences. These comparisons allow further discussion and refinement of the coding. By taking the time to assess intercoder reliability, teams can discuss differences, update the codebook, and decide on a refinement of the coding process.

Developing a Codebook

After reading up, memoing, preliminary coding, and developing an outline of your coding list, you will document your codes by developing a codebook.

A codebook:

- Provides a definition of a code, the inclusion and exclusion criteria for that code, an example, and any comments that guide use and analysis
- Helps keep your codes organized (even if you are not working with a team)
- Will not always have every section filled
- Is updated and maintained throughout the project
- Helps ensure reliability and validity (see more in Chapter 7)
- Serves as a tool for your analysis

Code	Definition	Inclusion Criteria	Exclusion Criteria	Example	Comments
Social Support Network (deductive/ analytical)	Describes social support network or lack network	Includes relatives, children, parents, partner, other parent	Does not include social support services or other public resources	“Mother who was her best support moved out of state.”	Expect overlap with childhood trauma
Unstable Housing (deductive/ Topic)	Describes unstable housing situation	Includes changes in housing and issues related to lack of housing Assumes unstable if short-term, not permanent	General references to home if no discussion of short-term/recent stays in facilities or hospital	“Her body was found at a friend’s home where she was staying.”	

This codebook is developed for all codes and is reviewed, updated, and refined throughout the analysis process. Begin your codebook in the sample space provided on the next page.

Exercise 6A: Creating a Codebook

Spend some time with your practice data to create a codebook.

Code	Definition	Inclusion Criteria	Exclusion Criteria	Example	Comments

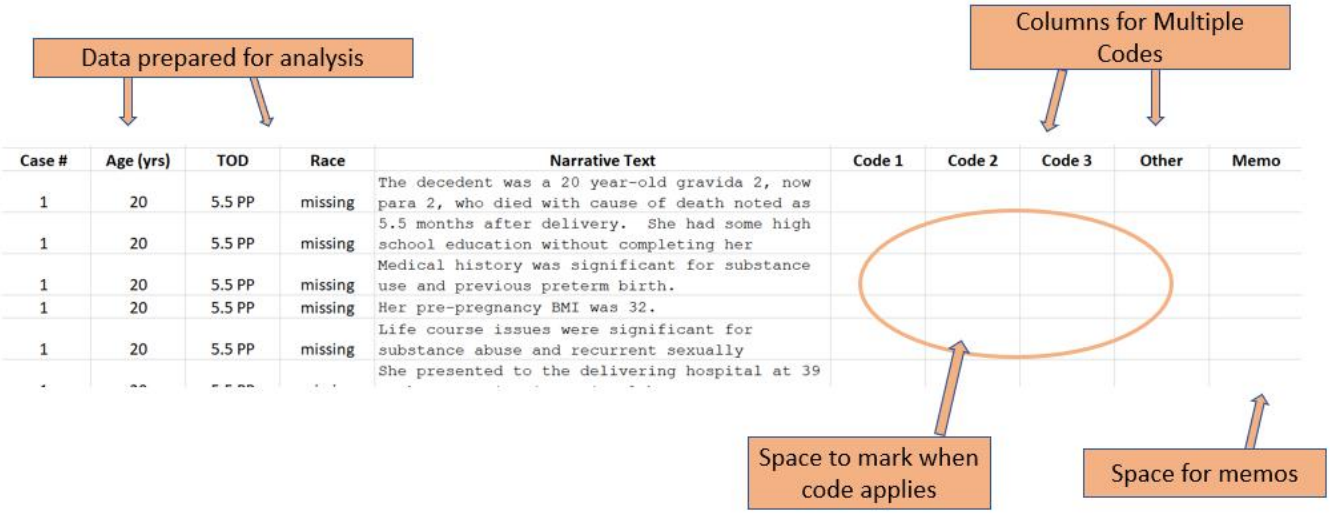
Coding

Once you have a set of codes, you can return to your prepared spreadsheet, create columns for the codes, and go through all the data and apply the codes.

Coding Using a Spreadsheet: A Column for Each Code

- Create columns to the right of the data (narrative text) you are coding
- Create a column for each potential code
- Label each column with a code
- Keep a column for notes
- Each cell provides space to indicate when the code applies
- Create an “Other” column for codes that are infrequent to help manage the number of columns needed
- Create a “Memo” column to capture analytical thoughts or notes as you code

This strategy is a **TOOL** to use to analyze your data. You are the analyst. While there are limits in using these basic tools to analyze your data, you can use them to get a deeper understanding of what is occurring in your cases and develop conclusions. Do not focus on creating a perfect system, but on using the tools to make progress in your analysis.



