Quality Improvement Initiative for Obstetric Hemorrhage Management (OHI): Hospital Level Implementation Guide

Florida Perinatal Quality Collaborative

At The Lawton and Rhea Chiles Center for Healthy Mothers and Babies

Partnering to Improve Health Care Quality for Mothers and Babies

The FPQC gratefully acknowledges and thanks the California Maternal Quality Care Collaborative, ACOG District II, and the Illinois Department of Public Health for sharing their materials, expertise, and time to assist the FPQC in the development of this Quality Improvement (QI) Initiative.

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INTRODUCTION

One of the most significant changes maternity service units can make to eliminate preventable maternal morbidities and save women's lives is:

> ***Improve Readiness, Recognition, Response, and Reporting of Obstetric (OB) Hemorrhage*** *by establishing policies and procedures that implement organized, practiced protocols and guide multi-disciplinary training for cooperative, timely response.*

The Florida Perinatal Quality Collaborative (FPQC)/ACOG Obstetric Hemorrhage Initiative (OHI) Work Group, under contract with the Florida Department of Health, developed OB Hemorrhage Best Practice Protocols and Tools to assist you in implementing change in your Maternity Service unit.

FPQC has recruited an expert work group that includes obstetricians, maternal/fetal medicine physicians, certified nurse midwives, maternity nurses, and change facilitators to assist hospitals in the action learning collaborative for management of maternal hemorrhage.

Obstetric hemorrhage is a leading cause of maternal morbidity and mortality. Our aims are to reduce the frequency of massive hemorrhages and the subsequent major complications, as well as to support collaborating hospitals as they develop and implement multi-disciplinary teams and strategies that respond to every hemorrhage.

This implementation guide was developed to support hospital leaders' efforts to successfully implement the best obstetric hemorrhage practices and tools to create active quality improvement processes to drive successful implementation. The following information outlines the objectives of this quality improvement collaborative, the methods to support it, and the expectations of both FPQC and participants. Use this information to communicate this opportunity throughout your organization and network.

This toolkit is considered a resource. Readers are advised to adapt the guidelines and resources based on their local facility's level of care and patient populations served and are also advised to not rely solely on the guidelines presented here. As more recent evidence-based strategies become available, these materials will be updated,

This provides an opportunity for your facility to implement change and improve the care provided to women. We expect you to make a commitment to implementing change and reporting your progress during the Collaborative for the benefit of all maternity services statewide. Please retain this Implementation Plan for reference.

If you have any questions about the information presented here or during the Collaborative, email Emily Dunn at edunn2@health.usf.edu.

Thank You!

OB Hemorrhage Initiative Leaders

Robert Yelverton, MD, FACOG
Karen Harris, MD, MPH, FACOG
Anthony R. Gregg, MD, FACOG
Bruce Breitt, MD, FACOG
Judette Lewis, MD, MPH, FACOG
Isaac Delke, MD, FACOG
Margie Mueller Boyer, RNC, MS
Mary Kaye Collins, CNM, JD, FACNM

FPQC Leaders and Staff

John Curran, MD
William Sappenfield, MD, MPH
Linda A. Detman, PhD
Annette Phelps, ARNP, MSN
Emily A. Dunn, MA, MPH

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PROJECT OVERVIEW

Problem Statement

Obstetric Hemorrhage is the leading cause of pregnancy-related mortality worldwide and in the United States (Bingham et al, 2011; American College of Obstetricians and Gynecologists (ACOG), 2006). Recent research indicates that "54 to 93% of these hemorrhage deaths may have been preventable" (Bingham and Jones 2012). Indeed, "maternal hemorrhage is considered to be the most preventable cause of maternal mortality" (Burke 2010).

In Florida, the pregnancy-related mortality ratio fluctuated from 13.3 in 2005 to 26.2 in 2009 without showing a clear trend. Hemorrhage was one of the top three causes of maternal mortality, accounting for 15% of deaths during this time period. Most maternal deaths from hemorrhage were caused by uterine atony/postpartum bleeding, placenta accreta, percreta, or increta, retained placenta and ruptured ectopic pregnancy (FL Pregnancy-Associated Mortality Review).

2-Year Multi Hospital Collaborative

We plan to achieve improvements in maternal outcomes related to hemorrhage by implementing best practice guidelines as developed by the OHI Work Group, including risk assessment, application of massive transfusion policies, OB Hemorrhage simulation drills and debriefing, quantification of blood loss, and more. Hospitals and providers will be better prepared to assess for hemorrhage risks, prepare for and manage obstetrical hemorrhage in earlier stages, and measure their results. The FPQC will help Collaborative participants meet OHI goals by sharing the best available scientific knowledge, teaching and applying methods for organizational change, involving experienced hospital experts, and sharing participating hospital experiences, challenges, and successes.

OHI will be implemented in a multiple phased approach, with up to 25 to 30 facilities in an "alpha cohort" (or demonstration phase). Remaining facilities would be engaged over time by supporting additional cohorts or other dissemination approaches based on resources and interest. In 18 months, participating facilities would implement strategies in the order of hospital priority until all core components appropriate to a hospital are implemented, then spend at least 6 additional months institutionalizing the strategies.

