Mortality for Women Within 1 Year After Delivery in the National Hospital Care Survey, 2016

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Background

- Approximately 700 women die each year from pregnancy-related complications in the United States (1).
- This study looks at mortality occurring at the time of delivery or within 1 year after delivery from any cause.
- There is little information available on risk factors at the time of delivery for women who die after hospital discharge. This study analyzed linked hospital and mortality data to study mortality risk factors at the time of delivery for women who died within 1 year after delivery. This study is not intended to measure pregnancy-related mortality.

Methods

- This study uses 2016 National Hospital Care Survey (NHCS) data, which collects information on health conditions and care received during visits to hospital inpatient (IP) and emergency departments.
- For the 2016 data collection, 145 of the 581 sampled hospitals provided IP data. The unweighted total number of patients was approximately 2 million non-newborn discharges.
- The collection of personally identifiable information allowed the 2016 NHCS data to be linked to the 2016 and 2017 National Death Index (NDI) mortality data through the National Center for Health Statistics Data Linkage Program. NDI is a centralized database of death record information on file in jurisdictional vital records or statistical offices used to identify all persons who have died in the United States, as well as determine their causes and manners of death (2).
- A delivery was identified as a woman between the ages of 12 and 55 with any listed inpatient diagnosis with an *International Classification of Diseases, 10th Revision, Clinical Modification* (ICD–10–CM) value of Z37.

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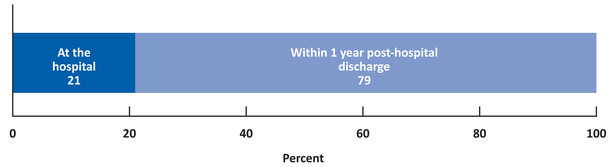
Results

NOTE: Data are not nationally representative.

In the 2016 NHCS, 109 women died within 1 year after delivering a baby.

Figure 1. Percentage of deaths within 1 year of delivery, by location of death (*n* = 109)

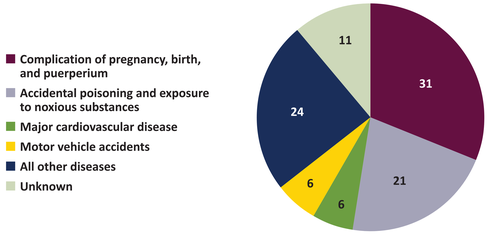


SOURCE: NCHS, National Hospital Care Survey, 2016 linked to the National Death Index, 2016 and 2017.

The NHCS data linked to the NDI provides information on the cause of death for women who died within 1 year after delivery. The linked data show that:

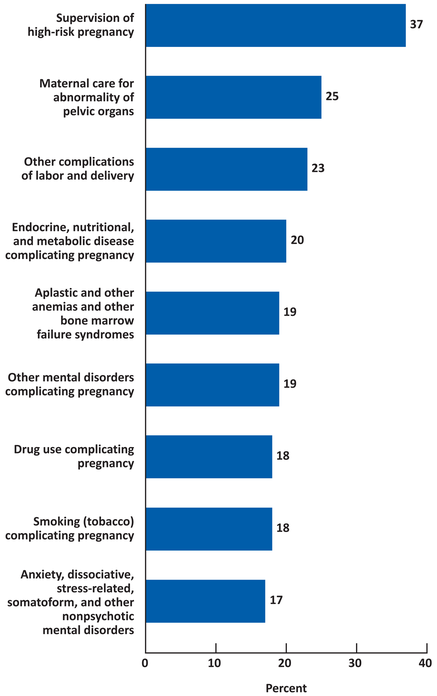
- 31% died from complications of pregnancy, birth, and puerperium.
- 21% died from accidental poisoning and exposure to noxious substances.

Figure 2. Percentage of deaths within 1 year of delivery, by cause of death (*n* = 109)



NOTE: Percentages do not add to 100 due to rounding.
SOURCE: NCHS, National Hospital Care Survey, 2016 linked to the National Death Index, 2016 and 2017.

Figure 3. Risk factors during delivery for women who died within 1 year of delivery (*n* = 109)



SOURCE: NCHS, National Hospital Care Survey, 2016 linked to the National Death Index, 2016 and 2017.

Findings

- Of the 109 women identified who died within 1 year of giving birth:
  - 21% died at the hospital.
  - 31% died from complications of pregnancy, birth, and puerperium.
  - 37% were under supervision of high-risk pregnancy.
  - 25% were treated for abnormality of pelvic organs (includes cesarean delivery before onset of labor).
  - 23% had other complications of labor and delivery.

These findings show the linked NHCS and NDI data can provide insight into mortality risk factors identified at the time of delivery for women who died within 1 year post-delivery.

Accessing NHCS Data

- Through the NCHS Research Data Center (RDC), researchers can access 2013–2016 NHCS data, NHCS–NDI linked files, and NHCS–Centers for Medicare & Medicaid Services linked files. Linked files allow researchers to study post-acute mortality and cause of death and also elderly, low-income, and disabled patients' health care experiences, including inpatient and ambulatory care settings.
- For information on preparing an RDC proposal, please visit: https://www.cdc.gov/rdc/index.htm.

References

1. Petersen EE, Davis NL, Goodman D, Cox S, Mayes N, Johnston E, et al. Vital Signs: Pregnancy-related deaths, United States, 2011–2015, and strategies for prevention, 13 states, 2013–2017. MMWR Morb Mortal Wkly Rep 68(18):423–9. 2019.
2. National Center for Health Statistics. The linkage of the 2016 National Hospital Care Survey to the 2016/2017 National Death Index: Methodology overview and analytic considerations. 2019. Available from: https://www.cdc.gov/nchs/data-linkage/index.htm.

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