Case #	Age (yrs)	TOD	Race	Narrative Text	Code 1	Code 2	Code 3	Other	Memo
1	20	5.5 PP	missing	The decedent was a 20 year-old gravida 2, now para 2, who died with cause of death noted as					
1	20	5.5 PP	missing	5.5 months after delivery. She had some high school education without completing her					
1	20	5.5 PP	missing	Medical history was significant for substance use and previous preterm birth.					
1	20	5.5 PP	missing	Her pre-pregnancy BMI was 32.					
1	20	5.5 PP	missing	Life course issues were significant for substance abuse and recurrent sexually					
				She presented to the delivering hospital at 39					

Exercise 6B: Coding Using a Spreadsheet

Take time to set up a spreadsheet using your data. Proceed to then code your data using codes from your codebook. Update your process notes. Record any thoughts about what is working well and your challenges in applying these strategies to your data.

Chapter 6 Summary

This chapter provided detail on the process of coding qualitative data. Coding begins with understanding the data, including developing memos, developing codes, and then using the codes to label segments of data.

Chapter 6 Notes

Take a moment to write any thoughts about the process of developing codes for your qualitative data. What challenges do you predict?

CHAPTER 7: IDENTIFY THEMES

This chapter includes strategies for identifying themes and analyzing your data. While coding is an important step of analysis, the process of understanding the patterns and themes in your data is an ongoing part of making meaning. This chapter will highlight strategies for analyzing your data, including sorting codes or sorting on key variables. This chapter also reviews validity and reliability in qualitative research.

Learning Objectives

After reviewing this chapter, MMRIA users will be able to:

- **Describe a variety of analytical strategies** to apply to qualitative data
- **Define and describe validity and reliability,** their importance, and how to achieve each

Identifying Themes

Now that you have gone through the stages of the analytical process, including coding your data, you can use the codes, memos, and notes you have created as well as the capabilities of the spreadsheets to identify meaning originating in the data. The focus of your analysis will be in answering your research question.

Step 5: Identify Themes	• Review codes and combine into themes • Analyze patterns in the data

Using your Coded Data to Find Themes

With all the data in a spreadsheet tagged and coded in segments, you can use the spreadsheet functionality to sort and review your data in a variety of ways. Codes allow you to sort and label data, but you must continue to read the text to find the meaning in the data. While not always possible, this process is enhanced by working with a team so that meaning and patterns can be reviewed and discussed. Consider the table below with examples of potential analytical tasks to review what your data might show.

Analysis Tasks	Task Description	Analysis Example	Example Finding
1. Review a single code	Sort your data on one code	• Sort data for the code "unstable housing" • Read through all data associated with the code to assess what is most meaningful for your research question	• Unstable housing impairs persons from getting consistent care and is present with missed intervention opportunities • Unstable housing can be both chronic and acute
2. Review how codes work together	Are some codes always together?	• Which codes are most commonly present with Behavioral Health/Mental Health concerns?	• Behavioral Health/Mental Health concerns interact frequently with weak family support
3. Sort on key variables	Do patterns vary by key variables?	• Sort on insurance status to identify any differences between segments, analyze codes and read data	• Presence of code: Lack of postpartum care is more common among women with Medicaid

4. Review code frequency	Which codes are most frequent?	• Review all codes for frequency and identify most frequent	• Substance Use issues was the most frequent code
5. Develop narratives	Create summaries within cases and across cases	• Create a narrative of social support for each case • Analyze each narrative • Identify further dimensions within social support	• Social support has a mixed impact. Social support varies across cases. Shifts/loss in social support create vulnerability
6. Identify exceptions	What case is a contrast to other patterns?	• Which cases had no code of weak social support? • Was it just a gap in description or does it indicate something else?	• Observations of strong support from family and the faith community was unique compared to other cases

