St. Luke COMMUNITY HEALTHCARE

# POSTPARTUM HEMORRHAGE QUALITY IMPROVEMENT

- POSTPARTUM HEMORRHAGE RISK ASSESSMENT
- ESTIMATED BLOOD LOSS TO QUANTITATIVE BLOOD LOSS
- TYPE AND CROSSMATCH BLOOD

ABIGAIL BYERS, DIRECTOR OF NURSING AND CARLY RYTHER, QI MANAGER

## BACKGROUND

- St. Luke monitored Postpartum Hemorrhage rates using Estimated Blood Loss prior to Fall 2021
- St. Luke's goals was to increase the awareness and education around reducing patient risk in the face of PPH, including
  - OB risk assessment
  - Quantitative Blood Loss
  - PPH kit education
  - Lessening wait time for blood from lab
  - Nursing education and provider buy-in for obstetric bundle from MPQC

| Year | Births | PPH | PPH rate |
|---|---|---|---|
| 2018 | 83 | 10 | 12% |
| 2019 | 113 | 8 | 7% |
| 2020 | 88 | 13 | 15% |
| 2021 | 74 | 7 | 9% |
| YTD 2022 | 71 | 10 | 14% |

## SEPTEMBER 2021

- St. Luke participated the Montana Perinatal Quality Collaborative
  - 1st steps were to assess at what level St. Luke was performing
    - Postpartum risk assessment
    - Quantitative Blood Loss
    - Management of 3rd stage of labor
- Team involved in project
  - Tabitha Normandeau, RN, BSN
  - Heather Day, RNC-OB, CLC, BSN
  - Abigail, DON, RN, BSN
  - Carly Ryther, QI Manager, CPHQ

MPQC
MONTANA PERINATAL QUALITY COLLABORATIVE

**Improving Perinatal Health in Montana**

The Rural Institute for Inclusive Communities has been funded to support the Montana Perinatal Quality Collaborative (MPQC). MPQC is a quality improvement initiative focused on improving perinatal health. The Montana Perinatal Quality Collaborative partners with:

- Montana's State Health Agency
- Montana Department of Public Health & Human Services
- The Montana Hospital Association
- The Montana Maternal Mortality Review Committee
- Enhancing Reviews and Surveillance to Eliminate Maternal Mortality
- Montana's Maternal Health Innovation grant
- The Alliance on Innovation in Maternal (AIM) Health initiative in Montana
- Other partners engaged in perinatal health in the state of Montana

The MPQC will follow the Centers for Disease Control and Prevention (CDC) outcomes to improve perinatal health and address health disparities. Further, the MPQC project will increase the support provided to facilities located on or near Montana's seven Indian Reservations, facilities that serve a disproportionately high percentage of AI/AN patients, and facilities located in rural and remote communities.

## AIM

- In October and December of 2021 workgroups were held by MPQC.
- PDSAs that were worked on
  - OBH Risk Assessment
  - Quantitative Blood Loss


| **Topic: Quantitative Blood Loss** | AIM |
|---|---|
| Aim: Evidence-based practice, consistency across team members, providers, nursing | |
| Measure: QBL consistency (not needing to use duplicative measures w/ EBL) | |
| Current Situation: St. Luke: every delivery uses drape and provider observes estimation of blood loss. | |
| Test of Change (choose a small change to test based on the topic listed above, modified to fit your facility): St. Luke: Weighing and measuring at one delivery. | |

| **Topic: *OBH Risk Assessment*** | AIM |
|---|---|
| Aim: Postpartum hemorrhage risk assessment completed prior to every delivery and plan response to risk in Centricity | |
| Measure: completion of assessment and interventions recorded | |
| Current Situation: hemorrhage risk took part of the admit assessment in Centricity | |
| Test of Change (choose a small change to test based on the topic listed above, modified to fit your facility): measuring completed assessments and interventions documented based on risk score. Modifying intervention scale and action based on risk factors. | |

# PLAN

**Background: Why did you choose this project?**

*St. Luke joined Montana Perinatal Quality Collaborative because it was an opportunity to hear from hospitals around Montana and how they were approaching quality improvement for postpartum hemorrhage processes. In particular, how other hospitals were implementing and having success with quantitative blood loss workflow. Based on the number of delivers we do and the number of PPH we have this was a good fit.*

