Topic Brief: Hospital-based Tobacco Treatment Interventions

Date: September 5, 2019
Nomination Number: 851

Purpose: This document summarizes the information addressing a nomination submitted on April 24, 2019 through the Effective Health Care Website. This information was used to inform the Evidence-based Practice Center (EPC) Program decisions about whether to produce an evidence report on the topic, and if so, what type of evidence report would be most suitable.

Issue: In 2012, the Joint Commission recommended tobacco quality standards that would address all hospitalized smokers regardless of diagnosis and clinical condition. [1] These recommendations are related to tobacco use of inpatients, tobacco use treatment, counseling and medication during hospitalization, tobacco use treatment management at discharge, and the retired measure of one-month follow-up after discharge. Although progress has been made, many hospitals have not fully implemented the Joint Commission quality standards.[2] Development of an evidence report and subsequent guideline could resolve this and establish a minimum standard of support for tobacco users across hospitals. A guideline could provide guidance on how to place the necessary systems and policies in place to encourage and enable consistent and effective support and treatment to tobacco users.

Program Decision: Though the scope of this topic met all EHC Program selection criteria and was considered for a systematic review it was not selected.

Key findings

- There are four recent SRs that cover parts of the KQs, but none are considered duplicative.
- There are a large number of primary studies available on health outcomes, but few studies were found for certain patient (i.e., readiness to quit), or population characteristics; and sub-topics such as harm from hospital –based interventions, or performance-based strategies for financing at the health systems level.
- We recommend a systematic review on the entire scope of the nomination. We estimate that this will be a medium-sized review.
- The nominator, CHEST, has partnered with AHRQ successfully many times in the past. CHEST has a wide array of evidence based guidelines through the CHEST journal, as well as serving as an educational resource for clinicians. They plan to develop a clinical practice guideline, informed by this proposed review.

Background

Tobacco treatment interventions are often referred to as the 'gold standard' of healthcare cost effectiveness because they achieve more life-years gained for fewer resources than other interventions. There are several effective, guideline-recommended tobacco cessation treatments, including in-person behavioral counseling, telephone quitlines, nicotine replacement therapy, and prescription medicines. Yet, treatments have shown disappointing impact due to limited reach, variable treatment fidelity and other dissemination and implementation challenges. Thus, there is a clear need to optimize both interventions and delivery strategies that enhance the effectiveness and reach of tobacco treatment interventions.

Hospitalization offers an opportunity to engage smokers who may not spontaneously seek tobacco treatment. It serves as a "teachable moment" of cognitive focus and emotional arousal, when smokers may be acutely aware of the consequences of smoking and thus, more receptive to tobacco treatment interventions. Hospital-based interventions, particularly when medication is provided with counseling and post-discharge support, could be highly effective in increasing motivation for quit attempts and rates of smoking cessation.

Recognizing this opportunity, in 2012, the Joint Commission recommended global (population) tobacco quality standards that would address all hospitalized smokers regardless of diagnosis and clinical condition. [1] These recommendations are related to tobacco use of inpatients, tobacco use treatment, counseling and medication during hospitalization, tobacco use treatment management at discharge, and the retired measure of one-month follow-up after discharge.

Difficulty exists in adopting inpatient tobacco treatment and post-discharge interventions given limited resources, time, and expertise in the majority of real-world settings. Few hospitals have fully implemented the Joint Commission quality standards, although progress has been made since 2012. [2] Development of an evidence report and subsequent guideline to help clinicians meet those standards could resolve this and establish a minimum standard of support for tobacco users across hospitals. A guideline will provide guidance on how to place the necessary systems and policies in place to encourage and enable consistent and effective support to tobacco users.

