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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 periodically occur at any time in any setting, particularly the inpatient setting. To respond to these emergencies, it is important that obstetrician-gynecologists prepare themselves by assessing potential emergencies that might occur, creating plans that include 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.

A practicing 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 prompt response. Preparation for potential emergencies requires planning. 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 in an emergency. Beyond these basics, certain principles of communication and teamwork will 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.

Advance Provision of Resources in the Outpatient Setting

A common practice for health care-related emergencies is the availability of the crash cart. All physicians should

be familiar with the crash cart. Placing all necessary items in a known, central location ensures that time is not lost gathering supplies in an emergency. Appropriate changes should be made to the crash cart as evidence-based changes are made to the Advanced Cardiac Life Support protocol. Advance provision of resources also may be extended, for example, to the management of eclampsia and malignant hyperthermia. Physicians in outpatient settings may wish to create a small kit for handling allergic reactions if they are not able to maintain a full crash cart. As with a crash cart, the kit must be checked regularly to ensure that perishable supplies have not been retained beyond expiration dates. All health care providers need to know how to use the allergic reaction kit.

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 the setting of trauma. However, many emergencies are preceded by a period of instability during which timely intervention may help avoid disaster. The rapid response team is set up to handle such emergencies. However, 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 changes include some events not usually considered to be emergencies, such as agitation or

new onset difficulty with movement. Ideally, each service will examine its own historical call 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. For example, the nurse who calls the rapid response team regarding the 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. The protocol should provide for a full evaluation of the problem. Some organizations have formalized the emergency communication process using a standardized communication tool, such as "SBAR" (Situation, Background, Assessment, and Recommendation); all health care providers are encouraged to follow it to clearly communicate the patient care issue. Standardized responses will increase the efficiency of care and allow a continuous quality improvement process to assess the effectiveness of the interventions.

Rapid Response Team

Medical emergency teams, otherwise known as rapid response teams, are designated emergency response teams. These teams of clinicians bring critical care expertise to the patient's bedside or wherever it is needed. Activation of rapid response team intervention occurs when predefined criteria are met, although the team intervention also may be activated for other reasons. Rapid response team intervention should be a no-fault process. The team is available at all times with authority to summon further help as needed. By designating criteria that define an emergency, it becomes clear when to call for help. For example, if a maternal or postoperative heart rate of more than 140 beats per minute is the criterion, the nurse who notes such a heart rate would immediately call the medical emergency team. This contrasts with the common practice of calling an attending physician and awaiting a call back for orders before intervention. Activation of rapid response team intervention before a full arrest may lead to improved survival of hospitalized patients and decreased admissions to an intensive care unit (1). It is important to emphasize that if there is a teaching service, calling the house officer does not substitute for triggering rapid response team intervention. Similarly, calling the in-house physician in a nonteaching setting does not substitute activating rapid response team intervention. Rapid response teams usually have advanced practice nurses and respiratory therapists as first responders and are expected to respond to the problem in a standardized fashion.

The goal of standardized response and rapid effective recognition and correction of problems is better met with a small stable group. Development of a rapid response system is one of the patient safety initiatives currently being promoted by the Institute for Healthcare Improvement (2) and the Agency for Healthcare Research and Quality. Blueprints for setting up such a system, as

well as other resources, may be found on the web sites of these organizations.

Establishing a rapid response system involves a multistep process (3–5). First, key staff must be identified for the response team. Second, the criteria for activation of intervention by the response team should be determined. Third, the staff involved with the rapid response system must be educated on their respective roles. Fourth, a means of evaluating feedback and process improvement must be established. Finally, the effectiveness of the rapid response system must be monitored. The rapid response system can be divided into four components: 1) activators, 2) responders, 3) quality improvement, and 4) administration (6).

The activators are those individuals who may activate the rapid response system. Activators may be floor staff, a patient, a family member, specialists, or anyone concerned about the condition of a particular patient. Team members from the nursing staff or floor staff are trained to monitor for disturbances in any indicators of acute distress. These indicators are determined by the individual medical treatment facilities.

Once the rapid response system is activated, the responders arrive at the bedside, along with the attending physician, to treat the patient and stabilize her condition. Responders will then determine the disposition of the patient. Options for this can include transfer to a higher level of care, a handoff to the primary team (nurse or physician or both), or revision of the current treatment plan. 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 may be used. Using such a protocol allows the activators to exchange information with the responders in a clear and concise manner. This will help ensure that expeditious care is provided to the patient.

During the response phase, other tools may be implemented to help facilitate care for the patient. Before initiation of the response phase, a discussion, or brief, should be conducted to assign essential roles, establish expectations and climate, and anticipate outcomes and likely contingencies. The primary purpose of the communication protocol is to develop a common understanding of the patient's issues so that a consensus for the patient's treatment plan can be reached. 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, time out, or call out may be used to ensure closed-loop communication.

The quality improvement team supports activators and responders by reviewing the events surrounding the activation of the rapid response system and evaluating the process. An informal information exchange, or debrief, is designed to improve team performance and effectiveness as part of the action review. Once the review is complete,

the administration team then provides organizational resources to implement improvements in the process.

Emergency Drills and Simulation

The principle that standardized care can result in safe care applies to emergencies as well as to routine care. Thus, each service should consider a protocol for management of common emergencies, such as emergency cesarean deliveries or postpartum hemorrhage. This training may use a sophisticated simulated environment, but it also may use the everyday workspace in a mock event. Protocols also can be reinforced by being prominently displayed as posters, pocket cards, or other aids.

Using drills to train physicians to respond to emergencies has several theoretical advantages. Adult learning theory supports the importance of experiential learning. Emergencies occur in a specific physical setting and may involve a group of nurses, physicians, and other health care providers attempting to respond. By conducting a drill in a realistic simulator or in the actual patient care setting, issues related to the physical environment become obvious.

Emergency drills also allow physicians and others to practice principles of effective communication in a crisis. Many aspects of the medical environment work against effective communication, including the often hierarchical hospital structure, and the nature of the training, work setting, and the different educational backgrounds and levels of understanding of the health care team. Many physicians are accustomed to talking to nurses. Effective teamwork requires talking with each other. It requires that there be a team leader coordinating the response, but it also should empower all members of the team to share information. By practicing together, barriers hindering communication and teamwork can be overcome. Effective drills may lead to improved standardization of response, health care provider satisfaction, and patient outcomes.

Simulator training also may be beneficial with respect to identifying common clinical errors made during emergencies and correcting those deficiencies (7). Although this is promising, there are limited data to suggest that improved proficiency with simulation models correlates with increased proficiency during actual emergencies (8).

Conclusion

The obstetrician-gynecologist practices in an environment where true emergencies will periodically occur. Preparation for these in-hospital situations requires that emergency supplies be placed in locations well known to members of the rapid response team. In addition,

the members of the rapid response team must clearly be defined. The criteria used to activate rapid response team intervention also must be clearly defined and disseminated among potential activators well in advance of any emergency. It is also important for members of the rapid response team to receive ongoing education and training regarding important changes in the management of any potential emergency to ensure maximal preparedness. The exact nature of the preparation will depend on the work environment and the resources available.

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