LEARNING OBJECTIVES

- Review the factors included in the initial assessment of the woman in labor.
- Describe the ongoing assessment of maternal progress during the first, second, and third stages of labor.
- Recognize the physical and psychosocial findings indicative of maternal progress during labor.
- Describe fetal assessment during labor.
- Identify signs of developing complications during labor and birth.
- Identify nursing interventions for each stage of labor and birth.
- Examine the influence of cultural and religious beliefs and practices on the process of labor and birth.
- Evaluate research findings on the importance of support (family, doula, nurse) in facilitating maternal progress during labor and birth.
- Describe the role and responsibilities of the nurse during an emergency childbirth.
- Identify the effect of perineal trauma on the woman.
- Discuss ways the nurse can increase the use of evidence-based practices in caring for a woman during labor and birth.

KEY TERMS AND DEFINITIONS

**active phase** Phase in the first stage of labor when the cervix dilates from 4 to 7 cm.

**amniotomy** Artificial rupture of the fetal membranes (AROM), using a plastic Amnihook or surgical clamp.

**bloody or pink show** Blood-tinged mucoid vaginal discharge that originates in the cervix and indicates passage of the mucous plug (operculum) as the cervix ripens before labor and dilates during labor; it increases as labor progresses.

**crowning** Phase in the descent of the fetus when the top of the head can be seen at the vaginal orifice as the widest part of the head (biparietal diameter) distends the vulva just before birth.

**doula** Experienced female assistant hired to give the woman support during labor and birth.

**episiotomy** Surgical incision of the perineum at the end of the second stage of labor to facilitate birth and to avoid laceration of the perineum.

**fern test** The appearance of a fernlike pattern found on microscopic examination of certain fluids such as amniotic fluid.

**first stage of labor** Stage of labor from the onset of regular uterine contractions to full effacement and dilation of the cervix.

**latent phase** Phase in the first stage of labor when the cervix dilates from 0 to 3 cm.

**Leopold maneuvers** Four maneuvers for diagnosing the fetal position by external palpation of the mother's abdomen.

**lithotomy position** Position in which the woman lies on her back with her knees flexed and with abducted thighs drawn up toward her chest; stirrups attached to an examination table can be used to facilitate assuming and maintaining this position.

**nitrazine test** Evaluation of body fluids using a test strip to determine the fluid's pH; urine will exhibit an acidic result, and amniotic fluid will exhibit an alkaline result.

**nuchal cord** Encircling of fetal neck by one or more loops of umbilical cord.

**Ritgen maneuver** Technique used to control the birth of the head; upward pressure from the coccygeal region to extend the head during the actual birth.

**rupture of membranes (ROM)** Integrity of the amniotic membranes is broken either spontaneously or artificially (amniotomy).

**second stage of labor** Stage of labor from full dilation of the cervix to the birth of the baby.

**spontaneous rupture of membranes (SROM, SRM)** Rupture of membranes by natural means, most often during labor.

**third stage of labor** Stage of labor from the birth of the baby to the separation and expulsion of the placenta.

**transition phase** Phase in the first stage of labor when the cervix dilates from 8 to 10 cm.

**uterine contractions** Primary powers of labor that act involuntarily to dilate and efface the cervix, expel the fetus, facilitate separation of the placenta, and prevent hemorrhage.
For most women, labor begins with the first uterine contraction, continues with hours of hard work during cervical dilation and birth, and ends as the woman and her significant others begin the attachment process with the newborn. Nursing care management focuses on assessment and support of the woman and her significant others throughout labor and birth, with the goal of ensuring the best possible outcome for all involved.

The first stage of labor begins with the onset of regular uterine contractions and ends with full cervical effacement and dilation. Care begins when the woman reports one or more of the following:

- Onset of progressive, regular uterine contractions that increase in frequency, strength, and duration
- Blood-tinged mucoid vaginal discharge (bloody or pink show) indicating that the mucous plug (operculum) has passed
- Fluid discharge from the vagina (spontaneous rupture of membranes [SRM; SROM])

The first stage of labor consists of the following three phases: the latent phase (up to 3 cm of dilation), the active phase (4 to 7 cm of dilation), and the transition phase (8 to 10 cm of dilation). Most nulliparous women seek admission to the hospital in the latent phase because they have not experienced labor before and are unsure of the “right” time to come in. Multiparous women usually do not come to the hospital until they are in the active phase.

The nursing process is used as a framework for managing the care of women and their significant others during all stages of labor. Involving the laboring woman as a partner in the formulation of an individualized plan of care helps preserve the woman’s sense of control, facilitates her participation in her own childbirth experience, and enhances her self-esteem and level of satisfaction.

Women often have lingering impressions of their childbirth experiences. Caregivers who are respectful, supportive, available, protective, encouraging, kind, patient, professional, calm, and comforting help these women to remember their childbirth experiences in positive terms. Frustrations women feel regarding their childbirth experiences stem from pain, lack of control, lack of knowledge, or the negative behaviors of some caregivers (Hanson, VandeVusse, & Harrod, 2001; Tumblin & Simkin, 2001).

Assessment and Nursing Diagnoses

Assessment begins at the first contact with the woman, whether by telephone or in person. Many women call the hospital or birthing center first to receive validation that it is all right for them to come in for evaluation or admission. The manner in which the nurse communicates with the woman during this first contact can set the tone for a positive birth experience. A caring attitude by the nurse encourages the woman to verbalize questions and concerns. If possible, the nurse should have the woman’s prenatal record in hand when speaking to her or admitting her for evaluation of labor. Copies of records are often filed on the perinatal unit at some time during the woman’s third trimester. Certain factors are assessed initially to determine whether the woman is in true or false labor and whether she should come for further assessment or admission (see Teaching Guidelines box).

The pregnant woman may call the primary health care provider or come to the hospital while in false labor or early in the latent phase of the first stage of labor. She may feel discouraged on learning that the contractions that feel so strong and regular to her are not true contractions because they are not causing cervical dilation or are still not strong or frequent enough for admission.

If the woman lives near the hospital, she may be asked to stay home or return home to allow labor to progress (i.e., until the uterine contractions are more frequent and intense). The ideal setting for the low risk woman at this time is the familiar environment of her home. The nurse can use a telephone interview (Box 14-1) to assess the woman’s status and to give instructions regarding the optimal time for admission and to reinforce teaching regarding the signs that require immediate notification of the primary health care provider. Measures the woman and her significant others can

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**ELECTRONIC RESOURCES**

Additional information related to the content in Chapter 14 can be found on the companion website at [http://evolve.elsevier.com/Lowdermilk/Maternity/](http://evolve.elsevier.com/Lowdermilk/Maternity/)

- NCLEX Review Questions
- Case Study—First Stage of Labor
- Case Study—Second and Third Stages of Labor
- WebLinks
use to enhance the progress of labor, reduce anxiety, and maintain comfort are described.

A warm shower can be relaxing for the woman in early labor. Soothing back, foot, and hand massage or a warm drink of preferred liquids such as tea or milk can help the woman to rest and even to sleep, especially if false or early labor is occurring at night. Diversional activities such as walking outdoors or in the house, reading, watching television, doing needlework, or talking with friends can reduce the perception of early discomfort, help the time pass, and reduce anxiety.

The woman who lives at a considerable distance from the hospital may be admitted in early labor. The same measures used by the woman at home should be offered to the hospitalized woman in early labor.

Admission to labor unit

When the woman arrives at the perinatal unit, assessment is the top priority (Fig. 14-1). The nurse first performs a screening assessment by using the techniques of interview and physical assessment and reviews the laboratory and diagnostic test findings to determine the health status of the woman.

### TEACHING GUIDELINES

#### How to Distinguish True Labor from False Labor

**TRUE LABOR**
- Contractions
  - Occur regularly, becoming stronger, lasting longer, and occurring closer together
  - Become more intense with walking
  - Usually felt in lower back, radiating to lower portion of abdomen
  - Continue despite use of comfort measures
- Cervix (by vaginal examination)
  - Shows progressive change (softening, effacement, and dilation signaled by the appearance of bloody show)
  - Moves to an increasingly anterior position
- Fetus
  - Presenting part usually becomes engaged in the pelvis, which results in increased ease of breathing; at the same time, the presenting part presses downward and compresses the bladder, resulting in urinary frequency

**FALSE LABOR**
- Contractions
  - Occur irregularly or become regular only temporarily
  - Often stop with walking or position change
  - Can be felt in the back or abdomen above the navel
  - Often can be stopped through the use of comfort measures
- Cervix (by vaginal examination)
  - May be soft, but there is no significant change in effacement or dilation or evidence of bloody show
  - Is often in a posterior position
- Fetus
  - Presenting part is usually not engaged in the pelvis

The woman who lives at a considerable distance from the hospital may be admitted in early labor. The same measures used by the woman at home should be offered to the hospitalized woman in early labor.

**Admission to labor unit**

When the woman arrives at the perinatal unit, assessment is the top priority (Fig. 14-1). The nurse first performs a screening assessment by using the techniques of interview and physical assessment and reviews the laboratory and diagnostic test findings to determine the health status of the woman.

### Telephone Interview with Woman in Latent Phase of Labor

The perinatal nurse performs the following steps of the nursing process.

**ASSESSMENT**
- Gathers data regarding the woman’s status, including signs and symptoms indicative of true or false labor (uses prenatal chart if available)
- Discusses instructions given by the woman’s primary health care provider regarding when to come for admission

**PLANNING AND IMPLEMENTATION**
- Decides whether the woman will come for labor assessment and admission or be encouraged to stay at home until contractions increase in duration, frequency, and intensity
- Assures the woman that she is welcome to call the perinatal unit at any time to discuss her labor status
- Answers questions the woman and her family may have regarding labor or provides instruction as needed (e.g., which entrance of the hospital to use)
- Suggests a variety of positions she can assume to maximally enhance uteroplacental and renal blood flow (e.g., side-lying position) and enhance the progress of labor (e.g., upright positions and ambulation)
- Suggests diversional activities, such as walking, reading, watching television, talking to friends
- Suggests measures to maintain comfort, such as a warm shower, back or foot massage
- Discusses the oral intake of foods and fluids appropriate for early labor (light foods or fluids or clear liquids depending on the preference of her primary health care provider)
- Instructs the woman to come in immediately if membranes rupture, bleeding occurs, or fetal movements change

**EVALUATION**
- Evaluates whether instructions and information have been understood by the woman by asking her to verbalize her understanding
active participants in the process of labor and birth. LDR or birthing as wellness and the woman and her support persons as care is the trend in maternity today. This approach views the waiting area, if that is the policy of the unit. Family-centered participation in this process may be directed to the appropriate assessment and admission process. Significant others not partaking in this role and purpose for his or her presence are not clearly identified (Hanson, Vande-Vusse, & Harrod, 2001).

When the woman is admitted, she usually is moved from an observation area to the labor room; the labor, delivery, and recovery (LDR) room; or the labor, delivery, recovery, and postpartum (LDRP) room. Because first impressions are important, the woman and her partner are welcomed by name and introduced to the staff members who will be involved in the woman’s care. Women often express concern regarding the number of persons intruding on their labor experience, especially if the role of the person and purpose for his or her presence are not clearly identified (Hanson, Vande-Vusse, & Harrod, 2001).

If the woman wishes, her partner is included in the assessment and admission process. Significant others not participating in this process may be directed to the appropriate waiting area, if that is the policy of the unit. Family-centered care is the trend in maternity today. This approach views labor as wellness and the woman and her support persons as active participants in the process of labor and birth. LDR or LDRP rooms are essential components of family-centered care, and the woman is encouraged to have anyone she wishes present for her support. After birth the mother, baby, and support persons are permitted to stay together to celebrate the arrival of a new family member (Zwelling & Phillips, 2001).

The woman is asked to undress and put on her own gown or a hospital gown. An admissions band is placed on the woman’s wrist. Her personal belongings are put away safely or given to family members, according to agency policy. Often women who participate in expectant parents classes bring a birth bag or Lamaze bag with them. The woman and her partner are oriented regarding the layout and operation of the unit and room, including the use of the call light and telephone system, and how to adjust lighting in the room and the different bed positions.

The nurse assures the woman that she is in competent, caring hands and that she and her partner can ask questions related to her care and her status and those of her fetus at any time during labor. The woman’s anxiety can be minimized by explaining terms commonly used during labor. The woman’s interest, response, and prior experience guide the depth and breadth of these explanations.

**LEGAL TIP** Obstetric Triage and EMTALA

The Emergency Medical Treatment and Active Labor Act (EMTALA) is a federal regulation enacted to ensure that a woman gets emergency treatment or active labor care whenever such treatment is sought. Nurses working in labor and birth units must be familiar with their responsibilities according to the EMTALA regulations, which include providing services to pregnant women when they experience an urgent pregnancy problem. A pregnant woman presenting in an obstetric triage is considered to be in “true” labor until a qualified health care provider certifies that she is not. Agencies need to have specific policies and procedures in place so that compliance with the EMTALA regulations is achieved while safe and efficient care is provided (Caliendo, Millbauer, Moore, & Kitchen, 2004).

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**Admission data.** Admission forms such as the one in Fig. 14-2 can provide guidelines for the acquisition of important assessment information when a woman in labor is being evaluated or admitted. Additional sources of data include the prenatal record, the initial interview, physical examination to determine baseline physiologic parameters, laboratory and diagnostic test results, expressed psychosocial and cultural factors, and the clinical evaluation of labor status.

**Prenatal data.** The nurse reviews the prenatal record to identify the woman’s individual needs and risks. If the woman has not had any prenatal care or her prenatal record is unavailable, certain baseline information must be obtained. If the woman is having discomfort, the nurse should ask questions between contractions when the woman can concentrate more fully on her answers. At times the partner or support person(s) may need to be secondary sources of essential information.

It is important to know the woman’s age so that the plan of care can be tailored to the needs of her age group. For example, a 14-year-old girl and a 40-year-old woman have different but specific needs, and their ages place them at risk for different problems. Height and weight relations are important to determine because a weight gain greater than that recommended may place the woman at a higher risk for cephalopelvic disproportion and cesarean birth. This is especially true for women who are petite and have gained 16 kg or more. Other factors to consider are the woman’s general health status, current medical conditions or allergies, respiratory status, and previous surgical procedures.

Her obstetric and pregnancy history are carefully noted. These include gravidity, parity, and problems such as history of vaginal bleeding, gestational hypertension, anemia, gestational diabetes, infections (e.g., bacterial or sexually transmitted), and immunodeficiency.
**Obstetric Admitting Record**

**Basic Admission Data**
- Date: __ / __ / __
- Time: __
- Ambulatory: ☐
- Direct admit: ☐
- Transfer from: __
- Occupied: __
- Marital status: S ☐ M ☐ Sep D ☐ W ☐
- Religion: __
- Address: __
- Support person/Relationship: __
- Tel no: __

**Patient Triage Data**
- Contraindications: None ☐ Pulsation ☐ Tocotransducer ☐
- Frequency: __ / __ / __
- Duration: __
- Intensity: __
- Membranes: Intact ☐ Bulging ☐
- Fluid: Clear ☐ Bloody ☐ False smelling ☐
- Vaginal bleeding: None ☐ Normal show ☐ Meconium stained ☐ No foul odor ☐

**Patient Care Data**
- Personal Effects: __
- Disposition: __
- Alcohol/Drug use: None ☐
- Substances: __
- Amt/Day: __
- Last used: __
- Time: __

**Patient History**
- Illness (≤ 14 days prior to admission): None ☐
- Recent Exposure to Communicable Disease: None ☐
- Type/Dose: __
- Last Oral Intake: __
- Fluids: __
- Solids: __
- Medications: None ☐
- Type/Dose: __
- Last taken: __
- With patient: Yes ☐ No ☐
- Disposition: __

**Psychosocial Data**
- Communication Deficit: None ☐
- Partner involved: Yes ☐ No ☐
- Other children: __
- Age/Sex: __

---

**Fig. 14-2** Obstetric admitting record. (Permission to use and/or reproduce this copyrighted material has been granted by the owner, MNRS-Briggs Corporation, Des Moines, IA.)

Continued
CD: Assessment Video—Leopold Maneuvers

### Obstetric Admitting Record

#### Psychosocial Data (Cont’d.)

- **Basic needs met:** Yes [ ] No [ ]
- **Housing:** [ ]
- **Clothing:** [ ]
- **Food:** [ ]
- **Transportation:** [ ]

- **Free from apparent physical/emotional abuse:** Yes [ ] No [ ]

#### Discharge Planning Data

- **Discharge planning initiated:** Yes [ ] No [ ]
- **Social service referral:** Yes [ ] No [ ]

#### Significant Prenatal Data

- **Prenatal Records Available on Admission:** Yes [ ] No [ ]
- **First prenatal visit:** / / 
- **Infant care provider:** 

#### Lab Findings

<table>
<thead>
<tr>
<th>Test</th>
<th>Time</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood pH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ketones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albumin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucose</td>
<td></td>
<td></td>
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<tr>
<td>C + S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Fetal Assessment Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doppler</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetoscope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetal monitor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Fetal Problems Identified

1. [ ] 2. [ ] 3. [ ]

#### Maternal Problems Identified

<table>
<thead>
<tr>
<th>Active</th>
<th>Resolved</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

#### Physical Assessment

- **Height:** [ ]
- **Weight:** [ ]

#### System

- **HEENT:** [ ]
- **Neurologic:** [ ]
- **Skin:** [ ]
- **Breasts:** [ ]
- **Extremities:** [ ]
- **Cardiovascular:** [ ]
- **Respiratory:** [ ]
- **Abdomen:** [ ]
- **Gastrointestinal:** [ ]
- **Urinary:** [ ]
- **Genitalia:** [ ]

#### Fetal Evaluation Data

- **Fundal height:** [ ]
- **Estimated weight:** [ ]
- **Weeks gestation:** [ ]

#### Initial Problems Identified

1. [ ] 2. [ ] 3. [ ]
If this is not the woman’s first labor and birth experience, it is important to note the characteristics of her previous experiences. This information includes the duration of previous labors, the type of anesthesia used, the kind of birth (e.g., spontaneous vaginal, forceps-assisted, vacuum-assisted, or cesarean birth) and the condition of the newborn. The woman’s perception of her previous labor and birth experiences should be explored because it may influence her attitude toward her current experience. Women can retain long-term memories of their childbirth experiences. The memory of labor and birth events including her behavior and that of health care providers (e.g., physician, nurse-midwife, nurses, doula, partner) can affect a woman’s postpartum emotional adjustment, self-esteem, and ability to parent effectively (Hanson, VandeVusse, & Harrod, 2001).

It is important to confirm the expected date of birth (EDD). Other data in the prenatal record include patterns of maternal weight gain, physiologic measurements such as maternal vital signs (blood pressure, temperature, pulse, respirations); fundal height; baseline fetal heart rate (FHR); and laboratory and diagnostic test results. Laboratory tests include the woman’s blood type and Rh factor; a complete or partial blood cell count (CBC, hemoglobin, and hematocrit); the 50g blood glucose test; determination of the rubella titer; serologic tests (Venereal Disease Research Laboratories [VDRL] or rapid plasma reagin [RPR] test) for syphilis; hepatitis B surface antigen (HBsAg); culture for group B streptococci; and urinalysis. Additional tests may include a tuberculin skin test with purified protein derivative (PPD); screening for the human immunodeficiency virus (HIV); and a screen for sickle cell trait or other genetic disorders (e.g., maternal serum alpha-fetoprotein). Diagnostic tests include amniocentesis, nonstress test (NST), contraction stress test (CST), biophysical profile (BPP), and ultrasound examination.

Interview. The woman’s primary complaint or reason for coming to the hospital is determined in the interview. Her primary complaint may be that her bag of waters (BOW, amniotic membranes) ruptured, with or without contractions. The woman may have come in for an obstetric check, amniotic membranes ruptured, with or without contractions (e.g., spontaneous vaginal, forceps-assisted, vacuum-assisted, or cesarean birth) and the condition of the newborn. Screening of the neonate for substances abused by the mother may be required. After birth the nurse would assess the neonate for signs indicating maternal substance use during pregnancy (e.g., abstinence syndrome, characteristic size and appearance).

The nurse reviews the birth plan; if no written plan has been prepared, the nurse helps the woman formulate a birth plan by describing options available and finds out the woman’s wishes and preferences. The nurse prepares the woman for the possibility that changes may be needed in her plan as labor progresses and assures her that information will be provided so that she can make informed decisions. The nurse uses the information in the birth plan to individualize the care given the woman during labor.
The nurse should discuss with the woman and her partner their plans for preserving childbirth memories by using photography and videotaping and provide information about the agency’s policies regarding these practices and under what circumstances they are allowed. Protection of privacy and safety and infection control are major concerns for the parents-to-be and the agency. If a birth video is made, consideration should be given to the woman’s reaction to viewing the video after birth. She may need help in interpreting the events, behaviors, and reactions she sees depicted in the video, because her impression of her childbirth experience, including her behavior, can have a profound effect on her future labor and birth experiences. Women may have an idealized view of what their birth video will depict, based on childbirth videos viewed during an expectant childbirth class (Hanson, VandeVusse, & Harrod, 2001).

