

Getting Ready for 2021 Joint Commission Perinatal Standards

Lessons From the Field

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Summary Statement: The new Joint Commission requirements on perinatal safety present a unique opportunity for the simulation community to actively engage with labor and delivery units nationwide. Considerations for implementation using “real-life” experience with the programmatic development of an in situ team-based simulation training program in obstetric emergencies are discussed. We urge simulationists to explore opportunities to promote culture change on a large scale to move the needle of maternal morbidity and mortality. (*Sim Healthcare* 17:416–424, 2022)

Key Words: In situ simulation, obstetrics, The Joint Commission, accreditation, patient safety, perinatal outcomes, team training.

BACKGROUND

Maternal Outcomes, Postpartum Hemorrhage, and Hypertensive Disorders of Pregnancy

Despite advances in modern medicine and a significant drop in maternal mortality in the 20th century, maternal mortality in the United States continues to climb over the last few decades with the estimated rate of 26.4 maternal deaths per 100,000 births in 2015, increasing from 16.9 per 100,000 in 1990.^{1,2} Even worse, the United States is 65th among industrialized nations in maternal deaths and massive disparities exist for women of color.¹ In addition to mortality, significant morbidity, such as emergency hysterectomy, massive transfusion, “status” seizures, stroke, coma, intracranial hemorrhage, intensive care unit admissions, disseminated intravascular coagulation, and multiorgan failure, has also received attention recently.³ To put it simply, most of the clinicians who working on labor and delivery have unfortunately witnessed avoidable maternal deaths and serious complications resulting in loss of quality of life, health, and function. Clinicians and patients continue to face sequelae of a mother dying from a potentially preventable cause at the time of a most joyful event of her life.

The top 2 causes of maternal morbidity and mortality are hemorrhage and hypertensive disorders of pregnancy (commonly known as preeclampsia).⁴ Hemorrhage is the leading cause of maternal mortality worldwide.⁴ Whereas maternal hemorrhage can happen before, during, and after delivery, most commonly it happens postpartum, hence the term postpartum hemorrhage (PPH). A mother can bleed to death in minutes, and labor and delivery teams need to recognize it and respond to it quickly (determine the cause, give medications to help the uterus contract, transfuse, resuscitate, and, if needed, take the patient to

the operating room to compress the uterus and to do a hysterectomy if conservative measures fail). This complex process is similar to trauma management as it involves multiple teams (obstetrics, nursing, anesthesia), multiple parts of the hospital (blood bank, emergency department, operating room, critical care), and requires team members to have adequate medical knowledge and a wide variety of clinical, technical, and teamwork skills. Leadership needs to be actively involved to anticipate problems on the systems' level and troubleshoot challenges as they arise, and a robust quality improvement process needs to be in place to support frontline clinicians. Similarly, hypertensive disorders of pregnancy can quickly turn into an emergency, such as a hypertensive crisis or eclamptic seizures. Preeclampsia complications range from a maternal stroke, status epilepticus, multiorgan failure, and hemorrhage to fetal death. Rapid control of high blood pressure, seizure prophylaxis with medication, and supportive care are lifesaving.

Up to 60% of maternal deaths are preventable, and although societal factors and disparities are major contributors to continued increase, effective management of PPH and preeclampsia is thought to add up to a 15% potential reduction in incidence.⁵ A team-based approach is key in reducing bad outcomes, and simulation has been used successfully to address obstetric emergencies in the last 2 decades.

Simulation Initiatives

Given recent publicity and clinicians' concerns with the previous trends, many national and local organizations have formed working groups, committees, and task forces to address them. This activity resulted in high-quality clinical guidelines and toolkits, along with courses and other simulation modalities, which are now readily available to improve the delivery of care (Table 1).

