



Effective Health Care

Home Oxygen Therapy

Nomination Summary Document

Results of Topic Selection Process & Next Steps

- Home oxygen therapy is not feasible for a full systematic review due to the limited data available for a review at this time.
- Although this topic is not moving forward as a research review, it could be considered for a potential new research project within the Effective Health Care (EHC) Program.

Topic Description

Nominator: Public payer

Nomination Summary: The nominator is interested in an evidence-based product to determine which children who are prescribed home oxygen therapy will benefit from it and whether it is a safe therapy. The nominator suggests that robust evidence-based guidance on this topic does not exist to guide coverage decisions.

Population(s): Children 0-20 years (including subgroups based on comorbidities and on age, including newborns, toddlers, preschool children, school age children, and adolescents) who have abnormal oxygen saturation while breathing room air caused by cardiac, pulmonary, or neurological conditions

Intervention(s): Oxygen therapy

Comparator(s): Usual medical management or no oxygen therapy

Outcome(s): Mortality, quality of life measures, functional capacity, development of complications, adverse effects and harms, ability to transition off of oxygen therapy, hospital or non-home care facility admissions, cost, and the need for (non family member) in-home health assistance

Setting: Home

- Key Questions from Nominator:**
1. Is home oxygen therapy effective for improving outcomes among children with abnormally lowered oxygen saturation compared with no oxygen therapy or other medical management?
 2. When is oxygen required for children ages 0-20? At what threshold levels of blood oxygen saturation should children aged 0 to 20 years with cardiac, pulmonary, neurologic or other diseases leading to lowered oxygen saturation receive supplemental oxygen therapy?
 3. What oxygen saturation levels are acceptable to meet the need for oxygen (saturation as measured either by arterial blood gas measurement or by transcutaneous oxygen saturation measurement)? For example, should the

- threshold be for an oxygen saturation of 88% or 94% or some other number?
4. Is there a different threshold for use during activity versus during rest?
 5. Is there a different threshold based on age? For example for ages 0-1, ages 9-10 as compared to ages 19-20.
 6. Are there sub-categories of comorbidity that require different levels of oxygen saturation for treatment (e.g., is there a difference between an infant with bronchopulmonary dysplasia versus a school age child with another condition)?

Considerations

- The topic meets EHC Program appropriateness and importance criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
- This topic is not feasible for a full systematic review due to the limited data available for a review at this time. Our literature scan supports the nominator's claim that there is a lack of good evidence-based guidance on this topic. Nearly all publications identified in our literature scan point to the fact that more research is needed to resolve clinical uncertainty and practice variation.
- The majority of existing research reflects short-term studies of infant populations receiving supplemental oxygen within the hospital setting. Data from older child and adolescent populations receiving supplemental oxygen therapy within the home setting are needed.
- Potential new research on this topic could help address the gap in evidence for older children and adolescents receiving home oxygen therapy.