Psychosocial factors. The woman’s general appearance and behavior (and those of her partner) provide valuable clues to the type of supportive care she will need. However, the nurse should keep in mind that general appearance and behavior may vary, depending on the stage and phase of labor (Table 14-1).

Women with a history of sexual abuse. Memories of sexual abuse can be triggered during labor by intrusive procedures such as vaginal examinations; loss of control; being confined to bed and “restrained” by monitors, intravenous (IV) lines, and epidurals; being watched by students;
and having intense sensations in the uterus and genital area, especially at the time when she must push the baby out. Women who are abuse survivors may fight the labor process by reacting in panic or anger toward care providers, may take control of everyone and everything related to their childbirth, may surrender by being submissive and dependent, or may retreat by mentally dissociating themselves from the sensations of labor and birth (Hobbins, 2004).

The nurse can help these women to associate the sensations they are experiencing with the process of childbirth and not with their past abuse. The woman’s sense of control should be maintained by explaining all procedures and why they are needed, validating her needs and paying close attention to her requests, proceeding at the woman’s pace by waiting for her to give permission to touch her, accepting her often extreme reactions to labor, and protecting her privacy by limiting the amount of exposure of her body and the number of persons involved in her care. It is recommended that all laboring women be cared for in this manner, because it is not unusual for a woman to choose not to reveal a history of sexual abuse. These care measures can help a woman to perceive her childbirth experience in positive terms and to parent her new baby effectively (Hobbins, 2004).

<table>
<thead>
<tr>
<th>TABLE 14-1</th>
<th>Woman’s Responses and Support Person’s Actions during First Stage of Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOMAN’S RESPONSES</td>
<td>NURSE OR SUPPORT PERSON’S ACTIONS*</td>
</tr>
<tr>
<td>DILATION OF CERVIX 0-3 CM (LATENT) (contractions 30-45 sec long, 5-30 min apart, mild to moderate)</td>
<td>Stays with woman; provides constant support</td>
</tr>
<tr>
<td>Mood: alert, happy, excited, mild anxiety</td>
<td>Provides encouragement, feedback for relaxation, companionship</td>
</tr>
<tr>
<td>Symptoms of transition (e.g., nausea, vomiting)</td>
<td>Encourages woman to cope with contractions</td>
</tr>
<tr>
<td>Continues relaxation, needs greater concentration to do this</td>
<td>Helps to concentrate on breathing techniques</td>
</tr>
<tr>
<td>Uses breathing techniques</td>
<td>Uses comfort measures</td>
</tr>
<tr>
<td>Uses panting to overcome urge to push if appropriate</td>
<td>Helps to concentrate on breathing techniques</td>
</tr>
<tr>
<td>Mood: irritable, intense concentration, symptoms of transition (e.g., nausea, vomiting)</td>
<td>Supports woman who has nausea and vomiting; gives oral care as needed; gives reassurance regarding signs of end of first stage</td>
</tr>
<tr>
<td>Mood: seriously labor oriented, concentration and energy needed for contractions, alert, more demanding</td>
<td>Uses relaxation techniques (effleurage and voluntary relaxation)</td>
</tr>
<tr>
<td>Mood: irritable, intense concentration, symptoms of transition (e.g., nausea, vomiting)</td>
<td>Keeps woman aware of progress</td>
</tr>
<tr>
<td>Mood: seriously labor oriented, concentration and energy needed for contractions, alert, more demanding</td>
<td>Offers analgesics as ordered</td>
</tr>
<tr>
<td>Mood: alert, happy, excited, mild anxiety</td>
<td>Checks bladder; encourages her to void</td>
</tr>
<tr>
<td>Mood: alert, happy, excited, mild anxiety</td>
<td>Uses breathing techniques</td>
</tr>
<tr>
<td>Mood: alert, happy, excited, mild anxiety</td>
<td>Provides encouragement, feedback for relaxation, companionship</td>
</tr>
<tr>
<td>Mood: alert, happy, excited, mild anxiety</td>
<td>Encourages woman to cope with contractions</td>
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Stress in labor. The way in which women and their support person or family members approach labor is related to the manner in which they have been socialized to the childbearing process. Their reactions reflect their life experiences regarding childbearing—physical, social, cultural, and religious. Feelings a woman has about her pregnancy and fears regarding childbirth should be discussed. This is especially important if the woman is a primigravida who has not attended childbirth classes or is a multiparous woman with a previous negative childbirth experience. Major fears and concerns relate to the process and effects of childbirth, maternal and fetal well-being, and the attitude and actions of the health care staff. Unresolved fears increase a woman’s stress and can inhibit the process of labor as a result of the inhibiting effects of catecholamines associated with the stress response on uterine contractions (Melender, 2002).

Women in labor usually have a variety of concerns that they will voice if asked but rarely volunteer. It is important to ask the woman what she expects or to suggest that the woman ask her primary health care provider about an issue. The following are common concerns of women in labor: Will my baby be all right? Will I be able to stand labor? Will my labor be long? How will I act? Will I need medication? Will it work for me? Will my partner or someone be there to support me? Do I have to have an IV?

The nurse’s responsibility to the woman in labor with regard to these concerns is to answer her questions or find the answers, to provide support for her and her support person or family, to take care of her in partnership with those persons the woman wants as her support team, and to serve as their advocate. Women feel empowered when they are given information they can understand and that shows support for their efforts. This feeling of empowerment gives women the sense that they have the freedom to participate fully in their labor and birth and fosters a positive perception of the experience. In contrast, a woman’s level of anxiety and fear may increase when she does not understand what is being said. The woman who is unfamiliar with expressions such as “bloody show,” “the membranes ruptured,” “scalp electrode,” and “baby’s lying on the cord” could panic. Many such expressions sound violent and could conjure up thoughts of injury or pain.

The nurse communicates to the woman that she is not expected to act in any particular way and that the process will end in the birth of her baby, which is the only expectation she should have. Women need to trust in their own innate ability to give birth, and nurses need to support and protect the woman’s efforts to achieve this outcome (Lothian, 2001).

The father, coach, or significant other(s) also experiences stress during labor. The nurse can assist and support these individuals by identifying their needs and expectations and by helping make sure these are met. The nurse can ascertain what role the support person intends to fulfill and whether he or she is prepared for that role by making observations and asking her/himself such questions as, “Has the couple attended childbirth classes?” “What role does this person expect to play?” “Does he or she do all the talking?” “Is he or she nervous, anxious, aggressive, or hostile?” “Does he or she look hungry, tired, worried, or confused?” “Does he or she watch television, sleep, or stay out of the room instead of paying attention to the woman?”“Where does he or she sit?” “Does he or she touch the woman; what is the character of the touch?” The nurse should be sensitive to the needs of support persons and provide teaching and support as appropriate.

Cultural factors. It is important to note the woman’s ethnic or cultural and religious background to anticipate nursing interventions that should be added to or eliminated from the individualized plan of care (Fig. 14-3). The woman should be encouraged to request specific caregiving behaviors and practices that are important to her. If a special request contradicts usual practices in that setting, the nurse can ask the woman’s primary health care provider to write an order to accommodate the special request. For example, in many cultures, it is unacceptable to have a male caregiver examine a pregnant woman. In
The non-English-speaking woman in labor. A woman’s level of anxiety in labor increases when she does not understand what is happening to her or what is being said. Some misunderstanding may occur with English-speaking women and cause some stress, but the effect of misunderstanding on non-English-speaking women is much more dramatic. These women often feel a complete loss of control over their situation if no health care provider is present who speaks their language. They can panic and withdraw or become physically abusive when someone tries to do something they perceive might harm them or their babies. Sometimes a support person is able to serve as an interpreter. However, this must be done with caution because the interpreter may not be able to convey exactly what the nurse or others are saying or what the woman is saying, which can increase the woman’s stress level even more.

Ideally, a bilingual nurse will care for the woman. Alternatively, an employee or volunteer interpreter may be contacted for assistance (see Box 2-1). Ideally, the interpreter is from the woman’s culture. For some women a female interpreter may be more acceptable. If no one in the hospital is able to interpret, a service can be called so that interpretation can take place over the telephone. Another alternative is for the labor and birth unit staff to prepare a set of cards with graphic illustrations that depict common situations. These cards can be used to communicate with non-English-speaking women. Even when the nurse has limited ability to communicate verbally with the woman, in most instances the nurse’s efforts to communicate are meaningful and appreciated by the woman. Speaking slowly and avoiding complex words and medical terms can help a woman and her partner to understand (Mattson, 2000) (see Guidelines/Guías box).

Physical examination

The initial physical examination includes a general systems assessment; performance of Leopold maneuvers to determine fetal presentation and position and the point of maximal intensity (PMI) for auscultating the FHR; assessment of fetal status; assessment of uterine contractions; and vaginal examination to assess the status of cervical effacement and dilation, fetal descent, and amniotic membranes in the society in which she lives. For example, in Western societies, the father is viewed as the ideal birth companion. For European-American couples, attending childbirth classes together has become a traditional, expected activity. In some other cultures the father’s presence during labor and birth is inappropriate—for example Mexican, Filipino, Chinese, Islamic, and Ethiopian (D’Avanzo & Geissler, 2003). However, among the Laotian (Hmong), the father plays an important role in the birth. If couples from these cultures immigrate to the United States or Canada, their roles may change. The nurse will need to talk to the woman and her support persons to determine the roles they wish to assume. Some women feel it is shameful to scream or cry out in pain if a man is present. If the woman’s support person is of another culture, this can increase the woman’s stress level even more.

C H A P T E R

Nursing Care during Labor and Birth

Cultural Considerations

Birth Practices in Different Cultures

SOUTH KOREA

Stoic response to labor pain; fathers usually not present.

JAPAN

Natural childbirth methods practiced; may labor silently; may eat during labor; father may be present.

CHINA

Stoic response to pain; fathers usually not present; side-lying position preferred for labor and birth, because this position is thought to reduce infant trauma.

INDIA

Natural childbirth methods preferred; father is usually not present; female relatives usually present.

IRAN

Fathers not present; female support and female caregivers preferred.

MEXICO

May be stoic about discomfort until second stage, then may request pain relief; fathers and female relatives may be present.

LAOS

May use squatting position for birth; fathers may or may not be present; female attendants preferred.

## TABLE 14-2

### Sociocultural Basis of Pain Experience

<table>
<thead>
<tr>
<th>WOMAN IN LABOR</th>
<th>NURSE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PERCEPTION OF MEANING</strong></td>
<td>Origin: Cultural concept of and personal experience with pain; for example: Pain in childbirth is inevitable, something to be endured. Pain in childbirth can be avoided completely. Pain in childbirth is punishment for sin. Pain in childbirth can be controlled.</td>
</tr>
<tr>
<td><strong>COPING MECHANISMS</strong></td>
<td>Nurse may respond by: Using physical factors effectively (e.g., using tone of voice, closeness in space, and touch as media for conveying message of interest and caring) Using avoidance, belittling, or other distracting actions as protective device for self Offering comfort measures and other nonpharmacologic methods of pain relief Using pharmacologic resources at hand judiciously Assuming accountability for control and management of pain</td>
</tr>
<tr>
<td><strong>EXPECTATIONS OF OTHERS</strong></td>
<td>Only certain verbal or nonverbal responses to pain may be accepted as appropriate responses. Couple that is prepared for childbirth may be expected to refuse medication and to wish to “do everything on their own.” Woman's definition of pain may not be accepted; that is, woman may wish to experience and participate in controlling pain or may not be able to accept any pain as reasonable.</td>
</tr>
</tbody>
</table>

### GUIDELINES/GUÍAS

#### Labor Assessment

- **When was the last time you ate or drank anything?**
- **¿Cuándo fue la última vez que comió o tomó algo?**
- **Have you had any problems with this pregnancy?**
- **¿Ha tenido algún problema con este embarazo?**
- **Are you taking any medications?**
- **¿Toma algún medicamento?**
- **Are you allergic to penicillin or other medicines?**
- **¿Es alérgica a la penicilina o otras medicinas?**
- **Please sign this consent form.**
- **Por favor, firme este formulario de autorización.**

- **What time did the contractions begin?**
- **¿A qué hora le empezaron las contracciones?**
- **How far apart are the contractions?**
- **¿Con qué frecuencia tiene las contracciones?**
- **Have the membranes ruptured? When?**
- **¿Se le rompió la fuente? ¿Cuándo?**
- **Have you had bleeding?**
- **¿Ha tenido hemorragia?**
- **What color was the fluid? Red? Pink?**
- **¿Qué color tenía el líquido? ¿Rojo? ¿Rosado?**
- **How much? A cupful? A tablespoon? A teaspoon?**
- **¿Cuánto? ¿Una taza? ¿Una cucharadita? ¿Una cucharadita?**
- **¿Cuánto? ¿Una taza? ¿Una cucharadita? ¿Una cucharadita?**

### Guide to...
and fluid. The findings of the admission physical examination serve as a baseline for assessing the woman’s progress from that point.

It is important to obtain as many related pieces of information as possible before planning and implementing care. Women often focus on the nature of their contractions as the clearest indicator of how far advanced their labor is. However, the findings from the vaginal examination are more valid indicators of the phase of labor, especially for nulliparous women.

The information yielded by a complete and accurate assessment during the initial examination serves as the basis for determining whether the woman should be admitted and what her ongoing care should be. Expected maternal progress and minimal assessment guidelines during the first stage of labor are presented in Table 14-3 and the Care Path for the low risk woman in the first stage of labor.

Table 14-3

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>LATENT (0-3 cm)</th>
<th>PHASES MARKED BY CERVICAL DILATION*</th>
<th>TRANSITION (8-10 cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>About 6-8 hr</td>
<td>About 3-6 hr</td>
<td>About 20-40 min</td>
</tr>
<tr>
<td>Contractions</td>
<td>Mild to moderate</td>
<td>Moderate to strong</td>
<td>Strong to very strong</td>
</tr>
<tr>
<td>Frequency</td>
<td>5-30 min apart</td>
<td>3-5 min apart</td>
<td>2-3 min apart</td>
</tr>
<tr>
<td>Duration</td>
<td>30-45 sec</td>
<td>40-70 sec</td>
<td>45-90 sec</td>
</tr>
<tr>
<td>Station of presenting part</td>
<td>Nulliparous: 0</td>
<td>Varies: 1 to 2 cm</td>
<td>Varies: 2 to 3 cm</td>
</tr>
<tr>
<td>Show</td>
<td>Multiparous: 2 cm to 0</td>
<td>Varies: 1 to 2 cm</td>
<td>Varies: 2 to 3 cm</td>
</tr>
<tr>
<td>Color</td>
<td>Brownish discharge, mucous plug, or pale pink mucus</td>
<td>Pink to bloody mucus</td>
<td>Bloody mucus</td>
</tr>
<tr>
<td>Amount</td>
<td>Scant</td>
<td>Scant to moderate</td>
<td>Copious</td>
</tr>
<tr>
<td>Behavior and appearance</td>
<td>Excited; thoughts center on self, labor, and baby; may be talkative or silent, calm or tense; some apprehension; pain controlled fairly well; alert, follows directions readily; open to instructions</td>
<td>Becomes more serious, more apprehensive; desires companionship and encouragement; attention more inwardly directed; fatigue evidenced; malar (cheek) flush; has some difficulty following directions</td>
<td>Pain described as severe; backache common; frustration, fear of loss of control, and irritability may be voiced; vague in communications; amnesia between contractions; withering with contractions; nausea and vomiting, especially if hyperventilating; hyperesthesia; circumoral pallor, perspiration of forehead and upper lips; shaking tremor of thighs; feeling of need to defecate, pressure on anus</td>
</tr>
</tbody>
</table>

*In the nullipara, effacement is often complete before dilation begins; in the multipara, it occurs simultaneously with dilation.

†Duration of each phase is influenced by such factors as parity, maternal emotions, position, level of activity, and fetal size, presentation and position. For example, the labor of a multipara tends to last longer, on average, than the labor of a nullipara. Women who ambulate and assume upright positions or change positions frequently during labor tend to experience a shorter first stage. Descent is often prolonged in breech presentations and occiput posterior positions.

‡Women who have epidural analgesia for pain relief may not demonstrate some of these behaviors.
### CARE PATH

#### Low Risk Woman in First Stage of Labor

<table>
<thead>
<tr>
<th>CARE MANAGEMENT</th>
<th>CERVICAL DILATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>*<em>I. ASSESSMENT MEASURES</em></td>
<td>0-3 cm (LATENT)</td>
</tr>
<tr>
<td>Temperature</td>
<td>Every 4 hr</td>
</tr>
<tr>
<td>Fetal heart rate (FHR)</td>
<td>Every 4 hr</td>
</tr>
<tr>
<td>Vaginal show</td>
<td>Every 4 hr</td>
</tr>
<tr>
<td>Behavior; appearance, mood, energy level of woman; condition of partner</td>
<td>Every 30 min</td>
</tr>
<tr>
<td>Vaginal examination</td>
<td>As needed to identify progress</td>
</tr>
<tr>
<td>Blood pressure, pulse, respirations</td>
<td>Coach breathing techniques</td>
</tr>
<tr>
<td>Uterine activity</td>
<td>Encourage ambulation, upright positions</td>
</tr>
<tr>
<td>Dorsal position</td>
<td>Assist with position changes</td>
</tr>
<tr>
<td>Nourishment; light foods and full liquids</td>
<td>Provide nourishment as desired</td>
</tr>
<tr>
<td>Encourage to void every 2 hr</td>
<td>Encourage voiding every 2 hr</td>
</tr>
<tr>
<td>Perform basic hygiene measures</td>
<td>Assist with hygiene, perineal care</td>
</tr>
<tr>
<td>Microbiological examination</td>
<td>Provide pharmacologic pain relief as requested by the woman and ordered by the primary health care provider</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>**II. PHYSICAL CARE MEASURES§</th>
<th>Frequency</th>
<th>Frequency</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stay at home for as long as possible</td>
<td>Every 30 min</td>
<td>Every 30 min</td>
<td>Every 15-30 min</td>
</tr>
<tr>
<td>Relaxation measures; rest and sleep if at night</td>
<td>Every 30 min</td>
<td>Every 30 min</td>
<td>Every 30 min</td>
</tr>
<tr>
<td>Activity—ambulation; emphasize upright positions</td>
<td>Every 30 min</td>
<td>Every 30 min</td>
<td>Every 15 min</td>
</tr>
<tr>
<td>Dorsal position</td>
<td>Every 30 min</td>
<td>Every 30 min</td>
<td>Every 15 min</td>
</tr>
<tr>
<td>Encourage ambulation, upright positions</td>
<td>Every 30 min</td>
<td>Every 30 min</td>
<td>Every 15 min</td>
</tr>
<tr>
<td>Physical care measures are performed by the nurse working together with the woman’s partner and significant others. The woman is capable of greater independence in the latent phase but needs more assistance during the active and transition phases.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>III. EMOTIONAL SUPPORT</strong></th>
<th>Frequency</th>
<th>Frequency</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review process of labor—what to expect, pain management techniques available</td>
<td>Provide feedback about performance</td>
<td>Reduce distractions during contractions</td>
<td>Role model comfort measures</td>
</tr>
<tr>
<td>Redemonstrate breathing techniques</td>
<td>Role model comfort measures</td>
<td>Encourage, encourage, praise</td>
<td>Measure comfort until control regained</td>
</tr>
<tr>
<td>Keep informed: progress, procedures</td>
<td>Keep informed</td>
<td>Take charge, talk through contraction until control regained</td>
<td>Continue to keep informed</td>
</tr>
<tr>
<td>Review birth plan</td>
<td>Provide continuous support</td>
<td>Reduce distractions</td>
<td>Role model care measures to assist partner</td>
</tr>
<tr>
<td>Continue reassurance, praise, and encouragement</td>
<td>Take charge as needed</td>
<td>Keep informed</td>
<td>Continue to keep informed</td>
</tr>
</tbody>
</table>

---

*Full assessment using interview, physical examination, and laboratory testing is performed on admission. Subsequently, frequency of assessment is determined by the risk status of the maternal-fetal unit. More frequent assessment is required in high risk situations. Frequency of assessment and method of documentation are also determined by agency policy, which is usually based on the recommended care standards of medical and nursing organizations. †If membranes have ruptured, the temperature should be assessed every 1 to 2 hr; assess orally or tympanically between contractions. ‡Perform vaginal examination at admission and thereafter only when signs indicate that progress has occurred (e.g., significant increase in frequency, duration, and intensity of contractions; rupture of membranes; perineal pressure); strict aseptic technique should be used. In the presence of vaginal bleeding, the primary health care provider performs the examination under a double setup in a delivery room, or an ultrasonography is performed to determine placental location.
### Labor Progress Chart

<table>
<thead>
<tr>
<th>Current date</th>
<th>Admit time</th>
<th>Maternal type and RH</th>
<th>Age</th>
<th>G</th>
<th>T</th>
<th>P</th>
<th>A</th>
<th>L</th>
<th>SBP</th>
<th>DBP</th>
<th>RAP</th>
<th>HAP</th>
<th>Monitor mode fetal</th>
<th>Membranes</th>
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</thead>
<tbody>
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</tr>
</tbody>
</table>