Given widespread agreement that simulation improves outcomes in the setting of obstetric emergencies,^{6–13} the American College of Obstetricians and Gynecologists (ACOG) has been consistently advising its members to use simulation in clinical environments since 2014¹⁴ and again reinforced its importance in 2017 practice guidelines.¹⁵ Unfortunately, professional organizations typically do not have the authority to mandate

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TABLE 1. Simulation Resources in OBGYN

Entity	Background	Simulation Component	Access	Cost	Website	Other
CMQCC	Founded in 2006 at Stanford together with the state of California, a multistakeholder organization created evidence-based quality improvement toolkits and statewide outreach collaboratives. While mortality continues to increase in the United States, in California, it actually declined since its inception. Created and maintains extensive, hands-on, easy-to-use protocols, data collection tools, education materials, forms. Address most conditions that affect maternal mobility, including PPH and preeclampsia.	QBL tools, debriefing tools, guide for simulation case development, 2 sample simulation scenarios (atony and pulseless electrical activity), simulation evaluation and debriefing tools.	Users need to create an account to access	Free	https://www.cmqcc.org/resources-tool-kits/toolkits/ob-hemorrhage-toolkit	Most comprehensive, well-recognized, standard of care across disciplines and specialties
AIM practicing for patients	Funded by the US Department of Health and Human Services, an initiative to improve maternity care. Comprises 19 professional organizations that cover all OBGYN subspecialties via participation from professional organizations, nursing, anesthesia, and hospital alliances. Created patient safety bundles including PPH and preeclampsia.	Three simulation case scenarios with videos (retained products of conception, atony requiring uterotonics and tamponade); slides for leadership buy-in; debriefing tools; TEAM STEPPS forms as related to PPH; e-learning modules for PPH and preeclampsia.	No account needed to access	Free	https://safehealthcareforeverywoman.org/council/education-and-engagement-tools/practicing-for-patients/postpartum-hemorrhage/	
ACOG ECO course	Course sponsored by ACOG. Simulation leaders in the field created content, update it and teach it. Courses consist of an online module (3 H) and a hands-on simulation course (3 H). Included is a posttest and certification, which lasts for 2 y. Open to any labor and delivery team members, including nursing and anesthesia. Participants can attend a course as a learner or as a trainer (for those interested in the train-the-trainer model). Course materials include a comprehensive handbook. No simulation background needed to participate. Switched to virtual format during COVID-19 pandemic, and plan to continue with hybrid model. OBGYN doctors are eligible for MOC credit.	5 Simulation units, 2 of which are PPH and preeclampsia.	Can attend a course as a learner or as a trainer (train the trainer model).	\$425	https://www.acog.org/education-and-events/simulations/eco/v3	Contact AIM coordinator to get information about institutional registration discounts and about regional collaboration
ACOG SWG APGO CREOG annual course on simulation	ACOG SWG has created a toolkit that catalogs simulations wetted by moderators for quality. SWG also runs a “show and tell” course at the annual APGO CREOG meeting.	Available scenarios are uterine atony case; surgical skills to perform compression sutures and peripartum hysterectomy	Requires ACOG membership	Annual dues	https://www.acog.org/education-and-events/simulations/uterine-atony	

TABLE 1. (Continued)

Entity	Background	Simulation Component	Access	Cost	Website	Other
SMFM	Obstetric critical care course takes place annually at Banner Health Simulation Center since 2015. In 2020, because of COVID-19, it was converted to online e-learning modules without in-person simulations. Includes online learning, virtual simulations, and in-person bedside simulations. Geared toward OBGYN doctors and those specializing in MFM and critical care, but midwives, fellows, residents, and high-risk OB nurses can attend.	Many scenarios to cover most high-risk maternal conditions including PPH and preeclampsia	Non-SMFM members need to create a free account to register.	\$200–\$1500	https://www.smfm.org/events/169-critical-care-obstetrics-banner-health	
AAFP ALSO course	In-person provider and instructor courses take place at local simulation centers. Any clinician can attend. Covers basic emergencies.	PPH and preeclampsia scenarios	All course materials included in registration fee	\$750 for instructor course	https://www.aafp.org/cme/programs/also.html	
AWHONN	An organization with long-term involvement in quality and simulation. Organizes webinars and podcasts (some free and some at a cost) on simulation in obstetrics and puts together educational products, for some of which they charge.	Perinatal Competency Validation Tool is TJC preparation manual with includes competency checklists and simulation cases for PPH and preeclampsia		\$300 for the competency tool	https://my.awhonn.org/productdetails?id=a1B2E00008WM9xUAG	
SSH OBGYN section	OBGYN section is an interest group within SSH. Volunteer members provide educational content via webinars. The online library includes simulation cases. Members can engage in online chats and discussion boards, as well as reach out to each other to collaborate.		Materials accessible to members	SSH membership fee	https://www.ssih.org/Interest-Groups/OB-GYN-SIG	
CMS course	Full-day labor and delivery resource management (CRM) experiential course refines and advances principles of CRM in obstetrics. Geared toward providers. Nonobstetrics specific simulation instructor training courses of varying cost and length are available. Any labor and delivery team member can attend.		Course material are included in course fee	\$285–\$2050	https://harvardmedsim.org/course-type/labor-delivery-teams/	