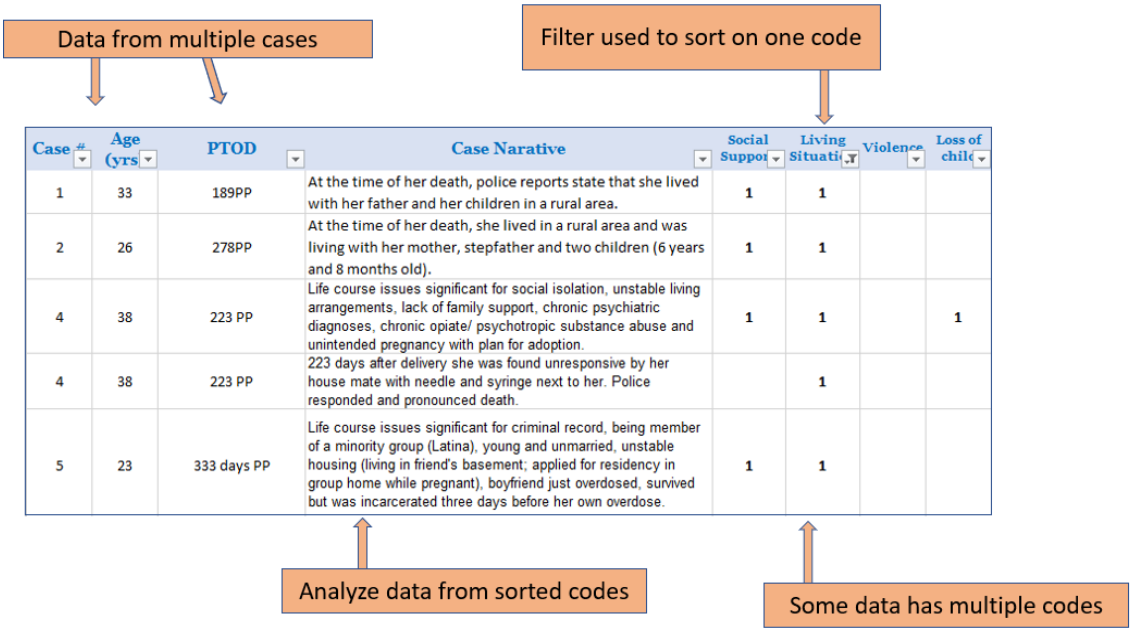
Using your Spreadsheet

Performing these analytical tasks with multiple cases can help you see patterns and relationships in the data.

Use your spreadsheet's filter table capability to sort your data in various ways. Many tutorials are available online to familiarize yourself with using filter tables if you need more information. Sorting your data using filters will allow you to review large amounts of data and review specific codes, and then read the data included in that code.

Consider saving important filter sorts to return to and review. Create notes within your spreadsheet, as well as other memo documents, to record your filter and analysis process and notes on your findings to develop themes.

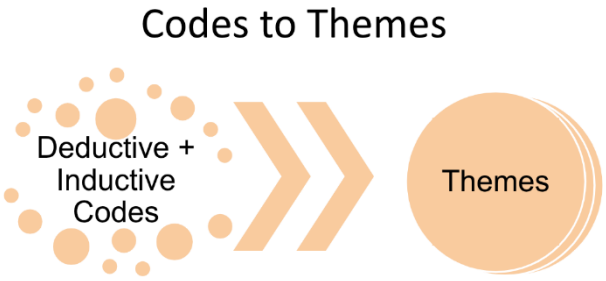
The example below shows multiple cases, sorted on one code, “Living Situation.” This code occurs in multiple cases in the sample data. This is only one snapshot. Finding meaning requires reviewing and sorting the data. The next section provides an example of combining codes to describe a theme.



Case #	Age (yrs	PTOD	Case Narative	Social Suppo	Living Situati	Violence	Loss of chil
1	33	189PP	At the time of her death, police reports state that she lived with her father and her children in a rural area.	1	1		
2	26	278PP	At the time of her death, she lived in a rural area and was living with her mother, stepfather and two children (6 years and 8 months old).	1	1		
4	38	223 PP	Life course issues significant for social isolation, unstable living arrangements, lack of family support, chronic psychiatric diagnoses, chronic opiate/ psychotropic substance abuse and unintended pregnancy with plan for adoption.	1	1		1
4	38	223 PP	223 days after delivery she was found unresponsive by her house mate with needle and syringe next to her. Police responded and pronounced death.		1		
5	23	333 days PP	Life course issues significant for criminal record, being member of a minority group (Latina), young and unmarried, unstable housing (living in friend's basement; applied for residency in group home while pregnant), boyfriend just overdosed, survived but was incarcerated three days before her own overdose.	1	1		

Moving Codes to Themes

Codes come together to form themes. Having performed the analytical tasks, read your coded data, and review your memos, to identify emerging themes.



This table shows three codes, samples of data from those codes across multiple cases, and analytic notes related to those codes. A summary thematic finding is described.

