



# COMMITTEE OPINION

Number 590 • March 2014

(Replaces Committee Opinion Number 487, April 2011)

## Committee on Patient Safety and Quality Improvement

*This document reflects emerging concepts on patient safety and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.*

## Preparing for Clinical Emergencies in Obstetrics and Gynecology

**ABSTRACT:** Patient care emergencies may occur at any time in any setting, particularly the inpatient setting. It is important that obstetrician–gynecologists prepare themselves by assessing potential emergencies, establishing early warning systems, designating specialized first responders, conducting emergency drills, and debriefing staff after actual events to identify strengths and opportunities for improvement. Having such systems in place may reduce or prevent the severity of medical emergencies.

An obstetrician–gynecologist may be faced with a sudden patient emergency at any time. Whether it is severe shoulder dystocia, catastrophic surgical or obstetric hemorrhage, or an anaphylactic reaction to an injection in the office, it will require a prompt response. Over the past decade, severe maternal morbidity in the United States has increased by 75% for complications associated with delivery and, specifically, 114% for postpartum hemorrhage (1). Preparation for potential emergencies requires planning and interdisciplinary collaboration (2). Issues to consider include advance provisioning of resources, establishing an early warning system, designating specialized first responders, and holding drills to ensure that everyone knows what to do (see Box 1). Excellent

communication and teamwork will further increase the efficiency and effectiveness of the emergency response.

### Planning

Planning for potential emergency events is challenging. At a minimum, it should involve an assessment of the potential or actual risks related to the practice setting or the patient population. For example, in the outpatient setting, are medications given or procedures performed that may result in anaphylaxis, airway compromise, or hemorrhage? In the inpatient setting, unit data or risk management data may reflect common and uncommon emergency situations that have occurred. The implementation of audit programs and multidisciplinary collaboration with all staff members involved will optimize success (3, 4). Additionally, this shift into coordinated efficient interventions may require nurses or other direct clinical providers to step outside of their traditional comfort zone and embrace a shift in the patient care culture (5). Frontline team members, such as the intake clerk or bedside nurse, should be empowered as a vital part of a purposeful team (5).

### Advance Provision of Resources in the Outpatient Setting

Placing all necessary items in a known, central location ensures that time is not lost gathering supplies in an emergency. A plan for the transportation of unstable patients or transfer of care should be established. A common

#### Box 1. Examples of Tools for Managing Clinical Emergencies ↵

- Availability of appropriate emergency supplies in a resuscitation cart (crash cart) or kit
- Development of a rapid response team
- Development of protocols that include clinical triggers
- Use of standardized communication tools for huddles and briefs (eg, SBAR)
- Implementation of emergency drills and simulations

Abbreviation: SBAR, Situation–Background–Assessment–Recommendation.



practice for health care-related emergencies is the availability of the crash cart (resuscitation cart). Appropriate changes should be made to the crash cart as evidence-based changes are made to the Advanced Cardiac Life Support protocol and all perishable supplies must be replenished. Advance provision of resources should be extended to the management of potential emergencies, such as hypotension, vagal reaction, or hemorrhage after loop electrosurgical excision. Physicians in outpatient settings should consider creating a kit for handling allergic reactions instead of a full crash cart, based on the needs of their practice setting. A team leader who is capable of initially managing a clinical emergency, utilizing on-site resources, and activating a response team must be available at all times.

### Early Warning Systems in the Inpatient Setting

Some emergencies are truly sudden and catastrophic, such as a ruptured aneurysm, massive pulmonary embolus, or complete abruptio placentae in a trauma setting. However, many emergencies are preceded by a period of instability during which timely intervention may help avoid disaster. Medical emergency teams—sometimes referred to as “Ob Team Stat” for obstetric emergencies or a rapid response team—are designated skilled responders who are ready to intervene during such emergencies. Even without the use of a rapid response team, nurses and other bedside caregivers need to recognize that certain changes in a patient’s condition can indicate an emergency that requires immediate intervention. These include some events, commonly referred to as “triggers,” which are not usually considered to be emergencies, such as agitation or new-onset difficulty with movement. These triggers mandate further actions by the health care team according to protocol, such as bringing the attending physician to the patient’s bedside immediately. Recognition of these events can be incorporated into protocols. An example of such a protocol is the Modified Early Obstetric Warning System developed in the United Kingdom (see Table 1) (6). Each health care setting should examine its own data to determine which events require activation of the early warning system. It is imperative that bedside personnel be able to request immediate help, without recrimination, when such changes occur (5). For example, the nurse who calls the rapid response team regarding an anxious postoperative patient with new-onset shortness of breath must not be dismissed as failing to recognize a panic attack, but instead praised for following protocol. Many rapid interventions may require discontinuation once the clinical course improves. For example, one hospital implemented a rapid response team for obstetric emergencies, whereby diagnosis of fetal bradycardia requires urgent transfer to the operating room with the expectation that many instances of bradycardia will resolve and not require emergent cesarean delivery (5).