AAFP, American Academy of Family Physicians; ACOG, American College of Obstetricians and Gynecologists; AIM, Alliance for Innovation on Maternal Health; ALSO, Advanced Life Support in Obstetrics; APGO, Association of Professors of Gynecology and Obstetrics; AWHONN, Association of Women's Health, Obstetric and Neonatal Nurses; CMQCC, California Maternal Quality Care Collaborative; CMS, Center for Medical Simulation; CRM, crisis resource management; ECO, Emergencies in Clinical Obstetrics; CREOG, Council for Resident Education in Obstetrics and Gynecology; MFM, maternal fetal medicine; MOC, maintenance of certification; PPH, postpartum hemorrhage; QBL, Quantification of blood loss; SMFM, Society for Maternal Fetal Medicine; SWG, ACOG Simulation Working Group.

simulation training nor the resources to assist hospitals in developing simulation programs. Not surprisingly, simulation uptake on labor and delivery units has been variable.

NEW JOINT COMMISSION PERINATAL STANDARDS

The Joint Commission Involvement in Perinatal Safety

The Joint Commission (TJC) is an independent not-for-profit organization and is the nation's largest accrediting body in healthcare in the United States, responsible for certifying most hospitals. Hospitals are typically surveyed every 3 years and quality and safety departments prepare for on-site visits far in advance. During a typical site visit, TJC inspectors review policies, charts, documentation, inspect physical spaces, and clinical care and identify areas for improvement.¹⁶

In 2004, TJC released a Sentinel Alert statement titled "Preventing infant death and injury during delivery."¹⁷ In this document, obstetric case studies were used to show that communication failures topped the list of identified root causes (72%), and team training was recommended for high-risk obstetric events along with debriefings to evaluate team performance and identify areas for improvement. In 2019, for the first time in the history of simulation in obstetrics, TJC issued a simulation mandate—new guidelines for maternity care or perinatal standards (also referred to as R3 by TJC, which stands for "recruitment, rationale, reference"). R3 consists of 13 new elements of performance (EPs), several of which are "drills."¹⁸ Because of the COVID-19 pandemic, TJC suspended site visits until recently and moved the deadline for implementation to January 1, 2021, to be completed by December 31, 2021. Organizations have 1 year to be compliant with the EPs for education and simulation EPs.

We conducted a webinar for the members of obstetrics and gynecology (OB/GYN), nursing, and hospital-based simulation sections in SSH (Society in Simulation in Healthcare) in December 2020 to share information about new simulation requirements and demonstrate some implementation examples. Here, we present the proceedings from that webinar and highlight considerations for broader implications of simulation in obstetric emergencies.

Synopsis of New TJC Perinatal Standards

The first set of EPs addresses PPH, and the second severe hypertension/preeclampsia, but both are similar in that they are designed to improve recognition and response on an individual, team, and systemic level. Elements of performance foster the creation of multidisciplinary quality improvement teams that create and update protocols on such interventions as risk assessments, emergency activation, hemorrhage kits, massive transfusion protocols, provider and patient education, and clinical event debriefing. Simulation EPs are summarized in Table 2. Additional information about simulation EPs was provided in the TJC newsletter in October 2020, where guidance on the interpretation was provided.¹⁹ Although this guidance is usually based on the deidentified examples of actual survey findings, this particular newsletter was not based on such examples because no surveys were conducted because of COVID (Table 2). Finally, a disclaimer of "interpretations are subject to change to allow for unique and/or unforeseen

circumstances" was added, which seems to suggest that TJC is in the process of changing interpretation of the standards as the implementation process unfolds.

