Georgia Maternal Mortality

2012 *Case Review*

June 2015

Georgia Department of Public Health

Georgia Maternal Mortality

Dear Dr. Fitzgerald:

Please accept the enclosed report as the findings and recommendations of the Georgia Maternal Mortality Review Committee (MMRC) regarding 2012 maternal deaths in Georgia. The Committee shares these findings with the confidence that we can make a difference in the health and well-being of Georgia women and their families.

We are grateful for the strong support of the review process from the Georgia Department of Public Health, Centers for Disease Control and Prevention, the Georgia Obstetric and Gynecological Society, hospitals, coroners, pathologists and so many more.

We are pleased to have a dedicated, fully-functioning MMRC, and to have completed our first full year of case reviews and corresponding annual report. We look forward to continuing our mission to improve women's health and pregnancy outcomes, as well as, improving the review process and further supporting evidence-based findings.

The MMRC has the great privilege to serve you and the State of Georgia in this process.

Sincerely,

Michael K. Lindsay, MD, MPH
Chair, Georgia Maternal Mortality Review Committee

Table of Contents

Introduction

IN 2010, AMNESTY INTERNATIONAL RELEASED A REPORT ENTITLED "*Deadly Delivery: The Maternal Health Care Crisis In The USA*", which listed Georgia as the state with the highest maternal mortality rate in the nation.[1] Based on data from 2001-2006, Georgia's pregnancy-related maternal mortality rate was 20.2 deaths per 100,000 live births and has been rising ever since. In 2009, Georgia had a pregnancy-related maternal mortality rate of 24.8 deaths per 100,000 live births, in 2010 the rate was 23.2, and in 2011 the rate increased to 28.7.[2] Between 2001 and 2011, the pregnancy-related maternal mortality rate was on average four times higher in Black, non-Hispanic women (39.1 deaths per 100,000 live births) than White, non-Hispanic women (9.6 deaths per 100,000 live births). These staggering rates and the underlying racial and ethnic disparities served as the impetus for creation of a statewide maternal mortality review committee (MMRC).

The Georgia MMRC is the result of a three-year process of assessment, strategic planning, coordination and collaboration with the the Georgia Department of Public Health (DPH) in conjunction with the Centers for Disease Control and Prevention (CDC) and the Georgia Obstetric and Gynecological (OBGyn) Society. The support of the Georgia Legislature and Governor with the passage of SB 273 laid the foundation for this work by providing legal protections for committee members and the review process, ensuring confidentiality of the review process and providing the committee with the necessary authority to collect data for case review. This report relects the first year of case reviews (2012).

CDC assisted in the development of a framework for the process of case identification, selection, and review. The Georgia Department of Public Health, Maternal and Child Health (MCH) Section established a contract with the Georgia OBGyn Society for carrying out the functions of medical record abstraction, development of case summaries and establishment and coordination of the overall team meetings and review process.

GEORGIA MMRC

The Georgia MMRC is a multidisciplinary committee whose geographically diverse members represent various specialties, facilities, and systems that interact with and impact maternal and child health. The committee consists of approximately 45 members who commit to serve a three year term.

GEORGIA MMRC MISSION STATEMENT

The mission of the Georgia MMRC is to identify pregnancy-associated deaths, review those caused by pregnancy complications and other selected deaths, and identify problems contributing to these deaths and interventions that may reduce these deaths.

Maternal Mortality Review Process

FIGURE 1: OVERVIEW OF THE MATERNAL MORTALITY REVIEW PROCESS

Case Identification

Identifying maternal deaths after an occurrence is a complex issue. Multiple strategies were employed to identify possible cases of maternal deaths; these strategies were performed concurrently:

- The Georgia death certificate has a check box indicating if the deceased died while pregnant or within one year of a pregnancy
- Passive surveillance reports submitted by mandated reporters (including hospitals, physicians and all other providers of healthcare, coroners, medical examiners, emergency medical service providers, and police)
- The Vital Records Section of DPH linked death certificates of women of reproductive age (14 through 44) to birth/fetal death certificates by matching on a combination of identifiers (including, names and date of birth)
- The Maternal and Child Health Section of DPH linked death certificates of women of reproductive age to birth/fetal death certificates using a probabilistic match of select identifiers (including, social security numbers, names, date of birth). A probabilistic match allows linking death certificates to birth/fetal death certificates when slight variations in records may exist; this allows for the linkage of additional cases that cannot be linked through a deterministic match (a match of the exact values), similar to the aforementioned process performed by the Vital Records Section.

Maternal Mortality Case Definitions

- **PREGNANCY-ASSOCIATED DEATHS:** The death of a woman while pregnant or within one year of end of pregnancy, irrespective of cause
- **PREGNANCY-RELATED DEATHS:** The death of a woman while pregnant or within one year of end of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by her pregnancy or its management, but not from accidental or incidental causes

Cases Selected for Abstraction

Identified cases were reviewed by a subcommittee that consists of the Georgia MMRC Chair, two CDC epidemiologists/clinicians, the Georgia MMRC Coordinator, and one additional clinician and/or epidemiologist. This subcommittee made a preliminary classification of "pregnancy-associated" or "case to be abstracted."

The Georgia MMRC Coordinator and/or designated case abstractor investigated and collected all available pertinent information on cases selected for abstraction. The information collected includes prenatal visit history, hospital/clinic medical records, prescribed medication history, coroner/autopsy reports, emergency medical services transport records and police reports. Thereafter, case summaries were developed synthesizing all the information that was collected.

