

# AHRQ Safety Program for Perinatal Care

## Safe Medication Administration Oxytocin

**Purpose of the tool:** This tool describes the key perinatal safety elements with examples for the safe administration of oxytocin during labor. The key elements are presented within the framework of the Comprehensive Unit-based Safety Program (CUSP).

**Who should use this tool:** Nurses, physicians, midwives, pharmacists, and other labor and delivery (L&D) unit staff involved in the preparation and administration of oxytocin during labor.

**How to use this tool:** Review the key perinatal safety elements with L&D leadership and unit staff to determine how elements will be implemented on your L&D unit. Consider any existing facility policies or processes related to oxytocin use. Consider using preprinted orders, standing orders, and staff training to support implementation. A sample of how some of these key perinatal safety elements can be incorporated into a unit approach to safe oxytocin administration is provided in the Appendix of this tool.

### Key Perinatal Safety Elements

<i>Standardize When Possible (CUSP Science of Safety)</i>	
Key Perinatal Safety Elements	Examples
Standard criteria established for oxytocin use.	<ul style="list-style-type: none"><li>• Elective induction criteria are established:<ul style="list-style-type: none"><li>○ Hard-stop policy against scheduling early elective induction; policy is communicated broadly and implementation monitored.<sup>1</sup></li><li>○ The evidence is clear that elective induction prior to 39 weeks is associated with neonatal harms.<sup>1,2,3</sup></li><li>○ The evidence is inconclusive about the maternal and neonatal benefits and harms of induction between 39 and 41 weeks.<sup>4</sup></li></ul></li><li>• Medical indications for labor induction may vary. Several professional organizations, guidelines, and evidence reviews offer examples of maternal and fetal conditions that may be indications for medical induction.<sup>5,6,7,8</sup></li></ul>



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<b>Standardize When Possible (CUSP Science of Safety) (continued)</b>	
<b>Key Perinatal Safety Elements</b>	<b>Examples</b>
<p>Standard criteria established, for oxytocin use. (continued)</p>	<ul style="list-style-type: none"> <li>• Medical indications for labor augmentation may also vary. Labor augmentation with oxytocin may reduce time to delivery but has no impact on rate of Cesarean section or instrumental vaginal delivery.<sup>9</sup> Several professional organizations, guidelines, and evidence reviews offer examples of conditions that may be indications for oxytocin use for labor augmentation.<sup>6,10</sup></li> <li>• Absence of contraindications for oxytocin use verified and documented. Contraindications included on the manufacturer’s drug label include<sup>11</sup>—             <ul style="list-style-type: none"> <li>○ Cephalopelvic disproportion</li> <li>○ Unfavorable fetal positions or presentations</li> <li>○ In obstetrical emergencies where benefit-to-risk ratio favors surgical intervention</li> <li>○ In fetal distress, where delivery is not imminent</li> <li>○ Where adequate uterine activity fails to achieve satisfactory progress</li> <li>○ Where the uterus is already hyperactive or hypertonic</li> <li>○ In cases where vaginal delivery is contraindicated: invasive cervical carcinoma, active herpes genitalis, total placenta previa, vasa previa, and cord presentation or prolapse</li> <li>○ Hypersensitivity to the drug</li> </ul> <p>In addition, professional organizations, guidelines, or evidence reviews may offer examples of maternal and fetal conditions that are contraindications for use,<sup>6,7</sup> such as fetal macrosomia, unfavorable bishop score, prior classical (vertical) cesarean incision, or previous myomectomy entering the endometrial cavity.</p> </li> <li>• Physician capable of performing a cesarean delivery is readily available whenever oxytocin is administered.</li> </ul>