We feel that it is important to understand semantics and granular details of the new requirements for 2 reasons:

1. To know what is required and to align simulation and quality improvement activities on the units from the accreditation standpoint and
2. To consider it as an opportunity to make a large impact on patient safety by the simulation community of practice.

What Is Involved in the Simulation Training in the New Perinatal Standards?

Although amount of the detail that would normally be needed for implementation in the generic description of "drills" in the R3 document is a bit surprising from the simulationists' perspective, TJC accreditation process is such that it often leaves room for interpretation to give institutions flexibility (Table 2).

We then decided to examine individual references listed in the R3 report to better understand the meaning of "drills" and could not find any additional specific information.¹⁸ One reference is an ACOG practice bulletin mentioned previously (without the endorsement of one technique or simulation delivery method over the other); another is a review article on the value of simulation across disciplines, and the last is a simulation case report of maternal cardiac arrest (where authors concluded that "multidisciplinary simulation was exceedingly difficult to conduct").^{14,20,21} To explore this further, we then read original sources cited in the previous articles. One of them defined "drill" as "a coordinated supervised activity usually used to test a single, specific operation or function within a single entity (eg, emergency department), typically under time pressure... to test staff training, response time, resources, and equipment."²⁰

"Drill" is not included in the simulation dictionary created and maintained by the SSH, which is not surprising to many as it contradicts principles of experiential learning, such as debriefing and deliberate practice. In contrast, "simulation-based learning experience" is defined in the SSH dictionary as "an array of structured activities that represent actual or potential situations in education and practice... [which] allow participants to develop or enhance their knowledge, skills, and attitudes, or to analyze and respond to realistic situations in a simulated environment." Of note, none of these terms exclude a wide array of alternatives to the traditional in situ team training model,²² nor do they specify if this needs to be taking place in the simulation center or on the unit. Regarding the location, "on the unit" requirement was only mentioned in the TJC newsletter a year after EPs were published.¹⁹

To obtain more clarity on the interpretation of simulation EPs, we contacted the standards interpretation department at TJC in October 2020 (personal communication). Hereinafter are clarifications to our questions about simulation EPs we were able to obtain:

1. "Drills" are performed on the unit where care is being provided to patients so that staff can practice an emergency in the environment where the events will occur. This allows the team to determine any process failures and make improvements on the opportunities identified during the drill.

TABLE 2. Simulation EPs

EP Number/Topic	R3 Requirement	R3 Rationale	R3 Key points	Surveyor Observations From 2020 Newsletter	Interpretation
EP #5/PPH	Conduct drills at least annually to determine system issues as part of ongoing quality improvement efforts. Drills include representation from each discipline identified in the organization's hemorrhage response procedure and include a team debrief after the drill.	Multidisciplinary drills give an organization the opportunity to practice skills and identify system issues (eg, the unwillingness of the blood bank to release blood products despite authorization for this in the procedure) in a controlled environment. It is crucial to have members from as many disciplines identified in the organization's response procedure as possible available during drills to be able to test each level of the emergency and identify areas of improvement. This is crucial for identifying weaknesses in the response system and to identify opportunities for improvement. Organizations should assess their level of proficiency to determine the frequency drills should be performed; organizations that have reached a high level of mastery may need less frequent drills.	<ul style="list-style-type: none"> –Drills at least annually –Goals: <ul style="list-style-type: none"> –To determine system's issues as part of quality improvement effort –To practice skills –To test levels of emergency –To identify areas of improvement –Hemorrhage team members need to be present –Drill must include team debrief –Frequency is determined by hospitals' assessment of proficiency 	Surveyor observation: Hospital conducted hemorrhage response drills in a simulation laboratory only and not on the unit where care, treatment, and services are provided	<ul style="list-style-type: none"> –Hospital conducts drills on the nursing unit to identify systems issues –Drills must include representation from each department listed on the hemorrhage response procedure, which means 100% of identified departments must participate; however, 100% of staff participation is not required –Hospitals should present lessons learned to entire team
EP #3/severe hypertension, preeclampsia	Conduct drills at least annually to determine system issues as part of ongoing quality improvement efforts. Drills should include a team debrief.	Multidisciplinary drills give an organization the opportunity to practice skills and identify system issues in a controlled environment. It is crucial to have members from as many disciplines as possible available during drills to truly be able to test each level of the emergency and identify areas of improvement. Organizations should assess their level of proficiency to determine the frequency drills should be performed; organizations that have reached a high level of mastery may need less frequent drills.	<ul style="list-style-type: none"> –Drills at least annually –Goals: <ul style="list-style-type: none"> –To determine system's issues as part of quality improvement effort –To practice skills –To test levels of emergency –To identify areas of improvement –Severe hypertension/preeclampsia team members need to be present –Drill must include team debrief –Frequency is determined by hospitals' assessment of proficiency 	Same as above but with regard to severe hypertension/preeclampsia	Same as above but with regard to severe hypertension/preeclampsia

