Guidance Brief and Resources to Support Effective Simulations and Debriefs

The 2025 Missouri Pregnancy-Associated Mortality Review report determined 80% of pregnancy-related deaths to be preventable. Multiple provider, facility and system-level factors contributed to these deaths, including inadequate assessment (i.e., not measuring quantitative blood loss), clinical skill/quality of care issues, a lack of or inconsistent use of policies and procedures, and a lack of continuity of care and care coordination, among others. To address these factors, one key recommendation is for all hospital staff to participate in simulation-based training (Missouri Department of Health and Senior Services, 2025). Simulation-based training can aid teams to address the factors that contribute to morbidity and mortality, leading to improved maternal health outcomes. This guidance provides resources to assist facilities in the planning and execution of simulation-based training.

Without structured practice, teams may lack the necessary communication and coordination required to achieve positive outcomes. Participating in an in-situ simulation provides the opportunity to not only recognize and respond to clinical situations but also improve communication and identify process and system-level barriers that prevent optimal care provision (American College of Obstetricians and Gynecologists, 2022). Utilizing the Alliance for Innovation on Maternal Health's Simulations and Drills for Patient Safety is recommended to decrease staff burden and enhance standardization.

TeamSTEPPS is an evidence-based program developed to enhance how health care teams operate by focusing on four key skills: communication, team leadership, situation monitoring and mutual support. This program helps teams achieve and sustain high reliability for all patients. It

is essential to model these principles in both the simulation environment and everyday working environment to maintain effectiveness in providing safe, high-quality care. The Agency for Healthcare Research and Quality has free online learning modules that teams can access to learn the TeamSTEPPS framework (AHRQ, 2025).

Considerations to Deploy an Effective Simulation/Debrief Exercise

- **Multidisciplinary team inclusion:** Teams are best prepared for actual patient encounters when all members of the multidisciplinary team participate. This includes, but is not limited to, obstetric providers, nurses, anesthesiologists, support staff (e.g., pharmacists, blood bank and lab technicians), Neonatal Intensive Care Unit/pediatric teams, unit clerks, administrative leaders and additional specialties (e.g., critical care intensivists, gynecologists and surgeons). Including leadership from quality and/or risk management may also be helpful to assist in tracking appropriate responses per facility protocols and key performance metrics.

  Another important consideration is the inclusion of simulated family members. Involving at least one person to act as a family member is essential to creating a more realistic scenario and provides the team with an opportunity to practice communication with the family member(s). Teams may include a patient/family partner to bolster realism and ensure the patient/family perspective is considered when addressing barriers and needed improvements (ACOG, 2022).

- **Location selection and scheduling:** Once you have considered which individuals and teams need to participate, you can begin planning your simulation by identifying the best

location within the department. Based on the number of participants, you will need to determine if one or multiple dates and/or times will be necessary to ensure participation in the simulation by all team members. Consider running simulations on both days and nights to ensure standardization across all shifts (ACOG, 2022).

- **Equipment needs:** Teams can create effective simulation scenarios using either low- or high-tech options or a combination. Low-tech options most often refer to handmade or staff-created equipment that can be used at any time and do not require electronics or a special team to set up and run a scenario. Having an individual play the role of the patient is an example of a low-tech option. High-tech options typically involve electronic equipment and manikins to simulate specific clinical scenarios. These options often require trained personnel to perform scenarios and are more complex and expensive. High fidelity tools like a manikin offer teams the opportunity to learn and refine their skills with a level of realism. Fidelity refers to how close a scenario resembles an actual patient encounter, including both how the scenario unfolds and the emotions it evokes in participants (ACOG, 2022).

  Prior to the scheduled simulation, ensure you have all the necessary equipment available. See basic lists below for hemorrhage and hypertension scenarios. Additional or facility-specific equipment and resources will vary by organization.