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<b>Standardize When Possible (CUSP Science of Safety) (continued)</b>	
<b>Key Perinatal Safety Elements</b>	<b>Examples</b>
Use a uniform mixed preparation unitwide for all patients to reduce variability and risk for error.	<ul style="list-style-type: none"> <li>• A uniform mixed preparation of oxytocin for infusion is established and consistently used for all patients (e.g., 10 units/L).</li> </ul>
Have two standard-dosing protocols available for use: a low-dose protocol and a high-dose protocol.	<ul style="list-style-type: none"> <li>• A standard dosing protocol (i.e., starting dose, incremental dose increase, frequency of increase, and maintenance dose) should be used consistently for all patients to reduce variability and risk of error.<sup>12</sup></li> <li>• The risks and benefits of low- versus high-dose oxytocin protocols remain an active area of research and debate.<sup>10,13,14</sup> Both protocols may be appropriate, so two standard dosing protocols may need to be defined, one for low-dose and one for high-dose oxytocin.<sup>6</sup> Two sample dosing protocols are available in the Appendix of this tool. Other example dosing protocols are also available.<sup>15,16</sup></li> </ul>
Use a calibrated infusion pump.	<ul style="list-style-type: none"> <li>• Oxytocin line attached via calibrated infusion pump into the proximal port of the mainline intravenous (IV) line.</li> <li>• IV bag, tubing, and infusion pump labeled in a standard and consistent manner.</li> </ul>
Use uniform parameters for maternal and fetal monitoring and provider notification prior to initiation of oxytocin and during infusion.	The use of the same uniform parameters for fetal and maternal monitoring and provider notification before and during oxytocin use minimizes variability across providers and nursing staff in order to reduce the risk of error.
Use standard National Institute of Child Health and Human Development (NICHD) nomenclature to document and communicate fetal monitoring findings.	The use of standard NICHD nomenclature <sup>17,18,19</sup> reduces confusion and risk of error. Units can use cognitive aids at the bedside, internal training, and external certification courses to ensure staff knowledge and skills with respect to interpreting fetal heart rate (FHR) patterns using NICHD nomenclature.

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<b>Create Independent Checks (CUSP Science of Safety)</b>	
<b>Key Perinatal Safety Elements</b>	<b>Examples</b>
<p>Assess appropriateness of medication use in patient by staff other than the ordering provider.</p>	<p>An independent verification of indications and maternal and fetal status per unit-established standard criteria is recommended to minimize use in cases where risk may exceed benefit.</p> <ul style="list-style-type: none"> <li>• Indications for use (e.g., medical induction, labor augmentation)</li> <li>• Contraindications for use</li> <li>• Maternal status prior to initiation, such as cervical status</li> <li>• Fetal status prior to initiation, such as fetal presentation and station, and baseline FHR</li> </ul>
<p>Use unit-established parameters for maternal and fetal monitoring at regular intervals.</p>	<p>Use unit-established uniform parameters and specified regular time intervals for maternal and fetal monitoring to identify changes in status requiring alteration in management. Such parameters might include the following:</p> <ul style="list-style-type: none"> <li>• <i>Maternal assessment prior to initiation:</i> cervical status (effacement, dilation, cervical ripening devices removed for specified period of time, etc.), vital signs, tocography including resting tone, abdominal signs and symptoms, vaginal bleeding</li> <li>• <i>Fetal assessment prior to initiation:</i> baseline electronic fetal monitoring tracing, assessment of fetal presentation and station</li> <li>• <i>Maternal assessment during infusion:</i> vital signs; fluid intake/output; tocography, including resting tone; abdominal signs and symptoms; vaginal bleeding; signs/symptoms of water intoxication (headache, nausea, vomiting, confusion, hypotension, tachycardia, arrhythmias)</li> <li>• <i>Fetal assessment during infusion:</i> FHR pattern</li> </ul>

