State of Alaska Epidemiology **Bulletin**

Department of Health and Social Services
William J. Streur, Commissioner
Ward B Hurlburt, MD, MPH, CMO
3601 C Street, Suite 540
Anchorage, Alaska 99503 http://www.epi.Alaska.gov

Division of Public Health
Kerre Fisher, Director
Local (907) 269-8000
24 Hour Emergency (800) 478-0084

Editors:
Joe McLaughlin, MD, MPH
Louisa Castrodale, DVM, MPH

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Pregnancy-Associated Mortality in Alaska, 2000–2011

Background

Pregnancy-*associated* mortality refers to the death of a woman while pregnant or within 1 year of pregnancy termination due to any cause, including accidental or incidental causes. Pregnancy-associated deaths are rare, sentinel events that often underscore socioeconomic and medical problems in communities, such as alcohol and drug abuse, domestic violence, untreated mental health disorders, and health care disparities. This *Bulletin* updates a prior review of Alaska's pregnancy-associated mortality during 1990–1999.[1] (Note: pregnancy-*related* mortality, referred to here and described in a companion *Bulletin*,[2] is the sub-set of pregnancy-associated mortality that refers specifically to deaths from causes related to or aggravated by the pregnancy or its management.)

Methods

We reviewed pregnancy-associated mortality events identified in Alaska during 2000–2011. Pregnancy-associated mortality events were identified by 1) reviewing death certificates for obstetrical ICD-10 cause of death codes A34, O00-O96, and O98-O99; and 2) matching women's death certificates with birth/fetal death certificates dated within 1 year prior to the woman's death.

The Alaska Maternal-Infant Mortality Review (MIMR) Committee reviewed pregnancy-associated deaths for consensus on cause, contributing factors, and preventability. We examined pregnancy-associated mortality rates by Alaska Native and non-Native race, as documented on birth/death certificates, and presented 99% (rather than 95%) confidence intervals (CI) to account for uncertainty in the point estimates resulting from small numbers and substantial annual variation in case counts.

Results

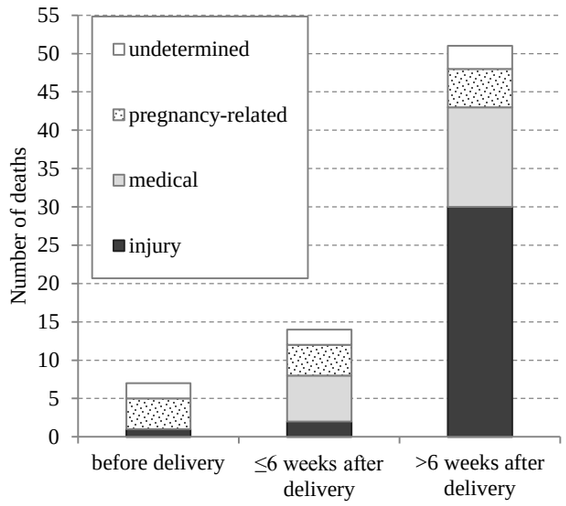
We identified 72 pregnancy-associated deaths during 2000–2011 (56.6 per 100,000 live births). During 1990–2011, there was no significant trend (p-value=0.40). Thirty-seven deaths occurred in Alaska Native women and 34 occurred in non-Native women (115 and 36 per 100,000 live births, respectively; rate ratio: 3.2, 99% CI: 1.7–5.8). Case counts by region were highest in Anchorage/Mat-Su (n=35), followed by Southwest (n=14), Northern (n=9), Interior (n=8), and Gulf Coast (n=5); one of the decedents was not from Alaska.

The MIMR Committee review determined that during 2000–2011,

- 33 (46%) of the deaths were due to injuries, including 13 suicides, 11 drug or alcohol overdoses, 6 unintentional injuries, and 3 homicides;
- 19 (26%) were due to medical causes that were not pregnancy-related;
- 13 (18%) were due to causes directly related to or aggravated by pregnancy (i.e., pregnancy-*related* deaths; see companion *Bulletin*[2]); and
- 7 were due to undetermined causes.

Of the 72 deaths that occurred during 2000–2011, seven (10%) happened while the woman was still pregnant, six (8%) happened within 7 days of delivery, eight (11%) happened 8–42 days post-delivery, and 51 (71%) happened more than 42 days post-delivery (Figure). Of the risk factors that were evaluated by the MIMR Committee, underlying issues associated with the 59 deaths that were not pregnancy-related included alcohol abuse (n=17, 29%), drug abuse (n=13, 22%), mental health conditions of the decedent or someone else (n=10, 17%), adverse socioeconomic factors (n=6, 10%), and domestic violence or other forms of abuse (n=5, 8%). Among these 59 deaths, the MIMR Committee concluded that 21 (36%) would definitely have been prevented and 19 (32%) would probably have been prevented by addressing the aforementioned underlying factors.

Figure. Number of Pregnancy-Associated Deaths, by Cause and Relative Time of Death — Alaska 2000–2011



Discussion

The MIMR Committee found that 68% (40/59) of the pregnancy-*associated* deaths that were not pregnancy-*related* during 2000–2011 were potentially preventable. The proportion of preventable pregnancy-associated deaths found in Alaska during 2000–2011 was similar to that found during 1990–1999.[3]

During 2000–2011, most of the pregnancy-associated deaths occurred more than 6 weeks postpartum, and most were injury-related. Associated factors that are amenable to interventions included alcohol and drug abuse, mental health conditions, adverse socioeconomic issues, and domestic violence. These factors likely also contribute to a large proportion of morbidity among women of child-bearing age. The American College of Obstetricians and Gynecologists has published Committee Opinions reports on screening for depression, alcohol and illicit drug use, and intimate partner violence, which offer information for health care providers on recognizing and addressing these risk factors.[4]

Health care providers who care for pregnant women, mothers, and babies to 1 year of age should use established tools to screen mothers for mental health conditions, alcohol and illicit drug use, intimate partner violence, and other underlying factors that put them at increased risk for pregnancy-associated mortality.[4,5]

References

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(Contributed by: Margaret Young, MPH, Jared Parish, MS, and Debbie Golden, RN, MS, Section of Women's, Children's, and Family Health.)