Nomination Summary

- The nomination focuses on the effectiveness of hospital-based tobacco cessation interventions on outcomes. The nominators are also interested in gathering the evidence on effectiveness of healthcare financing systems on outcomes for hospital-based tobacco cessation interventions, the barriers to adoption of these hospital-based interventions, and the harms of these hospital-based interventions. The nominators have further provided context for several sub-bullets that they are particularly interested in. However, they acknowledge there might not be substantial publications in these areas.
- The nominator is a large professional society, the American College of Chest Physicians (CHEST), CHEST has a wide array of evidence based guidelines through the CHEST journal, as well as serving as an educational resource for clinicians.
- After discussions with the nominator, the scope was revised further to focus on patient characteristics and outcomes that are related to hospital-based tobacco treatment interventions. Sub-bullets were revised.

Scope

1. What is the effectiveness of hospital-based tobacco cessation treatment interventions on outcomes?
    a. Does effectiveness differ by patient characteristics?

b. Does effectiveness differ by readiness to quit?
c. Does effectiveness differ by post-hospital discharge treatment strategies?

2. What is the effectiveness of healthcare financing systems on tobacco cessation treatment outcomes?
    a. Does effectiveness differ by performance-based strategies (pay-for-performance/incentive payments, accountable care organizations, and bundled payments)?
    b. Does effectiveness differ by financing systems directed at smokers?

3. What are the barriers to adoption of hospital-based interventions for tobacco treatment?

4. What are the harms of hospital-based interventions for tobacco treatment?

Table 1. Questions and PICOTS (population, intervention, comparator, outcome, timing and setting)

Key Questions	**KQ #1: What is the effectiveness of hospital-based tobacco cessation treatment interventions on outcomes?**	**KQ #2: What is the effectiveness of healthcare financing systems on outcomes?**	**KQ #3: What are the barriers to adoption of hospital-based interventions for tobacco treatment?**	**KQ #4: What are the harms of hospital-based interventions for tobacco treatment?**
Population	Hospitalized Adults 18 years and older who use tobacco Patient characteristics including concurrent mental illness, preoperative status, low socioeconomic status, SUD with co-morbid tobacco dependence, preoperative status, and comorbidities, such as post-myocardial infarction, congestive heart failure, lung cancer, chronic obstructive pulmonary disease.	Hospitalized Adults 18 years and older who use tobacco	Hospitalized Adults 18 years and older who use tobacco	Hospitalized Adults 18 years and older who use tobacco
Interventions	Tobacco cessation treatment including nicotine replacement therapy (NRT), varenicline, buproprion, with or without enhanced strategies [tobacco treatment counseling or other modality (text messaging, quit lines, interactive voice recognition, telehealth)] during hospitalization and perhaps after	Payment strategies related to hospital-based tobacco treatment interventions	All hospital-based tobacco treatment interventions	All hospital-based tobacco treatment interventions
Comparators	Usual care	Usual practice		Usual care

	No tobacco cessation treatment Other tobacco cessation treatment Inpatient tobacco treatment + 1 mo. Post-D/C vs. Inpatient tobacco treatment	Other payment strategies		No tobacco cessation treatment Other tobacco cessation treatment Inpatient tobacco treatment + 1 mo. Post-D/C vs. Inpatient tobacco treatment
Outcomes	Smoking abstinence, Rates of cessation, Quit attempts, Nicotine withdrawal symptoms, Tobacco use relapse rates, Increase or decrease in other substance use, Change in tobacco use, Meeting JC tobacco quality standards, Cost savings, Effect on disparity	Meeting Joint Commissions tobacco quality standards, performance measures, cost savings, effect on disparity Tobacco use screening Tobacco treatment offered or provided at hospitalization Tobacco treatment provided or offered at discharge	Barriers	Harms of treatment
Timing	Post-discharge up to 1 month (immediate), also post-discharge up to 6 months (abstinence)	N/A	During Treatment	During Treatment
Setting	Hospitals/Institutions	Hospitals/Institutions	Hospitals/Institutions	Hospitals/Institutions

Abbreviations: Nicotine Replacement Treatment (NRT); Discharge (D/C); Not applicable (N/A); Joint Commission (JC)

Methods

See Appendix A.