**Table 1.** Limits of Trigger Thresholds for MEOWS Parameters ↵

	Red trigger	Yellow trigger
Temperature; °C	< 35 or > 38	35–36
Systolic BP; mmHg	< 90 or >160	150–160 or 90–100
Diastolic BP; mmHg	> 100	90–100
Heart rate; beats.min <sup>-1</sup>	< 40 or > 120	100–120 or 40–50
Respiratory rate; breaths.min <sup>-1</sup>	< 10 or > 30	21–30
Oxygen saturation; %	< 95	—
Pain score	—	2–3
Neurological response	Unresponsive, pain	Voice

Abbreviations: BP, blood pressure; MEOWS, Modified Early Obstetric Warning System.

Singh S, McGlennan A, England A, Simons R. A validation study of the CEMACH recommended modified early obstetric warning system (MEOWS). *Anaesthesia* 2012;67:12–18. Used with permission.

The protocol should provide for a full evaluation of the problem. Training all staff in a formal emergency communication process, using a standardized communication tool such as SBAR (Situation–Background–Assessment–Recommendation), may further optimize effective response to a patient care issue. Lack of teamwork and suboptimal communication have been cited as the leading cause of perinatal and maternal death (6). Standardized responses and practices will increase the efficiency of care and allow a continuous quality improvement process to accurately assess the effectiveness of the interventions.

### Rapid Response Team

Rapid response teams comprise a diverse range of clinicians and stakeholders who bring critical care expertise to the patient’s bedside or wherever it is needed. Rapid response teams may include advanced practice nurses, respiratory therapists, and first responders who approach the scenario in a standardized fashion. The activation of a rapid response team should be simultaneous with the event. All regular clinical team members have the authority to activate a rapid response team when a critical event or criteria are noted, or for any potential serious emergency in which a team response is required (5). By designating criteria that define an emergency, it becomes clear when to call for help, thus increasing the utilization of the rapid response team (3–5). For example, if a criterion is a patient’s heart rate of more than 140 beats per minute after cesarean delivery, the nurse who notes such a heart rate would call the rapid response team before notifying the attending obstetrician. This contrasts with the conventional, serial chain of command that traditionally was followed before an intervention could be initiated. Early activation of a rapid response team has been associated



with a decrease in cardiac arrest, improved survival of hospitalized patients, and decreased admissions to an intensive care unit (7). It is important to emphasize that calling a resident physician in a teaching hospital is not a substitute for triggering a rapid response team intervention. Similarly, calling the in-house physician in a nonteaching setting does not substitute activating a rapid response team intervention.

Establishing a rapid response team is a multistep process (3, 8, 9). Clinicians, support staff, and stakeholders must be identified; this may include the page operator, as well as staff in the blood bank or the hospital laboratory (5). Criteria for activation of a rapid response team should be determined. A protocol that designates each team member's role must be implemented with drills and ongoing training. Debriefing, with feedback and process improvement, must be established (5). Finally, the effectiveness of the rapid response team process should be evaluated on a regular basis.

A rapid response team can be divided into four components: 1) activators, 2) responders, 3) quality improvement, and 4) administration (8). Activators are individuals who may activate the rapid response team, and may include clinicians, specialists, or clerical staff. In some facilities, a patient, family member, or anyone concerned about the condition of a particular patient may also initiate a rapid response team, sometimes referred to as a "Condition H" (10). Team members from the nursing staff or floor staff are trained to monitor for disturbances that require activation of the rapid response team. Responders are clinicians who arrive at the bedside, along with the attending physician, to stabilize the patient and determine her disposition. Options may include transfer to a higher level of care, revision of the current treatment plan, or a handoff to the primary nurse or physician. Activators may become responders to help aid in stabilizing the patient's condition.