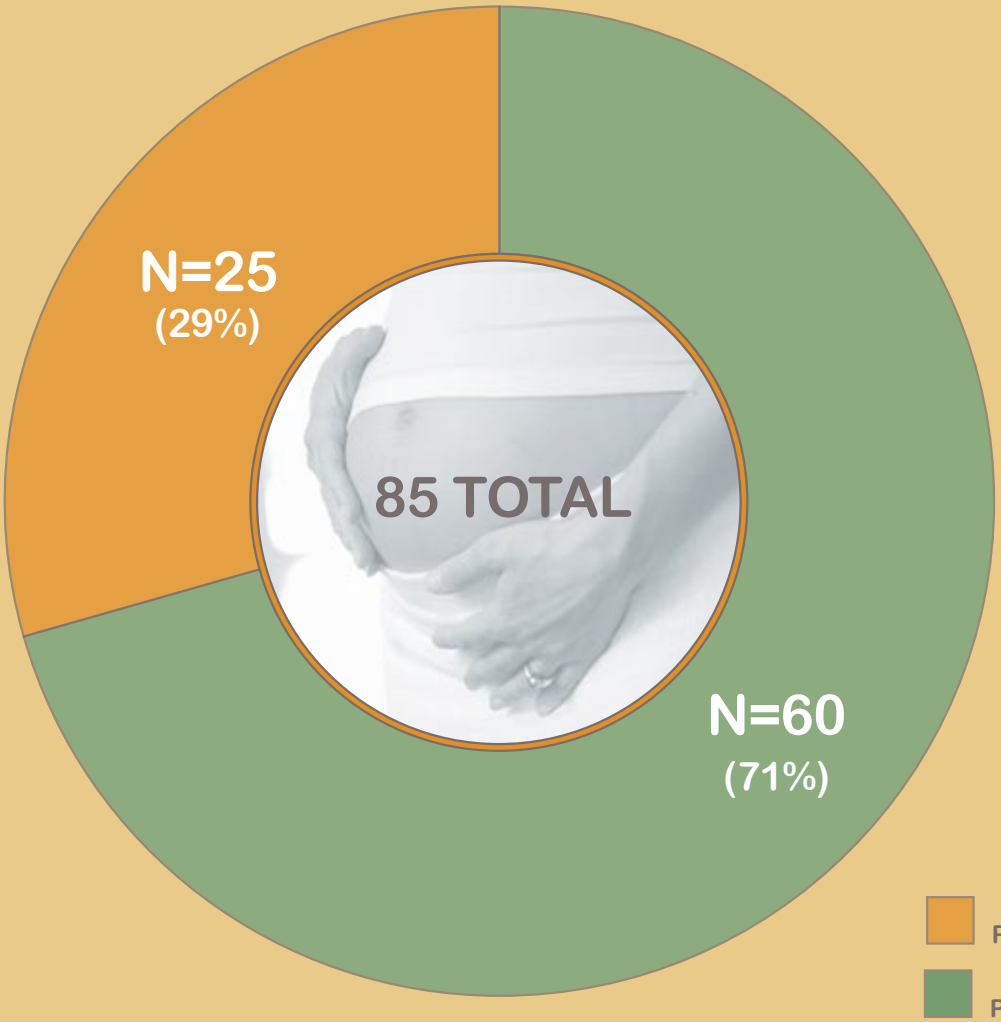
Committee Review Process

The Georgia MMRC convened quarterly to review cases selected by the subcommittee. The goal was for the Georgia MMRC to review all pregnancy-related deaths as well as pregnancy-associated deaths due to suicide, drug overdose or accidents within six months of end of pregnancy.

The committee, as part of its discussion, designated cases "pregnancy-associated", "pregnancy-related" or "non-case." Also, medical and non-medical issues that contributed to the death were identified, as well as possible interventions to address the issues that arose with the intent to decrease the risk of future deaths.

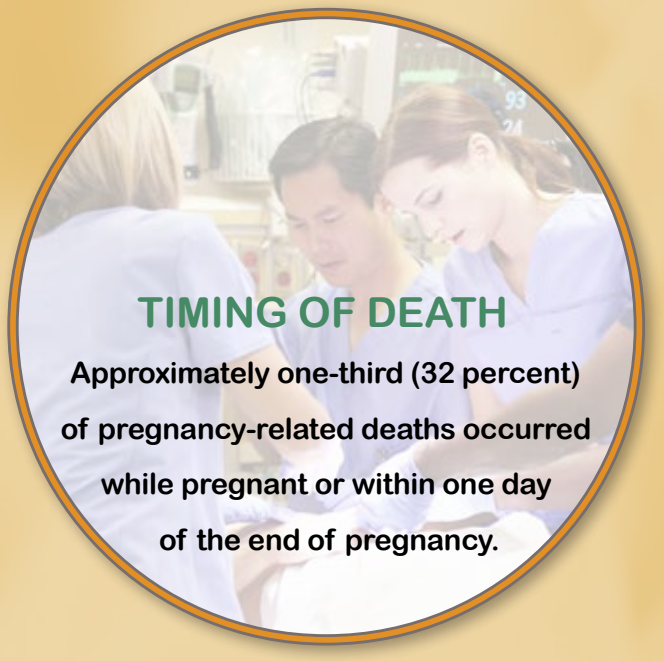
Overview of Cases

FIGURE 2: MATERNAL MORTALITY CASES, GEORGIA, 2012



THE MULTIPLE STRATEGIES of case identification yielded 85 cases of maternal deaths. Sixty cases (71 percent) occurred while pregnant or within one year of the end of pregnancy (pregnancy-associated). Twenty-five cases (29 percent) were found to be related to or aggravated by the cause of pregnancy or its management (pregnancy-related).

Almost two-thirds of the maternal deaths occurred more than 42 days postpartum (Table 1). However, over half (52 percent) of the pregnancy-related deaths occurred within the first 42 days after the end of the pregnancy. Sixty percent of the maternal deaths occurred to women 29 years of age and younger, with the youngest death occurring to a 17 year old. African-Americans were the most predominant racial/ethnic group of the cases reviewed. Marital status was missing at a high rate (approximately 30 percent) for the cases; however, over one-third of the cases were married at the time of death. While occupational status varied, the most prevalent occupation was a homemaker (28 percent). The highest level of education attained by more than 75 percent of the cases was a high school diploma or less.



