



Effective Health Care

Vagus Nerve Stimulation for Treatment-Resistant Depression in Adults & Children Nomination Summary Document

Results of Topic Selection Process & Next Steps

- The topic of vagus nerve stimulation (VNS) for treatment-resistant depression in adults was found to be addressed by an in-process comparative effectiveness review titled *Comparative Effectiveness of Non-Pharmacologic Treatments for Refractory Depression*. Given that the report underway covers this nomination, no further activity will be undertaken on this topic.
- For additional information on the populations and outcomes included in this report, please see the draft key questions on the Effective Health Care (EHC) Program Web site at <http://effectivehealthcare.ahrq.gov/healthInfo.cfm?infotype=rr&ProcessID=76>.
- The topic of vagus nerve stimulation (VNS) for treatment-resistant depression in children is not feasible for a full systematic review due to the limited data available for a review at this time.

Topic Description

Nominator: Public payer

Nomination Summary: The nominator is interested in the effectiveness of vagus nerve stimulation (VNS) for treatment-resistant depression. The nominator is interested in patients who have been chronically unresponsive to multiple treatment strategies.

Key Questions from Nominator: None

Considerations

- This topic has two main areas of focus:
 1. Vagus nerve stimulation (VNS) for treatment-resistant depression in adults
 2. Vagus nerve stimulation (VNS) for treatment-resistant depression in children
- The topic of VNS for treatment-resistant depression in adults is addressed by an in-process comparative effectiveness review titled *Comparative Effectiveness of Non-Pharmacologic Treatments for Refractory Depression*. The key questions of this report include:

1. For adults with treatment-resistant depression (TRD, defined as two or more failed adequate trials of a biologic intervention), do non-pharmacologic interventions such as electroconvulsive therapy (ECT), vagus nerve stimulation (VNS), repetitive transcranial magnetic stimulation (rTMS), or an evidence-based psychotherapy (e.g., cognitive therapy [CBT or IPT]) differ in efficacy or effectiveness in treating acute phase depressive symptoms (e.g., response and remission), whether as a single treatment or part of a combination treatment?
 2. For adults with TRD, do non-pharmacologic interventions differ in their efficacy or effectiveness for maintaining response or remission (e.g., preventing relapse or recurrence) whether as a single treatment or part of a combination treatment?
 3. Do non-pharmacologic interventions (single or combination) differ in their efficacy or effectiveness for treating TRD as a function of particular symptom subtypes (e.g., catatonic (frozen or hyper) or psychotic symptoms)?
 4. For adults with treatment-resistant depression, do non-pharmacologic interventions differ in safety, adverse events, or adherence? Adverse effects of interest include but are not limited to: amnesia, memory loss, headaches, post-operative complications.
 5. How do the efficacy, effectiveness, or harms of treatment with non-pharmacologic treatments for treatment-resistant depression differ for the following subpopulations?
 - elderly or very elderly patients; other demographic groups (defined by age, ethnic or racial groups, and sex);
 - patients with medical comorbidities (e.g., seizure history, stroke, diabetes, dementia, perinatal, ischemic heart disease, cancer).
 6. For adults with treatment-resistant depression, do non-pharmacologic interventions differ in regards to payor treatment costs and other health-related outcomes (e.g., quality of life)?
- The topic of VNS for treatment-resistant depression in children 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/>.)
- A literature scan revealed no trials evaluating vagus nerve stimulation for depression in a population younger than 18 years. In addition, no relevant observational studies were found. Therefore, the topic of VNS for treatment-resistant depression in children is not feasible for a full systematic review due to the limited data available for a review at this time.