

Avoiding the pitfalls of obstetric triage

This process has streamlined the evaluation of labor and common complaints of pregnancy, such as diminished fetal movements and vaginal discharge. Here, a look at optimal screening, with case presentations illustrating the physician's key role.

Although nonphysician personnel provide the majority of obstetric triage services, close supervision by a doctor is required because of the considerable risks involved.¹ Careful attention also is recommended because responsibility for the patient's well-being—and that of her infant—ultimately lies with her obstetrician, even if another practitioner conducts the initial assessment. (See the example cases described on pages 51 and 53.)

Thus, it is in the physician's best interest to ensure that women who present to the triage unit are properly evaluated. This entails checking maternal vital signs and ascertaining the chief complaint, taking a complete history, and gauging risk based on the patient's prenatal records. Assessment of fetal well-being includes evaluating fetal movements, performing a nonstress test, and calculating the appropriate amniotic fluid index or biophysical profile for the gestational age.

The following scenarios should receive special scrutiny: abdominal pain, abdominal

trauma, vaginal bleeding, vaginal fluid leakage or discharge, decreased fetal movements, and motor vehicle accidents (TABLE 1).

Rationale for obstetric triage

Obstetric triage came into common use in the United States in the early 1980s as a result of increased financial constraints on hospitals, a personnel shortage, and the resultant strain on environmental services and other valuable hospital resources.² Due to an increasing number of births at the time, the use of labor and delivery beds for patient evaluation clearly was inappropriate and led

KEY POINTS

- Several studies have documented the cost-effectiveness of obstetric triage, as well as patient satisfaction with the arrangement.
- Any number of medical errors are possible during triage, the most common being incorrect assessment of the mother or fetus and incorrect diagnosis of true labor.
- The most common task required of obstetric triage personnel is labor evaluation.
- Several maternal symptoms require special evaluation. These include abdominal trauma, vaginal bleeding, motor vehicle accidents, decreased fetal movements, abdominal pain, and leakage of fluid.

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TABLE 1**Maternal symptoms requiring special evaluation**

SYMPTOM	RECOMMENDED SCREENING/INTERVENTION
Abdominal pain	<p>Assess maternal and fetal well-being.</p> <p>Rule out trauma, fall, abruption, preterm or term labor, domestic violence, abdominal pathology, ovarian torsion, appendicitis, acute abdomen, cholelithiasis, and nephrolithiasis.</p>
Abdominal trauma or a fall (with or without direct abdominal trauma)	<p>Assess maternal well-being and gauge severity of trauma—mild, moderate, or severe (emergency room protocol).</p> <p>Obtain blood type and screen, with Rh-immune globulin for Rh-negative.</p> <p>Employ continuous fetal monitoring for 6 hr (mild), 12 hr (moderate), or 24 hr (severe) when there is direct abdominal trauma.</p> <p>Rule out domestic violence.</p>
Vaginal bleeding	<p>Assess maternal well-being and identify placental location if unknown.</p> <p>Conduct bedside ultrasound to rule out placenta previa.</p> <p>Confirm bleeding by sterile speculum and quantify amount.</p> <p>Perform serial hematocrit and hemoglobin, Kleihauer-Betke test if Rh-negative; Rh-immune globulin may be indicated.</p> <p>Confirm fetal well-being (nonstress test, amniotic fluid index, biophysical profile).</p> <p>Monitor contractions.</p> <p>Rule out placental abruption, trauma, or domestic violence.</p>
Fluid leakage or vaginal discharge	<p>Assess maternal and fetal well-being.</p> <p>Rule out spontaneous rupture of membranes, infection (urine, vagina, uterus), and preterm or term labor.</p>
Motor vehicle accidents	<p>Have the emergency room evaluate, stabilize, or resuscitate the mother.</p> <p>Confirm GA and fetal well-being after above.</p> <p>Deliver fetus if indicated. (Fetus best resuscitated intrauterus.)</p>
Decreased fetal movements	<p>Assess maternal well-being and confirm GA.</p> <p>Obtain reactive nonstress test as per GA; if nonreactive, obtain a biophysical profile.</p> <p>Confirm fetal movements. Measure amniotic fluid index as per GA.</p> <p>Rule out domestic violence.</p>

GA = gestational age

Case 1: Absence of fetal movement

A 30-year-old primigravida presented to triage at 36 weeks' gestation complaining of an absence of fetal movement for the last 12 hours.