- **Monitor mode uterine activity**
- **P** = Palpation
- **E** = External
- **I** = Internal

#### Abbreviations/Key
- Vaginal bleeding
- **NS** = Normal show
- **ABN** = Frank vaginal bleeding
- **EDB** = Estimated date of birth
- **LMP** = Last menstrual period
- **NS** = Normal show

#### Vital Signs
- Temperature
- Pulse
- Respiration
- Blood pressure
- Deep tendon reflexes (L/R)
- Blood type

### Deep Tendon Reflexes (L/R)
- *Normal:* Present
- *Increased:* May be absent
- *Decreased:* Decreased
- *Absent:* May be absent

### Medications
- POS: Parenteral
- PO: Oral
- IV: Intravenous
- U/IV: Urine
- *IV**: Intramuscular
- *IV**: Intravenous
- *IV**: Intravenous

- **Position change**
- **IV bolus**
- **Pitocin mU/min**
- **MgSO4 gms/hr**
- **Ritodrine mg/min**
- **Terbutaline mg/hr**

### Fetal Assessment
- **Uterine activity**
- **Maternal Vital signs**
- **Intervention**
- **Cont meds**
- **Intake/Output**
- **Fetal Assessment**
- **Uterine activity**
- **Maternal Vital signs**

### Monitor mode fetal
- **A** = Auscultation (fetoscope)
- **D** = Doppler
- **E** = External
- **I** = Internal

### STV (short term variability)
- **STV** = Present (roughness of tracing line present)
- **STV Ø** = Absent (tracing line is smooth)

### Montevideo Units (MVUs)
The sum of the peak of each uterine contraction minus resting tone, in a 10 minute period.

### STV short term variability
- **STV** = Present (roughness of tracing line present)
- **STV Ø** = Absent (tracing line is smooth)

---

Fig. 14-4 Labor progress chart. [Permission to use and/or reproduce this copyrighted material has been granted by the owner, MNRS-Briggs Corporation, Des Moines, IA.]
### Labor Progress Chart

<table>
<thead>
<tr>
<th>Medication Allergy/Sensitivity</th>
<th>Chart of</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>LVT (long-term variability)</th>
<th>Accel. (accelerations)</th>
<th>Decel. (decelerations)</th>
<th>Membranes</th>
<th>Membranes</th>
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</thead>
<tbody>
<tr>
<td>0-2 BPM = Absent</td>
<td>+ = 15 BPM ↑</td>
<td>N = None</td>
<td>I = Intact</td>
<td>C = Clear</td>
</tr>
<tr>
<td>3-5 BPM = Minimal</td>
<td></td>
<td>E = Early</td>
<td>B = Bulging</td>
<td>M = Meconium stained</td>
</tr>
<tr>
<td>6-25 BPM = Average</td>
<td></td>
<td>V = Variable</td>
<td>R = Ruptured</td>
<td>B = Bloody</td>
</tr>
<tr>
<td>&gt;25 BPM = Marked</td>
<td></td>
<td>L = Late</td>
<td>F = Foul smelling</td>
<td>NF = Not foul smelling</td>
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</table>

Fig. 14-4, cont’d
### Labor Progress Chart

<table>
<thead>
<tr>
<th>Stage</th>
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<th>Solution</th>
<th>Amount</th>
<th>Medication/Dose</th>
<th>Initials</th>
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<th>Time</th>
<th>Amount infused</th>
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<tbody>
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### TV Record

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<th>Time</th>
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### Teaching

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<th>Date time</th>
<th>Comments</th>
<th>Date time</th>
<th>Medication/Dose</th>
<th>Route</th>
<th>Site</th>
<th>Initials</th>
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<tr>
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<td>Support person</td>
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### Progress Notes

<table>
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</tbody>
</table>

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*Fig. 14-4, cont’d*
Labor Progress Chart

Progress Notes (Cont’d.)

Date  Time

Composite normal dilatation curves

Time

Mark X

Effacement %

and/or position

Multiparous (composite)

Nulliparous (composite)

Normal dilatation curve

Protracted active phase

Secondary arrest of dilatation

Prolonged deceleration curve

Fig. 14-4, cont’d
Standard Precautions during Childbirth

Birth is a time when nurses and other health care providers are exposed to a great deal of maternal and newborn blood and body fluids. Observation of Standard Precautions is necessary to prevent the transmission of infection. Perinatal infections most often are transmitted through contact with body fluids. The Standard Precautions applicable to childbirth include the following:

- Wash hands before and after putting on gloves and performing procedures.
- Wear gloves (clean or sterile, as appropriate) when performing procedures that require contact with the woman's genitalia and body fluids, including bloody show (e.g., during vaginal examination, amniotomy, hygienic care of the perineum, insertion of an internal scalp electrode and intraterine pressure monitor, and catheterization).
- Wear a mask that has a shield or protective eyewear, and a cover gown when assisting with the birth. Cap and shoe covers are worn for cesarean birth but are optional for vaginal birth in a birthing room. Gowns worn by the primary health care provider who is attending the birth should have a waterproof front and sleeves and should be sterile.
- Drape the woman with sterile towels and sheets as appropriate. Explain to the woman what can and cannot be touched.
- Help the woman's partner put on appropriate coverings for the type of birth, such as cap, mask, gown, and shoe covers. Show the partner where to stand and what can and cannot be touched.
- Wear gloves and gown when handling the newborn immediately after birth.
- Use an appropriate method to suction the newborn's airway, such as a bulb syringe, mechanical wall suction, or De Lee oral suction device, that prevents the newborn's mucus from getting into the user's mouth or airway.

Fig. 14-5 Supine hypotension. Note relation of pregnant uterus to ascending vena cava in standing position (A), and in the supine position (B, C). Compression of aorta and inferior vena cava with woman in supine position. D, Compression of these vessels is relieved by placement of a wedge pillow under the woman's right side.
Leopold maneuvers (abdominal palpation). Leopold maneuvers are performed with the woman briefly lying on her back (see Procedure box). These maneuvers help identify the (1) number of fetuses; (2) presenting part, fetal lie, and fetal attitude; (3) degree of the presenting part’s descent into the pelvis; and (4) expected location of the point of maximal intensity (PMI) of the fetal heart tones (FHTs) on the woman’s abdomen.

Assessment of FHTs and fetal heart rate pattern. It is important for the nurse to understand the relation between the location of the PMI of the FHTs and fetal presentation, lie, and position. A high risk for childbirth complications may be revealed by variations in these findings. The PMI of the FHTs is the location on the maternal abdomen at which FHTs are the loudest (see Procedure Box). It is usually directly over the fetal back. The PMI also is an aid in determining the fetal presentation and position (Fig. 14-6). In a vertex presentation, FHTs are usually heard below the mother’s umbilicus in either the right or left lower quadrant of the abdomen; in a breech presentation, FHTs are usually heard above the mother’s umbilicus (Fig. 14-6, A). As the fetus descends and rotates internally, the FHTs are heard lower and closer to the midline of the maternal abdomen. The PMI of the fetus in the right occipitoanterior (ROA) position moves to the midline just over the symphysis pubis. Just before birth, the fetal position is occipitoanterior (OA), and the fetal back is directly above the symphysis pubis. Assessments recommended for determining fetal status in the low risk woman during each stage of labor are summarized in the Care Paths on p. 406 and p. 433. The FHR and pattern must be assessed (1) immediately after ROM, because this is the most common time for the umbilical cord to prolapse; (2) after any change in the contraction pattern or maternal status; and (3) before and after the woman receives medication or a procedure is performed (Tucker, 2004).

Assessment of uterine contractions. A general characteristic of effective labor is regular uterine activity

---

**Procedure**

**Leopold Maneuvers**

**LEOPOLD MANEUVERS**

- Wash hands.
- Ask woman to empty bladder.
- Position woman supine with one pillow under her head and with her knees slightly flexed.
- Place small rolled towel under woman’s right or left hip to displace uterus off major blood vessels (prevents supine hypotensive syndrome; see Fig. 14.5, D).
- If right-handed, stand on woman’s right, facing her:
  1. Identify fetal part that occupies the fundus. The head feels round, firm, freely movable, and palpable by ballottement; the breech feels less regular and softer. This maneuver identifies fetal lie (longitudinal or transverse) and presentation (cephalic or breech) (Fig. A).
  2. Using palmar surface of one hand, locate and palpate the smooth convex contour of the fetal back and the irregularities that identify the small parts (feet, hands, elbows). This maneuver helps identify fetal presentation (Fig. B).
  3. With right hand, determine which fetal part is presenting over the inlet to the true pelvis. Gently grasp the lower pole of the uterus between the thumb and fingers, pressing in slightly (Fig. C). If the head is presenting and not engaged, determine the attitude of the head (flexed or extended).
  4. Turn to face the woman’s feet. Using both hands, outline the fetal head (Fig. D) with the palmar surface of the fingertips. When the presenting part has descended deeply, only a small portion of it may be outlined. Palpation of the cephalic prominence helps identify the attitude of the head. If the cephalic prominence is found on the same side as the small parts, this means that the head must be flexed and the vertex is presenting (see Fig. D). If the cephalic prominence is on the same side as the back, this indicates that the presenting head is extended and the face is presenting.
- Document fetal presentation, position, and lie and whether presenting part is flexed or extended, engaged, or free floating. Use agency’s protocol for documentation (e.g., “Vtx, LDA, floating”).

---

**Figure Legends**

A: Identification of fetal part occupying the fundus. B: Location and palpation of the fetal back and small parts. C: Determination of presenting part over the inlet to the true pelvis. D: Outlining of the fetal head.
(i.e., contractions becoming more frequent and increased duration), but uterine activity is not directly related to labor progress.

Uterine contractions are the primary powers that act involuntarily to expel the fetus and the placenta from the uterus. Several methods are used to evaluate uterine contractions, including the woman’s subjective description, palpation and timing of contractions by a health care provider, and electronic monitoring.

Each contraction exhibits a wavelike pattern. It begins with a slow increment (the “building up” of a contraction from its onset), gradually reaches an acme (intrauterine pressure less than 80 mm Hg), and then diminishes rapidly (decrement, the “letting down” of the contraction). An interval of rest (intrauterine pressure less than 20 mm Hg with a duration of at least 30 seconds) ends when the next contraction begins (Tucker, 2004). The outward appearance of the woman’s abdomen during and between contractions and the pattern of a typical uterine contraction are shown in Fig. 14-7.

A uterine contraction is described in terms of the following characteristics:

- **Frequency**—How often uterine contractions occur; the time that elapses from the beginning of one contraction to the beginning of the next contraction
- **Intensity**—The strength of a contraction at its peak
- **Duration**—The time that elapses between the onset and the end of a contraction
- **Resting tone**—The tension in the uterine muscle between contractions; relaxation of the uterus

Uterine contractions are assessed by palpation or by an external or internal electronic monitor. Frequency and duration can be measured by all three methods of uterine activity monitoring. The accuracy of determining intensity varies by the method used. Palpation is more subjective and is a less precise way of determining the intensity of uterine contractions. The following terms are used to describe what is felt on palpation:

- **Mild**—Slightly tense fundus that is easy to indent with fingertips (feels like touching finger to tip of nose)
- **Moderate**—Firm fundus that is difficult to indent with fingertips (feels like touching finger to chin)
- **Strong—Rigid**—Boardlike fundus that is almost impossible to indent with fingertips (feels like touching finger to forehead)

Women in labor tend to describe the pain of contractions in terms of the sensations they are experiencing in the lower abdomen or back, which may be unrelated to the firmness of the uterine fundus. Therefore their assessment of the strength of their contractions can be less valid than that of the health care provider, although the amount of discomfort reported is valid.

External electronic monitoring provides information about the relative strength of the uterine contractions. Internal electronic monitoring with an intrauterine pressure

---

**Procedure Determination of Points of Maximal Intensity of Fetal Heart Tones**

Wash hands.

Perform Leopold maneuvers. Auscultate fetal heart tones (FHTs) based on fetal presentation identified with Leopold maneuvers. The PMI is the location at which the FHTs are the loudest, usually over the fetal back (see Fig. 14-6).

Chart PMI of FHTs using a two-line figure to indicate the four quadrants of the maternal abdomen, as follows: right upper quadrant (RUQ), left upper quadrant (LUQ), left lower quadrant (LLQ), and right lower quadrant (RLQ):

<table>
<thead>
<tr>
<th>RUQ</th>
<th>LUQ</th>
<th>RLQ</th>
<th>LLQ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

The umbilicus is the reference point for the quadrants (point at which the lines cross). The PMI for the fetus in vertex presentation, in general flexion with the back on the mother’s right side, commonly is found in the mother’s right lower quadrant and is recorded with an “X” or with the FHT, as follows:

- Resting tone

Women in labor tend to describe the pain of contractions in terms of the sensations they are experiencing in the lower abdomen or back, which may be unrelated to the firmness of the uterine fundus.
catheter is the most accurate way of assessing the intensity of uterine contractions. On admission, a 20- to 30-minute baseline monitoring of uterine contractions and the FHR and pattern commonly is done. The minimal assessment times during the various phases of labor are given in the Care Paths on pp. 406 and 433, and the findings expected as labor progresses are summarized in Tables 14-3 and 14-7.

The nurse’s responsibility in the monitoring of uterine contractions is to ascertain whether they are powerful and frequent enough to accomplish the work of expelling the fetus and the placenta. If the characteristics of contractions are found to be abnormal, either exceeding or falling below what is considered acceptable in terms of the standard characteristics, the nurse should report this to the primary health care provider.

**NURSE ALERT** If the characteristics of contractions are found to be abnormal, either exceeding or falling below what is considered acceptable in terms of the standard characteristics, the nurse should report this to the primary health care provider.

**Cervical effacement, dilation, fetal descent.** Uterine activity must be considered in the context of its effect on cervical effacement and dilation and on the degree of descent of the presenting part (see Chapter 11). The effect on the fetus also must be considered. The progress of labor can be effectively verified through the use of graphic charts (partograms) on which cervical dilation and station (descent) are plotted. This type of graphic charting assists in early identification of deviations from expected labor patterns. Fig. 14-8 provides examples of partograms. Hospitals and birthing centers may develop their own graphs for recording assessments. Such graphs may include not only data on dilation and descent but also data on maternal vital signs, FHR, and uterine activity.

**NURSE ALERT** If the characteristics of contractions are found to be abnormal, either exceeding or falling below what is considered acceptable in terms of the standard characteristics, the nurse should report this to the primary health care provider.

**Vaginal examination.** The vaginal examination reveals whether the woman is in true labor and enables the examiner to determine whether the membranes have ruptured (Fig. 14-9). Because this examination is often stressful and uncomfortable for the woman, it should be performed only when indicated by the status of the woman and her fetus. For example, a vaginal examination should be performed on admission, when significant change has occurred in uterine activity, on maternal perception of perineal pressure or the urge to bear down, when membranes rupture, or when variable decelerations of the FHR are noted. A full explanation of the examination and support of the woman are important factors in reducing the stress and discomfort associated with the examination. Chapter 5 describes a typical vaginal examination.

**Laboratory and diagnostic tests**

**Analysis of urine specimen.** A clean-catch urine specimen may be obtained to gather further data about the pregnant woman’s health. It is a convenient and
**Fig. 14-8** Partograms for assessment of patterns of cervical dilation and descent. Individual woman’s labor patterns (colored) are superimposed on prepared labor graph (black) for comparison. **A,** Labor of a nulliparous woman. **B,** Labor of a multiparous woman. The rate of cervical dilation is plotted with the circled plot points. A line drawn through these symbols depicts the slope of the curve. Station is plotted with Xs. A line drawn through the Xs reveals the pattern of descent.

**Fig. 14-9** Vaginal examination. **A,** Undilated, unefaced cervix; membranes intact. **B,** Palpation of sagittal suture line. Cervix effaced and partially dilated.
simple procedure that can provide information about her hydration status (e.g., specific gravity, color, amount), nutritional status (e.g., ketones), infection status (e.g., leukocytes), and the status of possible complications such as preeclampsia, shown by finding protein in the urine. The results can be obtained quickly and help the nurse determine appropriate interventions to implement.

**Blood tests.** The blood tests performed vary with the hospital protocol and the woman’s health status. An example of a minimal assessment is a hematocrit determination, in which the specimen is centrifuged in the perinatal unit. Blood can be obtained by a finger stick or from the hub of a catheter used to start an IV line. More comprehensive blood assessments such as white blood cell count, red blood cell count, the hemoglobin level, hematocrit, and platelet values are included in a CBC. A CBC may be ordered for women with a history of infection, anemia, gestational hypertension, or other disorders.

If the woman’s blood type has not been verified, blood is drawn for the purpose of determining the type and Rh factor. If blood typing has already been done, the primary health care provider may choose not to repeat the test. If obvious signs of immunocompromise or substance abuse are present, other blood tests may be ordered.

**Assessment of amniotic membranes and fluid.** Labor is initiated at term by SROM in approximately 25% of pregnant women. A lag period, rarely exceeding 24 hours, may precede the onset of labor. Membranes (the BOW) also can rupture spontaneously any time during labor, but most commonly in the transition phase of the first stage of labor. The tests used to assess amniotic fluid are discussed in the Procedure box on p. 400, and the characteristics of the fluid are described in Table 14-4. Artificial rupture of membranes (AROM, ARM), or amniotomy, may be done to augment or induce labor or to facilitate placement of internal monitors when fetal status indicates the need for some form of direct assessment (e.g., insertion of a fetal scalp electrode or an intrauterine pressure catheter).

**Infection.** When membranes rupture, microorganisms from the vagina can then ascend into the amniotic sac, causing chorioamnionitis and placentitis to develop. For this reason, maternal temperature and vaginal discharge are assessed frequently (every 1 to 2 hours) so that an infection developing after ROM can be identified early. Even when membranes are intact, however, microorganisms may ascend and cause PROM. There is controversy regarding whether prophylactic antibiotic therapy can protect against infection (chorioamnionitis), which involves

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**TABLE 14-4.**

**Assessment of Amniotic Fluid Characteristics**

<table>
<thead>
<tr>
<th>CHARACTERISTIC OF FLUID</th>
<th>NORMAL FINDING</th>
<th>DEVIATION FROM NORMAL FINDING</th>
<th>CAUSE OF DEVIATION FROM NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Pale, straw colored; may contain white flecks of vernix caseosa, lanugo, scalp hair</td>
<td>Greenish brown color Yellow-stained fluid Port wine colored</td>
<td>Hypoxic episode in fetus results in meconium passage into fluid May be normal finding in breech presentations related to pressure exerted on fetal abdominal wall during descent Fetal hypoxia ≥ 36 hr before ROM; fetal hematolytic disease; intrauterine infection Bleeding associated with premature separation of the placenta (abruptio placenta) Intrauterine infection Large amount of meconium can make fluid thick</td>
</tr>
<tr>
<td>Viscosity and odor</td>
<td>Watery; no strong odor</td>
<td>Thick, cloudy, foul smelling</td>
<td></td>
</tr>
<tr>
<td>Amount (normally varies with gestational age)</td>
<td>400 ml (20 wk gestation) 1000 ml (36 to 38 wk gestation)</td>
<td>≥ 2000 ml (32 to 36 wk gestation) ≤ 500 ml (32 to 36 wk gestation)</td>
<td>Hydramnios; associated with congenital anomalies of the fetus when fetus cannot drink or fluid is trapped in the body (e.g., fetal gastrointestinal obstruction or atresia); increased risk with maternal preeclampsia or gestational diabetes mellitus Oligohydramnios; associated with incomplete or absent kidney; obstruction of urethra; fetus cannot secrete or excrete urine</td>
</tr>
</tbody>
</table>

ROM: Rupture of membranes.
both the maternal and fetal sides of the membrane. Use of prophylactic antibiotics for prelabor ROM at term or preterm is a form of care of unknown effectiveness (Enkin et al., 2000).

The nurse’s responsibility is to report findings promptly to the primary health care provider and to document findings in the labor record and on the monitor strip. If abnormal findings are noted, continuous electronic monitoring usually is implemented and maintained for the duration of labor. The presence of meconium-stained amniotic fluid alerts the nurse to the need to observe fetal status more closely. After birth, the newborn may be at risk for an alteration in respiratory status if meconium is aspirated into the lungs with the first breath.

Signs of potential problems
Assessment findings serve as a baseline for evaluating the woman’s subsequent progress during labor. Although some problems of labor are anticipated, others may appear unexpectedly during the clinical course of labor (see Signs of Potential Complications box).

Nursing diagnoses
Nursing diagnoses determine the types of nursing actions needed to implement a plan of care. When establishing nursing diagnoses, the nurse should analyze the significance of findings ascertained during the assessment.

