Early identification of women likely to be high utilizers of perinatal acute care services

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Background

• Patients in the general and obstetric populations seek emergency services both for urgent and non-urgent medical problems.
• Non-urgent issues may be better addressed by the patient's usual prenatal care provider in an outpatient setting.
• In order to identify women who might benefit from care coordination, we sought to identify women in early pregnancy likely to be high utilizers of emergency and inpatient care.

Methods

Study Design

• We conducted a secondary analysis of 3423 women within the Care4Moms cohort who received prenatal care within our health system and delivered at the North Carolina Women's Hospital between July 1, 2014, and June 30, 2016.
• Included women with ≥1 prenatal outpatient encounter in early pregnancy, defined as before 20 weeks' gestation.

Definitions

• Comorbidities: classified by number of Non-Obstetric diagnoses documented in the first 20 weeks of pregnancy, using Clinical Classification Software (CCS) codes.
  - atherosclerosis (114-117), cancer (11-41), cardiac disease (96.97,100-108.213), cerebrovascular disorders (109-113), GI disorders (135-155), infectious disease (00.0-19.9), mental disorders (290-319), metabolic disorders (250-279), musculoskeletal disorders (278-287), renal disease (156-158), respiratory disorders (149-151), skin disorders (688-695), psychiatric disorders (650-670), and other (V80-V99).
• Severe maternal morbidity: determined using Alliance for Innovation on Maternal Health (AIM) criteria.
• High utilization: three or more OB triage, emergency department or inpatient admissions during pregnancy.

Statistical Analysis

• Data was analyzed with SAS 9.4 (Cary, NC) using chi square tests.
• P-values < 0.05 were considered statistically significant.

Results

• A total of 3423 women were included in the current analysis, of which 1708 had no comorbidities, 884 had one comorbidity, 485 had two comorbidities, 213 had three comorbidities and 133 had four or more comorbidities.
• Comorbidities were highly predictive of maternal and infant morbidity, and acute care utilization.

Conclusions

• Non-obstetric comorbidities in early pregnancy identify women at increased risk for perinatal morbidity and mortality, and high perinatal acute care utilization.
• These criteria can identify women who may benefit from interventions designed to reduce acute care service utilization and minimize risk of perinatal morbidity and mortality, such as multidisciplinary care coordination.