When the responders arrive, the activators must be prepared to exchange information. A communication protocol such as SBAR allows team members to exchange information in a clear and concise manner. This will help ensure that expeditious care is provided to the patient. Early in the response phase, a discussion, or brief, should be conducted to assign essential roles, establish expectations, and anticipate outcomes and possible contingencies. The primary purpose of the communication protocol is to exchange critical patient information and establish a treatment plan. A team huddle, designed to reinforce plans already in place and to assess the need to adjust the plan, also may be used to review situational awareness and to troubleshoot and revise the current plan of action, if needed. A check-back (closed loop communication strategy used to verify and validate information exchanged), a time-out (planned period of quiet and interdisciplinary discussion focused on ensuring that key procedural details have been addressed), or a call out (strategy used to communicate important or

critical information) may be used to ensure closed loop communication.

Team members should be debriefed after the event in an effort to evaluate and improve their response. The quality improvement team reviews the activation, implementation, and outcomes of the rapid response team. Their assessment and recommendations are formulated into an action review, which may be implemented by administration (11).

Development of a rapid response team is a patient safety initiative promoted by the American College of Obstetricians and Gynecologists, the Institute for Healthcare Improvement (10), The Joint Commission, the Agency for Healthcare Research and Quality, and the Association of Women's Health, Obstetric and Neonatal Nurses. Resources for setting up such an initiative, as well as other resources, may be found on the web sites of these organizations. Successful implementation of a rapid response team may involve overcoming logistic, political, institutional, social, financial, or anthropologic barriers. Leadership from senior medical and nursing personnel is crucial (11).

## Emergency Drills and Simulation

The principle that standardized care can result in safer care applies to emergency situations as well as to routine care. Periodic drills that follow a designated protocol for the management of common emergencies, such as fetal bradycardia or postpartum hemorrhage, may improve a health care unit's ability to respond to and mitigate an adverse outcome. This training may use a comprehensive curriculum that addresses communication strategies such as TeamSTEPPS (12) or a less structured teamwork model or a curriculum that focuses on specific clinical scenarios, such as shoulder dystocia. A sophisticated simulated environment or an everyday workspace can meet the needs of the trainees as long as it mirrors the existing clinical setting and resources. By conducting a drill in the actual patient care setting, issues related to the physical environment may become obvious. Simulation training can identify and correct common clinical errors made during emergencies (13). Protocols, activation criteria, and critical interventions can be reinforced by being posted on walls, printed on pocket cards, or uploaded as screen savers to promote a sustained culture of safety.

Emergency drills allow team members to practice effective communication in a crisis. Adult learning theory supports the importance of experiential learning. Many aspects of the medical environment may compromise effective communication, including a hierarchical hospital structure, emotional intensity and stress of a situation, and the range of educational backgrounds and clinical understanding of various team members. Other barriers to improved response to medical emergencies include inadequate leadership, adherence to traditional models, fear of criticism, hierarchy and intimidation, failure to function as a team, and lack of education and orientation of involved staff (14, 15).



Effective teamwork requires a team leader to coordinate the response, but it also empowers all members of the team to contribute and share information. By practicing together, barriers that hinder communication and teamwork can be overcome. Effective drills may lead to improved standardization of response, health care provider satisfaction, and patient outcomes (12). Developing rapid response teams and training using drills and simulations may allow for faster and improved response to emergent situations, thereby potentially maximizing patient outcomes.

## Conclusion

The obstetrician–gynecologist practices in an environment where emergencies will occur. Preparation for these situations requires allocation of resources and supplies, planning, and collaboration. Inpatient emergencies can be mitigated by a rapid response team that has designated roles, streamlined communication, prompt access to emergency supplies, and ongoing education and training. The criteria used to activate a rapid response team must be defined and disseminated among potential activators. A protocol with standardized interventions and onsite drills will improve the care given in an emergency. The exact nature of the protocol will vary widely depending on the work environment and resources available. Prompt recognition of and response to critical clinical scenarios, teamwork, and training enhance patient safety and mitigate the severity of adverse outcomes.

## The American College of Obstetricians and Gynecologists' Resource

American College of Obstetricians and Gynecologists. Patient safety checklists. Available at: [http://www.acog.org/Resources\\_And\\_Publications/Patient\\_Safety\\_Checklists\\_List](http://www.acog.org/Resources_And_Publications/Patient_Safety_Checklists_List). Retrieved June 13, 2013.