Summary of Literature Findings

There are many systematic reviews (SR) that cover the topic of tobacco cessation. Specifically for the hospitalized population, we found five SRs that are applicable to our key questions and PICOTS:

- Cochrane review "Interventions for smoking cessation in hospitalized patients (Review)". [3] This SR relates to the scope of KQ #1 and #3; however it is 7 years old and is not considered current.

- Cochrane review "System change interventions for smoking cessation (Review). [4] This SR is 2 years old and covers organizational change interventions within healthcare settings to increase smoking cessation and the provision of smoking cessation. It covers part of KQ #1 and KQ#3.
- Cochrane review "Healthcare financing systems for increasing the use of tobacco dependence treatment (Review). [5] This SR is 2 years old and covers the impact of reducing costs for smokers or healthcare providers to use/provide tobacco cessation treatment through healthcare financing interventions within healthcare settings to increase smoking cessation and the provision of smoking cessation. It covers part of KQ#1 and KQ #2 (directed at smokers).
- Cochrane review "Relapse prevention interventions for smoking cessation (Review)". [6] Published this year, this SR covers interventions for relapse prevention to reduce the proportion of recent quitters who return to smoking. This addresses the post-hospitalization portion of the intervention for KQ #1.
- Cochrane review " Interventions to increase adherence to medications for tobacco dependence (Review)". [7] Published this year, this SR covers interventions to increase adherence to medications (KQ #1)

There are many studies identified in the primary literature that cover the topic of hospital-based tobacco cessation treatment and many more covering treatment not specific to the hospital.

Based on our targeted search of the literature, several areas of the scope are not feasible. See the bolded text in the KQs below for those that are not feasible:

1. What is the effectiveness of hospital-based tobacco cessation treatment interventions on outcomes?
   a. Does effectiveness differ by patient characteristics?
   b. Does effectiveness differ by readiness to quit? (1 study)
   c. Does effectiveness differ by post-hospital discharge treatment strategies?

2. What is the effectiveness of healthcare financing systems on tobacco cessation treatment outcomes?
   a. Does effectiveness differ by performance-based strategies (pay-for-performance/incentive payments, accountable care organizations, and bundled payments)? (0 studies)
   b. Does effectiveness differ by financing systems directed at smokers?

3. What are the barriers to adoption of hospital-based interventions for tobacco treatment?

4. **What are the harms of hospital-based interventions for tobacco treatment? (0 studies, however, could likely extrapolate harms from interventions that are not limited to hospitalized patients, such as harms from medications.)**

We note that for question 4, there are generally known harms of some tobacco cessation interventions which were not captured in our targeted search.

The rest of the KQ (not bolded) are likely feasible based on our targeted search of the literature.

See Appendix B for details of the literature.

Table 2. Literature identified for each Question

Question	Systematic reviews (9/2016-9/2019)	Primary studies (9/2014-9/2019)
Question 1: What is the effectiveness of hospital-based tobacco cessation treatment interventions on outcomes?	Total: 4 • Cochrane: 4[4,5-7]	Total: 36 • RCT: 16[8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23] • Clinical trial: 6 [24, 25 26 27 28 29] • Quasi-experimental: 6 [30-35] • Latent class analysis: 1[36] • Retrospective: 6 [37, 38 39 40 41 42] • Pragmatic: 1 [43] Clinicaltrials.gov • Recruiting: 1[61,63]
Question 2: What is the effectiveness of healthcare financing systems on outcomes?	Total: 1 • Cochrane: 1[5]	Total: 5 • RCT: 1 [18] • Retrospective: 3 [44 27 7, 22] • Quasi-experimental: 1 [33] Clinicaltrials.gov • Recruiting: 1[61]
Question 3: What are the barriers to adoption of hospital-based interventions for tobacco treatment?	Total: 1 • Cochrane: 1[3, 4]	Total: 15 • Quasi-experimental: 2 [34 45] • Observational: 4 [46 26 40 13] • Survey: 9 [32, 33, 47-51 52 53]
Question 4: What are the harms of hospital-based interventions for tobacco treatment?	Total: 0	Total: 0