Strategies will be adaptable to all hospital settings and recognize that some facilities will not have the necessary equipment or trained professionals to utilize some of the higher technology or complex procedures and guidelines. There will be core elements that are recommended in a priority order to be included in all locations, including participation in data collection for core metrics. Each facility can either adopt an existing set of protocols or guidelines and tools or develop/adapt protocols or guidelines and tools using the evidence based elements. A toolbox of materials to assist with implementation will be provided.

Collaborative hospitals will learn improvement strategies that include establishing goals and methods to develop, and test and implement changes to their systems. Quantitative and qualitative data will be collected by sites, submitted to FPQC monthly, and shared regularly with hospital teams in a de-identified fashion.

The following elements are critical to affecting change to ensure that improvements are adopted and sustained over time:

LEADERSHIP

- Identifying Leader and Clinician behaviors, including "Champions"
- Defining the problem and making the case for change
- Setting goals
- Allocating resources

POLICY & PROCEDURE

- Agreeing on a plan
- Creating consistency between departments to improve teamwork and cohesive quality of care; see Appendix for sample policy and protocol

MONITORING

- Creating audit tools that work; see Appendix for sample tools
- Communicating progress toward goals

Model for Improvement

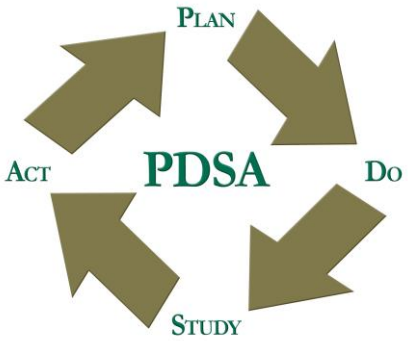
The goal of this implementation guide is to provide a simple step-by-step guide for creating quality improvement (QI) changes in your facility to improve care processes associated with obstetric hemorrhage. We will be using information and tools for quality improvement from the Institute for Health Care Improvement (IHI) available at: http://www.ihi.org/knowledge/Pages/HowtoImprove/default.aspx

The Model for Improvement as developed by Associates in Process Improvement, is a simple yet powerful tool for accelerating improvement that has been used very successfully by hundreds of health care organizations across the world to improve many different health care processes and outcomes.

The model has two basic parts:

- Three fundamental questions, which can be addressed in any order are: 1.) What are we trying to accomplish? 2.) How will we know a change is an improvement? and 3.) What changes can we make that will result in improvement?

- The Plan-Do-Study-Act (PDSA) cycle tests changes in real work settings. The PDSA cycle guides the test of a change to determine if the change is an improvement.



There are several steps involved in the improvement process. The following is a summary of those components as explained on the IHI site.

1. Improvement requires setting aims. The aim should be time-specific and measurable; it should also define the specific population of patients or other system that will be affected.

2. Measures are core to the process. Teams use quantitative measures to determine if a specific change actually leads to an improvement.

3. Ideas for change may come from the insights of those who work in the system, from change concepts or other creative thinking techniques, or by borrowing from the experience of others who have successfully improved. The concepts for the OHI are the result of a mix of information from the Florida Pregnancy Associated Mortality Review, professionals involved in obstetric care in Florida, and from other states and organizations such as ACOG, AWHONN, The Joint Commission, California, New York, and Illinois.

4. The Plan-Do-Study-Act (PDSA) cycle is shorthand for testing a change in the real work setting — by planning it, trying it, observing the results, and acting on what is learned. This is the scientific method adapted for action-oriented learning. The alpha cohort of hospitals chosen to participate will comprise the initial cycles of PDSA.

5. After testing a change on a small scale, learning from each test, and refining the change through several PDSA cycles, the team may implement the change on a broader scale to other hospitals and birthing facilities as resources and interest allow.

6. After successful implementation of a change or package of changes for a pilot population or an entire unit, the team can spread the changes to other parts of the organization or in other organizations. This may include additional evidence-based strategies or working with other states and hospitals or birthing facilities to expand the scope or refine concepts.

Hemorrhage Task Force and Maternal Quality Improvement Panel Members

The Florida Perinatal Quality Collaborative (FPQC) has developed this charter as partial fulfillment of a contract with the Florida Department of Health funded in part using Title V MCH Block Grant funds from the U.S. Health Resources and Services Administration. FPQC engaged an advisory team and partnered with ACOG District XII to develop this proposal and gratefully acknowledges their knowledge, expertise, and time that were generously donated to the project.