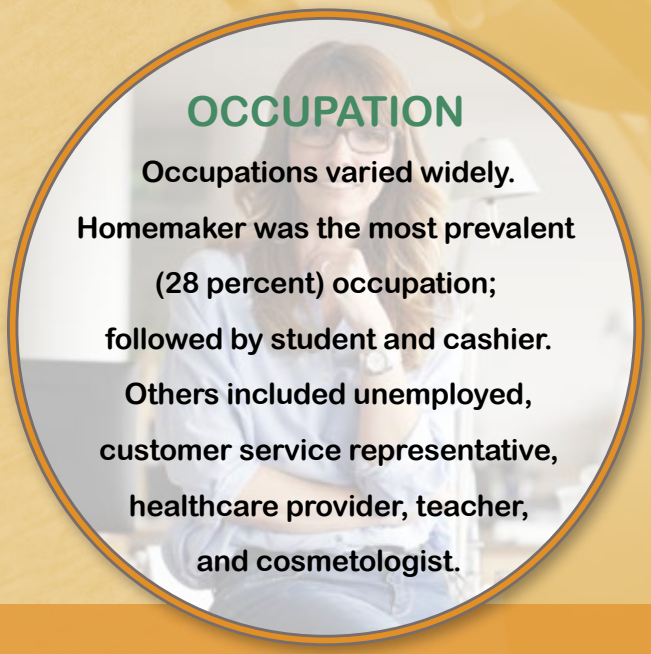
TIMING OF DEATH

Approximately one-third (32 percent) of pregnancy-related deaths occurred while pregnant or within one day of the end of pregnancy.

RACE / ETHNICITY

African-Americans were the most predominant racial/ethnic group of cases reviewed; accounting for 68 percent of pregnancy-related deaths.

DEMOGRAPHIC FACTORS ASSOCIATED WITH MATERNAL MORTALITY



OCCUPATION

Occupations varied widely. Homemaker was the most prevalent (28 percent) occupation; followed by student and cashier. Others included unemployed, customer service representative, healthcare provider, teacher, and cosmetologist.

TABLE 1:
DEMOGRAPHIC FACTORS ASSOCIATED WITH MATERNAL MORTALITY, GEORGIA, 2012

	TOTAL N (%)	PREGNANCY-ASSOCIATED N (%)	PREGNANCY-RELATED N (%)
	N=85	N=60	N=25
TIMING OF DEATH			
While pregnant	13 (15.3%)	8 (13.3%)	5 (20.0%)
Less than 1 day postpartum	3 (3.5%)	0 (0%)	3 (12.0%)
1-42 days postpartum	17 (20.0%)	5 (8.3%)	12 (48.0%)
43+ days postpartum	52 (61.2%)	47 (78.3%)	5 (20.0%)
AGE			
<20	5 (5.9%)	4 (6.7%)	1 (4.0%)
20-24	25 (29.4%)	17 (28.3%)	8 (32.0%)
25-29	21 (24.7%)	14 (23.3%)	7 (28.0%)
30-34	16 (18.8%)	15 (25.0%)	1 (4.0%)
35-39	12 (14.1%)	7 (11.7%)	5 (20.0%)
40+	6 (7.1%)	3 (5.0%)	3 (12.0%)
RACE/ETHNICITY			
Black or African American	41 (48.2%)	24 (40.0%)	17 (68.0%)
White	36 (42.4%)	30 (50.0%)	6 (24.0%)
Hispanic	5 (5.9%)	4 (6.7%)	1 (4.0%)
Other	2 (2.4%)	2 (3.3%)	0 (0%)
Unknown	1 (1.2%)	0 (0%)	1 (4.0%)
MARITAL STATUS			
Married	32 (37.6%)	22 (36.7%)	10 (40.0%)
Never married	24 (28.2%)	16 (26.7%)	8 (32.0%)
Divorced	3 (3.5%)	3 (5.0%)	0 (0%)
Unknown	26 (30.6%)	19 (31.6%)	7 (28.0%)
OCCUPATION			
Homemaker	24 (28.2%)	15 (25.0%)	9 (36.0%)
Student	6 (7.1%)	5 (8.3%)	1 (4.0%)
Cashier	4 (4.7%)	3 (5.0%)	1 (4.0%)
Other	49 (57.6%)	35 (58.3%)	14 (56.0%)
Unknown	2 (2.4%)	2 (3.3%)	0 (0%)
HIGHEST LEVEL OF EDUCATION ATTAINED			
No high school diploma	23 (27.1%)	15 (25.0%)	8 (32.0%)
High school diploma	42 (49.4%)	31 (51.7%)	11 (44.0%)
Associate's degree	10 (11.8%)	7 (11.7%)	3 (12.0%)
Bachelor's degree	7 (8.2%)	6 (10.0%)	1 (4.0%)
Master's degree	1 (1.2%)	0 (0%)	1 (4.0%)
Unknown	2 (2.4%)	1 (1.7%)	1 (4.0%)

ASSOCIATED PRENATAL / INTRAPARTUM FACTORS

OVERALL, THE PRENATAL AND intrapartum care factors are missing at an extremely high rate for maternal mortality cases; therefore, the findings are interpreted with caution (Table 2). More than half (58 percent) of the cases with a known pre-pregnancy weight had a BMI of 25.0 or greater (overweight, obese, or morbidly obese).