Analysis Question: How does social support affect the pregnancy and postpartum experience of persons who had a pregnancy-associated death?			
Code	**Sample of Data (to analyze read ALL data)**	**Analysis Notes**	**Thematic Findings**
Substance Use (Deductive and Topic)	• Life course issues significant for no prenatal care, alprazolam and oxycodone use in pregnancy, father of baby in out of state treatment facility • Previously obtaining suboxone off the street prior to pregnancy	• Substance use history includes links to social network • Substance use continues through pregnancy	Pregnant persons with substance use often experienced weak social context of housing and social support
Unstable Housing (Inductive and Analytical)	• She stated she lived alone, had been homeless and living in a hotel • She was homeless and reportedly moving back and forth between two cities and friends/relatives • Life course issues significant for unstable housing (living in friend's basement)	• Housing instability connected with social network shifts	
Social Support Network (Inductive and Analytical)	• Life course issues significant for unstable housing (living in friend's basement; boyfriend just overdosed, survived but was incarcerated three days before her own overdose • At the time of the first baby's birth, the patient was living with her mother. Her mother's address was listed as hers at the beginning of the second pregnancy. At the time of her death, however, her mother was living out of state • Father of baby in out of state treatment facility	• Social network engaged in substance use • Social network and living situation overlap • Social network	

Exercise 7A: Using Coded Data to Identify Themes

What codes from your data might you analyze to identify a theme? List them here.

Reliability and Validity

It can be challenging to feel confident that you truly "have it right." You cannot recalculate qualitative data in the same way possible with quantitative data.

Below are some strategies for considering the reliability (consistency) and validity (trustworthiness) of your qualitative analysis.

Reliability Strategies	Validity Strategies
• Establish a common code structure • Work with other coders as feasible • Assess intercoder agreement	• Allow peer review • Clarify research bias through reflection • Triangulate (looking at multiple sources to help explain a finding) • Generate thick (detailed) descriptions • Look for negative case or disconfirming evidence

Chapter 7 Summary

Chapter 7 illustrates options for analyzing your data and moving from codes to themes. This process is iterative and ideally collaborative. There is not one clear step by step path, rather multiple strategies for working with your data and seeing what emerges.

Chapter 7 Notes

Identify Themes

Work with your data and use your spreadsheet to practice some of the potential analytical tasks. Below, list which strategies you use to explore your practice data. Make notes about what themes you see emerging.

CHAPTER 8: STRONG QUALITATIVE FINDINGS

Once you have conducted your analysis and developed your findings, you will want to share the findings. This chapter will briefly discuss tools for presenting your analysis to stakeholders. This chapter does not share information on preparing qualitative findings for research publication. More advanced training resources can be found in Appendix 2: Additional Resources.

Learning Objectives

After reviewing this chapter, MMRIA users will be able to:

- **Identify potential audiences** for qualitative findings
- **Describe strategies for presenting** qualitative findings
- **Explain the issues** in quantifying data

Consider your Audience

In preparing to share your qualitative findings, consider your audience. Review the list of potential audiences below and include any additional thoughts about who might be interested in your findings.

Potential Audiences

- Maternal Mortality Review Committees
- Clinicians
- Legislators
- _____
- _____
- _____

As you prepare to share your findings, consider the following factors to guide your plans. In the righthand column, make notes about how you might share your qualitative findings.

Factor	Guidance	Sharing Your Analysis
Consider your audience	• Consider the amount of depth, context, or focus needed for your audience	• Who is your audience and what will they need?
Share your methodology	• Be prepared to provide basic details on your methodology for all audiences • Go more in-depth on methods for audiences that need to understand your approach	• What will you share about your methodology?
Give context of your analysis	• Share your analysis question to ground your findings • Provide details to help explain the context of your findings – context given may vary by audience	• What context will be important?
Tell a story	• Include visuals, timelines, and details that place the data in context	• How will you tell a story?
Use illustrative quotes	• Share quotes from your data that are the most illustrative and give “voice” to your findings	• What quotes will help give voice?