Advisory Team Members:

OB Hemorrhage Initiative Leaders	*FPQC Leaders and Staff*
Robert Yelverton, MD, FACOG ACOG District XII (Florida) Chair	John Curran, MD Professor of Pediatrics & Public Health, USF FPQC Executive Director
Karen Harris, MD, MPH, FACOG, Med. Dir. of Patient Safety and Quality, Florida Woman Care, LLC ACOG District XII (Florida) Vice-Chair	William Sappenfield, MD, MPH Professor & Chair, Dept. Comm & Fam. Hlth Director, USF Chiles Center
Anthony R. Gregg, MD, FACOG Professor, University of Florida Chair, Morbidity & Mortality Committee, ACOG District XII	Linda A. Detman, Ph.D. Research Associate, USF Chiles Center FPQC Program Manager
Judette Louis, MD, MPH, FACOG Assistant Professor Dept. of OB/GYN, USF Medicine & Dept. of Comm. & Fam. Hlth	Annette Phelps, ARNP, MSN Reach Up, Inc. FPQC Consultant
Bruce Breit, MD, FACOG Women's Care Florida at Winter Park OB-GYN Chair of Patient Safety and Quality Care Committee for ACOG District XII	Emily A. Dunn, MA, MPH USF Chiles Center FPQC Quality Improvement Analyst
Isaac Delke, MD, FACOG Professor, UF College of Medicine-Jacksonville Medical Director, Obstetric Services Shands Jacksonville Medical Center	
Margie Mueller Boyer, RNC, MS Administrative Director, Florida Hospital Tampa Women's Health Pavilion Florida Section Chair, AWHONN	
Mary Kaye Collins, CNM, JD, FACNM Treasurer, Florida Council of Nurse Midwives, Florida Affiliate of the American College of Nurse-Midwives	

Optimizing the Management of Obstetric Hemorrhage: Key Element Checklist

Each hospital must review the resources available within its own institution and community to design or modify a written protocol that will assist in the optimal management of obstetrical hemorrhage.

Components of any protocol that is created for the management of obstetrical hemorrhage should include core elements that maximize patient safety. Key elements include:

1. Unit-standard OB Hemorrhage Protocol
2. Development of a Hemorrhage Cart and Procedural Instructions
3. Partnership with Blood Bank for rapid and sustained availability of blood products at right ratios
4. Ensure rapid availability of medications for a hemorrhage emergency
5. Reinforce learning and team performance by regular unit-based drills (with debriefs)
6. Assessment of hemorrhage risk antenatally, on admission, and late in labor (often early second stage) for development of standing orders and to ensure proper specimens in the blood bank and mobilization of staff
7. Universal use of Active Management of Third Stage of Labor
8. Assessment of cumulative blood loss using one of several semi-quantification techniques carried through to the postpartum unit
9. Establishing a culture of always performing a Post-event Debrief/Huddle

It is further recommended that a multidisciplinary, systematic review of cases of severe obstetric morbidity, including cases of transfusion of 3 or more units of blood, be established and that reviews be conducted at regular (i.e. monthly, quarterly) intervals. The purpose of these reviews is to identify root causes and challenges related to severe obstetric morbidity related to hemorrhage and a discussion of ways to improve practices, processes, and outcomes.

The evidence-based approach to implementation includes strategies recommended by the Society for Maternal and Fetal Medicine (SMFM), ACOG, Centers for Disease Control and Prevention (CDC) and Health Resources Services Administration (HRSA)- Maternal and Child Heath Bureau (MCHB) partnership as the *Maternal Safety Bundle Obstetric Hemorrhage Key Element Checklist* (See Appendix E).

Aims

Aim 1. Reduce the number of massive hemorrhages and the number of major complications from massive hemorrhage, including transfusions and hysterectomies, for all birthing women by 50% by December 31, 2014.

Aim 2. All Collaborative participants develop and implement a multidisciplinary team response to every massive hemorrhage by December 31, 2014.

Each Member Hospital is expected to adopt the aim statements above (or similar site-specific aim statements) that include the specific goals and related required measures set forth herein. It is our hope that participating hospitals will work together toward an ultimate goal of spreading the improvements to other parts of the hospital or other hospital centers in larger hospital systems.

Participants will focus on improving practice metrics for their institution relative to their baseline measures using aggregate and de-identified data provided by participating sites. Metrics will be made available for all sites in a de-identified fashion for ready comparison across institutions. Each maternity service unit will examine its practices and share its observations on relevant activities related to:

1. Administrative involvement and priority setting;
2. Implementing consensus and evidence-based best practices and tools;
3. Determining how personnel can best implement these practices.

Core Measures

Core measures will include the following measures correlated to the Maternal Safety Bundle Obstetric Hemorrhage Key Element Checklist (Appendix E).

Highest Priority = *****
Recommended = ******

Process Measures

1. ***Post-partum hemorrhage policy (written) in place and updated within one year**. This policy identifies roles and multi-disciplinary team responders for various states of hemorrhage and the maintenance of and accessibility of an OB Hemorrhage Kit or Cart. This will be a process measure based on written policy and reported adherence to the policy as reported into the FPQC data system.
2. ***Mass transfusion policy (written) in place and updated within one year.** This policy must include coordinated response between Labor and Delivery and the Blood Bank. This will be a process measure based on written policy and reported adherence to the policy as reported into the FPQC data system.