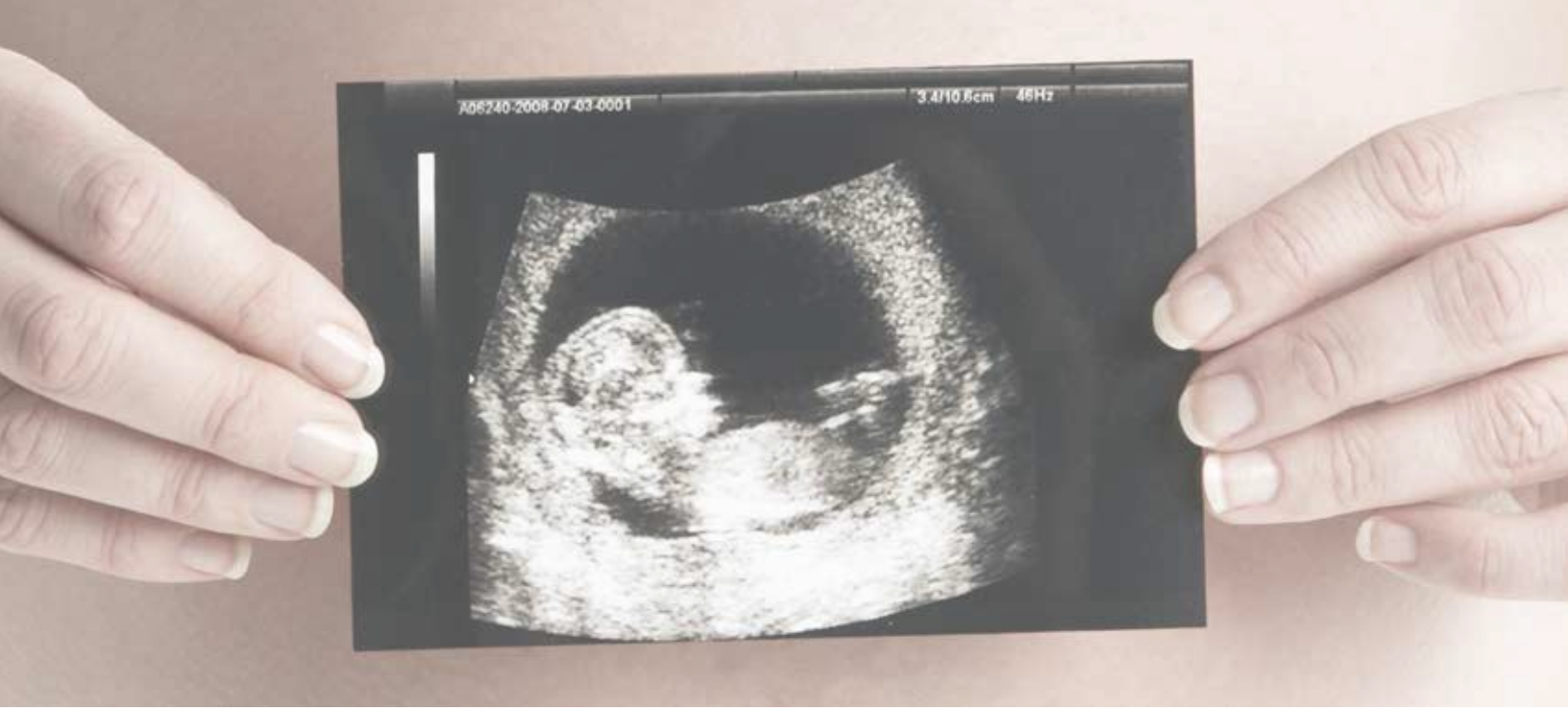
Approximately 35 percent of cases began prenatal care in their first trimester. Of the cases where adequacy of prenatal care (Kotelchuck Index*) was derived, approximately 56 percent of the cases received adequate plus care.

More than half (53 percent) of the cases delivered their babies at a facility that can provide subspecialty perinatal level of care. Physicians (MD) were predominantly (63 percent) noted as the labor and delivery practitioner.

**The Kotelchuck Index, also called the Adequacy of Prenatal Care Utilization (APNCU) Index, is a classification of the adequacy of prenatal care received by the mother based on a ratio of observed to expected prenatal care visits. The classes are as follows: Inadequate (received less than 50 percent of expected visits), Intermediate (50-79 percent), Adequate (80-109 percent), and Adequate Plus (110 percent or more).*

TABLE 2:
PRENATAL/INTRAPARTUM FACTORS ASSOCIATED WITH MATERNAL MORTALITY, GEORGIA, 2012

	TOTAL N (%)	PREGNANCY-ASSOCIATED N (%)	PREGNANCY-RELATED N (%)
PRE-PREGNANCY WEIGHT	**N=85**	**N=60**	**N=25**
Underweight (BMI: less than 18.5)	3 (3.5%)	1 (1.7%)	2 (8.0%)
Normal weight (BMI: 18.5-24.9)	8 (9.4%)	6 (10.0%)	2 (8.0%)
Overweight (BMI: 25.0-29.9)	3 (3.5%)	2 (3.3%)	1 (4.0%)
Obese (BMI: 30.0-39.9)	7 (8.2%)	5 (8.3%)	2 (8.0%)
Morbidly obese (BMI: 40.0 or greater)	5 (5.9%)	1 (1.7%)	4 (16.0%)
Unknown	59 (69.4%)	45 (75.0%)	14 (56.0%)
TRIMESTER PRENATAL CARE BEGAN	**N=85**	**N=60**	**N=25**
First trimester	30 (35.3%)	24 (40.0%)	6 (24.0%)
Second trimester	16 (18.8%)	8 (13.3%)	5 (20.0%)
Third trimester	1 (1.2%)	3 (5.0%)	1 (4.0%)
Unknown	38 (44.7%)	25 (41.7%)	13 (52.0%)
KOTELCHUCK INDEX* (PRENATAL CARE)	**N=71**	**N=51**	**N=20**
Inadequate	6 (8.5%)	5 (9.8%)	1 (5.0%)
Intermediate	4 (5.6%)	4 (7.8%)	0 (0%)
Adequate	9 (12.7%)	6 (11.8%)	3 (15.0%)
Adequate plus	24 (33.8%)	18 (35.3%)	6 (30.0%)
Unknown	28 (39.4%)	18 (35.3%)	10 (50.0%)
PERINATAL LEVEL OF CARE OF DELIVERY FACILITY	**N=74**	**N=52**	**N=22**
Basic	14 (18.9%)	11 (21.2%)	3 (13.6%)
Subspecialty	39 (52.7%)	27 (51.9%)	12 (54.5%)
Specialty	10 (13.5%)	9 (17.3%)	1 (4.5%)
Unknown	11 (14.9%)	5 (9.6%)	6 (27.3%)
LABOR AND DELIVERY PRACTITIONER	**N=71**	**N=51**	**N=20**
MD	45 (63.4%)	33 (64.7%)	12 (60.0%)
CNM/CM	5 (7.0%)	5 (9.8%)	0 (0%)
Other	1 (1.4%)	1 (2.0%)	0 (0%)
Unknown	20 (28.2%)	12 (23.5%)	8 (40.0%)
MODE OF DELIVERY	**N=71**	**N=51**	**N=20**
Vaginal	11 (15.5%)	9 (17.6%)	2 (10.0%)
Cesarean	27 (38.0%)	13 (25.5%)	14 (70.0%)
Unknown	33 (46.5%)	29 (56.9%)	4 (20.0%)



APPROXIMATELY ONE-THIRD (37 percent) of maternal mortality cases delivered a preterm baby; a greater proportion (50 percent) of preterm births was noted in pregnancy-related cases (Table 3). 61 percent of babies were born normal weight (2500 grams or greater).