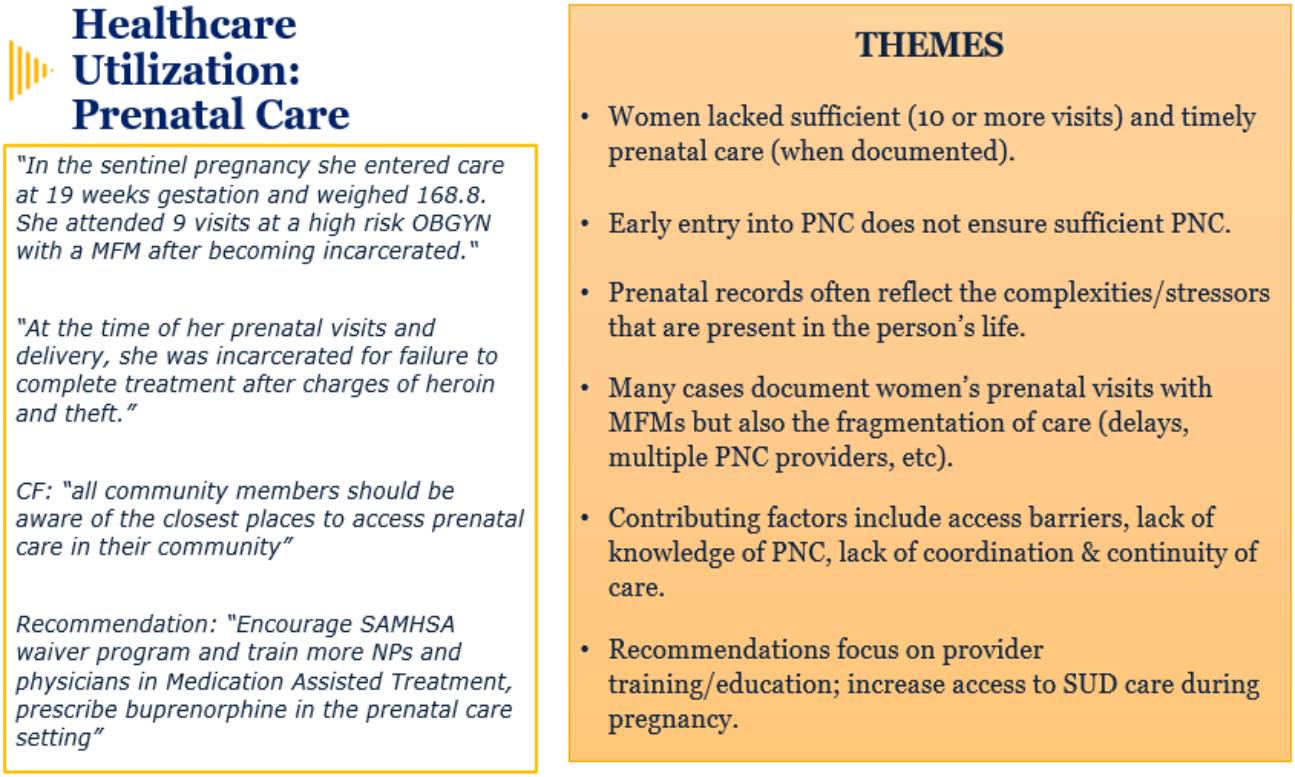
Quantify some data	• Quantify some of your qualitative data to show the “magnitude”
	  ○ Say “most,” “all,” “few,” to describe a phenomenon
	  ○ Offer ratios and/or percentages
	  ○ Be mindful of over quantification – offering some scale is helpful but not always feasible
		• What is a finding you might quantify to show magnitude?

Present your Data

There are multiple strategies for presenting qualitative data. Below are examples of sharing themes and illustrative quotes and using timelines, models, and infographics to show findings. Beyond the strategies described in Chapter 5 for protecting confidentiality, as you move through the process of presenting your data it will also be important to consider whether illustrative or highlight quotes contain unique details that could inadvertently identify an individual.

Share Themes and Illustrative Quotes

Below is an example of the presentation of findings from an analysis of receipt of prenatal care using data from the MMRIA Case Narratives, Contributing Factors, and Committee Recommendations. Illustrative quotes are shown on the left and the themes are detailed on the right.



