Name: Nathana Lurvey MD FACOG
Professional Title, Organization: Director Women's Health Eisner Health
CHIP Title: Decreasing Iron Deficiency Anemia in Pregnancy

Project Description:
I am Director of Women's Health for Eisner Health, an FQHC which provides physician and midwife care to 2000 birthing people annually at two safety net hospitals in Los Angeles. Local, statewide, and national data all show significant health disparities around maternal morbidity. The majority of maternal morbidity is secondary to the need for transfusion. Women who present to labor and delivery anemic are more likely to need transfusion. Internal data at the two facilities where Eisner delivers infants showed that one quarter of women at one facility and nearly one half of women at the other presented anemic to labor and delivery. As nearly all of our patients had received prenatal care, it was clear that the usual approach of referral to WIC for high iron food, use of oral iron pills, and standard nutritional information during prenatal care was not sufficiently effective. There needed to be an option to escalate care to include IV iron infusion during pregnancy. Although this is not novel, the existing workflow required referral to hematology prior to receipt of transfusion. Very few women were actually referred.

My CHIP required me to obtain funding for and implement a short cycle care management approach focused on women identified as anemic during pregnancy, with the initial goal of ensuring that all women presented in labor with a hematocrit of 33% or more. As part of the revised workflow, there would be follow up every two weeks in the second half of pregnancy for women identified as anemic and direct referral to the hospital for iron infusion if oral intake did not reverse the anemia.

Achieving this required coordination between outpatient clinic staff (health educators, midwives, physicians, registered dieticians, pharmacy, and laboratory) and inpatient resources (nursing, pharmacy, midwives and physicians).

Since one of the birthing facilities for Eisner is part of the CommonSpirit Health system, I had the benefit of being able to leverage the resources of CommonSpirit Health's Women and Infants Clinical Institute, a national advisory group for the 67 birthing facilities that are part of CommonSpirit Health. I brought forward the data from Eisner and California Hospital to the national meeting in Phoenix in January 2020. A sister facility in Phoenix was also focused on similar work. Based on our advocacy, the creation of a standard workflow and a small trial was authorized at the CommonSpirit Health maternity line meeting. Eisner Health and California Hospital were to be one of three demonstration sites. COVID however delayed everything with actual project initiation on patients being delayed until March of 2022.

Key Findings and Lessons Learned:

- **Care management improved the efficacy of standard outpatient management of anemia.** Having the care manager receive lab results weekly (so women were notified of anemia immediately, not just at next scheduled visit), counsel patients on proper use of oral iron (every other day with vitamin C), ensure the prescription was in the pharmacy and that the patient received a visit (remote or in person) with the registered dietician at time of diagnosis, and having follow up lab tests in two weeks for women in the second half of pregnancy resolved 90% of anemic patients.
- **Outcomes require measurement** in preparation for data collection for the CommonSpirit Health trial, we learned that nursing assessment of blood loss was still an estimate. In addition, we learned that the IV iron infusion available at the hospital was not recommended for use in pregnancy. The hospital needed to procure and create a process for use of a slightly more expensive product recommended for use in pregnancy. **Despite COVID as a distraction, Common Spirit Health hospital leadership (nursing, pharmacy) recognized the importance of this work and made the needed changes. California Hospital continues to invest in training and equipment so that measurement of maternal blood loss is accurate rather than guesswork.**
- The low incidence of severe maternal morbidity and the length of gestation combine to make 18 months too short an interval to show that this intervention will impact rates of transfusion in laboring and postpartum patients.
- The success of the dedicated care manager led Eisner to request for two more FTE care managers to address other pregnancy complications so that the lessons of dedicated care management and integration of information between inpatient and outpatient can be applied to pregnancy complications beyond anemia
- Through my participation on ACOG District IX Patient Safety and Quality Improvement Committee I will take the lessons learned and amplify them to obstetrical practices across the state.