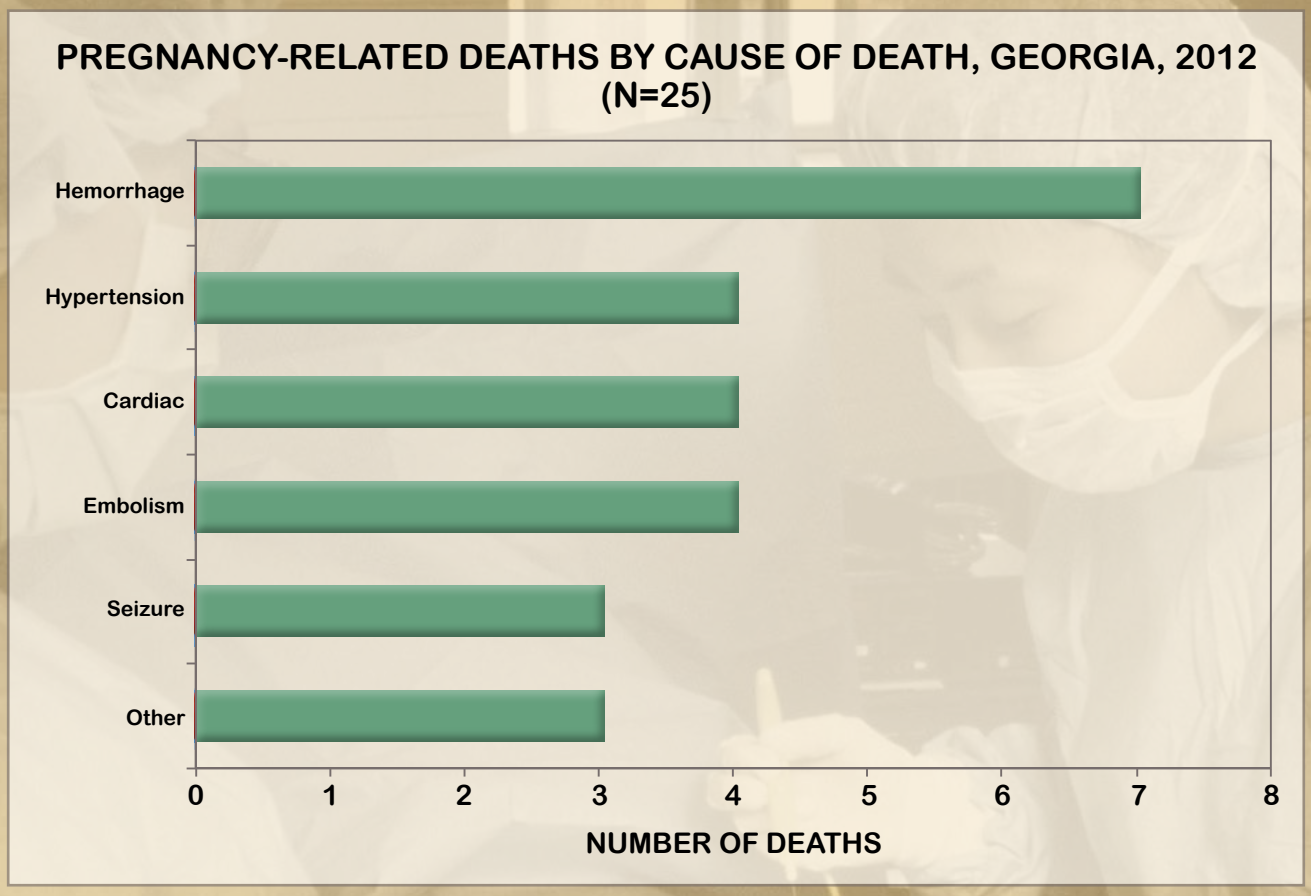
TABLE 3:
BIRTH OUTCOMES ASSOCIATED WITH MATERNAL MORTALITY, GEORGIA, 2012

	TOTAL N (%)	PREGNANCY-ASSOCIATED N (%)	PREGNANCY-RELATED N (%)
GESTATIONAL AGE	**N=71**	**N=51**	**N=20**
Preterm (less than 37 weeks)	26 (36.6%)	16 (31.4%)	10 (50.0%)
Early Term (37-38 weeks)	6 (8.5%)	5 (9.8%)	1 (5.0%)
Full Term (39-40 weeks)	19 (26.8%)	15 (29.4%)	4 (20.0%)
Late Term (41 weeks)	0 (0%)	0 (0%)	0 (0%)
Post Term (42 weeks or greater)	2 (2.8%)	1 (2.0%)	1 (5.0%)
Unknown	18 (25.4%)	14 (27.5%)	4 (20.0%)
BIRTH WEIGHT	**N=71**	**N=51**	**N=20**
<1500 grams	6 (8.5%)	4 (7.8%)	2 (10.0%)
1500 - 2499 grams	8 (11.3%)	3 (5.9%)	5 (25.0%)
2500 grams or greater	43 (60.6%)	34 (66.7%)	9 (45.0%)
Unknown	14 (19.7%)	10 (19.6%)	4 (20.0%)

Causes of Pregnancy-Related Deaths

GEORGIA MMRC FOUND 25 DEATHS from pregnancy-related causes.

The five most common causes were hemorrhage (28 percent), hypertension (16 percent), cardiac (16 percent), embolism (16 percent), and seizure (12 percent).



Hemorrhage

The seven pregnancy-related deaths from hemorrhage were due to a variety of circumstances including placental abruption, ruptured ectopic pregnancy, and inefficient replacement of blood products. Contributing factors included:

- Women unaware of the warning signs of abruption, leading to delays in seeking care
- Providers not recognizing abruption and the urgency for treatment

Hypertension

Hypertension and eclampsia was a common cause of death for pregnant women. Four cases were found by the Georgia MMRC to be pregnancy-related. Issues identified as contributing to poor clinical outcomes included:

- Delay in use of antihypertensive medications during pregnancy or throughout the spectrum of pregnancy, delivery and postpartum
- Need for more aggressive management and control of blood pressure from the time of delivery through the first few weeks after the delivery
- Early Response Teams in the hospital were not available or activated
- Delayed clinical response to emergency hypertensive crisis

Cardiac Disorders

Four pregnancy-related deaths were caused by cardiomyopathy. Among the issues uncovered from the four cases reviewed by the committee:

- Women were unaware of their risk and/or warning signs of cardiac disease
- Providers did not screen, educate, and/or refer women at risk for cardiomyopathy

Embolism

Four deaths were thromboembolic in nature; obesity was a comorbidity in one case. Findings from these cases included:

- Obese patients placed on prolonged bed rest fostering a thrombotic event
- Lack of prophylaxis to prevent thrombosis

Seizure Disorders

Three cases involved women with histories of seizure disorder who died from complications following a seizure. A common theme was that medication and/or dosage had not been appropriately adjusted to meet the changing physiological needs of the prenatal and postpartum periods.