Adopted from Consistent interpretation. Joint Commission surveyors' observations related to perinatal safety requirements¹⁹ and The Joint Commission.¹⁸
PPH, postpartum hemorrhage.

2. "Simulation" was defined as "computer hardware and software allowing realistic interactions and interventions to occur in programmed scenarios to evaluate clinical practitioner competence," according to the Comprehensive Accreditation Hospital Manual.²³
3. Other types of simulations mentioned previously,²² such as "tabletop" simulations, are not acceptable.
4. The entire obstetric team should be included in the "lessons learned" (how is not specified) so they can learn from the drills because 100% participation from each staff member is not required.
5. The term "unit" means "any unit in the hospital that could expect to have an obstetric emergency." No specifics were provided about intensive care units, emergency departments, or other areas where pregnant patients might be cared for.

At this time, TJC does not provide information about items hereinafter and leaves it up to individual institutions to decide:

- What learning objectives should be
- How scenarios are designed
- What simulation modality/format is used
- Who conducts simulations and what training/credentials they are expected to have
- What type of debriefing is used

- How long simulations are expected to last
- How frequently simulations need to take place
- What percent of the clinical staff needs to participate
- What time of the day they need to be taking place/which shifts need to participate
- Which staff members need to be included given that 100% of them do not need to participate
- How latent threats are addressed
- How "lessons learned" are communicated to the quality improvement teams

OPPORTUNITIES FOR ENGAGEMENT

The simulation community is now being presented with a big opportunity to further embed simulation into obstetric training and practice. The good news is that every birthing unit accredited by TJC will have to do simulations of some sort and this will be a major driver for culture change. This will lead to more widespread adoption and use of simulation beyond what TJC requires. What form or shape it is going to take will depend on how we respond and how we are able to engage.

TABLE 3. Stepwise Approach to Building a Comprehensive Obstetric Safety Simulation Program