Summary of Selection Criteria Assessment

Smoking cessation is one of the most impactful public health treatment interventions with the potential to affect a large number of individuals in the United States. Negative outcomes related to smoking are a huge financial drain to payers, employers, and the government. There are guidelines that recommend tobacco cessation treatment interventions, but despite tobacco quality standards for hospitals, few hospitals have fully implemented these standards, and offer these interventions. Clinical guidance is needed to help to implement these quality standards. This potential and impactful opportunity to intervene with hospitalized smokers is not being fully utilized.

There are 4 recent SRs that cover part of the KQs, but none were considered duplicative. There are a large number of studies available on health outcomes, but there are likely few studies on certain patient or population characteristics (i.e., readiness to quit), and sub-topics such as harm from hospital –based interventions, or performance-based strategies for financing at the health systems level.

A new systematic review could be highly useful and impact clinical care. An updated report and subsequent guidelines by the nominator could established a minimum standard of support for

tobacco users across hospitals. A guideline could provide guidance on how to place the necessary systems and policies in place to encourage and enable consistent and effective support to tobacco users. The nominator, CHEST, plans to develop a clinical practice guideline informed by this proposed systematic review.

We are recommending a systematic review on the entire scope of the nomination. We estimate the size as medium.

Please see Appendix B for detailed assessments of individual EPC Program selection criteria.

Related Resources

We identified additional information in the course of our assessment that might be useful.

- The Joint Commission Journal on Quality and Patient Safety has published several articles on the Tobacco Treatment performance measures for hospitals. In 2017, one article was a study in two hospitals that abstracted electronic health record data to evaluate the impact of two interventions including an order set and a nurse-delivered counseling model. They found a modest increase in medication orders and a 10-fold increase in rates of counseling with the interventions. [54] Another article in 2017, described the use of bioinformatics to treat hospitalized smokers in a large tertiary care hospital that implemented the JC tobacco measures. The article describes the feasibility of implementing a tobacco treatment service and increased counseling and medications. [55]
- The American Journal of Preventive Medicine had a theme issue on Tobacco Interventions for Hospitalized Smokers in 2016 that reported the findings of the NIH-funded Consortium of Hospitals to Advance Research on Tobacco (CHART) in eight studies. A number of these studies are included in table 2. An editorial in that issue revealed two challenges for researchers. [56] Firstly, not all hospitalized smokers are open to or available to tobacco treatment interventions. Secondly, biochemical verification of self-reported abstinence remains advisable in this population (hospitalized patients). Some of the studies in table 2 verified self-reported abstinence by testing and some do not, which should be considered when evaluating the research.
- A toolkit has been created to help hospitals and health systems implement from UCSF's Smoking Cessation Leadership Center.[57]
- In addition, many studies on effectiveness of tobacco treatment interventions have been published and although the studies were not specific to hospitalized patients, they may be of value in evaluating the evidence behind certain interventions, patient characteristics, co-morbidities [57], and harms when data is lacking in hospitalized patients. Similarly, there are ongoing published and systematic reviews that target specific populations and specific interventions that do not specifically include hospitalized patients.[58-59]

References

1. Fiore MC, Goplerud E, Schroeder SA. The Joint Commission's new tobacco-cessation measures--will hospitals do the right thing? N Engl J Med. 2012 Mar 29;366(13):1172-4. doi: 10.1056/NEJMp1115176. PMID: 22417200. https://www.ncbi.nlm.nih.gov/pubmed/22417200
2. Fiore MC, Adsit R. Will Hospitals Finally "Do the Right Thing"? Providing Evidence-Based Tobacco Dependence Treatments to Hospitalized Patients Who Smoke. Jt Comm J Qual Patient Saf. 2016 May;42(5):207-8. PMID: 27066923. https://www.ncbi.nlm.nih.gov/pubmed/27066923
3. Rigotti NA, Clair C, Munafo MR, et al. Interventions for smoking cessation in hospitalised patients. Cochrane Database Syst Rev. 2012 May 16(5):CD001837. doi:

10.1002/14651858.CD001837.pub3. PMID: 22592676.
https://www.ncbi.nlm.nih.gov/pubmed/22592676
4. Thomas D, Abramson MJ, Bonevski B, et al. System change interventions for smoking cessation. Cochrane Database Syst Rev. 2017 Feb 10;2:CD010742. doi: 10.1002/14651858.CD010742.pub2. PMID: 28185257.
https://www.ncbi.nlm.nih.gov/pubmed/28185257
5. van den Brand FA, Nagelhout GE, Reda AA, et al. Healthcare financing systems for increasing the use of tobacco dependence treatment. Cochrane Database Syst Rev. 2017 Sep 12;9:CD004305. doi: 10.1002/14651858.CD004305.pub5. PMID: 28898403.
https://www.ncbi.nlm.nih.gov/pubmed/28898403
6. Livingstone-Banks J, Norris E, Hartmann-Boyce J, et al. Relapse prevention interventions for smoking cessation. Cochrane Database Syst Rev. 2019 Feb 13;2:CD003999. doi: 10.1002/14651858.CD003999.pub5. PMID: 30758045.
https://www.ncbi.nlm.nih.gov/pubmed/30758045
7. Hollands GJ, Naughton F, Farley A, et al. Interventions to increase adherence to medications for tobacco dependence. Cochrane Database Syst Rev. 2019 Aug 16;8:CD009164. doi: 10.1002/14651858.CD009164.pub3. PMID: 31425618.
https://www.ncbi.nlm.nih.gov/pubmed/31425618
8. Ellerbeck EF, Cox LS, Hui SA, et al. Impact of Adding Telephone-Based Care Coordination to Standard Telephone-Based Smoking Cessation Counseling Post-hospital Discharge: a Randomized Controlled Trial. J Gen Intern Med. 2019 Jul 31. doi: 10.1007/s11606-019-05220-2. PMID: 31367875. https://www.ncbi.nlm.nih.gov/pubmed/31367875
9. Hecht J, Rigotti NA, Minami H, et al. Adaptation of a sustained care cessation intervention for smokers hospitalized for psychiatric disorders: Study protocol for a randomized controlled trial. Contemp Clin Trials. 2019 Aug;83:18-26. doi: 10.1016/j.cct.2019.06.001. PMID: 31212100.
https://www.ncbi.nlm.nih.gov/pubmed/31212100
10. Liebmann EP, Richter KP, Scheuermann T, et al. Effects of post-discharge counseling and medication utilization on short and long-term smoking cessation among hospitalized patients. Prev Med Rep. 2019 Sep;15:100937. doi: 10.1016/j.pmedr.2019.100937. PMID: 31338281.
https://www.ncbi.nlm.nih.gov/pubmed/31338281
11. Streck JM, Chang Y, Tindle HA, et al. Smoking Cessation After Hospital Discharge: Factors Associated With Abstinence. J Hosp Med. 2018 Nov 1;13(11):774-8. doi: 10.12788/jhm.2997. PMID: 30156578. https://www.ncbi.nlm.nih.gov/pubmed/30156578
12. Levy DE, Chang Y, Regan S, et al. Improvements in health-related quality of life among smokers who quit after hospitalization. Prev Med. 2018 May;110:38-46. doi: 10.1016/j.ypmed.2018.02.006. PMID: 29427673.
https://www.ncbi.nlm.nih.gov/pubmed/29427673
13. Tague C, Richter KP, Cox LS, et al. Impact of Telephone-Based Care Coordination on Use of Cessation Medications Posthospital Discharge: A Randomized Controlled Trial. Nicotine Tob Res. 2017 Mar 1;19(3):299-306. doi: 10.1093/ntr/ntw138. PMID: 27194545.
https://www.ncbi.nlm.nih.gov/pubmed/27194545
14. Streck JM, Regan S, Chang Y, et al. Examining the effects of illicit drug use on tobacco cessation outcomes in the Helping HAND 2 randomized controlled trial. Drug Alcohol Depend. 2017 Sep 1;178:586-92. doi: 10.1016/j.drugalcdep.2017.06.005. PMID: 28739101.
https://www.ncbi.nlm.nih.gov/pubmed/28739101
15. Rogers ES, Friedes R, Jakes A, et al. Long-term abstinence and predictors of tobacco treatment uptake among hospitalized smokers with serious mental illness enrolled in a smoking cessation trial. J Behav Med. 2017 Oct;40(5):750-9. doi: 10.1007/s10865-017-9844-0. PMID: 28349344. https://www.ncbi.nlm.nih.gov/pubmed/28349344