Nursing diagnoses appropriate for the first stage of labor include:

- Anxiety related to
  - negative experience with previous childbirth
  - cultural differences

- Impaired urinary elimination related to
  - reduced intake of oral fluids
  - diminished sensation of bladder fullness associated with epidural anesthesia or analgesia

- Impaired fetal gas exchange related to
  - maternal hypotension or hypertension
  - maternal position
  - compression of the umbilical cord

- Situational low self-esteem (maternal) related to
  - inability to meet self-expectations regarding performance during childbirth
  - loss of control during labor

Nursing diagnoses that represent potential areas for concern during the second stage of labor include the following:

- Risk for injury to mother and fetus related to
  - persistent use of Valsalva maneuver

- Situational low self-esteem related to
  - deficient knowledge of normal, beneficial effects of vocalization during bearing-down efforts
  - inability to carry out plan for birth without medication

- Anxiety related to
  - inability to control defecation with bearing-down efforts
  - deficient knowledge regarding perineal sensations associated with the urge to bear down

- Ineffective coping related to
  - coaching that contradicts woman’s physiologic urge to push

Examples of nursing diagnoses relevant to the third stage of labor include the following:

- Risk for deficient fluid volume related to
  - blood loss occurring after placental separation and expulsion
  - inadequate contraction of the uterus

- Anxiety related to
  - lack of knowledge regarding separation and expulsion of the placenta
  - occurrence of perineal trauma and the need for repair

- Fatigue related to
  - energy expenditure associated with childbirth and the bearing-down efforts of the second stage

Expected Outcomes of Care
It is important for the nurse and woman to set and assign priorities to expected outcomes that focus on the woman, the fetus, and the woman’s significant others. Appropriate nursing and patient actions are then determined so that these expected outcomes can be met. Planning with the woman is essential to ensure the achievement of expected outcomes and to maintain her sense of control over her own childbirth experience. Expected outcomes for the woman in the first
stage of labor are that the woman will accomplish the following:
• Continue normal progression of labor while the FHR and pattern remain within the expected range and without signs of distress
• Maintain adequate hydration status through oral or IV intake
• Actively participate in the labor process
• Verbalize discomfort and indicate the need for measures that help reduce discomfort and promote relaxation
• Accept comfort and support measures from significant others and health care providers as needed
• Sustain no injury to herself or the fetus during labor and birth
• Initiate, along with the partner and family, the processes of bonding and attachment with the newborn
• Express satisfaction with her performance during labor and birth

Plan of Care and Interventions

Standards of care
Standards of care guide the nurse in preparing for and implementing procedures with the expectant mother (Box 14-4). Protocols for care based on standards include the following tasks:
• Check the primary health care provider’s orders.
• Review the primary health care provider’s orders for completeness and correctness (e.g., the dose and route of the analgesic to be administered).

Box 14-4
Care Plan Using Protocols and Nursing Standards

<table>
<thead>
<tr>
<th>CARE PLAN FOR LABOR</th>
<th>MARY JAMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Initiated:</td>
<td>Time:</td>
</tr>
<tr>
<td>OUTCOME STANDARDS</td>
<td></td>
</tr>
<tr>
<td>1 Patient will demonstrate normal labor progress while the fetus tolerates the labor process without demonstrating nonreassuring signs. Date met:</td>
<td></td>
</tr>
<tr>
<td>2 Patient will participate in decisions about her care. Date met:</td>
<td></td>
</tr>
<tr>
<td>3 Patient and her partner will verbalize knowledge of labor process and their expectations for the birth experience. Date met:</td>
<td></td>
</tr>
</tbody>
</table>
• Check labels on IV solutions, drugs, and other materials used for nursing care.
• Check the expiration date on any packs of supplies used for procedures.
• Ensure that information on the woman’s identification band is accurate (e.g., the band is the appropriate color for allergies).
• Use an empathic approach when giving care (see Guidelines/Guías box):
  —Use words the woman can understand when explaining procedures; repeat as necessary.
  —Respect the woman’s individual needs and behaviors.
  —Establish rapport with the woman and her significant others.
  —Be kind, caring, and competent when performing necessary procedures.
  —Be aware that pain and discomfort are as the woman describes them.
  —Carry out appropriate comfort measures such as mouth care and back care.
  —Include the support persons in the care as desired by the woman and the support persons.
  —Recognize that a woman’s current childbirth experience and the actions of nurses and other health care providers can have a positive or negative effect on the woman’s future childbirth experiences.
• Use Standard Precautions, including precautions for invasive procedures (see Box 14-3).
• Document care according to hospital guidelines, and communicate information to the primary health care provider when indicated.

Physical nursing care during labor
The physical nursing care rendered to the woman in labor is an essential component of her care. The current emphasis on evidence-based practice supports the management of care by using this approach to enhance the safety, effectiveness, and acceptability of the physical care measures chosen to support the woman during labor and birth (Enkin et al., 2000). The various physical needs, the requisite nursing actions, and the rationale for care are presented in Table 14-5, the Plan of Care on p. 421, and the Care Path on p. 406.

General hygiene.
Women in labor should be offered the use of showers or warm water baths, if they are available, to enhance the feeling of well-being and to minimize the discomfort of contractions (Benfield, 2002; Cluett, Nikodem, McCandlish, & Burns, 2004). Women also should be encouraged to wash their hands after voiding and to perform self-hygiene measures. Linen should be changed if it becomes wet or stained with blood, and linen savers (Chux) should be used and changed as needed.

Nutrient and fluid intake
Oral intake. Traditionally the laboring woman has been offered only clear liquids or ice chips or given nothing by mouth during the active phase of labor to minimize the risk of anesthesia complications and their sequelae should general anesthesia be required in an emergency. These sequelae include the aspiration of gastric contents and resultant compromise in oxygen perfusion, which may endanger the lives of the mother and fetus. This practice is being challenged today because regional anesthesia is used more often than general anesthesia, even for emergency cesarean births. Women are awake during regional anesthesia and are able to participate in their own care and protect their airway.

An adequate intake of fluids and calories is required to meet the energy demands and fluid losses associated with childbirth. The progress of labor slows, and ketosis develops if these demands are not met and fat is metabolized. Reduced energy for bearing-down efforts (pushing) increases the risk for a forceps- or vacuum-assisted birth. This is most
## TABLE 14-5

### Physical Nursing Care during Labor

<table>
<thead>
<tr>
<th>NEED</th>
<th>NURSING ACTIONS</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GENERAL HYGIENE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Showers or bed baths, Jacuzzi bath</td>
<td>Assess for progress in labor, Supervise showers closely if woman is in true labor</td>
<td>Determines appropriateness of the activity</td>
</tr>
<tr>
<td></td>
<td>Suggest allowing warm water to flow over back</td>
<td>Prevents injury from fall; labor may be accelerated</td>
</tr>
<tr>
<td>Perineum</td>
<td>Cleanse frequently, especially after rupture of membranes and when show increases</td>
<td>Enhances comfort and reduces risk of infection</td>
</tr>
<tr>
<td>Oral hygiene</td>
<td>Offer toothbrush or mouthwash or wash the teeth with an ice-cold wet washcloth as needed</td>
<td>Refreshes mouth; helps counteract dry, thirsty feeling</td>
</tr>
<tr>
<td>Hair</td>
<td>Brush, braid per woman’s wishes</td>
<td>Improves morale; increases comfort</td>
</tr>
<tr>
<td>Handwashing</td>
<td>Offer washcloths before and after voiding and as needed</td>
<td>Maintains cleanliness; prevents infection</td>
</tr>
<tr>
<td>Face</td>
<td>Offer cool washcloth</td>
<td>Provides relief from diaphoresis; cools and refreshes</td>
</tr>
<tr>
<td>Gowns and linens</td>
<td>Change as needed; fluff pillows</td>
<td>Improves comfort; enhances relaxation</td>
</tr>
<tr>
<td><strong>NUTRIENT AND FLUID INTAKE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>Offer fluids and solid foods, following orders of primary health care provider and desires of laboring woman</td>
<td>Provides hydration and calories; enhances positive emotional experience and maternal control</td>
</tr>
<tr>
<td>Intravenous (IV)</td>
<td>Establish and maintain IV line as ordered</td>
<td>Maintains hydration; provides venous access for medications</td>
</tr>
<tr>
<td><strong>ELIMINATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiding</td>
<td>Encourage voiding at least every 2 hr</td>
<td>A full bladder may impede descent of presenting part; overdistention may cause bladder atony and injury, as well as postpartum voiding difficulty</td>
</tr>
<tr>
<td>Ambulatory woman</td>
<td>Allow ambulation to bathroom according to orders of primary health care provider, if:</td>
<td>Reinforces normal process of urination</td>
</tr>
<tr>
<td></td>
<td>The presenting part is engaged</td>
<td>Preventive measure to protect against prolapse of umbilical cord</td>
</tr>
<tr>
<td></td>
<td>The membranes are not ruptured</td>
<td>Preventive measure to protect against injury</td>
</tr>
<tr>
<td></td>
<td>The woman is not medicated</td>
<td></td>
</tr>
<tr>
<td>Woman on bed rest</td>
<td>Offer bedpan</td>
<td>Prevents complications of bladder distention and ambulation</td>
</tr>
<tr>
<td></td>
<td>Allow tap water to run; pour warm water over the vulva; give positive suggestion</td>
<td>Encourages voiding</td>
</tr>
<tr>
<td></td>
<td>Provide privacy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Put up side rails on bed</td>
<td>Shows respect for woman</td>
</tr>
<tr>
<td></td>
<td>Place call bell within reach</td>
<td>Prevents injury from fall</td>
</tr>
<tr>
<td></td>
<td>Offer washcloth for hands</td>
<td>Reinforces safe care</td>
</tr>
<tr>
<td></td>
<td>Wash vulvar area</td>
<td>Maintains cleanliness; prevents infection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintains cleanliness; enhances comfort; prevents infection</td>
</tr>
<tr>
<td>Catheterization</td>
<td>Catheterize according to orders of primary health care provider or hospital protocol if measures to facilitate voiding are ineffective</td>
<td>Prevents complications of bladder distention</td>
</tr>
<tr>
<td></td>
<td>Insert catheter between contractions</td>
<td>Minimizes discomfort</td>
</tr>
<tr>
<td></td>
<td>Avoid force if obstacle to insertion is noted</td>
<td></td>
</tr>
<tr>
<td>Bowel elimination</td>
<td>Perform vaginal examination</td>
<td>Prevents misinterpretation of rectal pressure from the presenting part as the need to defeate, Reinforces normal process of bowel elimination and safe care</td>
</tr>
<tr>
<td>— sensation of rectal pressure</td>
<td>Help the woman ambulate to bathroom or offer bedpan if rectal pressure is not from presenting part</td>
<td>Determine degree of descent of presenting part</td>
</tr>
<tr>
<td></td>
<td>Cleanse perineum immediately after passage of stool</td>
<td>Reduces risk of infection and sense of embarrassment</td>
</tr>
</tbody>
</table>
### PLAN OF CARE Labor and Birth

#### NURSING DIAGNOSIS Anxiety related to labor and the birthing process

**Expected Outcome** Woman exhibits decreased manifestations of anxiety.

**Nursing Interventions/Rationales**
- Orient woman and significant others to labor and birth unit and explain admission protocol to allay initial feelings of anxiety.
- Assess woman’s knowledge, experience, and expectations of labor; note any signs or expressions of anxiety, nervousness, or fear to establish a baseline for intervention.
- Discuss the expected progression of labor and describe what to expect during the process to allay anxiety associated with the unknown.
- Actively involve woman in care decisions during labor, interpret sights and sounds of environment (monitor sights and sounds, unit activities), and share information on progression of labor (vital signs, fetal heart rate [FHR], dilation, effacement) to increase her sense of control and allay fears.

#### NURSING DIAGNOSIS Acute pain related to in-digestion.

**Expected Outcome** Woman exhibits signs of ability to cope with discomfort.

**Nursing Interventions/Rationales**
- Assess woman’s level of pain and strategies that she has used to cope with pain to establish a baseline for intervention.
- Encourage significant other to remain as support person during labor process to assist with support and comfort measures, because measures are often more effective when delivered by a familiar person.
- Instruct woman and support person in use of specific techniques such as conscious relaxation, focused breathing, application of damp cloth to forehead, massage, and application of sacral pressure to increase relaxation, decrease intensity of contractions, and promote use of controlled thought and direction of energy.
- Provide comfort measures such as frequent mouth care to prevent dry mouth; application of damp cloth to forehead, and changing of damp gown or bed covers to relieve discomfort associated with diaphoresis.
- Help woman change position to reduce stiffness.
- Explain what analgesics and anesthetics are available for use during labor and birth to provide knowledge to help woman make decisions about pain control.

#### NURSING DIAGNOSIS Risk for impaired urinary elimination related to sensory impairment secondary to labor.

**Expected Outcome** Bladder does not show signs of distention.

**Nursing Interventions/Rationales**
- Palpate the bladder superior to the symphysis on a frequent basis (at least every 2 hours) to detect a full bladder that occurs from increased fluid intake and inability to feel urge to void.
- Encourage frequent voiding (at least every 2 hours) and catheterize if necessary to avoid bladder distention because it impedes progress of fetus down birth canal and may result in trauma to the bladder.
- Assist to bathroom or commode to void if appropriate, provide privacy, and use techniques to stimulate voiding such as running water to facilitate bladder emptying with an upright position (natural) and relaxation.

#### NURSING DIAGNOSIS Risk for ineffective individual coping related to birthing process.

**Expected Outcome** Woman actively participates in the birth process with no evidence of injury to her or her fetus.

**Nursing Interventions/Rationales**
- Constantly monitor events of second-stage labor and birth, including physiologic responses of woman and fetus and emotional responses of woman and partner, to ensure maternal, partner, and fetal well-being.
- Provide ongoing feedback to woman and partner to allay anxiety and enhance participation.
- Continue to provide comfort measures and minimize distractions to decrease discomfort and aid in focus on the birth process.
- Encourage woman to experiment with various positions to assist downward movement of fetus.
- Ensure that woman takes deep cleansing breaths before and after each contraction to enhance gas exchange and oxygen transport to the fetus.
- Encourage woman to push spontaneously when urge to bear down is perceived during a contraction to aid descent and rotation of fetus.
- Encourage woman to exhale, holding breath for short periods while bearing down, to avoid holding breath and triggering a Valsalva maneuver and increasing intrathoracic and cardiovascular pressure and decreasing perfusion of placental oxygen, placing the fetus at risk.
- Have woman take deep breaths and relax between contractions to reduce anxiety and enhance effectiveness of pushing efforts.
- Have mother paint as fetal head crowns to control birth of head.
- Explain to woman and labor partner what is expected in the third stage of labor to enlist cooperation.
- Have woman maintain her position to facilitate delivery of the placenta.

#### NURSING DIAGNOSIS Fatigue related to energy expenditure during labor and birth.

**Expected Outcome** Woman’s energy levels are restored.

**Nursing Interventions/Rationales**
- Educate woman and partner about need for rest and help them plan strategies (e.g., restricting visitors, increasing role of support systems performing functions associated with daily routines) that allow specific times for rest and sleep to ensure that woman can restore depleted energy levels in preparation for caring for a new infant.
- Monitor woman’s fatigue level and the amount of rest received to ensure restoration of energy.

Continued
Fluid balance is maintained, monitor the fundus for firmness after placental separation to determine the need for intervention. Assumptions—Describe underlying assumptions and evidence—Is there sufficient evidence to draw conclusions about how the nurse should respond to her request? Assumptions—Describe underlying assumptions about the following issues: a. Oral intake in labor b. Fasting in labor as a stressor c. Cultural influences on oral intake in labor 3 What implications and priorities for nursing care can be drawn at this time? 4 Does the evidence objectively support your conclusion? 5 Are there alternative perspectives to your conclusion? The CNM Data Group (1999) found that a woman’s culture may influence what she will eat and drink during labor. In addition, women who used nonpharmacologic pain relief measures and labored in nonhospital settings were more likely to eat and drink during labor.

Witholding food and fluids in labor is a form of care unlikely to be beneficial, and offering oral fluids is demonstrably useful and should be encouraged (Enkin et al., 2000; Hofmeyr, 2005). Nurses should follow the orders of the woman’s primary health care provider when offering the woman food or fluids during labor. As advocates, however, nurses can facilitate change by informing others of the current research findings that support the safety and effectiveness of the oral intake of food and fluid during labor and by initiating such research themselves.

Intravenous intake. Fluids are administered intravenously to the laboring woman to maintain hydration, especially when a labor is long and the woman is unable to ingest a sufficient amount of fluid orally or if she is receiving epidural or intrathecal anesthesia. However, routine use of IV fluids during labor is a form of care that is unlikely to be beneficial and may be harmful (Enkin et al., 2000). In most cases, an electrolyte solution without glucose is adequate and does not introduce excess glucose into the bloodstream. The latter is important because an excessive maternal glucose level results in fetal hyperglycemia and fetal hyperinsulinism. After birth, the neonate’s high levels of insulin will then deplete his or her glucose stores, and hypoglycemia will result. Infusions containing glucose can also reduce sodium levels in both the woman and the fetus, leading to transient neonatal tachypnea. If maternal ketosis occurs, the primary health care provider may order an IV solution containing a small amount of dextrose to provide the glucose needed to assist in fatty acid metabolism.

Nurse Alert: Nurses should carefully monitor the intake and output of laboring women receiving IV fluids because they also face an increased danger of hypervolemia as a result of the fluid retention that occurs during pregnancy.
Elimination

Voiding. Voiding every 2 hours should be encouraged. A distended bladder may impede descent of the presenting part, inhibit uterine contractions, and lead to decreased bladder tone or atony after birth. Women who receive epidural analgesia or anesthesia are especially at risk for the retention of urine, and the need to void should be assessed more frequently in them.

The woman should be assisted to the bathroom to void, unless the primary health care provider has ordered bed rest; the woman is receiving epidural analgesia or anesthesia; internal monitoring is being used; or, in the nurse’s judgment, ambulation would compromise the status of the laboring woman, her fetus, or both. External monitoring can usually be interrupted for the woman to go to the bathroom.

Catheterization. If the woman is unable to void and her bladder is distended, she may need to be catheterized. Most hospitals have protocols that rely on the nurse’s judgment concerning the need for catheterization. Before performing the catheterization, the nurse should clean the vulva and perineum because vaginal show and amniotic fluid may be present. If there appears to be an obstacle that prevents advancement of the catheter, this is most likely the presenting part. If the catheter cannot be advanced, the nurse should stop the procedure and notify the primary health care provider of the difficulty.

Bowel elimination. Most women do not have bowel movements during labor because of decreased intestinal motility. Stool that has formed in the large intestine often is moved downward toward the anorectal area by the pressure exerted by the fetal presenting part as it descends. This stool is often expelled during second-stage pushing and birth. However, the passage of stool with bearing-down efforts increases the risk of infection and may embarrass the woman, thereby reducing the effectiveness of these efforts. To prevent these problems, the nurse should immediately cleanse the perineal area to remove any stool, while reassuring the woman that the passage of stool at this time is a normal and expected event, because the same muscles used to expel the baby also expel stool. Routine use of an enema to empty the rectum is considered to be harmful or ineffective and should be eliminated (Enkin et al., 2000).

When the presenting part is deep in the pelvis, even in the absence of stool in the anorectal area, the woman may feel rectal pressure and think she needs to defecate. If the woman expresses the urge to defecate, the nurse should perform a vaginal examination to assess cervical dilation and station. When a multiparous woman experiences the urge to defecate, this often means birth will follow quickly.

Ambulation and positioning. Freedom of maternal movement and choice of position throughout labor are forms of care likely to be beneficial for the laboring woman and should be encouraged (Enkin et al., 2000). The potential advantages of ambulation include enhanced uterine activity, distraction from labor’s discomforts, enhanced maternal control, and an opportunity for close interaction with the woman’s partner and care provider as they help her to walk. Ambulation is associated with a reduced rate of operative birth (i.e., cesarean birth, use of forceps, and vacuum extraction) and less frequent use of opioid analgesics (Albers et al., 1997).

Walking, sitting, or standing during labor is more comfortable than lying down and facilitates the progress of labor (Simkin & Ancheta, 2000). Ambulation should be encouraged if membranes are intact, if the fetal presenting part is engaged after ROM, and if the woman has not received medication for pain (Fig. 14-10). Ambulation may be contraindicated, however, because of maternal or fetal status. The woman also may find it comfortable to stand and lean forward on her partner, doula, or nurse for support at times during labor (Fig. 14-11, A).
When the woman lies in bed, she will usually change her position spontaneously as labor progresses. If she does not change position every 30 to 60 minutes, she should be assisted to do so. The side-lying (lateral) position is preferred because it promotes optimal uteroplacental and renal blood flow and increases fetal oxygen saturation (Fig. 14-12, B). If the woman wants to lie supine, the nurse may place a pillow under one hip as a wedge to prevent the uterus from compressing the aorta and vena cava (see Fig. 14-5). Sitting is not contraindicated unless it adversely affects fetal status, which can be determined by checking the FHR and pattern. If the fetus is in the occiput posterior position, it may be helpful to encourage the woman to squat during contractions, because this position increases pelvic diameter, allowing the head to rotate to a more anterior position (Fig. 14-12, A). A hands-and-knees position during contractions also is recommended to facilitate the rotation of the fetal occiput from a posterior to an anterior position, as gravity pulls the fetal back forward (Fig. 14-11, B).