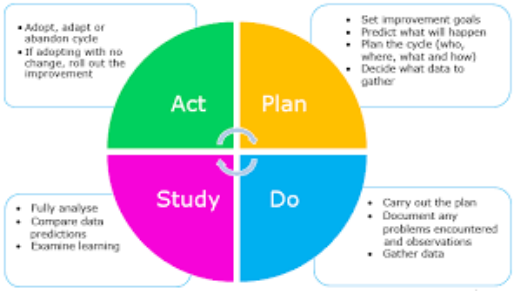
| PLAN QBL | | | |
|---|---|---|---|
| Tasks needed to set up the test | Person Responsible | By When | Where |
| List of dry weights of items, baby scale, Meditech intervention documentation | OB Nurse | Next delivery | OB |
| Save pads for first 24 hours for weighing | OB Nurse | Next delivery | OB |
| 3 new postpartum hemorrhage scales for OB | Tabitha/ MOMS group | TBD | OB |
| paper sheet with weights dry and used for calculations | Heather | 12/7/21 | OB |
| Add on QBL charting in I's and O's to post-delivery checklist | Tabitha | ASAP | OB |
| Audit and coaching | Tabitha | After deliveries | OB |

| PLAN OBH Risk Assessment | | | |
|---|---|---|---|
| Tasks needed to set up the test | Person Responsible | By When | Where |
| OB Committee discuss protocol for interventions for risk assessment | Tabitha | January 21, 2022 | |
| Hemorrhage cart placement recommendation- educate staff | Tabitha and Heather | December 7, 2021 | |
| Plan for measurement | Tabitha/IT/Centricity | TBD | Centricity |

# DO

**What did you do to make a change?**

- *OBH Risk Assessment- Not all patients that scored high had a PPH and some that didn't score had a PPH leaving staff not as prepared. Staff doing risk assessment and not doing anything with it.*
- *Quantitative Blood Loss- We chose a 24 hour measurement period and we got a lot of push back. Providers struggling with the drape and taking a measurement before the placenta is delivered*



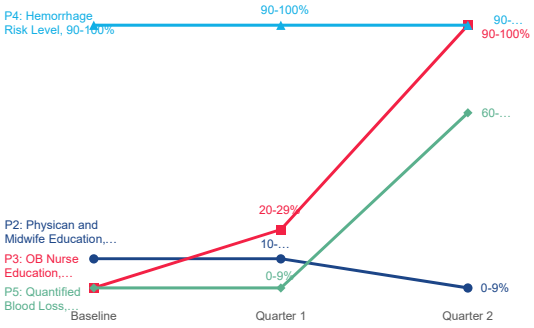
# STUDY

| Structure Measures 2022 Q2 | Implemented? | Date |
|---|---|---|
| S1: OB-specific resources and protocols to support patients, family, and staff through major OB complications | No | - |
| S2: Formal debriefs | Yes | 9/1/2021 |
| S3: Multidisciplinary systems-level reviews on cases of severe maternal morbidity | Yes | 9/1/2021 |
| S4: OB hemorrhage cart or mobile box | Yes | 8/1/2019 |
| S5: OB hemorrhage policy and procedure | Yes | 11/1/2021 |
| S6: Electronic Health Record system | Yes | 4/2022 |

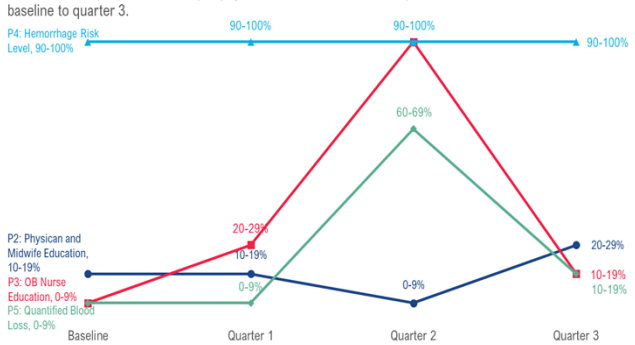

| Structure Measures 2022 Q3 | Implemented? | Date |
|---|---|---|
| S1: OB-specific resources and protocols to support patients, family, and staff through major OB complications | No | - |
| S2: Formal debriefs | Yes | 9/1/2021 |
| S3: Multidisciplinary systems-level reviews on cases of severe maternal morbidity | Yes | 1/1/2022 |
| S4: OB hemorrhage cart or mobile box | Yes | 8/1/2019 |
| S5: OB hemorrhage policy and procedure | Yes | 11/1/2021 |
| S6: Electronic Health Record system | No | - |

# STUDY

The cumulative proportion of P3 (OB nurse education) and P5 (QBL) increased from baseline to quarter 2.




The cumulative proportion of P2 (OB physician and midwife education) increased from baseline to quarter 3.