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<b>Create Independent Checks (CUSP Science of Safety) (continued)</b>	
<b>Key Perinatal Safety Elements</b>	<b>Examples</b>
<p>Use established maternal and fetal parameters for timely provider notification and provider response expectations.</p>	<p>Use of uniform, unit-established parameters for provider notification and expectations for provider response ensures that signs of potential adverse effects or clinical deterioration are communicated for situational awareness and response if needed. This may include provisions for activation of a rapid response.</p> <ul style="list-style-type: none"> <li>• Provider notification criteria can include Category II or III FHR, tachysystole, decreased urine output, signs of uterine rupture, signs of water intoxication.</li> <li>• Parameters for notification should use standard NICHD nomenclature and interpretation.               <ul style="list-style-type: none"> <li>○ NICHD-defined tachysystole is more than five contractions in 10 minutes, averaged over a 30-minute window.<sup>17,18,19</sup></li> <li>○ Some professional organizations, guidelines, or clinical references may suggest provider notification for tocographic findings that don't necessarily meet the NICHD definition of tachysystole. Examples include contractions lasting 2 minutes or more, contractions of normal duration occurring within 1 minute of one another, insufficient return of uterine resting tone between contractions or via palpation, intraamniotic pressure above 25 mmHg between contractions via intrauterine pressure catheter.</li> </ul> </li> </ul>
<p>Have standing orders for nurses to respond to tachysystole and for reducing, stopping, and restarting oxytocin infusion.</p>	<p>Use of uniform, unit-established standing orders allows nurses to provide initial management in response to tachysystole.<sup>5</sup> Standing orders can be written to vary depending on FHR and other maternal signs and symptoms—for example, response to tachysystole with a Category 1 or II FHR tracing versus response with a Category III FHR tracing.</p> <ul style="list-style-type: none"> <li>• Standing orders can specify criteria for reducing or stopping oxytocin infusion, nonpharmacologic measures (e.g., repositioning patient, increasing fluids, oxygen administration), and tocolytic agents.</li> <li>• Standing orders can also specify criteria for restarting infusion, though some sites may choose to require a provider order to restart as an independent check to ensure safety of restarting the infusion.</li> </ul>

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<b>Learn From Defects (CUSP Module)</b>	
<b>Key Perinatal Safety Elements</b>	<b>Examples</b>
Debrief and analyze near misses and adverse events related to oxytocin use.	<ul style="list-style-type: none"> <li>• Unit can decide its approach to debriefing events based on seriousness of event, expertise available, and data monitoring and tracking capabilities.               <ul style="list-style-type: none"> <li>○ Informal debriefings by clinical team immediately following event using an approach that does not shame or blame individuals. This allows for understanding of what went well, what could have gone better, and what could be done differently next time.</li> <li>○ Regular forum with a multidisciplinary team can help the unit learn from defects and sensemaking using the following tools:                   <ul style="list-style-type: none"> <li>▪ Discovery form</li> <li>▪ Root cause analysis</li> <li>▪ Eindhoven model</li> <li>▪ Failure mode and effects analysis</li> <li>▪ Probabilistic risk assessment</li> <li>▪ Causal tree worksheet</li> <li>▪ Interdisciplinary case reviews</li> </ul> </li> </ul> </li> </ul>
Have a process in place to review elective or medical inductions outside of defined policy indications.	Unit can decide its approach to reviewing cases of elective or medical inductions that occur outside of the unit's established policy for inductions. This might include an existing medical peer-review process or review by a perinatal safety or quality committee.
Have a process in place to review severe maternal or neonatal morbidity and mortality events.	<p>Unit can decide its approach to reviewing cases of severe maternal or neonatal morbidity or mortality. This might include an existing medical peer-review process or review by a perinatal safety or quality committee.</p> <p>A sample process and forms for a committee review are available at the Council on Patient Safety in Women's Health Care, <a href="http://www.safehealthcareforeverywoman.org">http://www.safehealthcareforeverywoman.org</a>. Select "Get SMM Forms."</p>
Share outcomes or process improvements from the informal (debriefing) and formal analysis with staff to achieve transparency and organizational learning.	Sites can decide how often this information will be shared, how much information will be shared, and with whom, and whether this is specified in a unit policy or is handled more informally.

