

## **Upstream Obstetrics: Assessing the Prevalence of Food Insecurity in a High-risk Obstetrics Population**

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### **Background:**

Food security is a social determinant of health defined as the availability of and access to adequate food. Barriers contributing to food insecurity include physical, social, and economic factors such as time, money, and transportation. While food insecurity affects all age groups and ethnicities, the prevalence of food insecurity is notably higher in women when compared to men. Co-morbid medical conditions such as obesity, hypertension, and diabetes can be exacerbated during pregnancy. Furthermore, food insecurity may heighten risks for poor maternal health, perinatal complications, and poor pregnancy outcomes particularly if compounded by existing co-morbidities in high-risk pregnancies.

### **Purpose:**

The Upstream Clinic is a quality improvement project initiated by students and faculty in the Department of Obstetrics and Gynecology that seeks to address food insecurity in high-risk obstetrics patients. This study aims to identify the prevalence and impact of food insecurity among pregnant patients in the clinic population. Information collected through this study will be used to assess the effect of social needs on pregnancy outcomes.

### **Methods:**

Validated survey questions from Health Leads regarding food insecurity were administered to patients attending the High-risk Obstetrics (HROB) Clinic at the University of Iowa Hospitals and Clinics (UIHC). Data including demographics, survey response(s), and predominant co-morbidities affecting the pregnancy were recorded. Clinic personnel reviewed the surveys in real-time. A “yes” response to any of the “food need” questions was designated as “screen positive.” Screen positive individuals were offered counseling by an Upstream Clinic team member as a means to identify nutrition resources in the patient's residential area. Data collected from the Upstream Clinic survey were used to assess 1) prevalence of social needs in the UIHC HROB population, 2) correlation of social needs with common medical co-morbidities, 3) possible effects of social needs on pregnancy outcomes by comparing survey data with variables from an existing UIHC HROB database.

### **Results:**

One hundred eighty-five women attending the HROB clinic completed the Upstream Clinic survey. Twenty-four percent (44/185) were screen positive while 76% (141/185) were screen negative. Diabetes was the most prevalent co-morbidity for screen positive patients (25/44, 57%). Amongst all screened patients, other common co-morbidities included obesity (33/185, 18%) and hypertension (38/185, 21%). More than one co-morbidity was self-reported by 32% (59/185) of respondents.

In the first seven-month period of this Upstream Clinic (1/1/18-7/31/18), 38% (71/185) have delivered and 20% (14/71) of delivered patients were screen positive. Patients with perinatal diabetes accounted for 56% (40/71) delivered patients. Within this subgroup, 22% (9/40) were screen positive and 78% (31/40) were screen negative. Poor control of diabetes was defined as an abnormal hemoglobin A1C (HgbA1C) > 6.5%. The prevalence of abnormal HgbA1C (at HROB enrollment) was 66% (6/9) for screen positive individuals with diabetes versus 39% (12/31) for screen negative individuals. There was no difference in gestational age at delivery or prevalence of large for gestational age (LGA) neonates in either group.

### **Conclusion:**

While 12% of adults in Iowa are food insecure, food insecurity appears to be highly prevalent amongst high-risk obstetric patients (24%), and particularly amongst perinatal diabetes patients (22%). Although statistically significant differences were not found due to limited sample size in the early stages of this initiative, this study suggests that food insecurity may be associated with adverse health outcomes such as poor maternal control of diabetes. As the population sample size of women served by the Upstream Clinic intervention increases, the impact of food insecurity on obstetric and neonatal outcomes will continue to be assessed.