Trends of Racial/Ethnic Differences in Protocolized Postpartum Hemorrhage Checklist Use in Cesarean Deliveries

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Overview of Parent Study

Improving Cesarean Hemorrhage Through the Use of a Protocolized Checklist; a Quality Improvement Initiative

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Background

The implementation of a checklist-based management protocol has shown a promising trend in improving maternal morbidity, team communication, and patient outcomes during post-partum hemorrhage (PPH) [1] .

AIM Statements

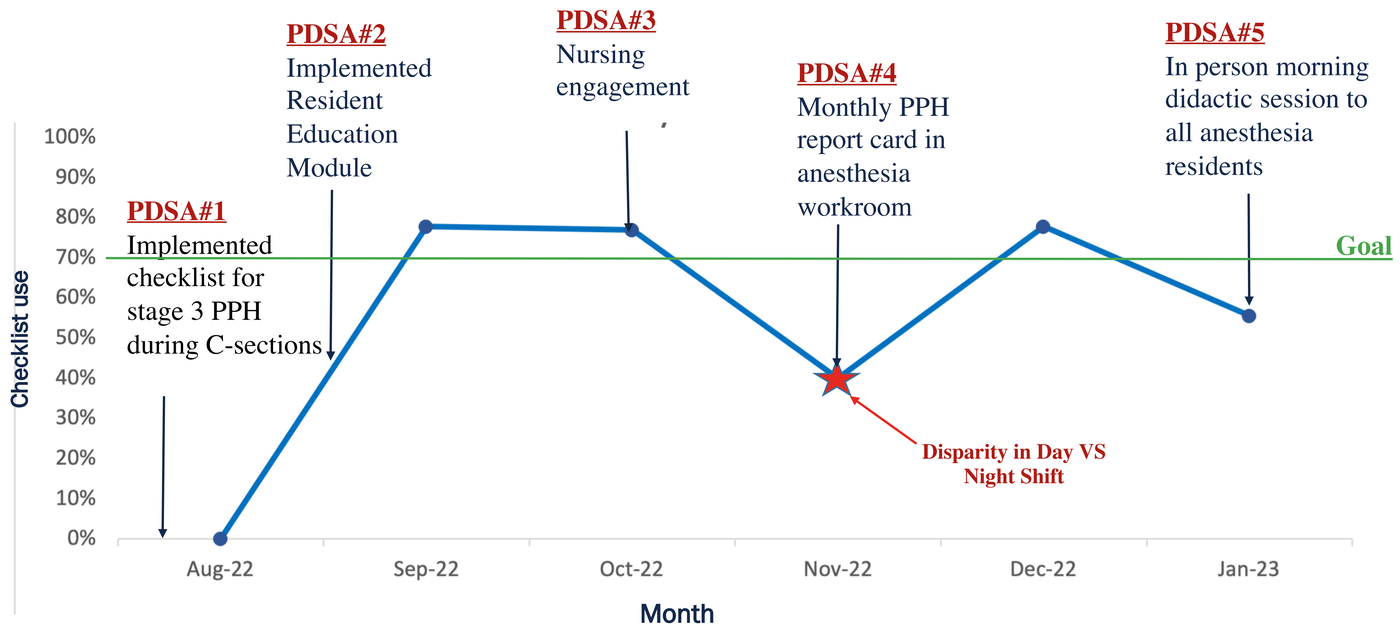
1) To increase emergency checklist utilization from 0% to 70% for Stage 3 PPH (>1500 ml) during cesarean delivery (CD) at a single academic institution by February 2023
2) To increase emergency checklist utilization to 90% for Stage 3 PPH (>1500 ml) during cesarean delivery (CD) at a single academic institution by August 2023

Methods

This quality improvement initiative utilized the Model for Improvement framework. Initial interventions included making the checklist available in all labor and delivery operating rooms, a mandatory educational video for new anesthesia residents, and nursing communication through a group huddle format. Checklist utilization was measured through survey responses by staff involved in the case. Quality improvement methodology was utilized to encourage PPH checklist utilization. Our team used this survey data to produce further PDSA cycles aimed at improving communication between OR staff, resident education, and checklist accessibility issues.

