



Effective Health Care

Nitrous Oxide for Management of Labor Pain Nomination Summary Document

Results of Topic Selection Process & Next Steps

- Nitrous oxide for the management of labor pain will go forward for refinement as a systematic review. The scope of this topic, including populations, interventions, comparators, and outcomes, will be further developed in the refinement phase.
- When key questions have been drafted, they will be posted on the AHRQ Web site and open for public comment. To sign up for notification when this and other Effective Health Care (EHC) Program topics are posted for public comment, please go to <http://effectivehealthcare.ahrq.gov/index.cfm/join-the-email-list1/>.

Topic Description

Nominator: Individual

Nomination Summary: The nominator is interested in the safety and effectiveness of nitrous oxide for labor pain management in low-risk, full-term planned vaginal deliveries, including maternal and child health outcomes, efficacy of pain relief, satisfaction with the birth experience, and effect on cesarean section rates.

Population(s): pregnant women, not designated high-risk, in 2nd and/or 3rd stage of labor, attempting vaginal delivery

Intervention(s): nitrous oxide inhalation

Comparator(s): no analgesic/anesthetic intervention, analgesia/anesthesia, systemic medications (such as opioids), other inhalational agents, non-pharmacologic methods of pain management

Outcome(s): efficacy of pain relief, maternal satisfaction with pain relief, maternal satisfaction with labor and birth experience, rate of operative delivery (including c-section), maternal and child health outcomes including adverse events

- Key Questions from Nominator:**
1. For low-risk women delivering a full-term baby vaginally, what is the comparative effectiveness of the use of nitrous oxide for pain management versus an epidural or other pain management strategies?
 2. What are the effects on the birth experience and maternal and child health outcomes?
 3. Is there evidence to suggest the use of nitrous oxide could decrease rates of cesarean sections in the US?

Considerations

- The topic meets all EHC Program selection criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
- The majority of births in the United States involve the use of some form of analgesia for labor pain relief. Although nitrous oxide is used less frequently than other agents in the US, it is a commonly available option for labor pain relief in several non-US countries. The availability of nitrous oxide for labor pain relief is one of growing interest in the US; however, guidance on the use of nitrous oxide in the labor and delivery unit is lacking from relevant US professional organizations, and systematic review of the evidence is limited.
- This topic will move forward as a new systematic review that will address the safety, effectiveness, and comparative effectiveness of nitrous oxide for pain relief during labor. The review may evaluate important comparators including other inhalation agents and epidurals. It may also address issues around patient monitoring, nursing protocol, collaborative care, and potential adverse effects including occupational and family member exposure to nitrous oxide.