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<b>Simulation (Safety Program for Perinatal Care Signature Element)</b>	
<b>Key Perinatal Safety Elements</b>	<b>Examples</b>
<p>Sample scenario:</p> <ul style="list-style-type: none"> <li>• uterine tachysystole</li> </ul>	<ul style="list-style-type: none"> <li>• A sample scenario available through the Safety Program for Perinatal Care can be used to train teams on the key perinatal safety elements related to oxytocin use. This scenario reinforces teamwork and communication related to the following:                             <ul style="list-style-type: none"> <li>○ situational awareness</li> <li>○ parameters for monitoring and provider notification</li> <li>○ timely use of standing orders for managing tachysystole</li> <li>○ communication with rapid responders</li> <li>○ communicating with patient/family</li> <li>○ using briefings, huddles, and debriefings</li> </ul> </li> </ul>
<b>Teamwork Training (TeamSTEPPS®)</b>	
<b>Key Perinatal Safety Elements</b>	<b>Examples</b>
<p>Communication between unit staff and admitting providers about admission for inductions outside of the unit’s defined criteria for induction.</p>	<p>Use TeamSTEPPS techniques for communication and collaboration when disagreements about admission for induction arise:</p> <ul style="list-style-type: none"> <li>• communicating the hard-stop policy on inductions outside of the unit’s defined criteria through a planned process</li> <li>• Use of TeamSTEPPS techniques of—                             <ul style="list-style-type: none"> <li>○ advocacy and assertion</li> <li>○ CUS technique (<b>C</b>oncerned, <b>U</b>ncomfortable, <b>S</b>afety issue)</li> <li>○ collaboration for commitment to a common mission</li> </ul> </li> <li>• These techniques can allow staff the ability and safe environment to “speak up” and have a “just in time” crucial conversation.</li> </ul>

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<b>Teamwork Training (TeamSTEPPS®) (continued)</b>	
<b>Key Perinatal Safety Elements</b>	<b>Examples</b>
<p>Situational awareness during oxytocin use.</p>	<p>Situational awareness refers to all staff caring for the patient—</p> <ul style="list-style-type: none"> <li>• knowing what the patient’s plan is through briefings and team management,</li> <li>• being aware of what is going on and what is likely to happen next,</li> <li>• verifying and checking back on information, and</li> <li>• providing ongoing updates.</li> </ul> <p>In the context of oxytocin use, this includes staff alertness for early signs of fetal or maternal distress, and knowing the plan for a timely response to prevent further deterioration.</p>
<p>Use SBAR (<b>S</b>ituation, <b>B</b>ackground, <b>A</b>ssessment, and <b>R</b>ecommendation), callouts, huddles, and closed-loop communication techniques.</p>	<ul style="list-style-type: none"> <li>• Use of SBAR, callouts, and closed-loop communication among team members. In the context of oxytocin use, these techniques are particularly useful— <ul style="list-style-type: none"> <li>○ for communicating a sense of urgency when requesting other unit personnel and provider for help responding to sudden changes in maternal or fetal status (e.g., tachysystole),</li> <li>○ for communicating changes in maternal or fetal status,</li> <li>○ when giving and receiving new orders to manage sudden changes in maternal or fetal status,</li> <li>○ when briefing new care team members who arrive to support a rapid response, such as when notifying providers regarding tachysystole and patient’s response to measures provided through standing orders, and</li> <li>○ when regrouping to discuss plan of care if patient fails to respond to initial measures.</li> </ul> </li> </ul>



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<b>Teamwork Training (TeamSTEPPS®) (continued)</b>	
<b>Key Perinatal Safety Elements</b>	<b>Examples</b>
<p>Communicate during transitions of care.</p>	<p>Use of transition communication techniques assures a shared mental model of plan of care and patient risks between shifts or between units.</p>
<p>Have high-reliability teams:</p> <ul style="list-style-type: none"> <li>• Anyone can sound an alarm, request help or challenge the status quo</li> <li>• Hierarchy is minimized</li> <li>• Communication is continuous, valued, and expected</li> </ul>	<ul style="list-style-type: none"> <li>• Team members protect each other from work overload and place requests or offers for assistance in the context of patient safety. It is expected that assistance will be actively sought and offered.</li> <li>• Team members will advocate for the patient when one person’s viewpoint does not coincide with another using these team communication techniques:               <ul style="list-style-type: none"> <li>○ Assert a corrective action in a firm and respectful manner.</li> <li>○ Use CUS language: “I am concerned. I am uncomfortable. This is a safety issue.”</li> <li>○ Use the "two-challenge" rule, repeating concern, and asking whether you have been heard.</li> <li>○ Use a predetermined “stop the line” phrase.</li> </ul> </li> <li>• Team members manage conflict using a constructive positive approach to emphasize “what is right, not who is right”:               <ul style="list-style-type: none"> <li>○ <b>D:</b> Describe the specific behavior or situation.</li> <li>○ <b>E:</b> Express how the situation makes you feel or concerns you.</li> <li>○ <b>S:</b> Suggest other alternatives.</li> <li>○ <b>C:</b> Consequences stated in terms of team goals, not punishment.</li> </ul> </li> </ul>