Suicide/Depression

The committee identified one pregnancy-related death with clinical documentation of depression. In this case, the woman had not taken her prescribed medications. Of note, and discussed later, are three additional suicide cases reviewed by the committee and determine to be pregnancy-associated. In the pregnancy-associated cases, there was no medical documentation of screening, treatment and/or referral for depression. Generalized findings for these pregnancy-related and pregnancy-associated suicides include:

- Women unaware of the importance of staying on prescribed medication
- Lack of understanding among providers and patients regarding the benefits and safety of antidepressant therapy during pregnancy, postpartum and while breastfeeding

ADDITIONAL KEY FINDINGS

Obesity

Obesity was a compounding factor in many cases reviewed by the committee. Evidence demonstrates that women who are obese are at increased risk for complications during pregnancy and postpartum. Committee findings included:

- Lack of consult to a perinatologist and/or cardiologist for morbidly obese pregnant women
- Lack of diligent assessment for other risk factors stemming from obesity
- Obese patients placed on prolonged bed rest fostering a thrombotic event
- Lack of prophylaxis to prevent thrombosis

Chronic Medical Conditions

Chronic medical conditions increase risk during pregnancy. Generalized findings revealed from cases of women with preexisting medical conditions included:

- Women with preexisting health conditions not always treated according to their risk
- Women with chronic health conditions unaware of increased risks during pregnancy
- Providers did not recognize or assess for increased risk of comorbidities among pregnant and postpartum women

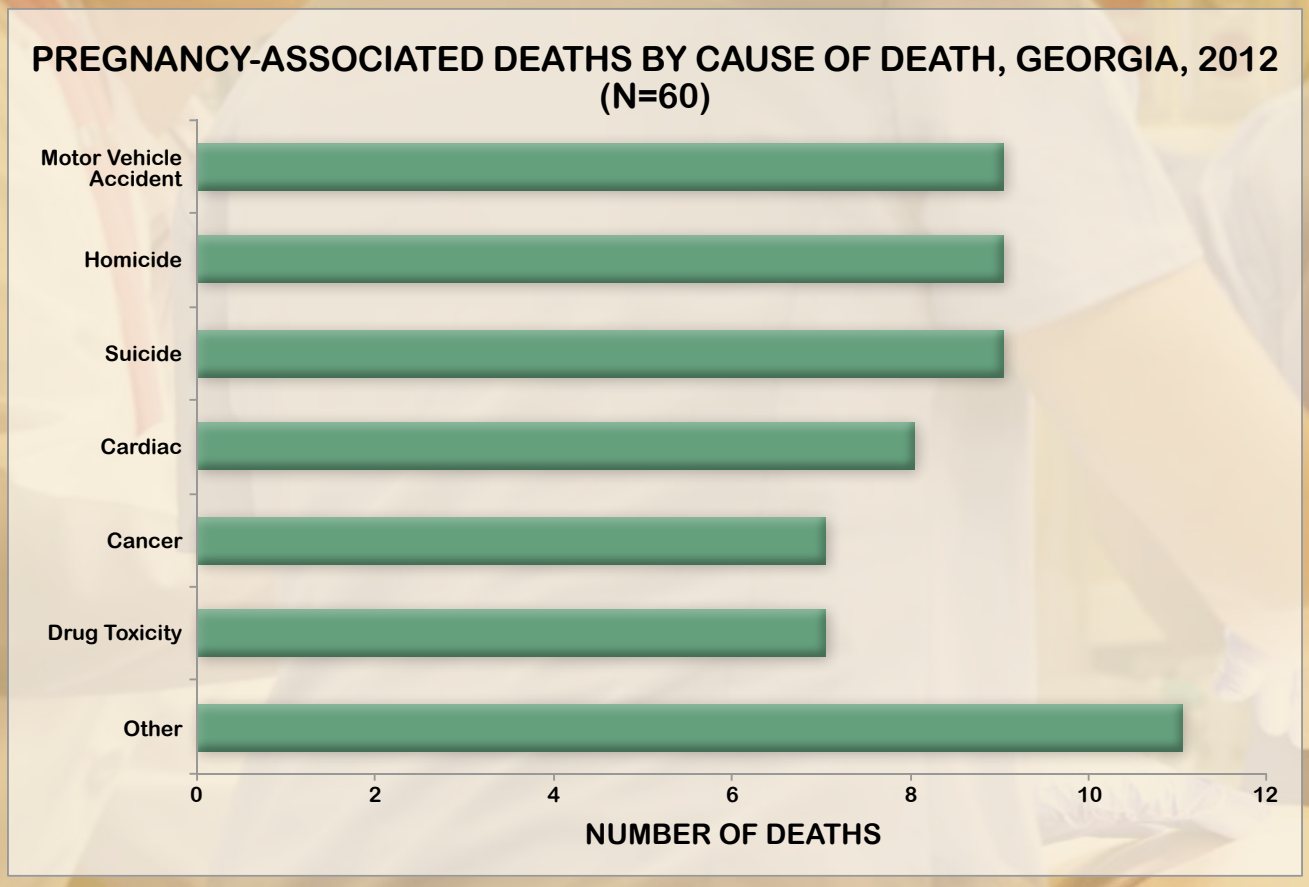
General Provision of Care

These findings included access to care, supplies, services and quality or type of services available. Georgia is a large state with both urban and large geographic rural areas leading to differences in availability and levels of care. Generalized findings include:

- Lack of mental health services for pregnant/postpartum women
- Women not accessing high-risk care, possibly due to lack of referral or geographic challenges
- Rural hospitals possibly having limited stores of blood products
- Lack of diligent follow-up care for women at risk for complications (includes those with chronic health issues and complications of pregnancy, labor and delivery, or miscarriage)
- Women with chronic health issues needing contraceptive counseling and access to effective contraceptive agents

Causes of Pregnancy-Associated Deaths

GEORGIA MMRC IDENTIFIED 60 DEATHS that were pregnancy-associated (not causally related to the pregnancy). These deaths occurred during or within a year of pregnancy with the six most frequent causes being: Motor vehicle accidents (15 percent), homicide (15 percent), suicide (15 percent), heart disease (13 percent), cancer (12 percent), and drug toxicity (12 percent).