Initial assessment. The triage nurse obtained her vital signs, confirmed gestational dating, placed a fetal monitor, and reviewed her prenatal records. Information gathered included:

- When did the fetus last move? Had there been any change in fetal activity in the previous 24 to 48 hours?
- Were there additional symptoms, such as vaginal bleeding or discharge, uterine contractions or cramping, or bladder- or bowel-related symptoms?
- Had there been any changes in daily routines of work, exercise, meals, or sleep?
- What was the history of the current pregnancy—specifically, were there any earlier complications?
- What is the patient's medical and social history? Has she used tobacco, alcohol, or drugs?

Observations. The fetal heart rate pattern was reactive, there were no regular uterine contractions, and a brief sonographic assessment demonstrated adequate amniotic fluid volume and fetal movement.

Patient's course. The patient was reassured by seeing her baby moving on the ultrasound monitor, and was able to associate these movements with her perception of fetal activity.

The patient's physician was contacted by phone and given all the information. Vaginal examination was considered but deemed unnecessary, given the lack of regular uterine activity and other signs and symptoms of labor.

The patient was discharged home, counseled about routine precautions, and advised to count fetal movements twice daily. She also was instructed to keep the appointment she had at her doctor's office within the week.

to dissatisfaction among patients and health-care providers alike.³

The solution to this problem came with the creation of a triage area adjacent to the labor and delivery unit, where pregnant women could be evaluated for labor and non-labor-related issues. Qualified nursing personnel, including registered obstetric nurses, nurse-midwives, and nurse-practitioners, completed staffing of the unit.

Labouring patients who presented to obstetric triage were assessed and transferred to the labor unit. Nonlabouring patients were evaluated and appropriately managed by experienced obstetric personnel. This reduced the time each woman spent in the hospital, increased patient satisfaction, and eliminated the cost of expensive labor and delivery beds by curtailing unnecessary admissions. The cost-effectiveness of this screening unit and the accompanying rise in patient satisfaction were demonstrated in several studies.^{4,5}

TABLE 2

Potential errors in obstetric triage

- Incorrect assessment of maternal condition, fetal well-being, or pregnancy-related complications
- Failure to diagnose active labor
- Inappropriate discharge from the triage unit
- Incomplete or poorly documented record
- Failure to comply with the standard of care

Recommendation: Close communication between physician and triage personnel

When evaluating patients in the triage unit, clinicians can rely upon a wealth of well-defined criteria. The American College of Obstetricians and Gynecologists sets the standards of care through its committee opinions, educational/technical bulletins, technology assessments, and other publications. In addition, the Emergency Medical

TABLE 3**Classification of fetal heart rate pattern^{8,9}****REACTIVE (REASSURING)**

A tracing with a baseline of 120 to 160 beats per minute, good variability (5 beats above and below the baseline), and at least 2 accelerations more than 15 seconds long of 15 beats above the baseline during a 20-minute period coinciding with fetal movements.

NONREACTIVE**Suspicious**

Mild fetal tachycardia (more than 160 beats per minute) or bradycardia (less than 110 beats per minute), decreased variability, no fetal heart rate accelerations or decelerations. This pattern may be associated with fetal hypoxia, maternal fever, chorioamnionitis, or use of certain drugs. A normal pattern may be restored by treating the underlying cause.

Threatening

Minimal variability, stable baseline, variable or late decelerations. This pattern suggests fetal response to impaired umbilical blood flow (variable decelerations) or uterine blood flow (late decelerations). The cause of variable decelerations is not always clear. Possible conditions that need to be ruled out include oligohydramnios; premature rupture of membranes; placental abruption; umbilical cord compression, prolapse, or entanglement; imminent delivery; and maternal hypotension after regional anesthesia. Late decelerations with normal variability may be caused by hypotension (for example, due to regional anesthesia) or uterine hyperstimulation (such as use of oxytocin or a cervical ripening agent). Intrauterine resuscitation maneuvers that may be used include changing the patient position, administering oxygen or IV fluid, and discontinuing oxytocin.

Ominous

Absent variability, unstable baseline, late decelerations, significant fetal tachycardia or bradycardia. These patterns suggest severe, acute fetal distress.

Chronic condition

Absent variability. This pattern suggests an earlier neurological insult; intervention is likely to be of little benefit.

Treatment and Active Labor Act⁶ holds hospitals accountable for prompt screening and subsequent care of pregnant women who present in active labor.

Any number of medical errors are possible during triage, the most common being incorrect assessment of the mother or fetus and incorrect management of laboring patients (TABLE 2). Close interaction between the physician and triage personnel—which can be achieved through clear, timely, sincere, and complete exchange of clinical information—decreases the likelihood of such mistakes.