Much research continues to be directed toward acquiring a better understanding of the physiologic and psychologic effects of maternal position in labor. The variety of positions that are recommended for the laboring woman are described in Box 14-5.
A birth ball (gymnastic ball, also used in physical therapy) can be used to support a woman’s body as she assumes a variety of labor and birth positions (Fig. 14-13). The woman can sit on the ball while leaning over the bed, or she can lean over the ball to support her upper body and reduce stress on her arms and hands when she assumes a hands-and-knees position. The birth ball can encourage pelvic mobility and pelvic and perineal relaxation when the woman sits on the firm yet pliable ball and rocks in rhythmic movements.

**Supportive care during labor and birth.** Support during labor and birth involves emotional support, physical care and comfort measures, and provision of advice and information (Davies & Hodnett, 2002; Miltner, 2000). Effective support provided to women during labor can

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**Figure 14-13** Woman laboring using birth ball. (Courtesy Polly Perez, Cutting Edge Press, Johnson, VT)
result in shorter labors; reduced rates of complications and surgical or obstetric interventions (e.g., cesarean births, labor augmentations and inductions, episiotomies, forceps and vacuum-assisted births); and enhanced self-esteem and satisfaction (Hodnett, 2001; Miltner, 2000). Physical, emotional, and psychologic support of the woman during labor and birth is a beneficial form of care demonstrated by clear research evidence (Enkin et al., 2000; MacKinnon, McIntyre, & Quance, 2005).

Labor rooms should be airy, clean, and homelike. The laboring woman should feel safe in this environment and free to be herself and to use the comfort and relaxation measures she prefers. To enhance relaxation, bright overhead lights should be turned off when not needed, and noise and intrusions should be kept to a minimum. The temperature is controlled to ensure the laboring woman’s comfort. The room should be large enough to accommodate a comfortable chair for the woman’s partner, the monitoring equipment, and hospital personnel. Couples may be encouraged to bring their own pillows to make the hospital surroundings more homelike and to facilitate position changes. Environmental modifications should reflect the preferences of the woman, including the number of visitors and availability of a telephone, television, and music. Nurses should ensure that each woman labors in an optimal birth environment (Hanson, Vanderveer, & Harrod, 2001).

Labor support by the nurse. The nurse can alleviate a woman’s anxiety by explaining unfamiliar terms, providing information and explanations without her having to ask, and preparing her for sensations she will experience and procedures that will follow. By encouraging the woman or couple to ask questions and by providing honest, understandable answers, the nurse can play an important role in helping the woman achieve a satisfying birth experience (Hodnett, Gates, Hofmeijer, & Sakala, 2003; Hodnett et al., 2002; Milner, 2002; Sauls, 2002).

Supportive nursing care for a woman in labor includes the following (Simkin, 2002):

- Helping the woman maintain control and participate to the extent she wishes in the birth of her infant
- Meeting the woman’s expected outcomes for her labor
- Acting as the woman’s advocate, supporting her decisions and respecting her choices as appropriate and relating her wishes as needed to other health care providers
- Helping the woman conserve her energy
- Helping control the woman’s discomfort
- Acknowledging the woman’s efforts, as well as those of her partner, during labor and providing positive reinforcement
- Protecting the woman’s privacy and modesty

Couples who have attended childbirth education programs that teach the psychophysiologic approach will know something about the labor process, coaching techniques, and comfort measures. The nurse should play a supportive role and keep such a couple informed of the progress. A review of methods learned in class may be needed.

Even when expectant parents have not attended childbirth classes, the nurse can teach them simple breathing and relaxation techniques during the early phase of labor. In this case, the nurse may provide more of the coaching and supportive care.

Comfort measures vary with the situation (Fig. 14-14). The nurse can draw on the couple’s repertoire of comfort measures learned during the pregnancy. Such measures include maintaining a comfortable, supportive atmosphere in the labor and birth area; using touch therapeutically (e.g., heat or cold applied to the lower back in the event of back labor, a cool cloth applied to the forehead); providing nonpharmacologic measures to relieve discomfort (e.g., massage hydrotherapy, administering analgesics when necessary); and, most important of all, just being there (MacKinnon, McIntyre, & Quance, 2005; Simkin, 2002) (see Table 14-1; see also the Care Paths on pp. 406 and 433). See Chapter 12 for a full discussion of both pharmacologic and nonpharmacologic comfort measures.

Most women in labor respond positively to touch but permission should be obtained before any of these touching measures are used. They appreciate gentle handling by staff members. Back rubs and counterpressure may be offered, especially if the woman is experiencing back labor. A support person may be taught to exert counterpressure against the woman’s sacrum over the occiput of the head of a fetus in a posterior position (see Fig. 14-12, B). The back pain is caused by the occiput pressing on spinal nerves, and counterpressure lifts the occiput off these nerves, thereby providing some relief from pain. The partner will need to be relieved after a while, however, because exerting counterpressure is hard work. Hand and foot massage also can be soothing and relaxing (Simkin, 2002). The woman’s perception of the soothing qualities of touch changes as labor progresses. Many women become more sensitive to touch.
EVIDENCE-BASED PRACTICE

Continuous Labor Support

BACKGROUND
Until the middle of the twentieth century, laboring women of all cultures had the support of other women to encourage and guide them through birth. Hospital births and the "cascade of medical interventions" have sparked calls for a return to a more humanized culture of birth, with the continuous presence of an emotionally supportive, reassuring person during labor. Labor support may enhance labor physiology and maternal confidence, mitigating the harsh environment of institutional routines, lack of privacy, and high rates of intervention. It may decrease stress and enhance passage of the fetus. Labor support has frequently been associated with decreased use of pain medication including epidural analgesia, which may slow labor and lead to further interventions.

In North America a trained birth assistant called a doula may fill this labor support role. Family members who have given birth themselves may also serve in this role. Observers have questioned the use of hospital staff in this role, as they are technologically oriented and may have conflicting demands on their time and loyalties.

OBJECTIVES
The reviewers desired to assess the effects of continuous labor support on mothers and babies, when compared with standard institutional care.

Outcome measures would ideally include:

- Labor Events: amniotomy, augmented labor, electronic fetal monitoring, epidural analgesia, other pain medication, severe pain, and length of labor
- Birth Events: cesarean birth, operative vaginal birth (forceps or vacuum), episiotomy, and perineal trauma
- Newborn Events: 5-minute Apgar score, low cord pH, admission to special care nursery, and prolonged newborn hospital stay
- Maternal Outcomes: anxiety during labor, dissatisfaction, difficulty coping, low coping, postpartum depression, low self-esteem, difficulty mothering, breastfeeding problems, pain, dyspareunia, problems with partner, and urinary and/or fecal incontinence

METHODS

Search Strategy
The reviewers searched Cochrane, MEDLINE, 30 journals, and a weekly awareness service of 37 journals. Keywords were labor, support, caregiver, doula, labor assistant, birth assistant, childbirth support, and labor companion.

Fifteen randomized, controlled trials involving 12,791 women provided high-quality data from hospitals in Australia, Belgium, Botswana, Canada, Finland, France, Greece, Guatemala, Mexico, South Africa, and the United States. All provided continuous presence during active labor as the intervention, and standard care for that institution as the control.

Statistical analyses included pooling of similar data. The reviewers analyzed certain variables, such as epidural analgesia, electronic fetal monitoring, employee or non-employee support person, and time of support onset. They analyzed how these variables may have influenced specific outcomes, such as pain medication, operative birth or normal spontaneous vaginal delivery (NSVD), low 5-minute Apgar scores, dissatisfaction, and postpartum depression.

FINDINGS
The continuous support groups showed significant decreases in use of any pain medication and regional analgesia, decreased cesarean or operative birth, and maternal dissatisfaction. Reviewers found no difference between groups in augmented labor, low Apgar scores, special care nursery admissions, severe pain, perineal trauma, poor fetal outcomes, incontinence, or postpartum depression.

LIMITATIONS
This review had few limitations owing to the large number of family members present, continuous electronic fetal monitoring, and epidural availability. The qualifications of the support people varied, although they were all women. Onset of support varied. Blinding of group randomization was not feasible. Attrition and dropouts were not always noted.

CONCLUSIONS

All laboring women need continuous support. The greatest benefit may be early support from a trained or experienced nonstaff support person. The use of nurses or nurse-midwives for support may not decrease the cesarean birth rate, because of their interventionist training. Support may provide great benefits to a laboring woman in a resource-poor environment.

IMPLICATIONS FOR PRACTICE

Childbirth educators can include in their classes the suggestion that a support person be selected to accompany the couple to labor. Nurses in the birthing setting can encourage laboring women to have continuous support and provide support to that person. Laboring women need to be given the choice of their support person.

IMPLICATIONS FOR FURTHER RESEARCH
Further research is needed for maternal and infant health outcomes and for long-term outcomes of postpartum depression and prolonged pain. Further information about costs, and comparisons of outcomes when support is provided is a trained doula or an experienced female family member or husband, would also be enlightening.


CD003766.
(hypesthesia) as labor progresses. This is a typical response during the transition phase (see Table 14-3). They may tell their coach to leave them alone or not to touch them. The partner who is unprepared for this normal response may feel rejected and may react by withdrawing active support. The nurse can reassure him or her that this response is a positive indication that the first stage is ending and the second stage is approaching. Women with increased sensitivity to touch may have a positive response when touched on surfaces of the body where hair does not grow, such as the forehead, the palms of the hands, and the soles of the feet.

**Labor support by the father or partner.** Although another woman or a man other than the father may be the woman’s partner, the father of the baby is usually the support person during labor. He often is able to provide the comfort measures and touch that the laboring woman needs. When the woman becomes focused on her pain, sometimes the partner can persuade her to try nonpharmacologic variations of comfort measures. In addition, he usually is able to interpret the woman’s needs and desires for staff members.

Throughout the past 30 years, childbirth preparation education has been widely available. The father’s ideal role was thought to be that of labor coach, and he was expected actively to help the woman cope with labor. However, this expectation may be unrealistic, because some men have concerns about their labor-coaching abilities. Men can assume one of at least three different roles during labor and birth: coach, teammate, or witness (Chapman, 1992). As a coach, the father actively assists the woman during and after contractions. Men who are coaches express a strong need to be in control of themselves and of the labor experience. Women also express a great desire for the father to be physically involved in labor. The father who acts as the teammate assists the woman during labor and birth by responding to requests for physical or emotional support, or both. Teammates usually adopt the follower or helper role and look to the woman or nurse to tell them what to do. Women express a strong desire to have the father present and willing to help in any way. The father who acts as a witness acts as a companion, giving emotional and moral support. He watches the woman labor and give birth, but he often sleeps, watches television, or leaves the room for long periods. Witnesses believe that there is little they can do to help the woman physically and look to the nurses and health care providers to be in charge of the experience. Women do not expect more of this type of father than to just be present.

The feelings of a first-time father change as labor progresses. Although he is often calm at the onset of labor, feelings of fear and helplessness begin to dominate as labor becomes more active and the father realizes that labor is more work than he anticipated. The first-time father may feel excluded as birth preparations begin during the transition phase. Once the second stage begins and birth nears, the father’s focus changes from the woman to the baby who is about to be born. The father will be exposed to many sights and smells he may never before have experienced. It is therefore important to tell him what to expect and to make him comfortable about leaving the room to regain his composure should anything occur that surprises him. Before he leaves the room, provision should be made for someone else to support the woman during his absence. Staff members should tell the father that his presence is helpful and encourage him to be involved in the care of the woman to the extent to which he is comfortable. Ways in which the nurse can support the father-partner are detailed in Box 14-6. A well-informed father can make an important contribution to the health and well-being of the mother and child, their family interrelationship, and his self-esteem.

**Labor support by doulas.** Continuity of care has been cited by women as a critical component of a satisfying childbirth experience. This need can be met by a specially trained, experienced female labor attendant called a doula. The doula provides a continuous, one-on-one caring presence throughout the labor and birth of the woman she is attending. This is a beneficial form of care (Enkin et al., 2000). The primary role of the doula is to focus on the laboring woman and provide physical and emotional support by using soft, reassuring words; touching, stroking, and hugging; administering comfort measures to reduce pain and enhance relaxation; and walking with the woman, helping her to change positions, and coaching her bearing-down efforts. Doulas provide information and explain procedures and
events. They advocate for the woman’s right to participate actively in the management of her labor (Kayne, Greulich, & Albers, 2001; Trainor, 2002).

The doula also supports the woman’s partner, who often feels unqualified to be the sole labor support. The doula can encourage and praise the partner’s efforts, create a partnership as caregivers, and provide respite care. Doulas also facilitate communication between the laboring woman and her partner, as well as between the couple and the health care team (Tumblin & Simkin, 2001).

Continuous care provided by doulas significantly reduces the cesarean birth rate; duration of labor; use of oxytocin, analgesics, and forceps; and requests for epidural anesthesia. Laboring women also reported a higher level of satisfaction with their childbirth experience and greater success in breastfeeding (Klaus, Kennell, & Klaus, 1993; Trainor, 2002).

The role of the nurse and the doula are complementary. They should work together as a team, with the doula providing supportive nonmedical care measures and with the nurse focusing on monitoring the status of the maternal-fetal unit; implementing clinical care protocols, including pharmacologic interventions; and documenting assessment findings, actions, and responses.

**Labor support by the grandparents.** When grandparents act as labor coaches, it is especially important to support and treat them with respect. They may have a way to deal with pain relief based on their experience. They should be encouraged to help as long as their actions do not compromise the status of the mother or the fetus. One example of an acceptable practice would be giving the woman herbal teas during labor. The nurse acts as a role model for parents by treating grandparents with dignity and respect, by acknowledging the value of the grandparents’ contributions to parental support, and by recognizing the difficulty parents have in witnessing their child’s discomfort or crisis, regardless of the age of the child. If they have never witnessed a birth, the nurse may need to provide explanations of what is happening. Many of the activities used to support fathers also are appropriate for grandparents.

**Siblings during labor and birth.** The preparation of siblings for acceptance of the new child helps promote the attachment process. Such preparation and participation during pregnancy and labor may help the older children accept this change. The older child or children who know themselves to be important to the family become active participants. Rehearsal for the event before labor is essential.

The age and developmental level of children influence their responses; therefore preparation for the children to be present during labor is adjusted to meet each child’s needs. The child younger than 2 years shows little interest in pregnancy and labor; for the older child, such preparation may reduce fears and misconceptions. Parents need to be prepared for labor and birth themselves and feel comfortable about the process and the presence of their children. Most parents have a “feeling” for their children’s maturational level and their physical and emotional ability to observe and cope with the events of the labor and birth process. Preparation can include a description of the anticipated sights, events (e.g., ROM, monitors, IV infusions), smells, and sounds; a labor and birth demonstration; a tour of the birthing unit; and an opportunity to be around a real newborn. Children must learn that their mother will be working hard during labor and birth. She will not be able to talk to them during contractions. She may groan, scream, grunt, and pant at times as well as say things she would not say otherwise (e.g., “I can’t take this anymore.” “Take this baby out of me,” or “This pain is killing me”). They can be told that labor is uncomfortable, but that their mother’s body is made for the job. Storybooks about the birth process can be read to or by children to prepare them for the event. Films are available for preparing preschool and school-age children to participate in the labor and birth experience. Most agencies require that a specific person be designated to watch over the children who are participating in their mother’s childbirth experience, to provide them with support, explanations, diversions, and comfort as needed. Health care providers involved in attending women during birth must be comfortable with the presence of children and the unpredictability of their questions, comments, and behaviors.

**Emergency interventions.** Emergency conditions that require immediate nursing intervention can arise with startling speed. Interventions for a nonreassuring FHR, inadequate uterine relaxation, vaginal bleeding, infection, and prolapse of the cord are detailed in the Emergency box.

**Evaluation**

Evaluation of progress and outcomes is a continuous activity during the first stage of labor. The nurse must carefully evaluate each interaction with the mother-to-be and her family and critically appraise how well the expected outcomes of care are being met.

**SECOND STAGE OF LABOR**

The second stage of labor is the stage in which the infant is born. This stage begins with full cervical dilation (10 cm) and complete effacement (100%) and ends with the baby’s birth. The force exerted by uterine contractions, gravity, and maternal bearing-down efforts facilitates achievement of the expected outcome of a spontaneous, uncomplicated vaginal birth.

The second stage is composed of three phases: the latent, descent, and transition phases. These phases are characterized by maternal verbal and nonverbal behaviors, uterine activity, the urge to bear down, and fetal descent.

The latent phase is a period of rest and relative calm (i.e., “laboring down”). During this early phase, the fetus continues to descend passively through the birth canal and rotate to an anterior position as a result of ongoing uterine contractions. The woman is quiet and often relaxes with her eyes closed between contractions. The urge to bear down is not
EMERGENCY

Interventions for Emergencies

SIGNS

NONREASSURING FETAL HEART RATE PATTERN
• Fetal bradycardia (FHR <110 beats/min for >10 min)†
• Fetal tachycardia (FHR >160 beats/min for >10 min in term pregnancy)§
• Irregular FHR, abnormal sinus rhythm shown by internal monitor
• Persistent decrease in baseline FHR variability without an identified cause
• Late, severe variable, and prolonged deceleration patterns (≥2 minutes to <10 minutes)
• Absence of FHTs

INADEQUATE UTERINE RELAXATION
• Intrauterine pressure >80 mm Hg (shown by intrauterine pressure catheter monitoring)
• Contractions consistently lasting >90 sec
• Contraction interval <2 min

VAGINAL BLEEDING
• Vaginal bleeding (bright red, dark red, or in an amount in excess of that expected during normal cervical dilation)
• Continuous vaginal bleeding with FHR changes
• Pain; may or may not be present

INFECTION
• Foul-smelling amniotic fluid
• Maternal temperature >38° C in presence of adequate hydration (straw-colored urine)
• Fetal tachycardia >160 beats/min for >10 min

PROLAPSE OF CORD
• Fetal bradycardia with variable deceleration during uterine contraction
• Woman reports feeling the cord after membranes rupture
• Cord lies alongside or below the presenting part of the fetus; can be seen or felt protruding from the vagina
• Major predisposing factors:
  —Rupture of membranes with a gush
  —Loose fit of presenting part in lower uterine segment
  —Presenting part not yet engaged
  —Breech presentation

INTERVENTIONS* PRIORITIES ARE BASED ON WHAT SIGN IS PRESENT
Notify primary health care provider.‡
Discontinue oxytocin (Pitocin) infusion, if hyperstimulation is occurring.
Start an IV line if one is not in place.
Increase IV fluid rate, if fluid is being infused, per protocol order.
Administer oxygen at 8 to 10 L/min by snug face mask.
Check maternal temperature for elevation.
Assist with amnioinfusion if ordered.
Stimulate fetal scalp or use sound stimulation.

Notify primary health care provider.†
Discontinue oxytocin infusion, if being infused.
Change woman to side-lying position.
Start an IV line if one is not in place.
Increase IV fluid rate, if fluid is being infused.
Administer oxygen at 8 to 10 L/min by snug face mask.
Palpate and evaluate contractions.
Give tocolytics (terbutaline), as ordered.

Notify primary health care provider.†
Assist with ultrasound examination if performed.
Start an IV line if one is not in place.
Anticipate emergency (stat) cesarean birth.
Do NOT perform a vaginal examination.

Notify primary health care provider.†
Institute cooling measures for laboring woman.
Start an IV line if one is not in place.
Assist with or perform collection of catheterized urine specimen and amniotic fluid sample and send to the laboratory for urinalysis and cultures.

Call for assistance. Do not leave woman alone.
Have someone notify the primary health care provider immediately.
Glove the examining hand quickly and insert two fingers into the vagina to the cervix; with one finger on either side of the cord or both fingers to one side, exert upward pressure against the presenting part to relieve compression of the cord.
Place a rolled towel under the woman’s hip.
Place woman in extreme Trendelenburg or modified Sims position or knee-chest position.
Wrap the cord loosely in a sterile towel saturated with warm sterile normal saline if the cord is protruding from the vagina.
Administer oxygen at 8 to 10 L/min by face mask until birth is accomplished.
Start IV fluids or increase existing drip rate.
Continue to monitor FHR by internal fetal scalp electrode, if possible.
Do NOT attempt to replace cord into cervix.
Prepare for immediate birth (vaginal or cesarean).

FHR, fetal heart rate; IV, intravenous.
*Because emergency situations are often frightening events, it is important for the nurse to explain to the woman and her support person what is happening and how it is being managed.
†Practice is to intervene within 2 to 30 min of FHR <110 beats/min.
‡In most emergency situations, nurses take immediate action, following a protocol and standards of nursing practice. Another person can notify the primary health care provider, or this can be done by the nurse as soon as possible.
§Nonreassuring sign when associated with late decelerations or absence of variability, especially if >180 beats/min.
well established and may not be experienced at all or only during the acme of a contraction. Allowing a woman to rest during this phase, and waiting until the urge to push intensifies, has been found to reduce maternal fatigue, conserve energy for bearing-down efforts, and provide optimal maternal and fetal outcomes (Minato, 2000). Coaching a woman to push before her body signals readiness can result in a prolonged period of active pushing with limited to no progress. The woman may become dependent on her coach or nurse to tell her when and how to push (Roberts, 2002). However, women who have epidural analgesia may not feel the urge to bear down and will need coaching.