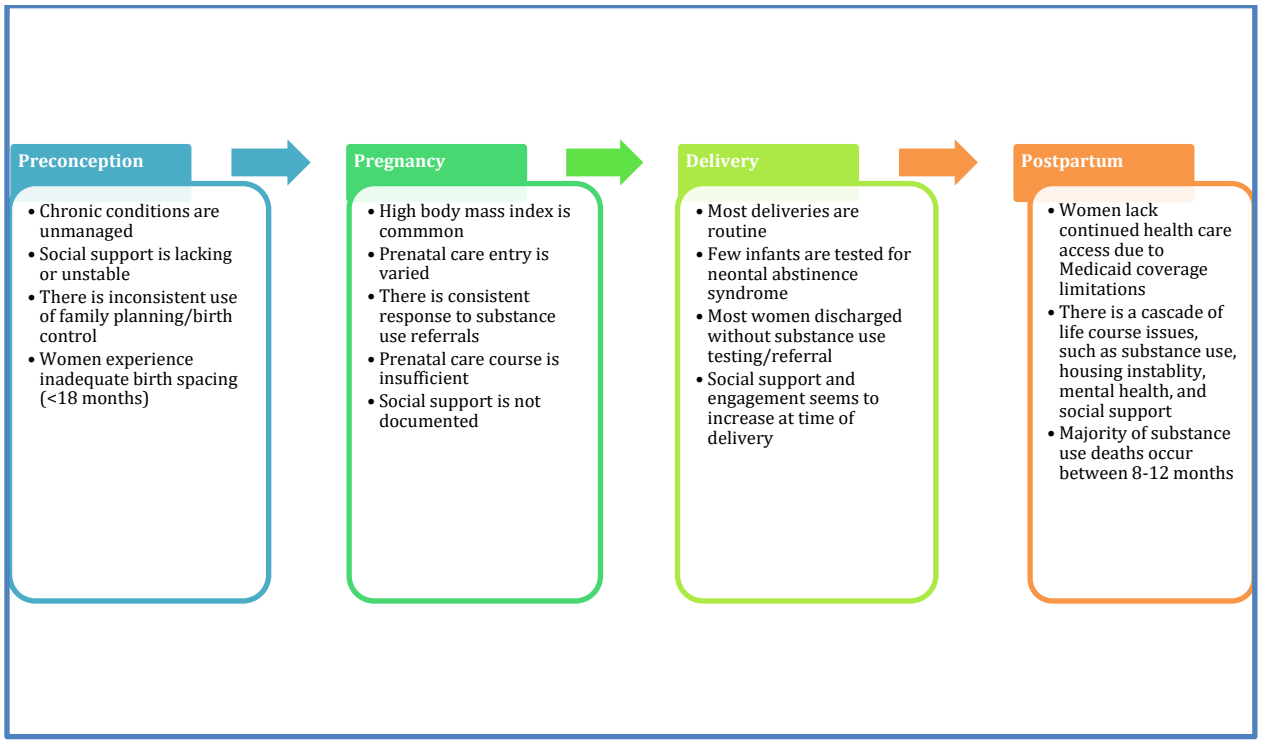
Highlight Quotes

Another strategy for using quotes in reports and presentations is to highlight compelling quotes. Format the quote in a way that makes it easy to read and visually engaging. Highlight words that are important for your findings.

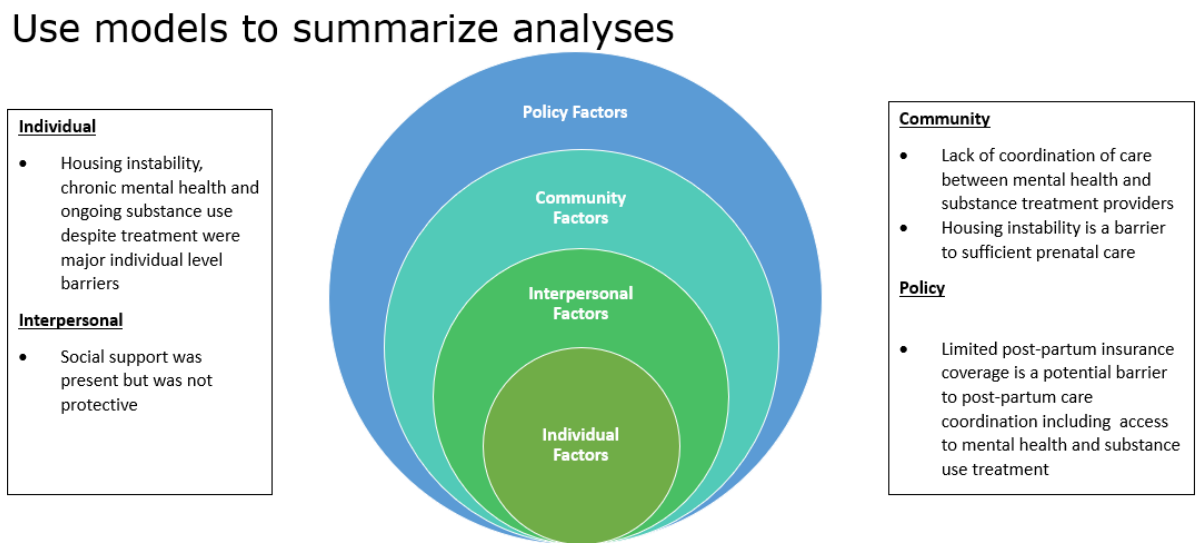
> She stated she **lived alone**, had been **homeless** and living in a hotel, but that she had to **vacate** the hotel room (**the day after delivery**)
>
> - **Case 4**