Obstetric Hemorrhage Supply List

- manikin or person to act as the patient

- vital signs equipment (e.g., blood pressure cuff, pulse oximeter, thermometer, stethoscope)
- simulated VS
    - high-tech simulated VS on monitor
    - low-tech simulated VS (e.g., printed, see AIM Hemorrhage Scenarios Visual Aids or create your own)
- facility hemorrhage protocol
- faux blood-soaked items
    - video on how to make fake blood
    - create your own fake blood using clear Dawn® dish soap and red food coloring
- gram scale
- Quantification of Blood Loss Worksheet (i.e., wet weight – dry weight = QBL)
- hemorrhage cart
    - IV start supplies and tubing (primary and secondary)
    - IV fluids (e.g., normal saline)
    - blood tubing
    - blood draw supplies
    - lab vials and biohazard specimen bags

- medications (e.g., oxytocin, methylergonovine, carboprost, misoprostol, tranexamic acid)
- straight catheter kit
- Foley catheter kit and urimeter bag
- balloon tamponade (BT) catheter
- JADA® system
- speculum
- lap sponges
- vaginal packing
- chux pads
- peripads
- biohazard bags

- faux blood products
  - cooler
- oxygen tubing
- code cart

Hypertension Supply List

- manikin or person to act as the patient
- VS equipment (e.g., blood pressure cuff, pulse oximeter, thermometer, stethoscope, fetal heart tone monitor)
- simulated VS

    - high-tech simulated VS on monitor
    - low-tech simulated VS (e.g., printed, see AIM Hypertension Scenario Training Aids or create your own)
- severe HTN protocol/antihypertensive algorithms
- first-line antihypertensive medications (e.g., IV Labetalol, IV Hydralazine, and PO Nifedipine)
- IV start supplies
- IV tubing (primary and secondary)
- IV pump
- IV fluid (e.g., normal saline)
- IV magnesium sulfate (NOTE: When a patient has sustained severe hypertension, and antihypertensive medication and IV magnesium sulfate cannot be given concurrently, **the priority is giving the antihypertensive medication first.**)
    - 4gm or 6gm bolus
    - maintenance bag
- IV calcium gluconate
- reflex hammer
- oxygen tubing
- code cart

- **Identify facilitation and debrief roles:** Plan to have one person facilitate the simulation and a separate individual debrief the scenario. The facilitator prepares participants, reviews the scenario and learning objectives, and provides all necessary case example information such as vital signs, lab values and assessment findings. The facilitator should ensure the protocol is followed and support the team members to flow through the scenario effectively. The debriefer should observe the scenario and then lead participants in a discussion utilizing a formalized debriefing tool following completion of the exercise (ACOG, 2022). If possible, have another observer present during the simulation to track and record times of key assessments and interventions. Recommendations for debriefing and debriefing tools are included in the Resources section of this document.

Importance of Team Debriefing

The team debrief should discuss how the scenario went, system barriers, communication flow, potential solutions or changes, and key takeaways. It is critical for both the facilitator and the debriefer to establish the simulation as a safe space to learn, practice, identify system issues and improve communication. It is not a test, nor intended to be punitive. To assist in creating this safe atmosphere, the facilitator and debriefer should review the basic assumption:

> "Everyone here is intelligent, well-trained, wants to be their best, and is here to improve patient care. This is not a test of individuals, it is a test of process, a tool to identify and potentially fix gaps on our unit, in our teamwork, in our communication, and the overall reliability of the care we provide. It is also an

opportunity to learn and ask questions in a safe environment." (ACOG, 2022, p. 11).

The team should discuss what went well and how they can replicate those positive aspects in future patient encounters. Additionally, the discussion must include ensuring that assessments and interventions are completed in a timely way using a checklist. See specific case scenarios and Appendix A for example checklists. This review is key to helping teams identify both individual and team needs to improve their care delivery and find solutions to workflow and system barriers. Ending the debrief by reflecting on the positive behaviors of the team is important in building team confidence. Finally, any suggestions for process and system changes should be addressed promptly with nursing and obstetric leadership to maintain team momentum gained during the simulation (ACOG, 2022). See In-Situ Drills Facility Protocol Change Form and Practicing for Patients Implementation Action Plan for assistance addressing changes. Review the AIM Obstetric In-Situ Drill Program Manual for information on preparation and scheduling, equipment options, and team review and debriefing.

Use of Videography in Simulations/Debriefs

Your team may consider recording the simulation scenario and then reviewing the recording with participants during the debrief. Though no significant difference has been established between verbal debriefing or video-assisted debriefing, there are some notable advantages to VAD, including having an objective account of the scenario, a chance for participants to examine and replay their actions and skills, and improved performance of specific skills of both individuals and teams. Some of the key disadvantages include technical issues

related to audio, video and equipment, the possibility of jeopardizing psychological safety, increased time constraints and added expense (Schertzer & Waseem, 2025). It is essential for teams to evaluate these options and their organizational capabilities to determine the best format for simulations and debriefs to achieve learning objectives, skill building and improved team functioning.