## Resource

*This resource is for information purposes only. Referral to this resource does not imply the endorsement of the American College of Obstetricians and Gynecologists. This resource is not meant to be comprehensive. The exclusion of a source or web site does not reflect the quality of that source or web site. Please note that web sites are subject to change without notice.*

The Joint Commission. Safe surgery checklist. Oakbrook Terrace (IL): Joint Commission; 2012. Available at: [http://www.jointcommission.org/safe\\_surgery\\_checklist](http://www.jointcommission.org/safe_surgery_checklist). Retrieved June 20, 2013.

## References

- Callaghan WM, Creanga AA, Kuklina EV. Severe maternal morbidity among delivery and postpartum hospitalizations in the United States. *Obstet Gynecol* 2012;120:1029–36. [PubMed] [*Obstetrics & Gynecology*] ↩
- Institute of Medicine. To err is human: building a safer health system. Washington, DC: National Academy Press; 2000. ↩

- Gosman GG, Baldisseri MR, Stein KL, Nelson TA, Pedaline SH, Waters JH, et al. Introduction of an obstetric-specific medical emergency team for obstetric crises: implementation and experience. *Am J Obstet Gynecol* 2008;198:367.e1–367.e7. [PubMed] [Full Text] ↩
- Skupski DW, Lowenwirt IP, Weinbaum FI, Brodsky D, Danek M, Eglinton GS. Improving hospital systems for the care of women with major obstetric hemorrhage. *Obstet Gynecol* 2006;107:977–83. [PubMed] [*Obstetrics & Gynecology*] ↩
- Catanzarite V, Almryde K, Bombard A. Ob team stat: developing a better L&D rapid response team. *Contemp Ob/Gyn* 2007;52(9):53–4, 56, 57, passim. ↩
- Singh S, McGlennan A, England A, Simons R. A validation study of the CEMACH recommended modified early obstetric warning system (MEOWS). *Anaesthesia* 2012;67:12–18. [PubMed] [Full Text] ↩
- Dacey MJ, Mirza ER, Wilcox V, Doherty M, Mello J, Boyer A, et al. The effect of a rapid response team on major clinical outcome measures in a community hospital. *Crit Care Med* 2007;35:2076–82. [PubMed] ↩
- Mahlmeister LR. Best practices in prenatal care: the role of rapid response teams in perinatal units. *J Perinat Neonatal Nurs* 2006;20:287–9. [PubMed] ↩
- Clements CJ, Flohr-Rincon S, Bombard AT, Catanzarite V. OB team stat: rapid response to obstetrical emergencies. *Nurs Womens Health* 2007;11:194–9. [PubMed] ↩
- Institute for Healthcare Improvement. How-to guide: deploy rapid response teams. Available at: <http://www.ihl.org/knowledge/Pages/Tools/HowtoGuideDeployRapidResponseTeams.aspx>. Retrieved June 20, 2013. ↩
- Jones DA, DeVita MA, Belloma R. Rapid response teams. *N Engl J Med* 2011;365:139–46. [PubMed] [Full Text] ↩
- Agency for Healthcare Research and Quality. TeamSTEPPS®: national implementation. Available at: <http://teamstepps.ahrq.gov/abouttoolsmaterials.htm>. Retrieved June 20, 2013. ↩
- Gardner R, Raemer DB. Simulation in obstetrics and gynecology. *Obstet Gynecol Clin North Am* 2008;35:97–127, ix. [PubMed] ↩
- Al Kadri HM. Obstetric medical emergency teams are a step forward in maternal safety! *J Emerg Trauma Shock* 2010; 3: 337–41. [PubMed] [Full Text] ↩
- The Joint Commission. Preventing infant death and injury during delivery. Sentinel Event Alert Issue 30. Oakbrook Terrace (IL): Joint Commission; 2004. Available at: [http://www.jointcommission.org/assets/1/18/SEA\\_30.PDF](http://www.jointcommission.org/assets/1/18/SEA_30.PDF). Retrieved June 20, 2013. ↩

Copyright March 2014 by the American College of Obstetricians and Gynecologists, 409 12th Street, SW, PO Box 96920, Washington, DC 20090-6920. All rights reserved.

Preparing for clinical emergencies in obstetrics and gynecology. Committee Opinion No. 590. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2014;123:722–5.