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<b><i>Patient and Family Engagement (CUSP Science of Safety)</i></b>	
<b>Key Perinatal Safety Elements</b>	<b>Examples</b>
Discuss risks and benefits of oxytocin use for labor induction or augmentation with patient.	<ul style="list-style-type: none"><li>• Use unit-established process for conveying risks and benefits of oxytocin use to patient and family.</li></ul>
Educate patient/family regarding oxytocin use.	<ul style="list-style-type: none"><li>• Use unit-established approach for nursing-led patient education regarding oxytocin infusion procedure, mobility restrictions if applicable, availability of wireless fetal monitoring, and expected effects.</li><li>• Educate the patient and family about concerning signs and symptoms to report to nursing staff.</li><li>• Provide instructions for reporting signs and symptoms to nursing staff.</li></ul>

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## Appendix

*Every effort was made to ensure the accuracy and completeness of this resource. However, the U.S. Department of Health and Human Services makes no warranties regarding errors or omissions and assumes no responsibility or liability for loss or damage resulting from the use of information contained within.*

### **SAMPLE Safe Medication Administration for Labor Induction or Augmentation with Oxytocin**

Category	Procedure
<b>1. Verifying and documenting indication for use</b>	<ul style="list-style-type: none"><li>• Verify and document absence of contraindications for use of oxytocin for induction (or augmentation). Contraindications include—<ul style="list-style-type: none"><li>– gestational age less than 39 completed weeks without medication indication for induction (i.e., early elective induction)</li><li>– fetal macrosomia (estimated fetal weight &gt; 4500 grams)</li><li>– placenta or vasa previa</li><li>– transverse lie or other malpresentation</li><li>– cord prolapse</li><li>– prior classical uterine incision or previous transfundal uterine surgery</li><li>– active genital herpes</li><li>– pelvic structural deformities</li><li>– invasive cervical carcinoma</li></ul></li><li>• Verify and document that a physician capable of performing a cesarean delivery is readily available.</li><li>• Verify and document evidence of medical indication for induction or augmentation, regardless of gestational age, including discussion of risks and benefits of oxytocin use versus nonuse with the patient and her family. Examples include but are not limited to—<ul style="list-style-type: none"><li>– hypertensive disorders of pregnancy</li><li>– chorioamnionitis</li><li>– maternal medical condition severe intrauterine fetal growth retardation</li><li>– pregnancy exceeding 41 completed weeks</li><li>– premature spontaneous rupture of membranes with absence of contractions</li></ul></li><li>• For inductions that are scheduled for women at greater than 39 completed weeks without a medical indication (i.e., non-early elective inductions), document gestational dating and</li></ul>

