Abstract # 83

**Epidemiology of Pregnancy-Related ICU Admissions in Maryland: 1999-2008**

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**Introduction:** Severe maternal morbidity and mortality is a significant public health problem in the United States (US); recent data suggests the US has amongst the highest incidence of maternal mortality in the developed world[1]. Intensive care unit (ICU) utilization during the peripartum period is a well established measure of severe maternal morbidity. There are few recent population based data examining ICU utilization in the US.

**Methods:** Data were derived from the Maryland State Inpatient Database which was collected as part of the Healthcare Cost and Utilization Project of the Agency for Healthcare Research and Quality. We identified all antepartum, postpartum, and delivery admissions from 1999-2008 using appropriate International Classification of Diseases, 9th revision-Clinical Modification (ICD-9 CM) codes. ICU utilization was directly recorded in the database. Indication for ICU admission was determined using ICD-9 CM codes. Outcomes for obstetric-related ICU admissions were compared with those of non-obstetric ICU admissions to women aged 15-44 years. Categorical variables were compared using chi-square analysis and trends were assessed using logistic regression.

**Results:** We identified 2,909 ICU admissions from 741,920 admissions for antepartum, delivery, or postpartum conditions (rate of ICU admission was 444.5 per 100,000 deliveries and 392.1 per 100,000 obstetric-related admissions). Leading indications for ICU admission included hypertensive diseases (101.5 ICU admissions per 100k obstetric-related admissions), postpartum hemorrhage (50.1 per 100k), trauma (48.7 per 100k), heart failure (46.0 per 100k), infectious pneumonia (35.2 per 100k), antepartum hemorrhage (31.8 per 100k), sepsis (25.4 per 100k), cerebrovascular accident (24.6 per 100k), pulmonary embolism (14.8 per 100k), aspiration pneumonia (10.5 per 100k), and status asthmaticus (8.0 per 100k). We assessed for trend in each of these indications and found rising rates of hypertensive disease (93.6 per 100k in 1999-2000 to 131.9 in 2007-2008, p<0.001), heart failure (39.2 to 66.6, p<0.001), and sepsis (20 to 45.4, p<0.001). The overall rate of pregnancy-related ICU admission and the rates for other indications remained relatively stable. Compared with non-ICU pregnancy-related admissions, ICU patients were more likely to be African-American (46.7% vs. 32.4%, p<0.001), <20 years old (21.3% vs. 9.9%, p<0.001) and >39 years old (5.7% vs. 3.2%, p<0.001).

Pregnancy-related ICU admissions accounted for 5.8% of all ICU admissions for women age 15-44 years old. Pregnancy-related ICU admissions had a lower rate of in-hospital mortality (1.7% vs. 4.4%, p<0.001).

**Conclusion:** Between 1999 and 2008, approximately 4.5 per 1,000 deliveries in Maryland were complicated by ICU admission. Episodes of intensive care increased for hypertensive disorders of pregnancy, heart failure, and sepsis.

**Reference**