Use Visuals to Show Relationships

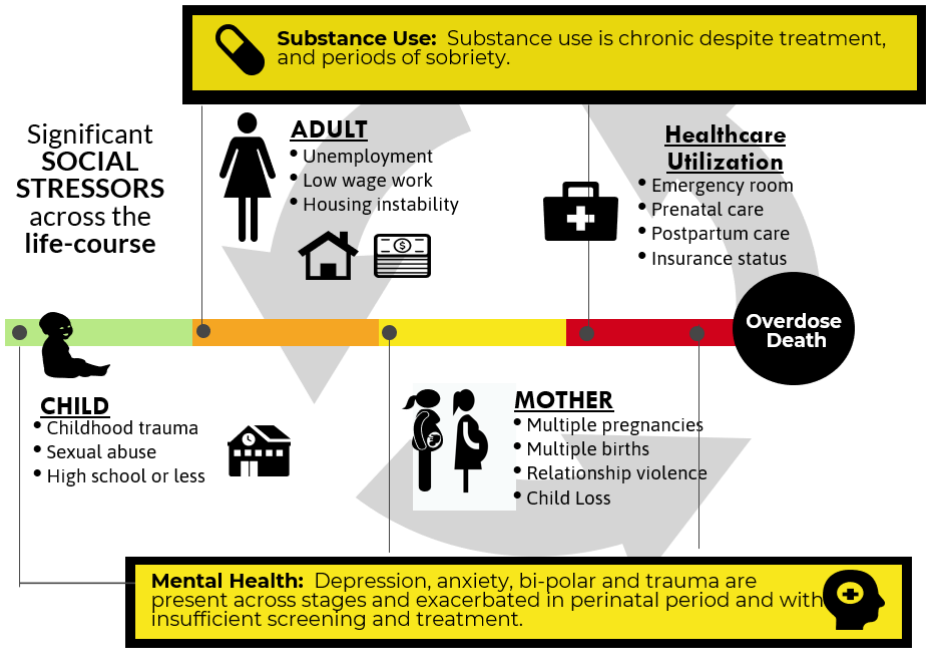
Tables and timelines can sort findings into different categories. Consider the example below that summarizes findings across stages of pregnancy.



Models can be used to describe findings in the data. This example uses the Socioecological Model to summarize analysis across cases to describe maternal mortality at multiple levels.



Infographics can help create a powerful message and framework for sharing your findings. Below is an example that considers social stressors over the life course and the impact on overdose deaths. Using engaging visuals can help explain findings.



Chapter 8 Summary

Sharing your analysis will help your findings have impact. Consider your audience as you choose from a variety of strategies to communicate your analysis.

Chapter 8 Notes

Take a moment to capture any thoughts about opportunities and challenges you expect in sharing your findings.

Who is a new audience you think could find value in your qualitative analysis?

CHAPTER 9: CONCLUSION

Congratulations on working your way through this Resource Guide. You should now be able to:

- **Describe the value and role** of qualitative data
- **Describe the types of MMRIA** qualitative data
- **Describe the qualitative data** analytical process
    - Develop an analysis question and analysis plan
    - Develop and apply coding strategies to MMRIA data using basic tools
    - Identify themes from coded data
- **Describe strategies** for presenting findings

Working through this guide is a **START** in your development as a qualitative analyst. You can continue to develop as a qualitative analyst by:

- **Continuing to practice** and apply your skills
- **Working with colleagues** to support each other in developing qualitative skills
- **Seeking opportunities** to advance your skills with training opportunities
- **Sharing** your learnings with others
- **Advocating** for improvements in qualitative data

As you continue to work to reduce maternal mortality in your jurisdiction, you have an opportunity to elevate the value of qualitative data. You can support inclusion of qualitative data by sharing your analysis with key stakeholders and also by identifying opportunities to enhance and improve qualitative data quality and availability. Good luck with this important work!

Reflection

Now that you have worked through this Resource Guide, make notes about what opportunities you see for improving qualitative data in your jurisdiction. What ideas do you have about improving qualitative data? What ideas do you have about building your capabilities as a qualitative analyst?