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Category	Procedure																																			
<p><b>1. Verifying and documenting indications for use (continued)</b></p>	<p>discussion with patient of risks and benefits of elective induction, with consideration to parity and cervical status.</p> <p>Examples of gestational dating documentation include the following:</p> <ul style="list-style-type: none"> <li>– Ultrasound measurement of crown-rump length obtained between 6 and 12 weeks supports a gestational age of at least 39 completed weeks.</li> <li>– Ultrasound obtained at 13 to 20 weeks confirms gestational age of at least 39 completed weeks determined by clinical history and physical examination.</li> <li>– Fetal heart tones have been documented for at least 30 weeks by Doppler.</li> </ul> <p>It has been 36 weeks since a positive serum or urine human chorionic gonadotropin (HCG) pregnancy test.</p> <ul style="list-style-type: none"> <li>• Verify and document Bishop score (inductions only).                             <ul style="list-style-type: none"> <li>– For all inductions, women with an unfavorable cervix (defined as a score of 6 or less) should be counseled on the possible need for repeat induction and roughly twofold increased risk of cesarean delivery.<sup>1</sup> The risk and benefits of induction will vary based on indication for induction and documentation of the discussion about risks, benefits, and alternatives should be documented to the fullest extent possible.<sup>2</sup></li> </ul> </li> </ul> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 25%;">Feature</th> <th colspan="4">Modified Bishop Score<sup>3</sup></th> </tr> <tr> <th></th> <th>0</th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td><b>Dilation (cm)</b></td> <td>&lt;1</td> <td>1–2</td> <td>3–4</td> <td>&gt;4</td> </tr> <tr> <td><b>Length (cm) or Effacement (%)</b></td> <td>&gt;4 0–30</td> <td>2–4 40–50</td> <td>1–2 60–70</td> <td>&lt;1 &gt;80</td> </tr> <tr> <td><b>Station</b></td> <td>-3</td> <td>-2</td> <td>-1 or 0</td> <td>+1 or +2</td> </tr> <tr> <td><b>Consistency</b></td> <td>Firm</td> <td>Medium</td> <td>Soft</td> <td>-</td> </tr> <tr> <td><b>Position</b></td> <td>Posterior</td> <td>Midposition</td> <td>Anterior</td> <td>-</td> </tr> </tbody> </table>	Feature	Modified Bishop Score <sup>3</sup>					0	1	2	3	<b>Dilation (cm)</b>	<1	1–2	3–4	>4	<b>Length (cm) or Effacement (%)</b>	>4 0–30	2–4 40–50	1–2 60–70	<1 >80	<b>Station</b>	-3	-2	-1 or 0	+1 or +2	<b>Consistency</b>	Firm	Medium	Soft	-	<b>Position</b>	Posterior	Midposition	Anterior	-
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<p><b>2. Assessment</b></p>																																				
<p>Fetal assessment</p>	<ul style="list-style-type: none"> <li>• Assess a 20-minute electronic fetal monitoring EFM tracing strip prior to the administration of oxytocin.</li> <li>• Assess fetal presentation and station (fetal descent) prior to the administration of oxytocin.</li> <li>• During oxytocin infusion titration, assess fetal heart rate (FHR), contraction pattern, and intensity every 15 minutes.</li> <li>• Once an adequate contraction pattern is reached, assess FHR and contraction pattern and intensity every 30 minutes.</li> </ul>																																			

## Safe Medication Administration—Oxytocin

Category	Procedure
Maternal assessment	<ul style="list-style-type: none"> <li>• Assess cervical status prior to the administration of oxytocin, noting—               <ul style="list-style-type: none"> <li>– effacement,</li> <li>– dilation, and</li> <li>– removal of cervical ripening devices</li> </ul> </li> <li>• Assess blood pressure, pulse, respiratory rate every hour.</li> <li>• Assess intake and output every 4 hours.</li> <li>• Monitor for signs of uterine hypertonus, tachysystole, and uterine rupture: tachysystole (more than five contractions in a 10-minute window, averaged over 30 minutes)               <ul style="list-style-type: none"> <li>– uterine hypertonus (resting tone greater than 20mmHg; verify with internal monitor)</li> <li>– abdominal rigidity and pain</li> <li>– hypotension</li> <li>– tachycardia</li> <li>– vaginal bleeding</li> </ul> </li> <li>• Monitor for signs of water intoxication:               <ul style="list-style-type: none"> <li>– headache</li> <li>– nausea and vomiting</li> <li>– confusion</li> <li>– decreased urine output (&lt;30mL/hr)</li> <li>– hypotension</li> <li>– tachycardia, cardiac arrhythmias</li> </ul> </li> </ul>
<b>3. Provider notification parameters and standing orders for response to complications</b>	<p><u>Provider Notification Parameters</u></p> <ul style="list-style-type: none"> <li>• tachysystole (more than five contractions within 10 minutes, averaged over a 30-minute window)</li> <li>• contractions lasting 2 minutes or more</li> <li>• contractions of normal duration occurring within 1 minute of one another</li> <li>• insufficient return of uterine resting tone between contractions or via palpation</li> <li>• intraamniotic pressure above 25 mmHg between contractions via intrauterine pressure catheter</li> </ul>