Drug Toxicity

A number of the cases reviewed demonstrated evidence of either illegal substance abuse or adverse effects and inappropriate use of prescribed medications. Case review indicates that medical personnel were sometimes unaware of medications prescribed by other providers or the medication history was incompletely documented. Patients appeared unaware of the effects of medication on pregnancy or the effects of mixing medications. This category, although ruled pregnancy-associated, demonstrates the need for both provider and patient education due to the following identified issues:

- Women unaware of the importance of staying on prescribed medications for a chronic condition during pregnancy (antidepressants, anti-seizure, anti-hypertensive medications)
- Women unaware of the danger in mixing multiple substances
- Women prescribed multiple medications that, when taken simultaneously, produce adverse effects
- Illegal substance use causing adverse outcomes on a woman's health (promoting uterine atony, delay in seeking care)

Motor Vehicle Accidents

Nine pregnancy-associated deaths occurred as a result of motor vehicle accidents. A question has arisen as to the seat belt status of pregnant women in motor vehicle accidents, and the committee recommended this information be collected for future case reviews.

Opportunities for Prevention

AFTER EACH CASE REVIEW, the Georgia MMRC identifies preventable contributing factors to pregnancy-related deaths. The following is a summary of the potential contributing factors identified during committee review of the 2012 cases and demonstrates the significant opportunities for reducing maternal mortality in Georgia. As the identified factors pertain to only one year of cases reviews, these findings will become more refined and directed during subsequent years of case reviews. This initial list is provided in its entirety so other stakeholders in the state can understand some of the contributors to maternal deaths in Georgia and can particpate in improvement activities suited to their organizational and individual missions.

Hemorrhage

- Slow recognition and treatment of hemorrhage in pregnant and postpartum women by providers
- Women possibly unaware of the warning signs of abruption and hemorrhage
- Women possibly unaware of the warning signs of ectopic pregnancy and the need to seek prompt medical attention

Cardiac Disorders

- Risk factors and symptoms associated with cardiomyopathy were not recognized by healthcare providers
- Warnings of cardiac symptoms were not included on postpartum discharge instructions

Seizure Disorders

- Women with a known history of seizure disorders were not adequately monitored throughout the pregnancy and postpartum period to ascertain appropriate medication dosage
- Women with seizure disorders discontinued use of prescribed medication during pregnancy

Suicide / Depression

- Potential lack of awareness by providers and pregnant women on the benefits and safety of antidepressant therapy during pregnancy
- Lack of follow-up in the postpartum period for women who screened positive for depression during pregnancy
- Potential lack of access to mental health services for pregnant and postpartum women

Obesity

- Inadequate assessment and monitoring of obese pregnant/postpartum women for complications
- Lack of consultation of morbidly obese pregnant women by a maternal fetal medicine specialist and potentially a cardiologist
- Lack of proactive embolism prevention in obese women by provision of prophylaxis and avoiding prolonged bed rest
- Lack of a calculated BMI or documentation of height and pre-pregnancy weight

Chronic Medical Conditions

- Women with preexisting medical conditions possibly not receiving preconception education and counseling regarding their increased risk during pregnancy
- Postpartum women with chronic illness or other health complications not receiving follow-up care as soon and as frequently as needed

General Provisions of Care

- Lack of ongoing monitoring and assessment of access to services, including mental health and high risk care
- Lack of services in rural settings
- Inadequate hospital policies and procedures for discharge planning, education, referrals and follow-up of pregnant and at-risk postpartum women

Drug Toxicity

- Inappropriate dosage and use of prescription pain medications in pregnant/postpartum women
- Potential lack of provider awareness about physiological side effects of medications for women who are pregnant, particularly those with co-morbid conditions
- Inappropriate mixing or adding of medications to those prescribed on discharge
- Lack of prescription history availability to providers
- Lack of screening for prescription and/or illegal substance abuse
- Absence of a mechanism for obstetric providers to communicate a mother's prescribed pain medication to pediatricians and neonatologists

Recommendations

DURING THE FIRST YEAR OF REVIEW, the Georgia MMRC, as expected, began identifying multiple issues for change and improvement. Further study of more cases over the next several years will provide additional corroboration, insight and information on how to best address many of the issues that now have been identified. Based on the information currently available and in order to focus committee efforts for greatest effectiveness, four key actions have been recommended.

Clinical Practice and Education

The titration of medication arose as a recurring issue spanning several at-risk categories of maternal mortality. Concerted efforts are needed to educate on appropriate titration and prescription of medications during pregnancy. This should include a focus on:

- The need for and thorough review of a complete medication history
- Appropriate use and titration of prescribed medication for chronic illness management during pregnancy/postpartum (antidepressants, anti-seizures, anti-hypertensive)
- Appropriate dosages when adding or mixing medications
- Education and counseling of women on maintenance medications
- Follow-up and care for pregnant and postpartum women with chronic medical conditions

Public Health/Vital Statistics

Efforts are needed to improve the efficiency of identifying possible cases, and the abstraction and review of cases. Possible next steps include:

- Identify problems with death certificate record keeping and/or data entry, particularly as it relates to the pregnancy check box. This will aid in the correct identification of maternal mortality cases whilst reducing the time and effort spent on investigating records deemed "non-cases."
- Streamline the strategies used to identify possible maternal death cases. This will reduce the efforts duplicated when the strategies are performed concurrently.
- Develop statewide communications for entities and persons responsible for the timely completion and submission of mandated reports of maternal deaths.