Step	Specifics in OBGYN
Create simulation team	<ul style="list-style-type: none"> -Define your team (at minimum OBGYN doctor and nurses, preferably who work on labor and delivery unit; engage with anesthesia teams and ancillary services such as blood bank personnel for participation) -Write job descriptions for team members -Obtain salary support for team members (protected full time equivalents for doctors, time for nurses) -Create budget (eg, describe upfront cost and maintenance costs) -Secure budget and resources -Recruit simulation faculty -Train faculty
Identify stakeholders	<ul style="list-style-type: none"> -Quality improvement committee members* -Chief quality officers (physicians, nursing) -Person (s) responsible for TJC accreditation -Chair of OBGYN department -OBGYN residency program director -Director of nursing -Nurse managers of individual units (labor and delivery, antepartum, postpartum) -Chair of anesthesiology -Anesthesia residency program director -Director of obstetric anesthesia -Director of blood bank -Chief OBGYN and anesthesia residents -Vice chair of clinical affairs -Anesthesia quality improvement committee chair
Find existing training programs currently in place and perform needs assessment	<p>Contact all stake holders to ask:</p> <ul style="list-style-type: none"> -What is working and what is not working -What is one thing on their mind that keeps them up at night -Who controls scheduling -Who controls educational content -Obtain input on scenarios -Involve in scenario development
Initial phase of programmatic development	<ul style="list-style-type: none"> -Get a headcount of learners -Obtain logistics/operations support (ie, scheduling) -Describe what you are going to do during session -Describe how you are going to schedule it -Make adjustments based on feedback from stakeholders
Find out what current practices/protocols are in place	<ul style="list-style-type: none"> -Work to updated policies if you find deviations from standard -If policies are up-to-date, work to adopt them into simulation curriculum
Create a process by which misses and suggestions for improvement are incorporated to quality improvement process	<ul style="list-style-type: none"> -Write down misses/opportunity for improvement -Share with team -Work with team members responsible for implementing those fixes (if that is not part of your role)
Maintenance	<ul style="list-style-type: none"> -Review evaluations after each session -Adjust scenarios to the needs of the units -Check in with stakeholders

*Quality improvement committee includes: director of maternal fetal medicine division, director of labor and delivery, safety nurses, nurse educator, director of obstetric anesthesia, nurse managers of each unit (labor and delivery, antepartum, postpartum).

Pivot an Existing Program: The Albert Einstein College of Medicine/ Montefiore Medical Center Experience

Approximately 10 years before TJC mandate, we (V.L. and K.B.) became involved in simulation in OBGYN. After adopting several simulation modalities and conducting many simulation sessions in different environments, we quickly realized that in situ multidisciplinary team-based training in obstetric emergencies was most impactful in improving the delivery of high-quality care. Conducting a PPH simulation on labor and delivery is an exhilarating experience as it becomes evident how much everyone who works there wants to do their best in caring for patients. However, building a large-scale program is very different from conducting “drills” of undermined scale.

We describe our program in Table 3. Details of how components of the existing program were pivoted to satisfy TJC requirements are listed in Table 4. Briefly, a simulation leader (V.L.) conducted a needs assessment and incorporated input from all stakeholders obtained support and buy-in from department and hospital leadership, engaged in faculty development created scenarios, trained standardized patients, created a scheduling and tracking system, and built a process for the simulation team to channel suggestions and near misses to quality improvement and leadership teams, as well as track outcomes. Importantly, individuals responsible for TJC accreditation work were the stakeholders contacted during the preparatory phase as quality improvement representatives on the departmental and organizational level. One hundred percent of all clinicians who work on labor and delivery participate in in situ simulations every 2 years. A single simulation session takes 2 hours and includes a prebrief, simulation encounter, and debrief via in situ PEARLS (Promoting Excellence and Reflective Learning in Simulation)/Advocacy Inquiry framework.^{25,26} Participants are blocked off from clinical duties at the time of simulation (nursing staff is paid hourly, and physician staff is mandated to attend without extra pay, although assistance is provided with scheduling to assure simulation sessions do not conflict with their clinical work). As a result, the cancellation rate is very low. In addition, we created supplementary “on the fly” simulations using staff that is already assigned to work a shift

on labor and delivery unit. We used a no-go-criteria (to assure that simulation does not interfere with clinical care)²⁷ to address additional learning objectives (eg, Bakri balloon placement, compression sutures, quantification of blood loss, moving to the operating room, activating massive transfusion protocols, managing refusal for transfusion). The same model was used to implement programs in 2 hospitals, adopted to each practice setting. In contrast, to satisfy TJC requirements, an alternative to the previously mentioned program could involve a team of four members (1 obstetrician, 2 nurses, and 1 anesthesiologist) to participate in a 10-minute hemorrhage simulation with a 15-minute debrief once a quarter. “Lessons learned” are “shared.” “System is tested.”