3. ****Didactic/ Cognitive and Skills Education documented for 80% of existing professional maternity/obstetrics providers and staff and 100% of new hires.** This will be a process measure based on written policy and reported adherence to the policy as reported into the FPQC data system.

4. ****Policy on obstetric hemorrhage multi-disciplinary simulation drills—report implementation**. This policy includes having one drill on each shift for four consecutive months to identify opportunities for improvement. After each drill the team completes a debrief form. Subsequently, the hospital must complete additional simulation drills per written hospital policy. This will be a process measure based on written policy and reported adherence to the policy as reported into the FPQC data system.

5. ***Number of women who were assessed for risk of hemorrhage upon birthing admission.** Calculated by measuring the: number of assessments over number of birth admissions per month. This will be a process measure based on written policy and reported adherence to the policy as reported into the FPQC data system.

6. ****Number of women who receive Active Management of Third Stage of Labor.** Calculated by measuring number of women who receive oxytocin administration at delivery of the baby, fundal massage for greater than 15 seconds, and gentle cord traction (must have all 3 components to be considered active management) over the number of total births. This will be a process measure based on written policy and reported adherence to the policy as reported into the FPQC data system.

7. ***Quantitative measurement of blood loss per delivery, stratified by vaginal and Cesarean delivery**. Calculated by measuring the use of a specified evidence-based method of calculation of blood loss (i.e., weight of pads/chux; graduated measurement containers) in number of women over number of birth admissions per month. This will be a process measure based on written policy and reported adherence to the policy as reported into the FPQC data system.

8. **Documented hand off report assessing for cumulative blood loss, between labor and delivery and postpartum medical and nursing staff for all women with 1000 cc blood loss or greater.** Calculated by measuring the number of reports over the number of birth admissions. This will be a process measure based on written policy and reported adherence to the policy as reported into the FPQC data system.

9. ***Frequency of debrief sessions and completion of debrief form after all hemorrhages of greater than 1000 cc for a delivery**. These debriefings must include all obstetricians, midwives, blood bank personnel, and nurses who participated in the hemorrhage episode. Calculated by measuring the number of debrief forms submitted over the number of hemorrhages that required interventions. This will be a process measure based on written policy and reported adherence to the policy as reported into the FPQC data system.

Outcome Measures

10. ***Percentage of women who gave birth and received blood product transfusions of any type during the birth admission.** Calculated by measuring the number of women who had blood products transfused per month (numerator) over the total number of births per month (denominator). Baseline will be collected with subsequent data reported monthly. Hospitals will report data based on internal data sources including patient records, blood bank data or ICD and CPT codes. Data will be entered into the FPQC data collection system monthly.

11. ****Total units of each type of blood product used during birth admissions per each admission.** Calculated by measuring the total units of each type of blood product transfused per woman. Baseline will be collected with subsequent data reported monthly. Hospitals will report data based on internal data sources including patient records, blood bank data or ICD and CPT codes. Data will be entered into the FPQC data collection system monthly.

12. ***Number of women who received three or more units of blood products during the birth admission.** Calculated by measuring the number of women transfused with three units or more of blood products. Baseline will be collected with subsequent data reported monthly. Hospitals will report data based on internal data sources including patient records, blood bank data or ICD and CPT codes. Data will be entered into the FPQC data collection system monthly.

13. ****Rate of peripartum hysterectomies per 1000 women who had a hysterectomy performed during the birth admission, stratified by risk factors including placenta previa, accreta, percreta, and uterine atony.** Calculated by measuring the number of peripartum hysterectomies performed during a birth admission with or without risk factors per month, divided by total number of births per month. Baseline will be collected with subsequent data reported monthly. Hospitals will report data based on internal data sources including patient records, blood bank data or ICD and CPT codes. Data will be entered into the FPQC data collection system monthly.

Collaborative Member Roles

The following outlines the expectations of the Expert Panel, FPQC and participating hospitals.

The OHI Leadership will:

- Provide participants with information on subject matter and application of that subject matter via medical and quality improvement experts
- Provide training on the methods for process improvement
- Develop/adapt/update useful materials and tools as needed by the initiative
- Offer guidance and feedback to participating hospitals on executing improvement strategies

FPQC will:

- Coordinate experts and other resources to support the improvement process
- Provide content oversight and process management for the Collaborative
- Facilitate all activities of the Collaborative timeline
- Provide a mechanism for sites to report project data as annotated time series and narrative progress reports, and provide information summaries to the participating hospitals
- Provide analytic support to determine overall improvement across all participating hospitals
- Provide communication strategies to keep participants connected (i.e., monthly conference calls and in-person meetings with didactic and hands-on skill building opportunities)
- Communicate progress and deliverables to the stakeholders of FPQC
- Evaluate and report OHI activities and impact in a fashion that does not publicly identify hospitals and providers.