The descent phase or the phase of active pushing is characterized by strong urges to bear down as the reflex called the Ferguson reflex is activated when the presenting part presses on the stretch receptors of the pelvic floor. At this point, the fetal station is usually 1+, and the position is anterior. This stimulation causes the release of oxytocin from the posterior pituitary gland, which provokes stronger expulsive uterine contractions. The woman becomes more focused on bearing-down efforts, which become rhythmic. She changes positions frequently to find a more comfortable pushing position. The woman often announces the onset of contractions and becomes more vocal as she bears down. The urge to bear down intensifies as descent progresses.

In the transition phase, the presenting part is on the perineum, and bearing-down efforts are most effective for promoting birth. The woman may be more verbal about the pain she is experiencing; she may scream or swear and may act out of control (Roberts, 2002).

The nurse encourages the woman to “listen” to her body as she progresses through the phases of the second stage of labor. When a woman listens to her body to tell her when to bear down, she is using an internal locus of control and often feels more satisfied with her efforts to give birth to her baby. Her sense of self-esteem and accomplishment is enhanced, and her efforts become more effective. The woman’s trust in her own body and her ability to give birth to her baby should be fostered (Mayberry et al., 2000).

If a woman is confined to bed, especially in a recumbent position, the rhythmic urge to bear down is delayed because gravity is not being used to press the presenting part against the pelvic floor. Being moved to another room and placed on a delivery table in the lithotomy position, as has been the custom in North America, also has an inhibiting effect on the urge to bear down. To today, Western societies have adopted the birthing practice of most non-Western societies in which labor and birth occur in the same room and women use various positions for bearing down, such as the side-lying position, kneeling, squatting, sitting, or standing.

Allowing these women a “laboring down” period for fetal descent and rotation may result in a more positive outcome (Roberts, 2002). Commonly, a second stage of more than 2 hours may be considered prolonged in women without regional analgesia and is reported to the primary health care provider. By using assessment findings such as the FHR and pattern, the descent of the presenting part, the quality of the uterine contractions, and the status of the woman, premature intervention with episiotomy or forceps- or vacuum- assisted birth can be avoided. If the status of the maternal-fetal unit is reassuring and progress is continuing, interventions to end the second stage of labor are unwarranted. Less emphasis should be placed on a definite time limit for the second stage. The duration of active pushing has been found to be more relevant to the newborn’s condition at birth than the duration of the second stage of labor itself (Cesario, 2004; Minato, 2000; Roberts, 2002).

C A R E  M A N A G E M E N T

The only certain objective sign that the second stage of labor has begun is the inability to feel the cervix during vaginal examination, indicating that the cervix is fully dilated and effaced. The precise moment that this occurs is not easily determined because it depends on when a vaginal examination is performed to validate full dilation and effacement. This makes timing of the actual duration of the second stage difficult (Roberts, 2002). Other signs that suggest the onset of the second stage include the following:

- Sudden appearance of sweat on upper lip
- An episode of vomiting
- Increased bloody show
- Shaking of extremities
• Increased restlessness; verbalization (e.g., “I can’t go on”)
• Involuntary bearing-down efforts

These signs commonly appear at the time the cervix reaches full dilation; however, women with an epidural block may not exhibit such signs. Other indicators for each phase of the second stage are given in Table 14-6.

Women can begin to experience an irresistible urge to bear down before full dilation. For some women, this occurs as early as 5 cm of dilation. This is most often related to the station of the presenting part below the level of the ischial spines of the maternal pelvis. This occurrence creates a conflict between the woman, whose body is telling her to push, and her health care providers, who believe that pushing the fetal presenting part against an incompletely dilated cervix will result in cervical edema and lacerations, as well as a slowing down of labor progress. The premature urge to bear down must be evaluated as a phase of labor progress possibly indicating the onset of the second stage of labor. The timing of when a woman pushes in relation to whether or not her cervix is fully dilated should be based on research evidence rather than on tradition or routine practice. It may be safe and effective for a woman to push with the urge to bear down at the acme of a contraction if her cervix is soft, retracting, and 8 cm or more dilated and if the fetus is at L+ station and rotating to an anterior position (Roberts, 2002).

Assessment is continuous during the second stage of labor. Professional standards and agency policy determine the specific type and timing of assessments, as well as the way in which findings are documented. The Care Path for the second and third stages of labor indicates typical assessments and the recommended frequency for their performance. Signs and symptoms of impending birth (see Table 14-6) may appear unexpectedly, requiring immediate action by the nurse (Box 14-7).

The nurse continues to monitor maternal-fetal status and events of the second stage and provide comfort measures for the mother, such as helping her change position; providing mouth care; maintaining clean, dry bedding; and keeping

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>LATENT PHASE (AVERAGE DURATION, 10-30 MIN)</th>
<th>DESCENT PHASE (AVERAGE DURATION VARIES)</th>
<th>TRANSITION PHASE (AVERAGE DURATION, 5-15 MIN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractions</td>
<td>Period of physiologic lull for all criteria; period of peace and rest; “laboring down”</td>
<td>Significant increase 2-2.5 min 90 sec</td>
<td>Overwhelmingly strong Expulsive 1-2 min 90 sec</td>
</tr>
<tr>
<td>Magnitude (intensity)</td>
<td></td>
<td>Increases and Ferguson reflex activated, +2 to +4</td>
<td>Rapid, +4 to birth Fetal head visible in introitus</td>
</tr>
<tr>
<td>Frequency Duration</td>
<td></td>
<td>Significant increase in dark red bloody show Increased urge to bear down</td>
<td>Bloody show accompanies birth of head Greatly increased</td>
</tr>
<tr>
<td>Descent, station</td>
<td>0 to -2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Show: color and amount</td>
<td>Slight to absent, except during acme of strongest contractions</td>
<td>Quiet; concern over progress</td>
<td></td>
</tr>
<tr>
<td>Spontaneous bearing-down efforts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocalization</td>
<td>Experiences sense of relief that transition to second stage is finished</td>
<td>Grunting sounds or expiratory vocalization; announces contractions</td>
<td>Grunting sounds and expiratory vocalizations continue; may scream or swear</td>
</tr>
<tr>
<td>Maternal behavior</td>
<td>Feels fatigued and sleepy Feels a sense of accomplishment and optimism, because the &quot;worst is over&quot;</td>
<td>Senses increased urge to push</td>
<td>Describes extreme pain Expresses feelings of powerlessness Shows decreased ability to listen or concentrate on anything but giving birth</td>
</tr>
</tbody>
</table>

Period of physiologic lull; period of peace and rest; “laboring down”

Significant increase 2-2.5 min 90 sec

Increases and Ferguson reflex activated, +2 to +4

Significant increase in dark red bloody show Increased urge to bear down

Overwhelmingly strong Expulsive 1-2 min 90 sec

Rapid, +4 to birth Fetal head visible in introitus

Bloody show accompanies birth of head Greatly increased

Quiet; concern over progress

Grunting sounds or expiratory vocalization; announces contractions

Senses increased urge to push

Alters respiratory pattern: has short 4- to 5-sec breath holds with regular breaths in between, 5 to 7 times per contraction

Makes grunting sounds or expiratory vocalizations

Frequent repositioning

Describes ring of fire (burning sensation of acute pain as vagina stretches and fetal head crowns) Often shows excitement immediately after birth of head

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Describes ring of fire (burning sensation of acute pain as vagina stretches and fetal head crowns) Often shows excitement immediately after birth of head

TABLE 14-6
Expected Maternal Progress in Second Stage of Labor


*Duration of descent phase can vary depending on maternal parity, effectiveness of bearing-down effort, and presence of spinal anesthesia or epidural analgesia.

†Pressure of presenting part on stretch receptors of pelvic floor stimulates release of oxytocin from posterior pituitary, resulting in more intense uterine contractions.
### Care Management

#### Low Risk Woman in Second and Third Stages of Labor

**I. Assessment Measures***
- Blood pressure, pulse, respirations
- Uterine activity
- Bearing-down effort
- Fetal heart rate (FHR)
- Vaginal show
- Signs of fetal descent: urge to bear down, perineal bulging, crowning
- Behavior, appearance, mood, energy level of woman; condition of partner

**II. Physical Care Measures†**

**Latent phase:**
- Assist to rest in position of comfort
- Encourage relaxation to conserve energy
- Promote urge to push; if delayed: ambulation, shower, pelvic rock, position changes

**Descent phase:**
- Assist to bear down effectively
- Help to use recommended positions that facilitate descent
- Encourage correct breathing during bearing-down efforts
- Help to relax between contractions
- Provide comfort measures as needed
- Cleanse perineum immediately if fecal material is expelled

**Transition phase:**
- Assist to pant during contraction to avoid rapid birth of head
- Coach to gently bear down between contractions

**III. Emotional Support**
- Keep informed of progress of fetal descent
- Provide feedback for bearing-down efforts
- Explain purpose if medications given
- Role model comfort measures
- Provide continuous nursing presence
- Create a quiet, calm environment
- Reassure, encourage, praise
- Take charge as needed, until woman regains confidence in ability to birth her baby
- Offer mirror to watch birth

### Care Path

**Low Risk Woman in Second and Third Stages of Labor**

<table>
<thead>
<tr>
<th>CARE MANAGEMENT</th>
<th>SECOND STAGE OF LABOR</th>
<th>THIRD STAGE OF LABOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment</strong></td>
<td>Frequency: Every 5-30 min to Every 15 min</td>
<td>Frequency: Assess for signs of placental separation</td>
</tr>
<tr>
<td>Blood pressure, pulse, respirations</td>
<td>Assess every contraction</td>
<td>Assess for signs of placental separation</td>
</tr>
<tr>
<td>Uterine activity</td>
<td>Assess each effort</td>
<td></td>
</tr>
<tr>
<td>Bearing-down effort</td>
<td>Every 5-15 min</td>
<td>Assist with determination of Apgar score at 1 and 5 min</td>
</tr>
<tr>
<td>Fetal heart rate (FHR)</td>
<td>Every 15 min</td>
<td>Assess bleeding until placental expulsion</td>
</tr>
<tr>
<td>Vaginal show</td>
<td>Every 10-15 min</td>
<td></td>
</tr>
<tr>
<td>Signs of fetal descent: urge to bear down, perineal bulging, crowning</td>
<td>Every 10-15 min</td>
<td>Assess response to completion of childbirth process, reaction to newborn</td>
</tr>
<tr>
<td>Behavior, appearance, mood, energy level of woman; condition of partner</td>
<td>Every 10-15 min</td>
<td></td>
</tr>
</tbody>
</table>

*Frequency of assessment is determined by the risk status of the maternal-fetal unit. More frequent assessment is required in high-risk situations. Frequency of assessment and method of documentation are also determined by agency policy, which is usually based on the recommended care standards of medical and nursing organizations.

†Physical care measures are performed by the nurse working together with the woman’s partner and significant others.
### BOX 14-7

**Guidelines for Assistance at the Emergency Birth of a Fetus in the Vertex Presentation**

1. The woman usually assumes the position most comfortable for her. A lateral position is often recommended.
2. Reassure the woman that birth is usually uncomplicated and easy if you maintain eye contact and a calm, relaxed manner. If there is someone else available, such as the partner, that person could help support the woman in the position, assist with coaching, and compliment her on her efforts.
3. Wash your hands and put on gloves, if available.
4. Place under woman's buttocks whatever clean material is available.
5. Avoid touching the vaginal area to decrease the possibility of infection.
6. As the head begins to crown, you should do the following:
   a. Tear the amniotic membrane if it is still intact.
   b. Instruct the woman to pant or pant-break, thus minimizing the urge to push.
   c. Place the flat side of your hand on the exposed fetal head and apply gentle pressure toward the vagina to prevent the head from "popping out." The mother may participate by placing her hand under yours on the emerging head. Note: Rapid delivery of the fetal head must be prevented because a rapid change of pressure within the molded fetal skull follows, which may result in dural or subdural tears and may cause vaginal or perineal lacerations.
7. After the birth of the head, check for the umbilical cord.
   a. If supplies are available, clean the mother's perineal area and apply a peripad.
   b. Do not allow the mother's bladder to become distended. Assess the bladder for fullness and encourage her to void if fullness is found.
8. Support the fetal head as external rotation occurs. Then, with one hand on each side of the baby's head, exert gentle pressure downward so that the anterior shoulder emerges under the symphysis pubis and acts as a fulcrum; then, as gentle pressure is exerted in the opposite direction, the posterior shoulder, which has passed over the sacrum and coccyx, emerges.
9. Be alert! Hold the baby securely because the rest of the body may emerge quickly. The baby will be slippery!
10. Cradle the baby's head and back in one hand and the buttocks in the other. Keep the head down to drain away the mucus. Use a bulb syringe, if one is available, to remove mucus from the baby's mouth.
11. Dry the baby quickly to prevent rapid heat loss. Keep the baby at the same level as the mother's uterus until the end of the cord stops pulsating. Note: It is important to keep the baby at the same level as the mother's uterus to prevent the baby's blood from flowing to or from the placenta and the resultant hypovolemia or hypervolemia. Also, do not "milk" the cord.
12. Place the baby on the mother's abdomen, cover the baby (remember to keep the head warm, too) with the mother's clothing, and have her cuddle the baby. Compliment her (them) on a job well done, and on the baby, if appropriate.
13. Wait for the placenta to separate; do not tug on the cord. Note: Injudicious traction may tear the cord, separate the placenta, or invert the uterus. Signs of placental separation include a slight gush of dark blood from the introitus, leakage of the cord, and change in the uterine contour from a discoid to globular shape.
14. Instruct the mother to push to deliver the separated placenta. Gently ease out the placental membranes using an up-and-down motion until the membranes are removed. If birth occurs outside a hospital setting, to minimize complications, do not cut the cord without proper clamps and a sterile cutting tool. Inspect the placenta for intactness. Place the baby on the placenta and wrap the two together for additional warmth. Check the firmness of the uterus. Gently massage the fundus and demonstrate to the mother how she can massage her own fundus properly.
15. Comfort or reassure the mother and her family or friends. Keep the mother and the baby warm. Give her fluids if available and tolerated.
16. If supplies are available, clean the mother's perineal area and apply a peripad.
17. In addition to gentle massage of the fundus, the following measures can be taken to prevent or minimize hemorrhage:
   a. Put the baby to the mother's breast as soon as possible. Sucking or nuzzling and licking the nipple stimulates the release of oxytocin from the posterior pituitary. Note: If the baby does not or cannot nurse, manually stimulate the mother's nipples.
   b. Do not allow the mother's bladder to become distended. Assess the bladder for fullness and encourage her to void if fullness is found.
18. Examine any clots from the mother's uterus.
19. Comfort or reassure the mother and her family or friends. Keep the mother and the baby warm. Give her fluids if available and tolerated.
20. Make notations regarding the following aspects of the birth:
   a. Fetal presentation and position
   b. Presence of cord around neck (nuchal cord) or other parts and number of times cord encircled part
   c. Color, character, and amount of amniotic fluid, if rupture of membranes occurs immediately before birth
   d. Time of birth
   e. Estimated time of determination of Apgar score (e.g., 1 and 5 min after birth), resuscitation efforts implemented, and ultimate condition of baby
   f. Sex of baby
   g. Time of placental expulsion, as well as the appearance and completeness of the placenta
   h. Maternal condition: affect, amount of bleeding, and status of uterine tonicity
   i. Any unusual occurrences during the birth (e.g., maternal or paternal response, verbalizations, or gestures in response to birth of baby)
extraneous noise, conversation, and other distractions (e.g., laughing, talking of attending personnel in or outside the labor area) to a minimum. The woman is encouraged to indicate other support measures she would like (Table 14-7; also see Care Path for Low Risk Woman in Second and Third Stages of Labor on p. 433, and Plan of Care for Labor and Birth on p. 421).

In the hospital, birth may occur in an LDR, LDRP, or delivery room. If the mother is to be transferred to the delivery room for birth, the nurse accomplishes the transfer early enough to avoid rushing the woman. The birth area also is readied for the birth.

Maternal position
There is no single position for childbirth. Labor is a dynamic, interactive process involving the woman’s uterus, pelvis, and voluntary muscles. In addition, angles between the baby and the woman’s pelvis constantly change as the infant turns and flexes down the birth canal. The woman may want to assume various positions for childbirth, and she should be encouraged and assisted in attaining and maintaining her position(s) of choice. Sitting and side-lying are the two most common positions assumed by women for their bearing-down efforts and birth.

Birth attendants play a major role in influencing a woman’s choice of positions for birth, with nurse-midwives tending to advocate the nonlithotomy positions for the second stage of labor. Upright positions facilitate birth and fetal descent and reduce the duration of the second stage of labor and the need for episiotomy, forceps, or vacuum extractor in the following ways (Gupta & Hofmeyr, 2003):
- Straighten the longitudinal axis of the birth canal
- Use gravity to direct the fetal head toward the pelvic inlet, thereby facilitating descent

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### TABLE 14-7

<table>
<thead>
<tr>
<th>WOMAN’S RESPONSES*</th>
<th>NURSE OR SUPPORT PERSON’S ACTIONS†</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LATENT PHASE</strong></td>
<td>Encourages woman to “listen” to her body</td>
</tr>
<tr>
<td>Experiences a short period of peace and rest</td>
<td>Continues support measures allowing woman to rest</td>
</tr>
<tr>
<td>Senses increased urgency to bear down as Ferguson reflex is activated</td>
<td>Encourages respiratory pattern of short breath holds and open-glottis pushing</td>
</tr>
<tr>
<td>Notes increase in intensity of uterine contractions; alters respiratory pattern: short 4- to 5-s breath holds, five to seven times per contraction</td>
<td>Encourages bearing-down efforts with urge to push</td>
</tr>
<tr>
<td>Makes grunting sounds or expiratory vocalizations</td>
<td>Encourages or suggests maternal movement and position changes (upright, if descent is not occurring)</td>
</tr>
<tr>
<td>Behaves in manner similar to behavior during transition in first stage (8-10 cm)</td>
<td>Encourages woman to “listen” to her body regarding movement and position change if descent is occurring</td>
</tr>
<tr>
<td>Experiences a sense of severe pain and powerlessness</td>
<td>Discourages long breath holds (no longer than 5 to 7 sec)</td>
</tr>
<tr>
<td>Concentrates on birth of baby until head is born</td>
<td>If birth is to occur in a delivery room, transfers woman to delivery room early to avoid rushing, or, if permitted, offers her option of walking to delivery room</td>
</tr>
<tr>
<td>Experiences contractions as overwhelming in intensity</td>
<td>Places woman in lateral recumbent position to slow descent if descent is too fast</td>
</tr>
<tr>
<td>Reports feeling ring of fire as head crowns</td>
<td>Provides mirror to help woman see or touch the emerging fetal head (best to extend over two to three contractions)</td>
</tr>
<tr>
<td>Maintains respiratory pattern of three to five 7-s breath holds per contraction, followed by forced expiration</td>
<td>Helps her understand the perineal sensations</td>
</tr>
<tr>
<td>Eases head out with short expirations</td>
<td>Coaches woman to relax mouth, throat, and neck to promote relaxation</td>
</tr>
<tr>
<td>Responds with excitement and relief after head is born</td>
<td>Applies warm compress to perineum to promote relaxation</td>
</tr>
</tbody>
</table>

---

*Woman’s responses will be altered if epidural analgesia is being administered.
†Provided by nurses and support persons in collaboration with the nurse.
• Enlarge pelvic dimensions and restrict the encroachment of the sacrum and coccyx into the pelvic outlet
• Increase uteroplacental circulation, resulting in more intense, efficient uterine contractions
• Enhance the woman’s ability to bear down effectively, thereby minimizing maternal exhaustion

The upright positions may, however, slightly increase the risk for second-degree lacerations and a blood loss greater than 500 ml. Further investigation is needed to determine the exact mechanism for these outcomes (Shorten, Donsante, & Shorten, 2002).

Squatting is highly effective in facilitating the descent and birth of the fetus. It is considered to be one of the best positions for the second stage of labor (Mayberry et al., 2000; Roberts, 2002). Women should assume a modified, supported squat until the fetal head is engaged, at which time a deep squat can be used. A firm surface is required for this position, and the woman will need side support (see Fig. 14-12, A). In a birthing bed a squat bar is available that she can use to help support herself (see Fig. 14-17, E). A birth ball also can be used to help a woman maintain the squatting position. The fetus will be aligned with the birth canal, and pelvic and perineal relaxation will be facilitated as she sits on the ball or holds it in front of her for support as she squats.

When a woman uses the standing position for bearing down, her weight is borne on both femoral heads, allowing the pressure in the acetabulum to cause the transverse diameter of the pelvic outlet to increase by up to 1 cm. This can be helpful if descent of the head is delayed because the occiput has not rotated from the lateral (transverse diameter of pelvis) to the anterior position. Birthing chairs or rocking chairs may be used to provide women with a good physiologic position to enhance bearing-down efforts during childbirth, although some women feel restricted by a chair. The upright position also provides a potential psychologic advantage in that it allows the mother to see the birth as it occurs and to maintain eye contact with the attendant. Most birthing chairs are designed so that if an emergency occurs, the chair can be adjusted to the horizontal or the Trendelenburg position.