# STUDY

- July 8th PPH drill and emergency C-section drill
- September 27th emergency C-section drill with Malignant Hyperthermia drill and PPH cart review
- December 6th C-section drill and PPH drill
- Multiple multidisciplinary reviews of PPH
  - Didn't remember the cart-moved cart to be more visible
  - Didn't remember what was in the cart labeled drawers
  - Not able to get blood fast enough
- *Audited PPH charts from the past and noted most PPH happened with in 6 hours.*

Table 1: Accuracy of physician EBL before and after implementation of QBL system

| | EBL (Pre-QBL) | EBL (Post-QBL) | p |
|---|---|---|---|
| **All Deliveries** | **N=6346** | **N=2754** | |
| EBL | 530.6 ± 370.9 | 460.9 ± 358.0 | |
| Difference in Hgb* | 0.3 ± 1.2 | 0.5 ± 1.2 | <0.001 |
| **Any Delivery, EBL>1000 mL** | **N=235** | **N=85** | |
| EBL | 1609.0 ± 843.3 | 1719.4 ± 888.4 | |
| Difference in Hgb* | -1.1 ± 3.0 | -1.4 ± 3.7 | 0.455 |
| **Vaginal** | **N=4399** | **N=1835** | |
| EBL | 351.9 ± 181.5 | 312.0 ± 187.8 | |
| Difference in Hgb* | 0.50 ± 1.1 | 0.7 ± 0.9 | <0.001 |
| **Cesarean** | **N=1943** | **N=919** | |
| EBL | 934.8 ± 372.2 | 758.3 ± 425.1 | |
| Difference in Hgb* | -0.13 ± 1.4 | 0.18 ± 1.50 | <0.001 |

All data presented as mean ± standard deviation.
EBL, estimated blood loss; QBL, quantitative blood loss; Hgb, hemoglobin.
*Difference between actual change in Hgb (predelivery Hgb – Hgb 24hrs after delivery) and predicted change in Hgb (predelivery Hgb – predicted Hgb 24hrs after deliver

**Table 1. Complications of Postpartum Hemorrhage**

| | |
|---|---|
| Anemia | Death |
| Anterior pituitary ischemia with delay or failure of lactation (i.e., Sheehan syndrome or postpartum pituitary necrosis) | Dilutional coagulopathy |
| Blood transfusion | Fatigue |
| | Myocardial ischemia |
| | Orthostatic hypotension |
| | Postpartum depression |

*Information from references 3, 6, and 7.*

# ACT OBH RISK ASSESSMENT

| | |
|---|---|
| Adopt, Adapt, or Abandon? | Adapting |
| Changes to be made? | Moving from an individual approach to an every patient every time approach. Changed from 1 time per delivery to 1 time per shift. |
| Lessons Learned? | Patients who score high may not have a PPH those who score low still can. Algorithm on what to do for each risk category confusing. It took a long time to get blood from the blood bank due to multiple factors. |
| Next steps or future goals? | Continue to do risk assessment for another reminder and a trigger for having more resources present during delivery. Use risk assessment when discussing in multidisciplinary case review. |
| Conclusion | Continue to review the usefulness of this risk assessment and re-evaluate its frequency. |

**Table 2. Risk Factors for Postpartum Hemorrhage**

| | |
|---|---|
| Antepartum hemorrhage | Maternal obesity |
| Augmented labor | Multifetal gestation |
| Chorioamnionitis | Preeclampsia |
| Fetal macrosomia | Primiparity |
| Maternal anemia | Prolonged labor |

*Information from reference 8.*

## ACT QUANTITATIVE BLOOD LOSS

| | |
|---|---|
| Adopt, Adapt, or Abandon? | Adapting |
| Changes to be made? | Not every provider is on board with doing QBL. Make excel sheet for auto calculations or integrate into I&O with in EMR. |
| Lessons Learned? | Little bites. Provider and nursing communication is key. It takes a while to get blood when you realize there has been a PPH. |
| Next steps or future goals? | Continue to reinforce QBL and give feedback to nursing and providers. Continue to do multidisciplinary debriefs and reviews of all PPH cases. Continue to do PPH drills and education. Work into C-sections. |
| Conclusion | This project still needs a lot of work but we are making headway one step at a time. |


## QUICK FIX- TYPE AND CROSS-MATCH PROCESS

- Why?
  - At the end of June 2022 there was a delivery where there was a delay in the patient receiving packed red blood cells due to no type or cross match done and lab paperwork that was overly complex and did not fit the situation.
- What?
  - For all patients, there will be 2 units blood typed and cross-matched at time of delivery.
  - Type specific release paperwork vs emergency release lab paperwork. Type specific release paperwork will be filled out by lab and be ready with
  - Education for staff
  - Added this as an auto checked order in all OB admission order sets

# QUESTIONS


WHY?
WHERE?
WHEN?
WHAT?
WHO?
HOW?
WHERE?
HOW?
WHAT?
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WHERE?
HOW? WHO?
WHAT? HOW? WHY?
HOW?