Participating Collaborative Hospitals are expected to:

- Identify an implementation team to include local and travel components, a physician champion, nurse champion, and administrative champion
- Develop and implement policies adhering to the evidence-based strategies for management of obstetric hemorrhage
- Participate on webinars or other telecommunications media and share their challenges and successes to provide for joint learning and practice improvements

Hospital Administrator in Participating Hospitals:

- Connect the goals of the Collaborative to a strategic initiative in their hospital
- Serve as sponsor for the team
- Provide the resources to support their team, including time to devote to this effort (learning sessions and monthly phone calls) and active senior leadership involvement as appropriate

Hospital MD and Nurse Leaders in Participating Hospitals:

- Lead the hospital's OHI quality improvement efforts
- Perform baseline assessment
- Attend the in-person meetings and monthly phone calls
- Share information with the Collaborative: Submit information to FPQC, and share both experiences and data with fellow participants on conference calls and at in-person meetings.
- Perform tests of change that lead to process improvements in the organization
- Spread successes across the entire hospital system where suitable

Collaborative Timeline

Tasks	Target Completion Date
Establish baseline data	**August 2013 – December 2013**
Initial in-person meeting of alpha cohort	**October 2013**
Monthly Conference calls with alpha cohort to report progress and additional training opportunities as need indicates	**November 2013 – June 2015**
All hospitals will attempt to have initiated their plans	**January 2014**
Mid-project in-person meeting of alpha cohort	**Spring 2014**
Optimization and sustainability phase of the alpha cohort implementation reached	**December 2014 – June 2015**
Technical assistance for alpha cohort	**August 2013 – June 2015**
Project Monitoring and Evaluation	**Ongoing**

Pre-Work

Pre-work is the period between commitment to participate and the Collaborative's first face-to-face meeting. During this pre-work time, we request you complete the Hospital Participation Survey and provide initial Baseline Data. An online data survey system will be provided for hospitals to submit their data on a monthly basis.

In-Person Meetings

Representatives (at least two, preferably one provider) from hospitals will participate in an initial in-person meeting in late October 2013 in order to share material for core elements and guideline/protocol examples, training on change management, and clinical practice elements.

A mid-project face-to-face meeting will occur in spring of 2014 to review data and share successes and ideas for project improvement.

Action Periods

During Action Periods, the time between in-person meetings, hospitals work toward major, breakthrough improvement. Hospitals in the cohort will receive ongoing technical assistance, including expert consultation, site visits, training, and data review as needed. To achieve planned results, it is expected that a work plan will be developed specific to the hospital/facility to address all core measures of the OHI. A sample work plan format is included in Appendix A.

Ongoing communication will occur during monthly conference calls and/or web-casts along with emails and list serves. Each hospital/facility will report progress and additional training opportunities as need in order to share improvement efforts internally and externally with other participating hospitals.

OBSTETRIC HEMORRHAGE QUALITY IMPROVEMENT
Participating Hospital Commitment Form

_____

Please Print - Participating Hospital

The above organization commits to participate in the Florida Perinatal Quality Collaborative Maternal Mortality Initiative, Obstetric Hemorrhage Quality Improvement initiative. The goals of the initiative are to 1. Reduce the number of massive hemorrhages and the number of major complications from massive hemorrhage, including transfusions and hysterectomies, for all birthing women by 50% by December 31, 2014; and 2. All Collaborative participants develop and implement a multidisciplinary team response to every massive hemorrhage by December 31, 2014.

As part of this initiative, our organization agrees to:

1. Adopt the aim statements laid out in this charter
2. Designate, establish and sustain a quality improvement team for the initiative for a period of 18 to 24 months,
3. Designate a physician champion/leader and a nurse champion/leader for the initiative
4. Perform a baseline assessment and participate in ongoing core data for metrics (to include but not limited to: number of hemorrhages, number of hemorrhage related hysterectomies, blood product usage, pharmaceutical usage, and various procedure and policy measures) to be entered into an accessible de-identified data system for your hospital's and FPQC's use,
5. Adopt an existing set of protocols or guidelines and tools *or* develop/adapt protocols or guidelines and tools using the evidence-based elements for management of OB hemorrhage,
6. Implement strategies in the order of hospital priority until all core components appropriate to a hospital are implemented, then institutionalize the strategies,
7. Participate on monthly conference calls, webinars or other telecommunications media and in-person meetings to share their challenges and successes to provide for joint learning and practice improvements
8. Commit to hospital administrative support, encouragement, and necessary resources for teams, for implementation of the project

Our primary contact for this initiative is:

Name: _____

Title: _____

Phone number: _____

Email address: _____

Signature: _____

PLEASE SIGN ABOVE and return to **Emily Dunn** by **September 30, 2013**.

APPENDIX A: OBSTETRIC HEMORRHAGE INITIATIVE WORK PLAN SAMPLE

OB Hemorrhage Multi-Hospital Collaborative

Aim 1: Reduce the number of massive hemorrhages and the number of major complications from massive hemorrhage, including transfusions and hysterectomies, for all birthing women in participating hospitals by 50% by December 31, 2014.

Aim 2: All collaborative participants develop and implement a multidisciplinary team response to every massive obstetric hemorrhage by December 31, 2014.

