

Optimizing Obstetric Patient Flow

In years past, the vast majority of U.S. women gave birth spontaneously and relatively intervention-free; however, much has changed, with 23.2% of mothers being induced into labor and an average 32.8% cesarean section rate nationwide (Martin et al.). While not all inductions and cesarean sections are scheduled events, many are, which makes scheduling very important to ensuring adequate flow throughout hospital areas that pregnant patients may use (e.g., labor and delivery unit, postanesthesia care unit [PACU]). Without proper planning, departments may become overextended and patient safety may be at risk.

ECRI Institute PSO received 25 reports related to pregnant patient flow problems* that occurred between May 1, 2012, and April 30, 2013. No pregnant patient flow issues were reported by the Kentucky Institute for Patient Safety and Quality PSO; however, members should be aware of this topic. Due to the voluntary nature of PSO reporting, the number of reported events may reflect a lack of event reporting, not necessarily a lack of occurrence. Nevertheless, the value of participating in a PSO is the ability to learn from reported events and evaluate the organization's risk.

WHAT WE ARE SEEING

Inadequate planning for patient surges can place patients at risk, as seen in the following cases:

Evaluations were delayed for more than two hours for two patients because facility policy requires that all patients less than 36 weeks be seen by the in-house attending physician, who was attending to a long delivery.

Three deliveries occurred within one hour, including one that required a full infant resuscitation. At the end of the hour, the charge nurse was informed of a patient in triage that needed to be admitted; however, there were no open labor rooms, and staff were unable to provide intravenous line access for the patient and were unable to closely monitor her.

Organizations must have policies in place for physicians regarding how and when nonemergent tests and procedures (e.g., scheduled cesarean sections and inductions) are allowed in the labor and delivery unit. Consider the following situation:

The labor and delivery unit and triage area were busy when a patient arrived for a nonstress test after her physician instructed her to do so because she was late to her appointment at his office. The department was not notified prior

to the patient's arrival; had the nurses been aware, they would have informed the physician that they could not perform the test due to a high patient load.

RECOMMENDATIONS

Data is necessary in order to evaluate patient flow. Software programs have been developed to manage obstetric patient flow and scheduling. Essential to these programs is the classification of patients by the following (Isken et al.):

- Labor: spontaneous, induced, or false (Griffin et al.)
- Induction urgency: urgent (within 24 hours) or elective (e.g., for nonurgent conditions)
- Birth: vaginal or cesarean
- Cesarean urgency: emergent (within 30 minutes), urgent (within 24 hours), or elective (e.g., repeat cesarean delivery)

Other conditions for which pregnant patients may present to the hospital, such as nonpregnancy problems and gynecologic issues, should also be considered. By analyzing the data, facilities can understand the typical pathway for each subset of patients from which measures, such as length of stay by unit, can be determined. (Griffin et al.)

After gathering data, facilities need to identify the patient volume in applicable units during various points in the day, week, and month. When do peaks and valleys occur? Are specific events (e.g., scheduled inductions, cesarean sections) influencing the census? Where, when, and why do bottlenecks occur?

“Artificial variability,” caused by issues such as scheduled elective procedures and inefficient discharge processes, should be “identified and eliminated” because it can impede patient flow. After this variability is removed and unless there is a real shortage in beds, the facility will be able to predict adequate staffing for the natural variability (e.g., due to spontaneous-labor patients) that it cannot control. (Litvak)

One hospital frequently experienced delays and rescheduling issues in its obstetrics unit until it limited the number of beds for scheduled deliveries. Initially, many physicians were skeptical, preferring to book deliveries in the morning; however, after the changes were made and scheduled deliveries were planned throughout the day, the deliveries occurred as planned, nurses no longer had to cancel and reschedule patients at the last minute due to overflow, and patients were no longer upset due to rescheduling. (Allen)

* Patient flow is a facility-wide problem for hospitals; see the May 2014 national *PSO Navigator* for more information about implementing improvement solutions throughout a facility.

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Modeling software can be used to identify bottlenecks. For example, one facility found that when total patient volume increases by 36%, the occupancy in the mother-and-baby unit is then over 90%, causing obstetric patients to be housed in the PACU three times longer than necessary, which is detrimental to flow. In order to alleviate the overcrowding, the facility converted some antepartum rooms to mother-and-baby rooms on an as-needed basis. (Griffin et al.)

As the previously mentioned study shows, backup in the mother-and-baby unit can lead

to delays in patient movement. Although not mentioned in the study, an inefficient discharge process may affect patient volume in this area. One organization was able to increase discharges before 11 a.m. (which was appropriate for the great majority of its patients but was delayed because of issues such as paperwork) from 8% to 84% through a facility-wide patient flow initiative (Jweinat et al.).

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