The majority of women presenting for obstetric triage at level 1 and 2 hospitals—ie, hospitals without a neonatal intensive care unit—are low-risk patients. In this setting, nonphysician providers are generally the ideal caregivers. These practitioners are able to evaluate common pregnancy symptoms, diagnose active labor, and transfer laboring patients to labor and delivery.¹

In level 3 hospitals, the proportion of high-risk patients who present to triage is usually larger; as a result, physicians typically are more closely involved in their evaluation.

Initial screening:**Overall well-being and history**

The most common task required of obstetric triage personnel is labor evaluation.³ Other common presenting symptoms are possible rupture of the amniotic membranes prematurely or at term, premature uterine contractions,¹ decreased fetal movements, vaginal discharge, urinary tract symptoms, and concerns related to the prenatal course and non-obstetric symptoms (eg, upper respiratory complaints).³ Less common reasons for evaluation include abdominal trauma, domestic violence, hypertensive disorders, vaginal bleeding, and a desire for prenatal care.³

Initial evaluation should include the following:

Case 2: Back pain and a history of preterm delivery

A 21-year-old gravida presented to triage at 32 weeks' gestation due to intermittent back pain. Her history was significant for a previous preterm vaginal delivery at 35 weeks' gestation.

Initial assessment. The triage nurse found that the patient's vital signs were normal; she was afebrile and normotensive. After confirming her gestational dates, the nurse initiated fetal monitoring and reviewed her prenatal records. Findings included:

- Her "back pain" had begun the previous evening and was "cramping" in nature. She did not associate the pain with uterine contractions, and felt no significant pelvic pressure.
- Her abdomen was not tender, and there had been no change in the fetal activity pattern.
- She had no vaginal bleeding, excessive discharge, or leakage of fluid.
- She had no dysuria, but complained of urinary frequency and urgency.
- Her pregnancy was complicated by an earlier positive chlamydia culture and by tobacco use. She had been treated for the infection.
- She had no medical problems, was taking prenatal vitamins only, and her family history was not contributory.
- The fetal heart rate tracing was reactive.
- Frequent uterine contractions were detected.

Patient's course. The patient's obstetrician was contacted and given the information. He came to the triage unit to assess her, and reviewed the findings with her. Upon examination, the physician confirmed that her abdomen was not tender.

A speculum examination revealed a minimal amount of clear vaginal discharge. The cervix appeared closed, the membranes were intact, and there was no bleeding.

Fetal fibronectin was collected, and chlamydia and gonorrhea cultures were obtained. Upon digital examination, the cervix was closed, but felt soft and somewhat effaced. A urine specimen and culture were sent to the laboratory.

Ultrasound examination revealed normal amniotic fluid volume. Transvaginally, the cervical length was 28 mm, and there was no funneling.

The physician recommended continued observation in the triage unit. Over the next 2 hours, the uterine contractions subsided. The urinalysis revealed 10 to 15 white blood cells, and the leukocyte esterase was positive, while the fetal fibronectin test was negative. The patient was discharged home with a prescription for antibiotics, and was instructed to decrease her physical activity and increase fluid intake. In addition, she was counseled about preterm labor precautions and instructed to call her doctor's office in 48 hours for follow-up and to check the results and sensitivity of her urine culture. She also was instructed to schedule a doctor's appointment in 1 week.

At 35 weeks' gestation, the patient again visited the triage unit reporting symptoms similar to those of her first visit. Evaluation revealed no preterm labor, and she was again discharged home. She had a spontaneous vaginal delivery at 37 weeks with good neonatal outcome.

Assessment of the mother's well-being.

A triage nurse obtains the patient's history, paying special attention to the presenting symptoms (for example, time of onset, appearance of vaginal discharge, duration and severity of vaginal bleeding), current risk factors, and pregnancy course. The

prenatal chart should be available to help direct and personalize the patient's care.

Evaluation of fetal status. This necessitates obtaining a history of fetal activity. Electronic monitoring of fetal heart rate (FHR) and uterine activity also is recommended after 24 weeks' gestation. In certain

TABLE 4

Indications for induction of labor¹⁰

<p>MATERNAL CONDITIONS</p> <ul style="list-style-type: none">• Pregnancy-induced hypertension• Premature rupture of membranes• Unstable maternal medical disorders (including psychological conditions)• Chorioamnionitis• Postterm pregnancy• Logistic reasons (history of rapid labor, distance from hospital)
<p>FETAL CONDITIONS</p> <ul style="list-style-type: none">• Placental abruption• Oligohydramnios• Intrauterine growth restriction• Nonreassuring fetal status• Fetal demise

situations (such as in the event of a nonreactive nonstress test or concern about possible premature rupture of membranes), a biophysical profile and/or evaluation of adequate placental function (for example, by