Purpose of the Work Plan Sample: The work plan outlines the measures to be collected during the 18-month OB Hemorrhage multi-hospital collaborative. The plan includes the specific parameters for each measure. The hospital should expand on this sample plan to include work steps, strategies, responsible parties and actual date the step is to be completed.

Timeline for Measurement: The work plan is broken down into two categories: Outcome and Process Measures. Teams may also develop additional measures based on the issues of most interest and importance to their hospital and patient population needs.

Process Measures: Identify progress over time in changes to processes of care that affect outcome measures. Measuring the results of these process changes will show if the changes are leading to an improved, safer system.

Outcome Measures: Identify whether changes are leading to improvement and achieving the overall aims of the OHI.

Each hospital will develop a work plan to include the components listed in the Sample Work Plan and may add components and steps to achieve the measures. Suggested due dates can be adjusted to meet local needs but should approximate suggested times in order to assure the alpha phase of implementation is institutionalized during the project period. Other component items to be considered for inclusion in the work plan are tool development related to standing orders from antenatal and other assessments, documentation forms, etc. which may be included as action steps in the development of policies or have separate categories and action steps.

As recommended nationally, facilities may choose to implement the systematic review of all cases of severe maternal morbidity including all cases where 3 or more units of blood product transfusion occur. If implemented this should be included in the work plan.

Obstetric Hemorrhage Initiative Sample Work Plan

Hospital/Facility:_____ Date:_____

Process Measures
Identify progress over time in changes to processes of care that affect outcome measures. Measuring the results of these process changes will show if the changes are leading to an improved, safer system.

Deliverable	Deliverable Specifics/Action Steps	Responsible Person	Comments/ Revisions	Tentative Due Date
1. General Department Hemorrhage Policy and Procedure is reviewed and updated	General Department Policy is reviewed and updated and includes (but is not limited to the following elements): • Identify roles and multi-disciplinary team responders for stage 1, 2, and 3 hemorrhages • Determine and implement the most desirable method for maintaining accessibility to the needed OB hemorrhage supplies (Hemorrhage Kit/Cart)			**March 1, 2014**
2. Massive Transfusion Policy and Procedure is reviewed and updated within 1 year	Massive Transfusion Policy is reviewed and updated and includes (but is not limited to) the following elements: Coordination of response with Blood Bank			**March 1, 2014**
3. Cognitive/Didactic education and Skills education conducted with/provided to >80% of existing RN and MD staff and an ongoing education plan is developed for 100% of incoming (new hire/new join) staff	Cognitive/Didactic education includes, but is not limited to, Grand Rounds, Flip Charts Skills education includes, but is not limited to: intrauterine balloons, B-Lynch suturing, quantitative measurement of blood loss			**April 1, 2014** **April 1, 2014**

Process Measures
Identify progress over time in changes to processes of care that affect outcome measures. Measuring the results of these process changes will show if the changes are leading to an improved, safer system.

Deliverable	Deliverable Specifics/Action Steps	Responsible Person	Comments/ Revisions	Tentative Due Date
4. Create drills tailored to your hospital P&Ps and responder roles	Run one multi-disciplinary (i.e., doctors and nurses) drill per month for four consecutive months (two on night/evening shift and two on day shift) to identify system and process improvement opportunities. After each drill complete a drill debrief form.			**March 1, 2014**
5. Women are assessed for risk of obstetric hemorrhage on admission	Utilizing an evidence-based risk scoring tool, all women admitted for birth will be assessed for risk of obstetric hemorrhage and the score documented in clinical record so that the risk is considered in the patient care plan for labor and delivery.			**January 1, 2014**
6. Women receive Active Management of Third Stage Labor	Active Management includes: •Oxytocin (IV or IM) at delivery of the baby (identify when administered) •Fundal Massage for 15 seconds minimum •Gentle Cord traction Note: Need all three to be considered Active Management			**January 1, 2014**
7a. Quantitative measurement of blood loss is documented DURING <u>vaginal</u> deliveries **7b.** Quantitative measurement of blood loss is documented DURING <u>cesarean</u> deliveries	Quantification and documentation of blood loss is performed (during and after all births until immediate recovery status changes to routine postpartum care and woman is physiologically stable) using one or more of the three preferred methods: 1. Formally estimate blood loss by recording percent (%) saturation of blood soaked items with the use of visual cues such as pictures/posters to determine blood volume equivalence of saturated/blood soaked pads, chux, etc. 2. Formally measure blood loss by weighing blood soaked pads/chux, etc. 3. Formally measure blood loss by collecting blood in graduated measurement containers.			**May 1, 2014**

8. Documented hand off report assessing for cumulative blood loss, between labor and delivery and postpartum medical and nursing staff for all women with 1000 cc blood loss or greater.	Handoff in 100% of cases. Calculated by measuring the number of reports over the number of birth admissions. These reports are to assure that continued vigilance is maintained for progression of blood loss and appropriate actions taken as needed.			**January 1, 2014**

