



# Effective Health Care

## Harms and Benefits of Electronic Cigarette (E-cigarette or Vaping) Smoking Nomination Summary Document

### Results of Topic Selection Process & Next Steps

- The topic, *Harms and Benefits of Electronic Cigarette (E-cigarette or Vaping) Smoking*, was addressed by six systematic reviews, including one Cochrane systematic review, which focused on the health effects and smoking cessation results of e-cigarette use.
  - McRobbie H, Bullen C, Hartmann-Boyce J, Hajek P. Electronic cigarettes for smoking cessation and reduction. *Cochrane Database of Systematic Reviews* 2014, Issue 12. Art. No.: CD010216.
  - Pisinger C, Dossing M. A systematic review of health effects of electronic cigarettes. *Prev Med* Dec 2014; 69:248-260.
  - Orr KK, Asal NJ. Efficacy of electronic cigarettes for smoking cessation. *Ann Pharmacother* Nov 2014; 48(11):1502-1506.
  - Gualano MR, Passi S, Bert F, et al. Electronic cigarettes: Assessing the efficacy and the adverse effects through a systematic review of published studies. *J Public Health (Oxf)* Sep 2015; 37(3):488-497.
  - Harrell PT, Simmons VN, Correa JB, et al. Electronic nicotine delivery systems ("e-cigarettes"): Review of safety and smoking cessation efficacy. *Otolaryngol Head Neck Surg* Sep 2014; 151(3):381-393.
  - Callahan-Lyon P. Electronic cigarettes: Human health effects. *Tob Control* May 2014; 23 Suppl 2:ii36-40.
- The topic nomination's focus on the potential transmission of an airborne illness to others through e-cigarette vapors spread of airborne illnesses through e-cigarette vapors is not feasible for a full systematic review due to the limited data available at this time.

### Topic Description

**Nominator(s):** Individual

**Nomination Summary:** The nominator is interested in the effect of vaping on transmission of airborne disease and whether vaping is a means of spread of those diseases. He/she is concerned with the popularity of vaping and its effects on people from the exhaled vapor. The nominator states that all the testing that he/she has seen explicitly describes most correlations to cigarette smoke but does not focus on what the person exhales and whether vaping would facilitate the spread of an airborne illness or disease from that individual to others. The nominator would like AHRQ to consider this topic in order to help regulate the use of electronic cigarettes and its use in public. It will also help to control the spread of airborne illnesses if vaping is found to be a contributor to the spread of such diseases.

**Staff-Generated PICO Population(s):**

**Population(s):** E-cigarette users and individuals in the vicinity of e-cigarette smokers  
**Intervention(s):** E-cigarette(s) or vaping  
**Comparator(s):** Cigarette, nicotine replacement therapy (skin patch, gum, lozenges, etc.), placebo, no device, historical controls  
**Outcome(s):** Adverse events, infection, cost, potential benefits, smoking cessation, smoking reduction

**Key Questions from Nominator:** Does e-cigarette vapor exhalation from a sick person infected with an illness that can spread via air transmit the same illness to others around him/her?

In consultation with our clinical reviewer, the nominator's Key Question was revised to focus on the harms and benefits of e-cigarette smoking in order to capture more published studies and to examine both the harms and benefits of e-cigarette smoking, including the potential transmission of illnesses through e-cigarette vapors. The revised Key Question is as follows:

What are the harms and benefits of e-cigarette smoking?

## Considerations

- The topic meets EHC Program importance criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
- E-cigarettes were introduced as a harm reduction strategy for tobacco smoking due to the absence of toxic chemicals that are released from burning tobacco leaves in e-cigarettes. However, not much is known regarding the safety and harmful effects of e-cigarette smoking compared to traditional tobacco smoking or use of other nicotine-containing products. Currently, they are an unregulated product. The Food and Drug Administration has not approved e-cigarette as a smoking cessation aid due to the presence of known carcinogens found in the limited products that they tested. There are also concerns that e-cigarettes are attracting young adolescents to begin smoking; the highest prevalence of e-cigarette users is among high school students. Understanding the harms and benefits of e-cigarette use on users and others could inform policies related to e-cigarettes.
- The broader topic of harms and benefits was found to be addressed by a number of recent systematic reviews, including a 2014 Cochrane systematic review titled *Electronic cigarettes for smoking cessation and reduction*. In general, findings from these reviews indicated that there are not enough studies to make a conclusion about the health effects of e-cigarettes.
- Only one systematic review specifically addressed the potential impact of e-cigarette vapors on others. However this review did not specifically address the transmission of an airborne illness to others through e-cigarette vapors. We found no systematic reviews or studies that addressed this specific area of focus.