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<p><b>3. Provider notification parameters and standing orders for response to complications (continued)</b></p>	<p><u>Standing Orders for Response to Complications</u></p> <p>For tachysystole, the following should be implemented as standing physician orders so that nurses can implement without delay:</p> <p><i>For Category I FHR pattern and tachysystole:</i></p> <ul style="list-style-type: none"> <li>• Turn patient to left (preferable) or right lateral position.</li> <li>• Increase maintenance IV rate or administer 500 cc LR IV bolus.</li> </ul> <p><b>Note:</b> Consider any fluid restrictions the patient may have.</p> <p>If uterine activity does not return to normal after 10 minutes, decrease the oxytocin rate by at least half; if uterine activity has not returned to normal after 10 more minutes, discontinue the oxytocin until uterine activity is less than five contractions in 10 minutes.</p> <p><i>For Category II and III FHR and tachysystole:</i></p> <ul style="list-style-type: none"> <li>• Discontinue oxytocin.</li> <li>• Turn patient to left (preferable) or right lateral position.</li> <li>• Increase maintenance IV rate or administer 500 cc LR IV bolus.</li> </ul> <p><b>Note:</b> Consider any fluid restrictions the patient may have.</p> <ul style="list-style-type: none"> <li>• Administer oxygen at 8 to 15 L/min. via nonrebreather face mask if the first interventions do not resolve the abnormal FHR pattern. Discontinue oxygen as soon as possible.</li> </ul> <p>If no response, administer terbutaline 0.25 mg SC.</p> <p>Discontinue oxytocin infusion and notify provider for—</p> <ul style="list-style-type: none"> <li>• Abnormal FHR patterns (categories II and III)</li> <li>• Urine output &lt;30 mL/hr or maternal hypotension</li> <li>• Signs of uterine rupture (increased uterine tone, abdominal rigidity, tearing pain reported by patient, hypotension, tachycardia, vaginal bleeding)</li> <li>• Signs of water intoxication</li> </ul>



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<p><b>3. Provider notification parameters and standing orders for response to complications (continued)</b></p>	<p>For decreased urine output or maternal hypotension, administer 500 cc of LR by IV bolus, and notify provider of response to bolus.</p> <ul style="list-style-type: none"> <li>• Notify provider of actions taken and maternal-fetal response.</li> </ul> <p><i>Resumption of oxytocin after discontinuation:</i></p> <p><i>[Note: some facilities choose to require a provider order to restart oxytocin]</i></p> <p>If oxytocin has been discontinued for less than 30 minutes—</p> <ul style="list-style-type: none"> <li>• If the FHR is normal and contraction frequency, intensity, and duration are normal, resume oxytocin at no more than half the rate that caused the tachysystole, and gradually increase the rate as appropriate based on unit protocol and maternal-fetal status.</li> <li>• If oxytocin was discontinued for more than 30 minutes, resume oxytocin at 1 mU/min.</li> </ul>
<p><b>4. Low-dose oxytocin administration</b> <i>(this is one example of a low-dose protocol; other examples may use different starting doses, titration intervals, and titration dose increases)</i></p>	<ul style="list-style-type: none"> <li>• Obtain oxytocin in your institution's standard dilution (e.g., 10 units/L or 20 units/L)</li> <li>• Label IV bag, IV tubing, and infusion pump.</li> <li>• Attach oxytocin line via calibrated infusion pump into the proximal port of the mainline IV.</li> <li>• Begin oxytocin infusion at 1–2 milliunits/min.</li> </ul> <p><b>Note:</b> Do not start oxytocin on patients who are &lt; 4 hours post-insertion of misoprostol.</p> <ul style="list-style-type: none"> <li>• Increase infusion rate 1-2 milliunits /min. every 30–45 minutes until—             <ul style="list-style-type: none"> <li>– adequate contraction pattern is obtained (e.g., contractions every 2 to 3 minutes, lasting 50–60 seconds each)</li> <li>-or-</li> <li>30 milliunits/min is reached</li> <li>-or-</li> <li>Contraction level of 200–220 Montevideo units is achieved (excluding a resting tone of 20 mmHg).</li> </ul> </li> <li>• Provider assessment is recommended once infusion rate is at 20 mU/min and is mandatory in order to exceed an infusion rate of 30 mU/min.</li> <li>• Discontinue oxytocin for 20 minutes after spontaneous or artificial rupture of the membranes, then restart oxytocin at 1/2 of the previous rate.</li> </ul>