Measure	Calculation/Data Collection	Responsible Person	Comments/ Revisions	Due Date
9. Frequency of debrief sessions involving MD and non-MD staff that took place for a hemorrhage that advanced beyond 1000 cc /beyond stage 2 or 3 Note: Stage 2 or 3 are defined as hemorrhages that continues requiring additional interventions after the patient received IV or IM Oxytocin, vigorous fundal massage, and either IM Methergine or PR Misoprostol	Numerator: Number of debrief forms submitted to FPQC from the denominator Denominator: Number of hemorrhages each month that required interventions, treatments, procedures outlined in Stage 2 or 3 of the CMQCC OB Hemorrhage checklist *Recommendation:* Completion of debrief is encouraged to occur immediately after the patient is stabilized e.g. when she goes to the recovery area, but no later than 24 hours after event. **Option for Hospitals:** Import data from OB Hemorrhage Quality Improvement Collaborative (#1; starting with January 2014) See "Obstetric Hemorrhage Team DeBriefing Form" or any form that captures the elements contained on this form. Email scan of debriefing to Emily Dunn at edunn2@health.usf.edu.			**Report monthly**

Outcome Measures
Identify whether changes are leading to improvement and achieving the overall aims of the OHI.

Measure	Calculation	Data Collection Method(s)	Responsible Person	Comments/ Revisions	Time frame for Data Collection
10. Percent of women (who gave birth ≥20 0/7 weeks gestation) who were transfused with any blood product during the birth admission	**Numerator:** Number of women (who gave birth ≥20 0/7 weeks gestation) who were transfused with any blood product during the birth admission per month. **Denominator:** Total Number of Births (≥20 0/7 weeks gestation) per month	**Blood Transfusion:** data from internal source such as blood bank data, patient charts, medical records, Electronic Medical Record (EMR), etc. If available: Blood loss data recorded in patient record or delivery log. **ICD-9 Procedure Code for transfusions: 99.0** **CPT Code: 36430: Transfusion, blood or blood components** Note that these codes do not typically identify transfusions accurately. We recommend obtaining data from the Blood Bank when possible. Cross check against patient charts as needed. Data entered to FPQC online data collection system			**BASELINE:** Collect for **January – December 2013** **COLLABORATIVE:** Report monthly data as defined

11. Total units of each type of blood product (PRBCs, Platelets, Plasma/FFP, Cryo) transfused during birth admissions per total births	**Numerators:** Total units of each type of blood product (PRBCs, Platelets, Plasma/FFP, Cryo) transfused during birth admissions per month. Select each blood product within the series from the drop-down menu: • Series 1*: Units of PRBCs/month • Series 2: Units of Platelets/month • Series 3: Units of Plasma/FFP/month • Series 4: Units of Cryo/month **Series are categories of data within a single measure* **Denominator:** Total Number of Births (≥20 0/7 weeks gestation) per month	Work with your blood bank to identify units transfused per month during birth admission Accounting records can also be an accurate source for these data Cross check data obtained from blood bank and/or accounting with chart reviews ***Debrief Form:*** *For women who experience Stage 2 or 3 hemorrhage, identify units of PRBCs, Platelets, Plasma/FFP, Cryo (for each woman) on the Debrief Form*			**BASELINE:** Collect for **January – December 2013** **COLLABORATIVE:** Report monthly data as defined (starting with September 2013)

12. Percent of women (who gave birth ≥20 0/7 weeks gestation) who were transfused with ≥5 units PRBCs during the birth admission	**Numerator**: Number of women (who gave birth ≥20 0/7 weeks gestation) who were transfused with ≥5 units PRBCs during the birth admission per month. **Denominator:** Total Number of Births (≥20 0/7 weeks gestation) per month.	See above			**BASELINE:** Collect for **January – December 2013** **COLLABORATIVE:** Report monthly data as defined **(starting with September 2013)**
13. Rate of peripartum hysterectomies in women (who gave birth ≥20 0/7 weeks gestation) per 1000 births (hysterectomy performed during birth admission) stratified by risk of Placenta Previa and/or Placenta Accreta/percreta	**Numerator:** Number of peripartum hysterectomies (performed during birth admission) in women (who gave birth ≥20 0/7 weeks gestation) per month stratified by: • **Series 1*:** Women **with** Placenta Previa and/or Placenta Accreta/Percreta • **Series 2:** Women **without** Placenta Previa and/or Placenta Accreta/Percreta ****Series are categories of data within a single measure*** **Denominator:** Total Number of Births (≥20 0/7 weeks gestation) per month	Peripartum Hysterectomy: Data Collection from internal source such as EMR, medical records, or other method determined by each site **ICD-9 Procedure Codes** **68.3** Subtotal abdominal hysterectomy **68.39** Other and unspecified subtotal abdominal hysterectomy **68.4** Total abdominal hysterectomy **68.49** Other and unspecified total abdominal hysterectomy **CPT Codes** **59525** Cesarean Hysterectomy **58150** Hysterectomy Total/Partial (Use Post-Partum or with Vaginal) **59160** D&C after delivery Data entered into FPQC online data collection system *****Annotate as an "Event" in Extranet; use "Annotation Notes" to enter a), b), and c)***			**BASELINE:** Number of peripartum hysterectomies (performed during birth admission) in women who gave birth ≥20 0/7 weeks gestation **Between 1/1/13 to 12/31/13** **COLLABORATIVE:** Report monthly data as defined starting **October 2013**