Oversized beanbag chairs and large floor pillows may be used for both labor and birth. They can mold around and support the mother in whatever position she selects. These chairs are of particular value for mothers who wish to be actively involved in the birth process. Birthing stools can be used to support the woman in an upright position similar to squatting. Women may want to sit on the toilet or commode during pushing because they are concerned about stool incontinence during this stage. These women must be closely monitored, however, and removed from the toilet before birth becomes imminent. Because sitting on chairs, stools, toilets, or commodes can increase perineal edema and blood loss, it is important to assist the woman to change her position frequently.

The side-lying position, with the upper part of the woman’s leg held by the nurse or coach or placed on a pillow, is an effective position for the second stage of labor (Fig. 14-15, A). Women using the lateral position have more control over their bearing-down efforts. In addition, a slower, more controlled descent of the fetus results in a reduced risk of perineal trauma (Gupta & Hofmeyr, 2003). Some women prefer a semi-sitting (semi-recumbent) position. To maintain good uteroplacental circulation and to enhance the woman’s bearing-down efforts in this position, the woman’s back and shoulders should be elevated to at least a 30-degree angle, and a wedge should be placed under one hip (Fig. 14-15, B). The episiotomy rate for nulliparas has been found to be highest in this position (Shorten, Donsante, & Shorten, 2002).

The hands-and-knees position, along with pelvic rocking and abdominal stroking, is an effective position for birth.
because it enhances placental perfusion, helps rotate the fetus from a posterior to an anterior position, and may facilitate the birth of the shoulders, especially if the fetus is large. Perineal trauma also may be reduced (Simkin & Ancheta, 2000) (see Fig. 14-11, B).

The birthing bed is commonly used today and can be set for different positions according to the woman’s needs (Figs. 14-16 and 14-17). The woman can squat, kneel, sit, recline, or lie on her side, choosing the position most comfortable for her without having to climb into bed for the birth. At the same time, there is excellent exposure for examinations, electrode placement, and birth. The bed also can be positioned for the administration of anesthesia and is ideal to help women receiving an epidural to assume different positions to facilitate birth. The bed can be used to transport the woman to the operating room if a cesarean birth is necessary. Squat bars, over-the-bed tables, birth balls, and pillows can be used for support.

**Bearing-down efforts**

As the fetal head reaches the pelvic floor, most women experience the urge to bear down. Reflexively the woman will begin to exert downward pressure by contracting her abdominal muscles while relaxing her pelvic floor. This bearing down is an involuntary response to the Ferguson reflex. A strong expiratory grunt or groan (vocalization) often accompanies pushing when the woman exhales as she pushes.

When coaching women to push, the nurse should encourage them to push as they feel like pushing (instinctive, spontaneous pushing) rather than to give a prolonged push on command (Hansen, Clark, & Foster, 2002; Roberts, 2003).

Women will usually begin to push naturally as the contraction increases in intensity and the Ferguson reflex strengthens. The nurse should monitor the woman’s breathing so that the woman does not hold her breath for more than 5 to 7 seconds at a time and should remind her to ventilate her lungs fully by taking deep cleansing breaths before and after each contraction. Bearing down while exhaling (open-glottis pushing) and taking breaths between bearing-down efforts help maintain adequate oxygen levels for the mother and fetus and result in approximately five pushes during a contraction, with each push lasting about 5 seconds (Mayberry et al., 2000). Women who use spontaneous pushing are less likely to have second- or third-degree lacerations or episiotomies (Roberts, 2002).

Prolonged breath-holding, or sustained, directed bearing down, which is still a common practice, may trigger the Valsalva maneuver, which occurs when the woman closes the glottis (closed-glottis pushing), thereby increasing intrathoracic and cardiovascular pressure, reducing cardiac output, and inhibiting perfusion of the uterus and the placenta. In addition, breath-holding for more than 5 to 7 seconds causes the perfusion of oxygen across the placenta to be diminished, resulting in fetal hypoxia. This approach to bearing down is harmful or ineffective and should be discouraged (Enkin et al., 2000).

A woman may reach the second stage of labor and then experience a lack of readiness to complete the process and give birth to her child. By recognizing that a woman may experience a need to hold back the birth of her baby, the nurse can then address the woman’s concerns and effectively coach the woman during this stage of labor.

To ensure the slow birth of the fetal head, the woman is encouraged to control the urge to bear down by coaching her to take panting breaths or to exhale slowly through pursed lips as the baby’s head crowns. At this point, the woman needs simple, clear directions from one person. Amnesia between contractions often is pronounced in the second stage, and the woman may have to be roused to get her to cooperate in the bearing-down process. Parents who have attended childbirth education classes may have devised a set of verbal cues for the laboring woman to follow. It is helpful for them to have these cues printed on a card that can be attached to the head of the bed so that the nurse can better substitute as coach if the partner has to leave.

**Fetal heart rate and pattern**

As noted previously, the FHR must be checked. If the baseline rate begins to slow, if there is a loss of variability, or if deceleration patterns develop (e.g., late, variable), prompt treatment must be initiated. The woman can be turned on her side to reduce the pressure of the uterus against the ascending vena cava and descending aorta (see Fig. 14-5), and oxygen can be administered by mask at 8 to 10 L/min (Tucker, 2004). This is often all that is necessary to restore a reassuring pattern. If the FHR and pattern do
not become reassuring immediately, the primary health care provider should be notified quickly because medical intervention to hasten the birth may be indicated.

**Support of the father or partner**

During the second stage, the woman needs continuous support and coaching (see Table 14-7). Because the coaching process can be physically and emotionally tiring for support persons, the nurse offers them nourishment and fluids and encourages them to take short breaks. If birth occurs in an LDR or LDRP room, the partner may be allowed to wear street clothes or be required to wear a clean scrub outfit, cap, and mask (for the birth). The support person who attends the birth in a delivery room is instructed to put on a cover gown or scrub clothes, mask, hat, and shoe covers, as required by agency policy. The nurse also specifies support measures that can be used for the laboring woman and points out areas of the room in which the partner can move freely.

![Fig. 14-17](image-url) The versatility of today’s birthing bed makes it practical in a variety of settings. NOTE: OB table used for lithotomy position. **A**, Labor bed. **B**, Birth chair. **C**, Birth bed. **D**, OB table. **E**, Squatting or birth bar. (Courtesy Julie Perry Nelson, Gilbert, AZ.)
Partners are encouraged to be present at the birth of their infants if this is in keeping with their cultural and personal expectations and beliefs. In this way the psychologic closeness of the family unit is maintained, and the partner can continue to provide the supportive care given during labor. The woman and her partner need to have an equal opportunity to initiate the attachment process with the baby.

**LEGAL TIP**

Documentation

Documentation of all observations (e.g., maternal vital signs, FHR and pattern, progress of labor) and nursing interventions, including patient response, should be done concurrent with care. The course of labor and the maternal-fetal response may change without warning. It is important that all documentation be accurate, complete, timely, and according to agency policy.

**Supplies, instruments, and equipment**

To prepare for birth in any setting, the birthing area is usually set up during the transition phase for nulliparous women and during the active phase for multiparous women. The birthing bed or table is prepared, and instruments are arranged on the instrument table (Fig. 14-18). Standard procedures are followed for gloving, identifying and opening sterile packages, adding sterile supplies to the instrument table, unwrapping sterile instruments, and handing them to the primary health care provider. The crib or radiant warmer and equipment are readied for the support and stabilization of the infant (Fig. 14-19).

The items used for birth may vary among different facilities; therefore each facility’s procedure manual should be consulted to determine the protocols specific to that facility.

The nurse estimates the time until the birth will occur and notifies the primary health care provider if he or she is not in the patient’s room. Even the most experienced nurse can miscalculate the time left before birth occurs; therefore every nurse who attends a woman in labor must be prepared to assist with an emergency birth if the primary health care provider is not present (Box 14-8).

*Fig. 14-18* Instrument table. (Courtesy Marjorie Pyle, RNC, Lifecircle, Costa Mesa, CA.)

*Fig. 14-19* Radiant warmer for newborn. (Courtesy Dee Lowdermilk, Chapel Hill, NC.)

**Birth in a delivery room or birthing room**

The woman will need assistance if she must move from the labor bed to the delivery table (Fig. 14-20). The various positions assumed for birth in a delivery room are the Sims or lateral position in which the attendant supports the upper part of the woman’s leg, the dorsal position (supine position with one hip elevated), and the lithotomy position. The lithotomy position has been the position most commonly used for birth in Western cultures, although this practice is slowly changing. The lithotomy position makes it more convenient for the primary health care provider to deal with complications that arise (see Fig. 14-17, D). To place the woman in this position, her buttocks are brought to the edge of the table and her legs are placed in stirrups. Care must be taken to pad the stirrups, to raise and place both legs simultaneously, and to adjust the shanks of the stirrups so that the calves of the legs are supported. There should be no pressure on the popliteal space. If the stirrups are not the same height, ligaments in the woman’s back can be strained as she bears down, leading to considerable discomfort in the postpartum period. The lower portion of the table may be dropped down and rolled back under the table.

It should be noted that the routine use of a supine or lithotomy position for labor and birth has been identified...
Normal Vaginal Childbirth

**FIRST STAGE**
- Anteroposterior slit. Vertex visible during contraction.
- Oval opening. Vertex presenting. Note: Nurse on left is wearing gloves, but support person on right is not.

**SECOND STAGE**
- Crowning.
- Nurse-midwife using Ritgen maneuver as head is born by extension.
- After nurse-midwife checks for nuchal cord, she supports head during external rotation and restitution.
- Use of bulb syringe to suction mucus.
- Birth of posterior shoulder.
- Birth of newborn by slow expulsion.

Second stage complete. Note that newborn is not completely pink yet.

Courtesy Michael S. Clement, MD, Mesa, AZ.
Normal Vaginal Childbirth—cont’d

BOX 14-8

THIRD STAGE

Newborn placed on mother’s abdomen while cord is clamped and cut.

Note increased bleeding as placenta separates.

Expulsion of placenta.

Expulsion is complete, marking the end of the third stage.

THE NEWBORN

Newborn awaiting assessment. Note that color is almost completely pink.

Newborn assessment under radiant warmer.

Parents admiring their newborn.
as a clearly harmful or ineffective practice and should be discouraged (Enkin et al., 2000).

The maternal position for birth in a birthing room varies from a lithotomy position, with the woman’s feet in stirrups, to one in which her feet rest on footrests while she holds onto a squat bar, to a side-lying position with the woman’s upper leg supported by the coach, nurse, or squat bar. The foot of the bed can be removed so that the primary health care provider attending the birth can gain better perineal access for performing an episiotomy, delivering a large baby, using forceps or vacuum extractor, or getting access to the emerging head to facilitate suctioning. Otherwise the foot of the bed is left in place and lowered slightly to form a ledge that allows access for birth and that also serves as a place to lay the newborn (see Fig. 14-16).

Once the woman is positioned for birth either in a delivery room or birthing room, the vulva and perineum may be cleansed. Hospital protocols and the preferences of primary health care providers for cleansing may vary. The labor nurse continues to coach and encourage the woman. The nurse auscultates the FHR or evaluates the monitor tracing every 5 to 15 minutes, depending on whether the woman is at low or high risk for problems or per protocol of the birthing facility, or continuously monitors the FHR with electronic monitoring. The primary health care provider is kept informed of the FHR and pattern (Tucker, 2004). An oxytocic medication such as oxytocin (Pitocin) may be prepared so that it is ready to be administered after expulsion of the placenta. Standard Precautions should always be followed as care is administered during the process of labor and birth (see Box 14-3).

In the delivery room the primary health care provider puts on a cap, a mask that has a shield or protective eyewear, and shoe covers. Hands are scrubbed, a sterile gown (with waterproof front and sleeves) is donned, and gloves are put on. Nurses attending the birth also may need to wear caps, protective eyewear, masks, gowns, and gloves. The woman may then be draped with sterile drapes. In the birthing room, Standard Precautions are observed, but the amount and types of protective coverings worn by those in attendance may vary.

Nursing contact with the parents is maintained by touching, verbal comforting, explaining the reasons for care, and sharing in the parents’ joy at the birth of their child.

**Water birth**

There is evidence that immersion in water during first stage labor can reduce the amount of pain and anxiety in labor and does not appear to affect neonatal outcomes (Benfield, 2002; Cluett et al., 2004). However, the effects of immersion during birth and in the third stage have not been determined by randomized controlled trials that have a large enough sample to make a determination about maternal and neonatal outcomes.

If a woman wishes to have a water birth (Fig. 14-21) in the United States, the newborn will usually be removed from the water immediately after birth (Waterbirth International, 2005). The infant can be placed in the mother’s arms until the cord is cut. The woman usually is assisted from the tub to the bed to deliver the placenta.

**Mechanism of birth: vertex presentation**

The three phases of the spontaneous birth of a fetus in a vertex presentation are (1) birth of the head, (2) birth of the shoulders, and (3) birth of the body and extremities (see Chapter 11).

With voluntary bearing-down efforts, the head appears at the introitus (Fig. 14-22). **Crowning** occurs when the widest part of the head (the biparietal diameter) distends the vulva just before birth. The birth attendant may apply mineral oil to the perineum and stretch it as the head is crowning. Immediately before birth, the perineal musculature becomes greatly distended. If an episiotomy (incision into the perineum to enlarge vaginal outlet) is necessary, it is done at this time to minimize soft tissue damage. Local anesthetic is administered before the episiotomy.

![Fig. 14-20](Delivery room. (Courtesy Michael S. Clement, MD, Mesa, AZ.)

![Fig. 14-21](Water birth. (Courtesy Global Maternal/Child Health Association, Inc., Wilsonville, OR.)
The physician or nurse midwife may use a hands-on approach to control the birth of the head, believing that guarding the perineum results in a gradual birth that will prevent fetal intracranial injury, protect maternal tissues, and reduce postpartum perineal pain. This approach involves (1) applying pressure against the rectum, drawing it downward to aid in flexing the head as the back of the neck catches under the symphysis pubis; (2) then applying upward pressure from the coccygeal region (modified Ritgen maneuver) (Fig. 14-23) to extend the head during the actual birth, thereby protecting the musculature of the perineum; and (3) assisting the mother with voluntary control of the bearing-down efforts by coaching her to pant while letting uterine forces expel the fetus.

Some health care providers use a hands-poised (hands-off) approach when attending a birth. In this approach, hands are prepared to place light pressure on the fetal head to prevent rapid expulsion. Hands are not placed on the perineum or used to assist with birth of the shoulders and body.

The umbilical cord often encircles the neck (nuchal cord) but rarely so tightly as to cause hypoxia. After the head is born, gentle palpation is used to feel for the cord. If present, the cord should be slipped gently over the head (Fig. 14-24). If the loop is tight or if there is a second loop, the cord is clamped twice, cut between the clamps, and unwound from around the neck before the birth is allowed to continue. Mucus, blood, or meconium in the nasal or oral passages may prevent the newborn from breathing. To eliminate this problem, moist gauze sponges are used to wipe the nose and mouth. A bulb syringe is first inserted into the mouth and oropharynx to aspirate contents, and then the nares are cleared in the same fashion while the head is supported.

Prevention of meconium aspiration. If meconium has been present in the amniotic fluid during labor, preparations are made for wall suction, or in some cases a De Lee suction apparatus is placed on the sterile field for use. Fluids are withdrawn from the infant’s mouth and nose before the first breath is taken to prevent meconium aspiration. Use of the De Lee device with oral suction to withdraw fluid from the infant should be avoided unless the suction device is designed so that it can keep mucus from entering the user’s airway.

The time of birth is the precise time when the entire body is out of the mother. In case of multiple births, each birth
would be noted in the same way. Time of birth must be recorded on the record.

If the newborn’s condition is not compromised, he or she may be placed on the mother’s abdomen immediately after birth and covered with a warm, dry blanket. The cord may be clamped at this time, and the primary health care provider may ask if the woman’s partner would like to cut the cord. If so, the partner is given a sterile pair of scissors and instructed to cut the cord 1 inch (2.5 cm) above the clamp (see Fig. 1-2).

**Use of fundal pressure.** Fundal pressure is the application of gentle, steady pressure against the fundus of the uterus to facilitate the vaginal birth. Historically it has been used when the administration of analgesia and anesthesia decreased the woman’s ability to push during the birth, in cases of shoulder dystocia, and when second-stage fetal bradycardia or other nonreassuring FHR patterns were present. Use of fundal pressure by nurses is not advised because there is no standard technique available for this maneuver, and no current legal, professional, or regulatory standards exist for its use (Simpson & Knox, 2001). In cases of shoulder dystocia, fundal pressure is not recommended: the all-fours position (Gaskin maneuver), suprapubic pressure, and maternal position changes are among the recommended interventions (Baxley & Gobbo, 2004) (see Chapter 24).

**Immediate assessments and care of the newborn**

The care given immediately after the birth focuses on assessing and stabilizing the newborn. The nurse’s primary responsibility at this time is the infant, because the primary health care provider is involved with the delivery of the placenta and the care of the mother. The nurse must watch the infant for any signs of distress and initiate appropriate interventions should any appear.

A brief assessment of the newborn can be performed while the mother is holding the infant. This includes checking the infant’s airway and Apgar score. Maintaining a patent airway, supporting respiratory effort, and preventing cold stress by drying the newborn and covering the newborn with a warmed blanket or placing him or her under a radiant warmer are the major priorities in terms of the newborn’s immediate care. Further examination, identification procedures, and care can be postponed until later in the third stage of labor or early in the fourth stage.

**Perineal trauma related to childbirth**

**Lacerations.** Most acute injuries and lacerations of the perineum, vagina, uterus, and their support tissues occur during childbirth. Some injuries to the supporting tissues, whether they were acute or nonacute and whether they were repaired or not, may lead to genitourinary and sexual problems later in life (e.g., pelvic relaxation, uterine prolapse, cystocele, rectocele, dyspareunia, urinary and bowel dysfunction).

Some damage occurs during every birth to the soft tissues of the birth canal and adjacent structures. The tendency to sustain lacerations varies with each woman; that is, the soft tissue in some women may be less distensible as that of darker-skinned women, and healing may be less efficient. The perineal skin and vaginal mucosa may appear intact, but...
numeros small lacerations in underlying muscle and its fascia may be obscured. Damage to pelvic supports usually is readily apparent and is repaired after birth. Immediate repair promotes healing, limits residual damage, and decreases the possibility of infection. Immediately after birth, the cervix, vagina, and perineum are inspected for damage. In addition, during the early postpartum period, the nurse and primary health care provider continue to inspect the perineum carefully and evaluate lochia and symptoms to identify any previously missed damage.

**Perineal lacerations.** Perineal lacerations usually occur as the fetal head is being born. The extent of the laceration is defined in terms of its depth:

1. **First degree:** Laceration that extends through the skin and structures superficial to muscles
2. **Second degree:** Laceration that extends through muscles of the perineal body
3. **Third degree:** Laceration that continues through the anal sphincter muscle
4. **Fourth degree:** Laceration that also involves the anterior rectal wall

Perineal injury often is accompanied by small lacerations on the medial surfaces of the labia minora below the pubic rami and to the sides of the urethra (periurethral) and clitoris. Lacerations in this highly vascular area often result in profuse bleeding. Special attention must be paid to third- and fourth-degree lacerations so that the woman retains fecal continence. Measures are taken to promote soft stools (e.g., roughage, fluid, activity, and stool softeners) to increase the woman’s comfort and foster healing. Antimicrobial therapy and occurrence of third- and fourth-degree lacerations (Weeks & Kozak, 2001). The practice in many settings now is to support the perineum manually during birth and allow the perineum to tear rather than perform an episiotomy. Tears are often smaller than an episiotomy, are repaired easily or not at all, and heal quickly. The pain and discomfort resulting from episiotomies can interfere with mother-infant interaction, breastfeeding, reestablishment of sexual relationship with partner, and even emotional recovery after birth.

The type of episiotomy is designated by the site and direction of the incision (Fig. 14-25). Midline (median) episiotomy is most commonly used in the United States. It is effective, easily repaired, and generally the least painful. However, midline episiotomies also are associated with a higher incidence of third- and fourth-degree lacerations. Sphincter tone is usually restored after primary healing and a good repair. Mediolateral episiotomy is used in operative births when the need for posterior extension is likely. Although a fourth-degree laceration may be prevented, a third-degree laceration may occur. The blood loss also is greater and the repair more difficult and painful than with midline episiotomies. It also is more painful in the postpartum period, and the pain lasts longer.

Risk factors associated with perineal trauma (e.g., episiotomy, lacerations) include nulliparity, maternal position, more commonly in the United States and Canada than in Europe. The side-lying position for birth, used routinely in Europe, causes less tension on the perineum, making possible a gradual stretching of the perineum with fewer indications for episiotomies.