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<p><b>5. High dose oxytocin administration</b>  <i>(this is one example of a high-dose protocol; other examples may use different starting doses, titration intervals, and titration dose increases)</i></p>	<ul style="list-style-type: none"> <li>• Obtain oxytocin in your institution’s standard dilution (e.g., 10 units/L or 20 units/L).</li> <li>• Label IV bag, IV tubing, and infusion pump.</li> <li>• Attach oxytocin line via calibrated infusion pump into the proximal port of the mainline IV.</li> <li>• Begin oxytocin infusion at 6 milliunits/min.</li> </ul> <p><b>Note:</b> Do not start oxytocin on patients who are &lt; 4 hours post-insertion of misoprostol.</p> <ul style="list-style-type: none"> <li>• Increase infusion rate 6 milliunits /min. every 15 minutes until—               <ul style="list-style-type: none"> <li>– adequate contraction pattern is obtained (e.g., contractions every 2 to 3 minutes, lasting 50 to 60 seconds each)</li> <li>-or-</li> <li>30 milliunits/min. is reached</li> <li>-or-</li> <li>Contraction level of 200 to 220 Montevideo units is achieved (excluding a resting tone of 20 mmHg).</li> </ul> </li> <li>• Provider assessment is recommended once infusion rate is at 20 mU/min. and is mandatory in order to exceed an infusion rate of 30 mU/min.</li> <li>• Decrease mainline intravenous fluids to maintain total fluid rate of 125 ml/hr.</li> <li>• Discontinue oxytocin for 20 minutes after spontaneous or artificial rupture of the membranes, then restart oxytocin at 1/2 of the previous rate.</li> </ul>
<p><b>6. Patient comfort and education</b></p>	<ul style="list-style-type: none"> <li>• Explain the oxytocin procedure, mobility or dietary restrictions if applicable, availability of wireless fetal monitoring, and expected results.</li> <li>• Explain the signs of uterine hypertonus or tachysystole and water intoxication to the patient/caregiver; ask the patient/caregiver to monitor these signs and notify the nurse if these signs occur.</li> <li>• Ask the patient to describe/rate her comfort level at periodic intervals.</li> <li>• Promote comfort using positioning, breathing and relaxation exercises, and medications if needed.</li> <li>• Assess the need for increased analgesia or epidural anesthesia.</li> </ul>

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<b>7.Communication</b>	<ul style="list-style-type: none"><li>● Use briefings to verify medication bag, pump settings, and IV tubing are correct during change of shifts or other transitions of care team.</li><li>● Use TeamSTEPPS communication techniques to—<ul style="list-style-type: none"><li>○ request urgent additional help</li><li>○ assert and advocate for safe practices (CUS)</li><li>○ brief new team members, such as during a rapid response (SBAR)</li><li>○ acknowledge receipt of orders (closed-loop communication)</li><li>○ maintain situational awareness by sharing new information with team as it is learned.</li></ul></li></ul>

### References

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3. Bishop EH. Pelvic scoring for elective induction. *Obstet Gynecol.* 1964;24:266-8. PMID: 14199536.