	Risk Stratification/Adjustment: Women who had a hysterectomy and placenta previa and/or accreta/percreta are reported separately from women who had a hysterectomy (and NO placenta previa/accreta/percreta) **Annotate** for each hysterectomy:** a) Indication for hysterectomy b) Number of prior cesarean sections Number of Days Post-Delivery (Days = 0 if procedure done on day of delivery)				

APPENDIX B:
POWERPOINT TRAINING TOOL FOR IMPLEMENTATION

Instructions for Use:

This slide set presentation summarizes the problem of and the best practices for handling obstetric hemorrhage to be used for local professional education and training.

These slides may be modified to meet the needs of the individuals and hospitals who will be presenting them for use in training and dissemination of the implementation plan as long as the user assures that evidence-based concepts are maintained.

The FPQC has received permission to use materials from the following groups:

- American Congress of Obstetricians and Gynecologists (ACOG) District II (New York)
- California Maternal Quality Care Collaborative, California Department of Public Health
- Illinois Department of Public Health

These permissions require that the source be cited when forms or materials are utilized. Please see **Appendix C** for citation requirements.

If slides are added to the presentation, please do not use any logos other than your own. Please provide feedback and share any changes that are made to the presentation so that we can continue to improve as well

APPENDIX C:
PERMISSION TO USE MATERIALS, CITATION REQUIREMENTS

Materials used without changes need to include logos or identifiers.

Materials that are adapted must be referenced appropriately.

The FPQC has received permission to use materials from the following groups:

1. California Maternal Quality Care Collaborative, California Department of Public Health

   Suggested citation: Lyndon A, Lagrew D, Shields L, Melsop K, Bingham B, Main E (Eds). Improving Health Care Response to Obstetric Hemorrhage. (California Maternal Quality Care Collaborative Toolkit to Transform Maternity Care) Developed under contract #08-85012 with the California Department of Public Health; Maternal, Child and Adolescent Health Division; Published by the California Maternal Quality Care Collaborative, July 2010.

   Funding for the development of this toolkit was provided by: Federal Title V block grant funding from the California Department of Public Health; Maternal, Child and Adolescent Health Division and Stanford University.

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2. American Congress of Obstetricians and Gynecologists (ACOG) District II (New York)—citation of materials used or modified.

3. Illinois Department of Public Health—citation of materials used or modified.

APPENDIX D:
MATERNAL SAFETY BUNDLE OBSTETRIC HEMORRHAGE KEY ELEMENT CHECKLIST

DRAFT

Maternal Safety Bundle
Obstetric Hemorrhage Key Element Checklist

HIGHEST PRIORITY:

- ☐ 1. Unit-standard OB Hemorrhage Protocol with EBL/VS driven stages to guide interventions and mobilization of assistance, including nursing checklists and physician back-up plan • Example: CMQCC Protocol--Table chart, Flowchart, and Checklist • Example: Montefiore Hemorrhage Protocol • Example: ACOG District II (NY) Protocol
- ☐ 2. Hemorrhage Cart (equipment) / including instructions for new procedures such as intrauterine balloons and compression sutures for L&D and Postpartum • Example: B-Lynch Compression Suture Poster • Example: CMQCC Hemorrhage Cart List Example
- ☐ 3. Partnership with your Blood Bank for rapid and sustained availability of blood products at right ratios • Example: Stanford Massive Transfusion Protocol • Examples: Hennepin O-neg and Uncrossmatched Transfusion Protocols
- ☐ 4. Establish a culture of always performing a Post-event Debrief/Huddle using a simple tool • Example: CMQCC Debrief Form
- ☐ 5. Universal use of Active Management of 3rd Stage • Example protocols *Pending*
- ☐ 6. Assessment of hemorrhage risk on admission and late in labor (often early second stage) to ensure proper specimens in the blood bank and mobilization of staff. • Example: CMQCC Risk Assessment tool • Example: AHWONN Risk Assessment tool
- ☐ 7. Assessment of CUMMULATIVE blood loss using one of several semi-quantification techniques. • Examples: CMQCC Ongoing Quantitative Measurement Document and Reporting Templates

RECOMMENDED:

- ☐ 8. Reinforce learning and team performance by regular unit-based drills (with debriefs) • Example: OB Drills from AHWONN
- ☐ 9. Ensure rapid availability of medications for a hemorrhage emergency: e.g. medication kit, PIXIS overrides, or other approaches specific to your unit • Example protocols *Pending*
- ☐ 10. Establish easily available resources for special cases: Jehovah's Witnesses, underlying bleeding disorders, placenta previa and accreta, • Example: CMQCC Jehovah's Witness Protocols • Example: Columbia University Placenta Accreta Protocol