Clear evidence exists that routine performance of an episiotomy for birth is a form of care that is likely to be harmful or ineffective (Enkin et al., 2000; Hofmeyr, 2005). Routine performance of episiotomies has declined in the United States since the 1990s, most likely related to the clear evidence regarding the harmful effects of episiotomy in terms of increased postpartum pain, blood loss, risk for infection, and occurrence of third- and fourth-degree lacerations (Weeks & Kozak, 2001). The practice in many settings now is to support the perineum manually during birth and allow the perineum to tear rather than perform an episiotomy. Tears are often smaller than an episiotomy, are repaired easily or not at all, and heal quickly. The pain and discomfort resulting from episiotomies can interfere with mother-infant interaction, breastfeeding, reestablishment of sexual relationship with partner, and even emotional recovery after birth.
placental separation is indicated by the following signs (Fig. 14-26):  

- A firmly contracting fundus  
- A change in the uterus from a discoid to a globular ovoid shape as the placenta moves into the lower uterine segment  
- A sudden gush of dark blood from the introitus  
- Apparent lengthening of the umbilical cord as the placenta descends to the introitus  
- The finding of vaginal fullness (the placenta) on vaginal or rectal examination or of fetal membranes at the introitus

Depending on the preferences of the primary health care provider, an expectant or active approach may be used to manage the third stage of labor. Expectant management involves watching the placenta separate and expel itself (watchful waiting) and is commonly the preferred approach in midwifery care. When complications are anticipated or threaten a safe outcome, an active approach may be needed. The goals of an active approach are to facilitate separation and expulsion, but no oxytocic (uterotonic) medications are given. A quiet, relaxed environment that supports close skin-to-skin contact between mother and newborn also promotes the release of endogenous oxytocin. Active management facilitates placental separation and expulsion with administration of one or more oxytocic (uterotonic) medications after the birth of the anterior shoulder of the fetus, clamping and cutting of the umbilical cord immediately, and delivery of the placenta by efforts of the mother with clamping and cutting of the cord after pulsation ceases. It may involve the use of gravity or nipple stimulation to facilitate separation and expulsion, but no oxytocic (uterotonic) medications are given. A quiet, relaxed environment that supports close skin-to-skin contact between mother and newborn also promotes the release of endogenous oxytocin. Active management facilitates placental separation and expulsion with administration of one or more oxytocic (uterotonic) medications after the birth of the anterior shoulder of the fetus, clamping and cutting of the umbilical cord immediately, and delivery of the placenta by efforts of the mother with clamping and cutting of the cord after pulsation ceases. It may involve the use of gravity or nipple stimulation to facilitate separation and expulsion, but no oxytocic (uterotonic) medications are given. A quiet, relaxed environment that supports close skin-to-skin contact between mother and newborn also promotes the release of endogenous oxytocin. Active management facilitates placental separation and expulsion with administration of one or more oxytocic (uterotonic) medications after the birth of the anterior shoulder of the fetus, clamping and cutting of the umbilical cord immediately, and delivery of the placenta by efforts of the mother with clamping and cutting of the cord after pulsation ceases. It may involve the use of gravity or nipple stimulation to facilitate separation and expulsion, but no oxytocic (uterotonic) medications are given. A quiet, relaxed environment that supports close skin-to-skin contact between mother and newborn also promotes the release of endogenous oxytocin.

$\text{Emergency childbirth}$

Even under the best of circumstances, there probably will come a time when the perinatal nurse will be required to assist with the birth of an infant without medical assistance. Because it is neither possible nor desirable to prevent impending birth, the perinatal nurse must be able to function independently and be skilled in the safe birth of a vertex fetus (see Box 14-7).

A lateral Sims position may be the position of choice for birth when (1) the birth is progressing rapidly and there is insufficient time for slow distention of the perineum; (2) the fetal head seems too large to pass through the introitus with the anchor of placental attachment broken (eclampsia) and episiotomy is also contraindicated; (3) there is a large fetus with macrosomia; or (4) the woman is unable to think clearly and make informed decisions about birth. As advocates can encourage women to use alternative birthing positions that reduce pressure on the perineum (e.g., lateral position) and to use spontaneous bearing-down efforts. In addition, nurses can educate other health care providers about measures to preserve perineal integrity and to be more flexible in defining the maximal limit for the duration of the second stage of labor as long as the maternal-fetal unit is stable.

$\text{THIRD STAGE OF LABOR}$

The third stage of labor lasts from the birth of the baby until the placenta is expelled. The goal in the management of the third stage of labor is the prompt separation and expulsion of the placenta, achieved in the easiest, safest manner.

The placenta is attached to the decidua plate’s thin endometrium by numerous fibrous anchor villi—much in the same way as a postage stamp is attached to a sheet of postage stamps. After the birth of the fetus, strong uterine contractions cause the placental site to shrink markedly. This causes the anchor villi to break and the placenta to separate from its attachments. Normally the first few strong contractions that occur 5 to 7 minutes after the baby’s birth cause the placenta to be sheared away from the basal plate. A placenta cannot detach itself from a flaccid (relaxed) uterus because the placental site is not reduced in size.

$\text{Placental Separation and Expulsion}$

Placental separation is indicated by the following signs (Fig. 14-26):  

- A firmly contracting fundus  
- A change in the uterus from a discoid to a globular ovoid shape as the placenta moves into the lower uterine segment  
- A sudden gush of dark blood from the introitus  
- Apparent lengthening of the umbilical cord as the placenta descends to the introitus  
- The finding of vaginal fullness (the placenta) on vaginal or rectal examination or of fetal membranes at the introitus

Depending on the preferences of the primary health care provider, an expectant or active approach may be used to manage the third stage of labor. Expectant management involves watching the placenta separate and expel itself (watchful waiting) and is commonly the preferred approach in midwifery care. When complications are anticipated or threaten a safe outcome, an active approach may be needed. The goals of an active approach are to facilitate separation and expulsion, but no oxytocic (uterotonic) medications are given. A quiet, relaxed environment that supports close skin-to-skin contact between mother and newborn also promotes the release of endogenous oxytocin. Active management facilitates placental separation and expulsion with administration of one or more oxytocic (uterotonic) medications after the birth of the anterior shoulder of the fetus, clamping and cutting of the umbilical cord immediately, and delivery of the placenta by efforts of the mother with clamping and cutting of the cord after pulsation ceases. It may involve the use of gravity or nipple stimulation to facilitate separation and expulsion, but no oxytocic (uterotonic) medications are given. A quiet, relaxed environment that supports close skin-to-skin contact between mother and newborn also promotes the release of endogenous oxytocin. Active management facilitates placental separation and expulsion with administration of one or more oxytocic (uterotonic) medications after the birth of the anterior shoulder of the fetus, clamping and cutting of the umbilical cord immediately, and delivery of the placenta by application of controlled cord traction when signs of separation are noted. Research findings support the superiority of active management in terms of less blood loss and reduced risk of hemorrhage and other complications of the third stage of labor (Brucker, 2001; Prendiville, Elbourne, & McDonald, 2000). Active management of the third stage of labor is a beneficial form of care (Enkin et al., 2000).

To assist in the delivery of the placenta, the woman is instructed to push when signs of separation have occurred. If possible, the placenta should be expelled by maternal effort during a uterine contraction. Alternate compression and elevation of the fundus, plus minimal, controlled traction on the umbilical cord, may be used to facilitate delivery of the placenta and amniotic membranes. Oxytocics are rarely needed for birth.
may be administered after the placenta is removed because they stimulate the uterus to contract, thereby helping to prevent hemorrhage.

Whether the placenta first appears by its shiny fetal surface (Schultze mechanism) or turns to show its dark roughened maternal surface first (Duncan mechanism) is of no clinical importance.

After the placenta and the amniotic membranes emerge, the primary health care provider examines them for intactness to ensure that no portion remains in the uterine cavity (i.e., no fragments of the placenta or membranes are retained) (Fig. 14-27).

Some women and their families may have culturally based beliefs regarding the care of the placenta and the manner of its disposal after birth, viewing the care and disposal of the placenta as a way of protecting the newborn from bad luck and illness. Requests by the woman to take the placenta home and dispose of it according to her customs may be at odds with health care agency policies, especially those related
to infection control and the disposal of biologic wastes. Many cultures follow specific rules regarding the disposal of the placenta in terms of method (burning, drying, burying, eating), site for disposal (in or near the home), and timing of disposal (immediately after birth, time of day, astrologic signs). Disposal rituals may vary according to the gender of the child and the length of time before another child is desired. If eaten, the placenta can be a means of restoring a woman’s well-being after birth or ensuring high-quality breast milk. Health care providers can provide culturally sensitive health care by encouraging women and their families to express their wishes regarding the care and disposal of the placenta and by establishing a policy to fulfill these requests (D’Avanzo & Geissler, 2003; Lemon, 2002; Molina, 2001).

**Maternal Physical Status**

Physiologic changes after birth are profound. The cardiac output increases rapidly as maternal circulation to the placenta ceases and the pooled blood from the lower extremities is mobilized. The pulse rate slows in response to the change in cardiac output and tends to remain slightly slower than the prepregnancy rate for approximately 1 week.

Soon after the birth, the woman’s blood pressure usually returns to prepregnancy levels. Several factors contribute to an elevated blood pressure at this time: the excitement of the second stage, certain medications, and the time of day (blood pressure is highest during the late afternoon). Analgesics and anesthetics may cause hypotension to develop in the hour after birth.

The major risk for women during the third stage of labor is postpartum hemorrhage. When the primary health care provider completes the delivery of the placenta, the nurse observes the mother for signs of excessive blood loss, including alteration in vital signs, pallor, light-headedness, restlessness, decreased urinary output, and alteration in level of consciousness and orientation. Because of the rapid cardiovascular changes taking place (e.g., the increased intracranial pressure during pushing and the rapid increase in cardiac output), the risk of rupture of a preexisting cerebral aneurysm and the risk of formation of pulmonary emboli are greater than usual during this period. Another dangerous, unpredictable problem that may occur is the formation of an amniotic fluid embolism (see Chapter 24).

Women with a history of cardiac disorders are at increased risk for cardiac decompensation and pulmonary edema as a result of the circulatory changes associated with the birth of the fetus and expulsion of the placenta. The nurse should carefully assess the woman’s respiratory pattern and effort, especially in the early postpartum period.

When the third stage is complete and any lacerations are repaired or an episiotomy is untied, the vault area is gently cleansed with warm water or normal saline, and a perineal pad or an ice pack is applied to the perineum. The birthing bed or table is repositioned, and the woman’s legs are lowered simultaneously from the stirrups if she gave birth in a lithotomy position. Drapes are removed, and dry linen is placed under the woman’s buttocks; she is provided with a clean gown and a blanket, which is warmed, if needed. She is assisted into her bed, if she is to be transferred from the birthing area to the recovery area; assistance also is necessary to move the woman from the birthing table onto a bed if the woman has had anesthesia and does not have full use of her lower extremities. The side rails are raised during the transfer. She may be given the baby to hold during the transfer or the father or partner may carry the baby or transport the baby in a crib, either to the nursery or to the recovery area. If the woman labors, gives birth, and recovers in the same bed and room, she is refreshed following the protocol already described. Maternal and neonatal assessments for the fourth stage of labor are instituted. Box 14-8 summarizes normal vaginal childbirth.

**Care of the Family**

Most parents enjoy being able to handle, hold, explore, and examine the baby immediately after birth. Both parents can assist with the thorough drying of the infant. The infant may be wrapped in a receiving blanket and placed on the woman’s abdomen. If skin-to-skin contact is desired, the unwrapped infant may be placed on the woman’s abdomen and then covered with a warm blanket.

Holding the newborn next to her skin helps the mother maintain the baby’s body heat and provides skin-to-skin contact; care must be taken to keep the head warm. Stockinette caps are sometimes used to cover the newborn’s head.

Many women wish to begin breastfeeding their newborns at this time to take advantage of the infant’s alert state (first period of reactivity) and to stimulate the production of oxytocin that promotes contraction of the uterus. Others prefer to wait until the newborn, parents, and older siblings are together in the recovery area. In some cultures (e.g., Vietnamese and Hispanic), breastfeeding is not acceptable to some women until the milk comes in.

The woman usually feels some discomfort while the primary health care provider carries out the postbirth vaginal examination. The nurse can assist the woman to use breathing and relaxation or distraction techniques to assist her in dealing with the discomfort. During this time, the nurse assesses the newborn’s physical condition; the baby can be weighed and measured, given eye prophylaxis and a vitamin K injection, given an identification bracelet, wrapped in warm blankets, and then given to the partner or back to the mother to hold when she is ready.

**Family-newborn relationships**

The woman’s reaction to the sight of her newborn may range from excited outbursts of laughing, talking, and even crying to apparent apathy. A polite smile and nod may be her only acknowledgment of the comments of nurses and the primary health care provider. Occasionally the reaction is one of anger or indifference; the woman turns away from the baby, concentrates on her own pain, and sometimes makes hostile comments. These varied reactions can arise from pleasure, exhaustion, or deep disappointment. When
evaluating parent-newborn interactions after birth, the nurse also should consider the cultural characteristics of the woman and her family and the expected behaviors of that culture. In some cultures, the birth of a male child is preferred, and women may grieve when a female child is born (D'Avanzo & Geissler, 2003). Whatever the reaction and its cause may be, the woman needs continuing acceptance and support from all staff. Notation regarding the parents' reaction to the newborn can be made in the recovery record. Nurses can assess this reaction by asking themselves such questions as, “How do the parents look?” “What do they say?” “What do they do?” Further assessment of the parent-newborn relationship can be conducted as care is given during the period of recovery. This is especially important if warning signs (e.g., passive or hostile reactions to the newborn, disappointment with sex or appearance of the newborn, absence of eye contact, or limited interaction of parents with each other) were noted immediately after birth. The nurse may find it helpful to discuss any warning signs that may have been noted with the woman’s primary health care provider.

Siblings, who may have appeared only remotely interested in the final phases of the second stage, tend to experience renewed interest and excitement when the newborn appears. They can be encouraged to hold the baby (Fig. 14-28). Parents usually respond to praise of their newborn. Many need to be reassured that the dusky appearance of their baby’s extremities immediately after birth is normal until circulation is well established. If appropriate, the nurse should explain the reason for the molding of the newborn’s head. Information about hospital routine can be communicated. It is important, however, for nurses to recognize that the cultural background of the parents may influence their expectations regarding the care and handling of their newborn immediately after birth. For example, some traditional Southeast Asians believe that the head should not be touched because it is the most sacred part of a person’s body. They also believe that praise of the baby is dangerous because jealous spirits may then cause the baby harm or take it away (D’Avanzo & Geissler, 2003). Hospital staff members, by their interest and concern, can provide the environment for making this a satisfying experience for parents, family, and significant others.

Determining a woman’s satisfaction with and impressions of her childbirth experience is a critical component in the provision of high-quality maternal-newborn health care that meets the individual needs of women and families using these services.

**Key Points**

- The onset of labor may be difficult to determine for both nulliparous and multiparous women.
- The familiar environment of her home is most often the ideal place for a woman during the latent phase of the first stage of labor.
- The nurse assumes much of the responsibility for assessing the progress of labor and for keeping the primary health care provider informed about progress in labor and deviations from expected findings.
- The FHR and pattern reveal the fetal response to the stress of the labor process.
- Meconium-stained amniotic fluid is not always indicative of fetal distress associated with hypoxia.
- Assessment of the laboring woman’s urinary output and bladder is critical to ensure her progress and to prevent injury to the bladder.
- Regardless of the actual labor and birth experience, the woman’s or couple’s perception of the birth experience is most likely to be positive when events...
Key Points—cont’d

- When allowed to respond to the rhythmic nature of the second stage of labor, the woman normally changes body positions, bears down spontaneously, and vocalizes (open-glottis pushing) when she perceives the urge to push (Ferguson reflex).
- Women should bear down several times during a contraction using the open-glottis pushing method; sustained closed-glottis pushing should be avoided because oxygen transport to the fetus will be inhibited.
- Nurses can use the role of advocate to prevent routine use of episiotomy and to reduce the incidence of lacerations by empowering women to take an active role in the birth and educating health care providers about approaches to managing childbirth that reduce the incidence of perineal trauma.
- Objective signs indicate that the placenta has separated and is ready to be expelled; excessive traction (pulling) on the umbilical cord, before the placenta has separated, can result in maternal injury.
- Siblings present for labor and birth need preparation and support for the event.
- Most parents and families enjoy being able to handle, hold, explore, and examine the baby immediately after the birth.
- Nurses should observe the progress in the development of parent-child relationships and be alert for warning signs that may appear during the immediate postpartum period.
- After an emergency childbirth out of the hospital, stimulation of the mother’s nipple manually or by the infant’s sucking stimulates the release of oxytocin from the maternal posterior pituitary gland; oxytocin stimulates the uterus to contract and thereby prevents hemorrhage.

Answer Guidelines to Critical Thinking Exercises

Oral Intake in Labor

1. Yes, there is evidence to support the nurse’s response concerning Margot’s request for something to eat and drink while in early labor.

2. a. Labor requires energy, and there is a loss of fluids during childbirth. Adequate intake of calories and fluids is needed to meet these needs and losses. If the needs are not met, labor progres can slow down and the woman can develop ketosis. She may also be at risk for not having enough energy to push during second stage, thus increasing her risk for a forceps- or vacuum-assisted birth.

   b. Fasting in labor has been identified by many women as a stressor. Fasting has been described as a source of frustration related to feeling a sense of loss of control over being able to make a decision about eating or drinking in labor.

   c. A woman’s culture may influence whether she will want to eat or drink during labor. For example, in some cultures, a woman will drink only warm drinks as she believes that this practice will facilitate birth and the delivery of the placenta (CNM Data Group, 1999; D’Avanzo & Geissler, 2003).

3. One priority for the nurse would be to do a check for ketones in the urine at each void. Another priority is to assess the woman’s energy level at frequent intervals. Oral fluids should be provided if ordered. If there is no order, the nurse should contact the doctor or nurse-midwife, provide information about Margot’s labor status and her request for some type of nourishment, and advocate that the request be granted.

   4. The evidence would seem to objectively support this action. Withholding fluids and food in labor is a form of care that is unlikely to be beneficial, and offering oral fluids should be en-
courage (Enkin et al., 2000; Hofmeyr, 2005). Clear liquids are commonly given in early labor and can meet the woman’s hydration needs and energy demands. The woman may also feel more comfortable and more in control (Schepers et al., 2001). However, an exploratory study with Australian midwives concluded that there was not enough conclusive research evidence to support any stance on oral intake in labor (Parsons, 2004).

b. Fetus and newborn: brachial plexus injury, fractures of the humerus and clavicle, spinal cord injury, subgaleal hemorrhage, and fetal death. Mother: perineal injuries (third- and fourth-degree lacerations), abdominal bruising, fractured ribs, liver rupture, uterine rupture, uterine inversion, possible amniotic fluid embolism. Nurse: back, arm, wrist, and hand injuries have been reported.

c. Fundal pressure should be avoided in the case of shoulder dystocia. If fundal pressure is applied, the anterior shoulder is likely to be further impacted, the birth delayed, and the risk of fetal injury increased. Suprapubic pressure is more commonly used to relieve shoulder dystocia.

d. Provider needs to be patient; pain relief measures should aim for epidural analgesia, not anesthesia; pushing may be delayed to allow passive descent to prevent maternal fatigue; directed coaching may be applied in pushing efforts.

The fetus needs to be assessed. If the FHR and fetal heart pattern are reassuring, there is no need to rush to birth and the mother can have a period of rest. Directed coaching in pushing can be provided.

There is little evidence in the literature about the risks and benefits of fundal pressure. The literature that exists mainly describes medicolegal problems when fundal pressure to relieve shoulder dystocia was used and it resulted in injury to the fetus or newborn. There is very limited information about the use of fundal pressure to shorten second-stage labor in low-risk women.

The optimal solution to such requests is to develop an interdisciplinary plan to manage risk before the occasion for the request for application of fundal pressure arises. Each department must develop its own approach. The attorney and professional liability insurance carrier of the agency should be involved in the discussion. If nurses are to apply fundal pressure, they must be trained in the proper application. The use of fundal pressure should be documented.


Resources

American College of Nurse Midwives
8403 Coloville Rd. Suite 1550
Silver Springs, MD 20910
240-481-8100
www.nmisn.org

Association of Labor Assistants and Childbirth Educators (ALACE)
P.O. Box 390496
Cambridge, MA 02139
617-441-3500
www.alace.org

Childbirth Graphics
P.O. Box 21207
Waco, TX 76792-1207
800-299-3366
www.childbirthgraphics.com

Childbirth Organizer
www.childbirth.org

Coalition for Improving Maternity Services (CIMS)
P.O. Box 2346
Pompano Beach, FL 33204
888-282-CIMS
www.motherfriendly.org

Doula of North America (DONA)
P.O. Box 626
Jasper, IN 47547
868-788-DONA
www.dona.com

Gentlebirth
www.gentlebirth.org

Global Maternal/Child Health Association and Waterbirth International
P.O. Box 1400
Wilsonville, OR 97070
503-673-0026
References