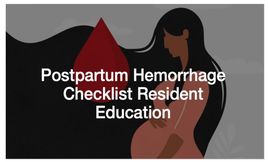
PDSAs

Figure 1: Postpartum Hemorrhage at Cesarean Delivery Checklist Use by Month



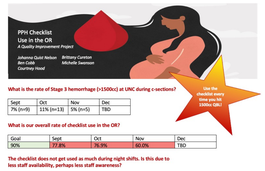
PDSA 1

PDSA 2



PDSA 4

PDSA 5



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Introduction

Evidence has shown that the utilization of a checklist-based management protocol can improve maternal morbidity, team communication, and overall patient outcomes during post-partum hemorrhage (PPH).1 Little is known about whether there are different practice patterns in checklist-based management of PPH in relation to a patient's race or ethnicity. Our objective was to assess rates of PPH checklist use in cesarean deliveries with stage 3 hemorrhage by the patient's race and/or ethnicity. This is a prospective quality improvement study with the aim to increase emergency checklist utilization from 0% to 90% for Stage 3 PPH (>1500 ml) during cesarean delivery (CD) at a single academic institution.

Methods

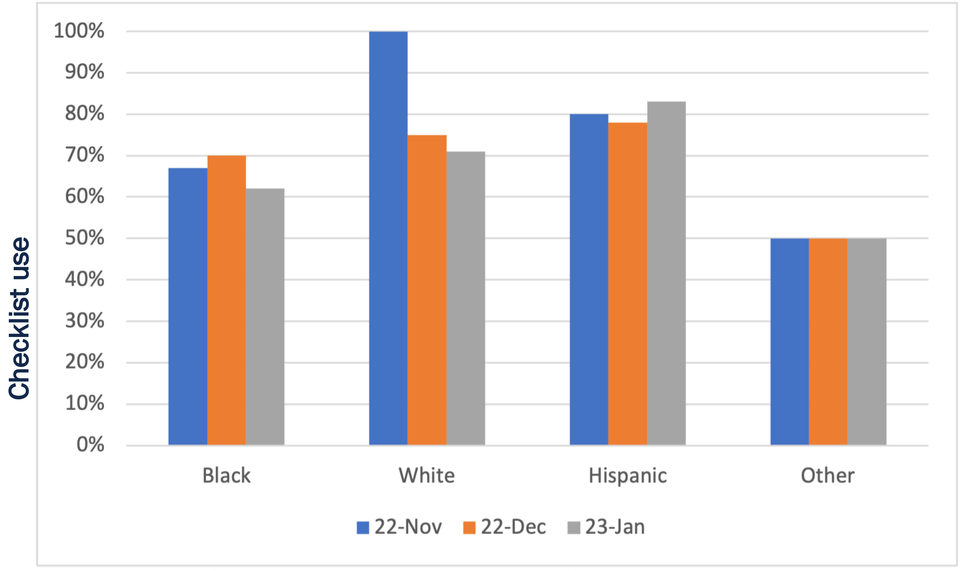
Checklist utilization was measured through surveys sent to various staff involved in the case. Patient's race was identified by self-report in the electronic health record (EHR). Patients with no race identified in the EHR or groups less than five were analyzed as one group identified as other.

Results

During the monthly assessment of data, trends in racial disparities for PPH checklist use were illuminated. In November, for cases of stage 3 PPH, checklist utilization was 67% for Black patients, 80% for Hispanic patients, 50% for those who identified as other, and 100% for White patients. In December, checklist utilization was 70% for Black patients, 78% for Hispanic patients, 50% for those who identified as other, and 75% for White patients. In January, checklist utilization was 62% for Black patients, 83% for Hispanic patients, 50% for those who identified as other, and 71% for White patients.

Tables and Figures

Figure 1: Postpartum hemorrhage checklist use during cesarean delivery by race and ethnicity



	Black	White	Hispanic	Other
22-Nov	67%	100%	80%	50%
22-Dec	70%	75%	78%	50%
23-Jan	62%	71%	83%	50%

Discussion

At our institution, 45 patients experienced a stage 3 PPH during CD and 68% required transfusion. We effectively increased PPH checklist use from 0% to 70% through QI methodologies. Future data collection will illuminate if checklist use results in a significant reduction in transfusion and improved morbidity.

Black patients and patients identified as other had the lowest rates of PPH checklist use in the OR for CD, despite the highest rates of red blood cell transfusion and quantitative blood loss compared to White patients. Though these differences are not statistically significant, this trend is concerning, given the racial disparities of national maternal morbidity and mortality. These trends highlight the importance of investigating racial disparities in PPH management and the need for intervention to improve health equity. Future quality improvement directions include using these data to create interventions and initiatives to improve patient checklist utilization.

References

1. Smith RB, Erickson LP, Mercer LT, Hermann CE, Foley MR. Improving obstetric hemorrhage morbidity by a checklist-based management protocol; a quality improvement initiative. Eur J Obstet Gynecol Reprod Biol. 2019 May;236:166-172. doi: 10.1016/j.ejogrb.2019.02.026. Epub 2019 Mar 26. PMID: 30939360.