Although it is beyond the scope of this article to address in detail obstacles encountered during programmatic development and their potential solutions, we would like to acknowledge that our programs have many challenges. We recognize that sustainability (and scalability) requires major investment, without which programs become dependent on a few key simulationists, who may not have the resources to start and maintain high-quality programs needed to make a difference. One of the authors (V.L.) has built programs in 5 different hospitals over her 15-year simulation career, and obstacles remain consistent among all institutions. Although simulation results in significant culture change¹³ (which is rewarding on a personal level as frontline clinicians approach us to say so and to request more simulations), potential solutions to this multifactorial problem have been suggested but not fully explored.^{28–34} One cannot help but wonder what it would take for society to allocate money and power to assure consistent widespread implementation. That being said, the OBGYN simulation community remains determined to continue on this path because of the impact of our work and impact on maternal mortality and morbidity. After all, practicing to improve performance in a safe learning environment with the goal of improving patient outcomes on all levels, from individual to systems to societal, is the very principle behind the Just Culture movement, endorsed by TJC itself.^{35,36} We hope that future work addresses an important aspect of being able to operationalize programs such as ours.

TABLE 4. Pivot From Comprehensive Obstetrics Simulation Program to the Checklist for the new Joint Commission Requirements

Elements	Montefiore Experience Before TJC	TJC Requirements	Pivot to Adjust to TJC
Topics	Started with PPH simulations in 10/2019, planning to conduct bimonthly simulations until all labor and delivery, antepartum and postpartum team members attended at least once at hospital number #1; after reaching that goal, the plan was to add preeclampsia simulations with a 3:1 ratio, and then to roll out this program in hospital #2 in 10/2021.	PPH and preeclampsia drills at least annually	–Added preeclampsia simulations with 1:1 ratio in 12/2020 –Expanded simulation program to hospital #2 in 10/2020
Participants	Multidisciplinary team	Multidisciplinary team	None needed
Debriefing	Used in situ PEARLS/AI framework ²⁴	Debriefing must follow the simulation	None needed
Link simulation to quality improvement	Kept a list of latent safety threats and opportunities for improvement identified during each simulation; worked with quality improvement leadership on an action plan (eg, blood bank activation, time to activate massive transfusion protocol and bring blood to bedside)	Determine systems issues as part of quality improvement	None needed
Frequency of simulations	Evidence-based goals for frequency: 1–2 y. Added skills stations to (quantification of blood loss, compression sutures, hypertension medications, and intravenous magnesium management skills)	Assess its own level of proficiency to determine the frequency	Evaluating what proficiency means in this setting

Adapted from Eppich and Cheng.²⁴

Tips on Design and Programmatic Development

Whether building a new program or pivoting an existing one, the following could be considered:

1. The EPs provide an opportunity to further embed simulation into obstetric training and practice.
2. Involve quality/safety, risk and regulatory colleagues into design and implementation.
 - a. Simulation content needs to match current protocols.
 - b. Current protocols need to be updated to meet current standards of care.
3. Design simulations keeping in mind associated policies, checklists, electronic health record, and training materials used by educators.
4. Simulation can be used as a vehicle to design, test, and embed policies and protocols.²⁸
5. If a problem is identified during a simulation, it is an opportunity to fix it to avoid patient harm. It gives a concrete visual to the leadership with controls over those fixes, and you can report back to your learners after the fix has taken place to build trust, increase engagement, and prevent burnout.
6. We are all learning. As the role of simulation in healthcare is changing and evolving, and new discoveries can benefit our community of practice.
7. The vast amount of high-quality recourses is already available. Familiarize yourself with them and pick and choose which fit you best.

CONCLUSIONS

We reviewed the background on simulation in obstetric emergencies, summarized and explored the new TJC requirements on simulation, and outlined considerations for programmatic implementation. We discussed in detail the simulation “drills” as defined by the TJC and explained a step-by-step process of building a robust in situ simulation program on labor and delivery unit using Montefiore Medical Center as an example, demonstrating how it could be pivoted to meet the new TJC requirements. We outline a wide range of resources for those who are building such programs. We make a case for systems-level thinking keeping in mind culture change as a goal to decrease maternal morbidity and mortality.

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