

# Obstetric Emergencies during Pregnancy and the Postpartum Period: Information for Emergency Medical Services Practitioners

## Key Information

- Pregnancy-related deaths can happen during pregnancy, during delivery, and up to 12 months after the end of pregnancy
- Of all pregnancy-related deaths in the United States, 53% happen seven days to 12 months after the end of pregnancy—and 84% are preventable<sup>1</sup>
- EMS practitioner identification of obstetric complications in the field is critical to the timely management of pregnant and postpartum patients upon arrival to the emergency department
- EMS practitioner readiness to stabilize pregnant and postpartum patients is important, especially in rural areas with long transports to a facility with obstetric care

## Bibliography

Cash RE, Swor RA, Samuels-Kalow M, Eisenbrey D, Kaimal AJ, Camargo CA Jr. Frequency and Severity of Prehospital Obstetric Events Encountered by Emergency Medical Services in the United States. *BMC Pregnancy Childbirth* 2021;21(1):655. doi: 10.1186/s12884-021-04129-1

### Summary

- Limited exposure to obstetric patients and minimal education requirements for obstetric care indicate the need to develop additional training and evidence-based guidelines
- A better understanding of the acuity of patients with obstetric conditions would help improve EMS planning and training

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<sup>1</sup> Trost SL, Beauregard J, Njie F, et al. Pregnancy-Related Deaths: Data from Maternal Mortality Review Committees in 36 US States, 2017–2019. Atlanta, GA: Centers for Disease Control and Prevention, US Department of Health and Human Services; 2022.

DeSisto CL, Oza-Frank R, Goodman D, Conrey E, Shellhaas C. *Maternal Transport: An Opportunity to Improve the System of Risk-Appropriate Care. J Perinatol 2021;41(9):2141-2146. doi: 10.1038/s41372-021-00935-9*

### Summary

- Improved maternal transport could lead to better maternal health outcomes

### Study Findings

- Four people died of preeclampsia or eclampsia, four of hemorrhage, three of cardiomyopathy, three of infections, one of pulmonary conditions, one of cardiovascular and coronary conditions, one of anesthesia complications, one of an embolism, and one of an autoimmune disease
- Two key contributing factors to these deaths were ...
  - EMS practitioners being unavailable or inadequately trained to transport the patient from the field to a hospital
  - Hospital practitioners being unable to transfer the patient to another hospital with a higher level of care

Hutchcraft ML, Ola O, McLaughlin EM, Hade EM, Murphy AJ, Frey HA, Larrimore A, Panchal AR. *A One-Year Cross Sectional Analysis of Emergency Medical Services Utilization and Its Association with Hypertension in Pregnancy. Prehosp Emerg Care 2022;26(6):838-847. doi: 10.1080/10903127.2021.1988775*

### Summary

- The study examined only hypertension during pregnancy
- Hypertension is common in the obstetric population transported by ambulance
- Little is known regarding the prehospital management of women with common obstetric complications, including hypertensive disorders of pregnancy
- EMS practitioners may be the first level of contact for many pregnant patients arriving at the hospital
- Prehospital management of hypertensive disorders of pregnancy may focus on identifying and treating severe preeclampsia or eclampsia
  - EMS practitioners' early stabilization of acutely ill patients before hospital arrival is critically important for optimal patient outcomes
  - Because of the high risk of maternal stroke, acute-onset severe hypertension that lasts at least 15 minutes is considered an obstetric emergency requiring immediate treatment
  - In areas with longer call times, consider treatment of severe hypertension

## Study Findings

- Although patients rarely reported hypertension (0.06%) or headache (1.3%), 32% were hypertensive on EMS examination

*Malavé G, Bressman P, Brooks K, Dixson L, Petrie, J. Obstetric Emergency Education and Simulation for the Prehospital Environment. JEMS 2022 June 28.*

### Summary

- Biannual national recertification of EMS practitioners requires 30 minutes of annual obstetric emergency refresher training
- Possessing the knowledge to identify and initiate the management of maternal hypertension and hemorrhage in the prehospital setting is invaluable
- One of the barriers to implementing training is the availability of medications in ambulances, which depend on each agency's medical director

*Trost S, Beauregard J, Chandra G, Njie F, Berry J, Harvey A, et al. Pregnancy-Related Deaths: Data from Maternal Mortality Review Committees in 36 US States, 2017–2019. Centers for Disease Control and Prevention; 2022.*

### Summary

- CDC analyzed data from 36 maternal mortality review committees to identify the most frequent underlying causes of pregnancy-related deaths:
  - Mental health conditions, which include deaths to suicide and overdose/poisoning related to substance use disorder (23%)
  - Hemorrhage (14%)
  - Cardiac and coronary conditions (13%)
  - Infection (9%)
  - Thrombotic embolism (9%)
  - Cardiomyopathy (9%)
  - Hypertensive disorders of pregnancy (7%)
- Over 80% of pregnancy-related deaths were considered preventable
- Among pregnancy-related deaths with information on timing, they occurred ...
  - During pregnancy (22%)
  - On the day of delivery or one to six days after the end of pregnancy (25%)
  - Seven days to one year after the end of pregnancy (53%)
- The leading underlying cause of pregnancy-related deaths varied by race and ethnicity:
  - Cardiac and coronary conditions were the leading underlying cause of pregnancy-related deaths among non-Hispanic Black persons

- Mental health conditions were the leading underlying cause of pregnancy-related deaths among Hispanic and non-Hispanic White persons
- Hemorrhage was the leading underlying cause of pregnancy-related deaths among non-Hispanic Asian persons