Additional Considerations

Structured simulations are essential to ensuring teams have the knowledge, skills and abilities to provide high quality, effective, safe, person-centered care. After staff have received proper training, teams may consider holding additional surprise or impromptu drills to examine team performance under pressure. Additionally, teams may perform table-top or discussion drills to verbally talk through different scenarios. These options can be utilized to supplement structured drills and training opportunities to maintain continued readiness.

Resources

General Resources

AIM: Obstetric In-Situ Drill Program Manual

AIM: In-Situ Drills Preparation Checklist

International Nursing Association for Clinical Simulation and Learning: INACSL Healthcare Simulation Standards of Best Practice®

Missouri Perinatal Quality Collaborative: Obstetric Hemorrhage Resource Workbook

MO PQC: Severe Hypertension in Pregnancy Resources Workbook

Hemorrhage and Hypertension Scenarios

AIM: Simulations and Drills for Patient Safety – Includes sample case scenarios, case videos and visual aids for simulation (e.g., vital signs and fetal heart tones)

California Maternal Quality Care Collaborative: Improving Health Care Response to Hypertensive Disorders of Pregnancy Toolkit: Appendix C: Simulation Scenarios

CMQCC: Obstetric Hemorrhage Toolkit: Appendix F: Simulations and Drills: Guidelines for Simulation Scenario Development

CMQCC: Obstetric Hemorrhage Toolkit: Appendix G: Simulations and Drills Sample Scenarios

CMQCC: Hypertensive Disorders of Pregnancy Toolkit: Appendix C: Simulation Scenarios

Team Review and Debriefing

American Heart Association: PEARLS Scripted Debriefing Tool – QuickStart Guide

ACOG: Severe Hypertension Form

ACOG: Obstetric Hemorrhage Form

See Appendix A for an additional example debrief form.

Team-based Communication Training

Agency for Healthcare Research and Quality: TeamSTEPPS

Missouri Hospital Association: TeamSTEPPS information and training

Protocol Change Form and Implementation Action Plan

AIM: In-Situ Drills Facility Protocol Change Form

AIM: Practicing for Patients Implementation Action Plan

Obtaining Institutional Support

AIM: Practicing for Patients Presentations – Includes ready-to-go PowerPoint presentations for both leadership and staff

References

Agency for Healthcare Research and Quality. (2025, March). *TeamSTEPPS Program*. Retrieved September 2, 2025, from https://www.ahrq.gov/teamstepps-program/index.html

American College of Obstetricians and Gynecologists. (2022, December). Alliance for Innovation on Maternal Obstetric In-Situ Drill Program Manual V3. https://saferbirth.org/wp-content/uploads/FINAL_AIM_ObstetricInSituDrill-ProgramManual-2.pdf

Missouri Department of Health and Senior Services. (2025, June). Missouri Pregnancy Associated Mortality Review 2018-2022 Annual Report. https://health.mo.gov/data/pamr/pdf/2025annual-report.pdf

Schertzer, K. & Waseem, M. (2025). *Use of Video During Debriefing in Medical Simulation*. Last Update May 1, 2023. StatPearls Publishing LLC. https://www.ncbi.nlm.nih.gov/books/NBK554619/

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Appendix A: Sample Debrief Form

Date/Time of Simulation:
Date/Time of Debrief:
Participants and Their Roles:
Key Assessment and Implementation Completed: ○ VS assessment and identification of abnormal findings (e.g., systolic bp ≥160 or diastolic bp ≥110 is in severe range) ○ Correct VS reassessment (i.e., severe HTN reading should be reassessed in 15 min to confirm it is sustained. Once sustained, it is considered an obstetric emergency.) ○ Physical assessment completed (i.e., fundal assessment and quantification of blood loss) ○ Symptom assessment completed ○ Timely communication with team and provider per protocol ○ Timely administration of medication per protocol (e.g., first-line antihypertensive medication given within one hour of first severe blood pressure reading) *Debriefer should provide feedback/instruction for any elements not completed timely or at all and review resources available.
What went well?
What opportunities did we have to improve the care and outcome in this scenario?

What will you do differently in the future?
What system barriers do you experience when caring for a patient with severe HTN/hemorrhage?
Any additional concerns, issues or takeaways identified?