



Effective Health Care

Noninvasive Positive Pressure Ventilation (NPPV) for Acute Respiratory Failure

Nomination Summary Document

Results of Topic Selection Process & Next Steps

- Noninvasive positive pressure ventilation (NPPV) for acute respiratory failure 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: Anonymous individual

Nomination Summary: The nominator is interested in the effectiveness of noninvasive positive pressure ventilation (NPPV) outside of the research setting for patients with chronic obstructive pulmonary disorder (COPD). The nominator is also interested in the comparative effectiveness of NPPV versus invasive ventilation such as intubation. Additionally, a clinical guideline development group has expressed interest in the topic nomination and suggested that it be expanded to include the effectiveness of NPPV in patients with acute cardiogenic pulmonary edema (ACPE).

Populations: Adults, particularly older adults with COPD and heart failure (ACPE), and any group at higher risk of respiratory failure.

Intervention: NPPV.

Comparators: Invasive ventilation including intubation and mechanical ventilation.

Outcomes: Health care utilization (e.g., length of hospital stay, health care costs, number of ventilator-free days, discharge to home rather than to another health care facility), mortality, patient comfort, and comparative harms (e.g., aspiration, aspiration pneumonia, and facial skin ulceration).

Key Questions from Nominator: 1. What is the comparative effectiveness of invasive ventilation versus NPPV in patients with respiratory failure from COPD?

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/.](http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/))
- Although there are several existing systematic reviews that address certain areas of this nomination, a comprehensive high-quality comparative effectiveness review that evaluates the strength of the evidence base for the use of noninvasive ventilation in both COPD and ACPE populations was not identified. To answer the nominator's question, clinicians, patients, policy makers, and guideline developers would have to consult multiple reviews, some of which are not available in the public domain. Despite the fact that these reviews have existed for several years and have shown a potential benefit from the use of NPPV and other noninvasive ventilation methods, significant variation in practice and utilization remain.
- This topic will move forward for refinement as a systematic review with a focus on COPD and ACPE as primary indications for NPPV and will emphasize setting, subpopulations, and effectiveness. Topic refinement may consider an expansion of the scope to include other indications for which there is emerging evidence of improved outcomes such as hypoxemic respiratory failure due to opportunistic infection in immunocompromised patients and post-extubation respiratory failure.