During the third trimester, the fetus makes gross body movements about 10% of the time, with 30 such movements every hour.

documenting appropriate amniotic fluid volume) are required.¹¹

The method used for assessment and documentation depends on the gestational age. For example, starting at 20 weeks' gestation, the uterine fundal height should be measured. From that point on, the fundal height in centimeters usually correlates with gestational age in weeks. During the third trimester, the fetus makes gross body move-

ments about 10% of the time, with 30 such movements every hour.⁷ The mother is able to perceive 70% to 80% of these movements.

■ **Evaluation of a previable pregnancy.** Prior to 24 weeks' gestation, fetal status is usually assessed by auscultation of FHR using a doppler-scope. Documentation of FHR ranging from 120 to 160 beats per minute usually is a sufficient assessment. In certain situations (such as first-trimester bleeding or suspected premature rupture of membranes), portable ultrasound is helpful to document fetal viability, assess amniotic fluid, and reassure the mother.

■ **Assessment between 24 and 28 weeks' gestation.** More thorough evaluation is warranted at this time. Because of the limited predictive value of clinical risk factors, the interpretation of the FHR pattern has become the primary method of assessing fetal well-being. A monitor strip documenting FHR and uterine activity should be obtained and classified as reactive or nonreactive (TABLE 3). A reactive FHR pattern usually requires at least 2 accelerations of 15 beats above the baseline. However, when the FHR is measured prior to 30 weeks' gestation, 10-beat accelerations are sufficient for reassurance. Although mild variable FHR decelerations may be present, they are not associated with adverse fetal outcomes as long as they are of short duration (less than 30 seconds) and nonrepetitive (less than 3 in 20 minutes).⁸ When the FHR tracing is nonreassuring, a biophysical profile may be performed.

■ **Assessment between 28 and 37 weeks' gestation.** As gestational age advances, the FHR baseline lowers, variability increases, and the cycles of fetal activity and rest become better defined. The amplitude of FHR accelerations is inversely proportional to the baseline rate.⁸ In uncompromised pregnancies, most nonstress tests are reactive (50% of nonstress tests are reactive between 24 and 27 weeks, and 85% are reactive at 28 to 32

weeks).⁹ However, some of the tests are non-reactive even when the fetus is not compromised (false positive); additional tests are necessary to assess the fetus' well-being and avoid unnecessary interventions such as induction of labor or cesarean delivery.

■ **Assessment at term.** During a triage visit between 37 and 42 weeks' gestation, the maternal and fetal conditions should be carefully assessed. When active labor is ruled out, the potential risks of continuing the pregnancy and of labor induction are weighed against the potential benefits of delivering the fetus.¹⁰ Conditions that should prompt the caregiver to consider induction of labor are listed in TABLE 4. Prior to labor induction, dating of the pregnancy should be carefully evaluated. Evaluation of fetal lung maturity should be considered when induction of labor is deemed indicated but dating of the pregnancy is insufficient to indicate whether it is at term.

Assessment of active term or preterm labor, pelvic adequacy, and fetal position are included.

At the conclusion of this initial evaluation, usually performed by a nurse, the patient's physician is consulted by phone. He or she then decides the patient's disposition. The woman may be discharged home, kept for further evaluation or observation, or reassessed by the physician.

Discharge from triage

Give kick-count instructions. When discharge is appropriate, women should be instructed to monitor and document fetal movements⁷ using one of several methods to conduct a "kick count." In general, patients should follow kick-count instructions given by their own obstetrician. One of the simplest methods is to count the number of movements over a defined period of time. For example, instruct the patient to monitor fetal activity 30 to 60 minutes after breakfast and

When discharge is appropriate, women should be instructed to monitor and document fetal movements.

again after supper by lying on her left side and counting fetal movements for 1 hour. If the number of movements is less than half her usual count, she should inform her physician. Another option is instructing the patient to expect a minimum of 5 to 10 fetal movements in 1 hour and have her notify her physician if she feels less than 5.

Final recommendations. To improve outcomes in obstetric triage, the care provider should make sure the patient understands her clinical situation and that all her concerns have been completely, satisfactorily, and properly addressed. Upon discharge, the patient should have a follow-up outpatient visit already scheduled at the physician's office and be adequately educated about her condition. She should feel free to call back if she fails to improve or worsens or if any new signs or symptoms appear. ■

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