Georgia MMRC Committee Development

Georgia MMRC will train four to five additional chart abstractors to facilitate case reviews and:

- Increase the breath of chart reviews as legalized under the new MMRC law
- Provide a more in-depth review of each maternal death case
- Review motor vehicle accidents for seatbelt usage
- Beta test CDC's EPI 7 national data collection tool
- Allow abstractors to develop and present case summaries for the committee

Georgia MMRC Policy Initiative

Georgia MMRC will develop policies and procedures to implement the newly passed law, SB 273:

- Develop a policy for family/relative interview
- Design an interview guide for families/relatives
- Develop request and documentation forms for pharmacy information

References

[1] International, A. (2010). Deadly delivery, the maternal health care crisis in the USA. Amnesty International Secretartiat. London: Peter Benenson House.Accessed on February 6, 2015.

[2] Georgia Department of Public Health, Office of Health Indicators for Planning (OHIP). Online Analytical Statistical Information System (OASIS). https://oasis.state.ga.us. Accessed on April 17, 2015.

Addendum: Georgia Law SB 273

O.C.G.A. § 31-2A-16

GEORGIA CODE

*** Current Through the 2014 Regular Session ***

TITLE 31. HEALTH
CHAPTER 2A. DEPARTMENT OF PUBLIC HEALTH

O.C.G.A. § 31-2A-16 (2014)

§ 31-2A-16. Maternal Mortality Review Committee established

(a) The General Assembly finds that:

(1) Georgia currently ranks fiftieth in maternal deaths in the United States;

(2) Maternal deaths are a serious public health concern and have a tremendous family and societal impact;

(3) Maternal deaths are significantly underestimated and inadequately documented, preventing efforts to identify and reduce or eliminate the causes of death;

(4) No processes exist in this state for the confidential identification, investigation, or dissemination of findings regarding maternal deaths;

(5) The federal Centers for Disease Control and Prevention has determined that maternal deaths should be investigated through state based maternal mortality reviews in order to institute the systemic changes needed to decrease maternal mortality; and

(6) There is a need to establish a program to review maternal deaths and to develop strategies for the prevention of maternal deaths in Georgia.

(b) The Department of Public Health shall establish a Maternal Mortality Review Committee to review maternal deaths and to develop strategies for the prevention of maternal deaths. The committee shall be multidisciplinary and composed of members as deemed appropriate by the department. The department may contract with an external organization to assist in collecting, analyzing, and disseminating maternal mortality information, organizing and convening meetings of the committee, and other tasks as may be incident to these activities, including providing the necessary data, information, and resources to ensure successful completion of the ongoing review required by this Code section.

(c) The committee shall:

(1) Identify maternal death cases;

(2) Review medical records and other relevant data;

(3) Contact family members and other affected or involved persons to collect additional relevant data;

(4) Consult with relevant experts to evaluate the records and data;

(5) Make determinations regarding the preventability of maternal deaths;

(6) Develop recommendations for the prevention of maternal deaths; and

(7) Disseminate findings and recommendations to policy makers, health care providers, health care facilities, and the general public.

(d) (1) Health care providers licensed pursuant to Title 43, health care facilities licensed pursuant to Chapter 7 of Title 31, and pharmacies licensed pursuant to Chapter 4 of Title 26 shall provide reasonable access to the committee to all relevant medical records associated with a case under review by the committee.

(2) A health care provider, health care facility, or pharmacy providing access to medical records pursuant to this Code section shall not be held liable for civil damages or be subject to any criminal or disciplinary action for good faith efforts in providing such records.

(e) (1) Information, records, reports, statements, notes, memoranda, or other data collected pursuant to this Code section shall not be admissible as evidence in any action of any kind in any court or before any other tribunal, board, agency, or person. Such information, records, reports, statements, notes, memoranda, or other data shall not be exhibited nor their contents disclosed in any way, in whole or in part, by any officer or representative of the department or any other person, except as may be necessary for the purpose of furthering the review of the committee of the case to which they relate. No person participating in such review shall disclose, in any manner, the information so obtained except in strict conformity with such review project.

(2) All information, records of interviews, written reports, statements, notes, memoranda, or other data obtained by the department, the committee, and other persons, agencies, or organizations so authorized by the department pursuant to this Code section shall be confidential.

(f) (1) All proceedings and activities of the committee under this Code section, opinions of members of such committee formed as a result of such proceedings and activities, and records obtained, created, or maintained pursuant to this Code section, including records of interviews, written reports, and statements procured by the department or any other person, agency, or organization acting jointly or under contract with the department in connection with the requirements of this Code section, shall be confidential and shall not be subject to Chapter 14 of Title 50, relating to open meetings, or Article 4 of Chapter 18 of Title 50, relating to open records, or subject to subpoena, discovery, or introduction into evidence in any civil or criminal proceeding; provided, however, that nothing in this Code section shall be construed to limit or restrict the right to discover or use in any civil or criminal proceeding anything that is available from another source and entirely independent of the committee's proceedings.

(2) Members of the committee shall not be questioned in any civil or criminal proceeding regarding the information presented in or opinions formed as a result of a meeting or communication of the committee; provided, however, that nothing in this Code section shall be construed to prevent a member of the committee from testifying to information obtained independently of the committee or which is public information.

(g) Reports of aggregated nonindividually identifiable data shall be compiled on a outine basis for distribution in an effort to further study the causes and problems associated with maternal deaths. Reports shall be distributed to the General Assembly, health care providers and facilities, key government agencies, and others necessary to reduce the maternal death rate.

HISTORY: Code 1981, § 31-2A-16, enacted by Ga. L. 2014, p. 337, § 1/SB 273.
Signed by Governor Nathan Deal, effective date July 1, 2014
LexisNexis, a division of Reed Elsevier Inc.
http://www.lexisnexis.com/hottopics/gacode/. Accessed on April 21, 2015

Acknowledgments

A SPECIAL THANK YOU to the Georgia Obstetric Gynecological Society for entering into a partnership with the Georgia Department of Public Health in an effort to combat maternal mortality and improve the outcome for all childbearing women in Georgia. The inaugural year of the MMRC was greatly successful due to your exceptional coordination and leading the charge of all related activities.

DPH greatly appreciates Centers for Disease Control and Prevention for helping the Committee establish procedures and data management.

DPH acknowledges with gratitude the strong support of the Georgia General Assembly and Governor Nathan Deal with the passage of SB 273.

DPH also recognizes the tremendous time commitment and professional contributions of each member of the Committee. Without their sacrifice and time, the review of each case would not be possible.

Georgia

2012 CASE REVIEW

Maternal Mortality

GEORGIA DEPARTMENT OF PUBLIC HEALTH