APPENDIX

This section of the Resource Guide provides additional information to support your understanding of qualitative analysis. It includes:

1. Glossary
2. Resources for advancing your practice
3. Frequently Asked Questions

APPENDIX 1: GLOSSARY

- **Code**: tag/label for assigning units of meaning to the descriptive or inferential information compiled during a study
- **Deductive**: arises from the topics/information already known from the analysis question or background information
- **Inductive**: arises from the data itself
- **Memoing**: the process of documenting your thoughts/decisions about the data, the methods you used to make sense of it, and notes about areas to come back to
- **Reading Up**: familiarizing yourself with your data by re-reading in order to enhance your understanding of it and to begin to spot patterns
- **Reliability**: how consistent are the data/measurement compared across similar conditions. In one word: precision
- **Theme**: A meaningful essence that describes patterns in the data
- **Triangulation**: looking at multiple sources to explain a finding
- **Validity**: how accurate are the data/measurement compared to the true state. In one word, accuracy

APPENDIX 2: ADDITIONAL RESOURCES

Qualitative Research Resources (General)

These important resources can guide you through the fundamentals of how to conduct qualitative research, including data collection and analysis.

- Creswell, J. W., & Noth, Cheryl N. (2018). Qualitative inquiry & research design: Choosing among five approaches. 4th edition. London. Sage Publications.
- Hennink, M. M., Hutter, I., & Bailey, A. (2011). Qualitative research methods. London: SAGE
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Strategies for Coding Qualitative Data

If you are interested in other methods of coding qualitative data, the following resources offer different methods from what we presented.

- The primary method in this Resource Guide uses Microsoft Excel to code the qualitative data. There are additional resources that document how to code in other ways using Microsoft Excel and Word:
    - Coding Textual Data with Word & Excel
    - Using Excel and Word to Structure Qualitative Data by Solveig Osborg Ose – doi: 10.1177/1936724416664948
    - Qualitative Data Analysis Using Microsoft Word Comments – Carsten Knoch blog post
    - If you know how to use Macros in Microsoft Word, Coding Text Using Microsoft Word is a great tutorial

- While they are not free to use, MaxQDA, Atlas.ti, NVivo, and DeDoose are a few examples of software that will assist with coding qualitative data. Each software program offers tutorials for further training.
    - MaxQDA2020
    - Nvivo
    - Atlas.ti
    - DeDoose

Qualitative Training Opportunities

There are a wide variety of training options available to enhance qualitative skills:

- Coursera Qualitative Research Methods
- University of Oxford
- Emory University
- Georgetown University McCourt School of Public Policy - Qualitative Research Methods Non-degree Certificate
- University of North Carolina Odum Institute
- University of Georgia Graduate Certificate of Qualitative Interdisciplinary Studies

APPENDIX 3: FREQUENTLY ASKED QUESTIONS

- **How do I code one piece of data for multiple codes?**

  It is not unusual for one piece of data to need multiple codes. It could be that one segment of data can be coded for a descriptive code (e.g., age, marital status) and a topic code (mental health). Consider if your segment of data is too large. Perhaps your data should be broken up into more segments in order to make coding more manageable. Once you have manageable segments, you can use multiple columns (with codes noted for each column) to tag one piece of data with multiple codes. Look to Chapter 6 for a review of this strategy.

- **How can I be confident of my conclusions?**

  Developing a robust process, documenting your steps and analytical insights, working with other coders, and challenging your findings by looking for disconfirming evidence will enhance your confidence that your conclusions are robust. Look to Chapter 7 for more information.

- **How can I persuade others that qualitative data is valuable?**

  You can help raise awareness of the value of qualitative analysis by:

  - Sharing examples from this Resource Guide that illustrate the limits of quantitative data and the need for qualitative data to answer some important questions
  - Showing how qualitative data analysis can inform prevention efforts
  - Reaching out to partners to discuss how to improve data quality
  - Sharing your analysis and methods to help others understand your process
  - Sharing resources for qualitative training

- **I do not have a lot of time and I do not know where to start, what do I do?**

  Try to make this process less overwhelming by just starting at the beginning. Identify an important question for analysis. If you are concerned about the time required to conduct a complex analysis, consider developing a more specific analysis question and/or a more specific population to focus your analysis. As you gain experience working through the qualitative analysis process, it will be easier to broaden your analysis and work with more data.

- **Can I combine quantitative data and qualitative data?**

  Yes. Combining qualitative and quantitative can provide a more complete sense of what is happening. For example, an analysis on barriers to prenatal care may include quantitative analysis of insurance status impact on prenatal care, numbers of visits, demographics on sufficient and insufficient prenatal care history, as well as qualitative analysis of prenatal care facilitators and barriers. This can be done through multiple methods and processes, such as triangulation or sequential mixing of the data.