16. Warner DO, Nolan MB, Kadimpati S, et al. Quitline Tobacco Interventions in Hospitalized Patients: A Randomized Trial. Am J Prev Med. 2016 Oct;51(4):473-84. doi: 10.1016/j.amepre.2016.03.005. PMID: 27067305.
https://www.ncbi.nlm.nih.gov/pubmed/27067305
17. Sherman SE, Link AR, Rogers ES, et al. Smoking-Cessation Interventions for Urban Hospital Patients: A Randomized Comparative Effectiveness Trial. Am J Prev Med. 2016 Oct;51(4):566-77. doi: 10.1016/j.amepre.2016.06.023. PMID: 27647057.
https://www.ncbi.nlm.nih.gov/pubmed/27647057
18. Richter KP, Faseru B, Shireman TI, et al. Warm Handoff Versus Fax Referral for Linking Hospitalized Smokers to Quitlines. Am J Prev Med. 2016 Oct;51(4):587-96. doi: 10.1016/j.amepre.2016.04.006. PMID: 27647059.
https://www.ncbi.nlm.nih.gov/pubmed/27647059
19. Kathleen FH, Young-Il K, Meifang C, et al. Web-Based Intervention for Transitioning Smokers From Inpatient to Outpatient Care: An RCT. Am J Prev Med. 2016 Oct;51(4):620-9. doi: 10.1016/j.amepre.2016.04.008. PMID: 27647062.
https://www.ncbi.nlm.nih.gov/pubmed/27647062
20. Fellows JL, Mularski RA, Leo MC, et al. Referring Hospitalized Smokers to Outpatient Quit Services: A Randomized Trial. Am J Prev Med. 2016 Oct;51(4):609-19. doi: 10.1016/j.amepre.2016.06.014. PMID: 27647061.
https://www.ncbi.nlm.nih.gov/pubmed/27647061
21. Cummins SE, Gamst AC, Brandstein K, et al. Helping Hospitalized Smokers: A Factorial RCT of Nicotine Patches and Counseling. Am J Prev Med. 2016 Oct;51(4):578-86. doi: 10.1016/j.amepre.2016.06.021. PMID: 27647058.
https://www.ncbi.nlm.nih.gov/pubmed/27647058
22. Reid ZZ, Regan S, Kelley JH, et al. Comparative Effectiveness of Post-Discharge Strategies for Hospitalized Smokers: study protocol for the Helping HAND 2 randomized controlled trial. BMC Public Health. 2015 Feb 7;15:109. doi: 10.1186/s12889-015-1484-0. PMID: 25879193.
https://www.ncbi.nlm.nih.gov/pubmed/25879193
23. Rigotti NA, Tindle HA, Regan S, et al. A Post-Discharge Smoking-Cessation Intervention for Hospital Patients: Helping Hand 2 Randomized Clinical Trial. Am J Prev Med. 2016 Oct;51(4):597-608. doi: 10.1016/j.amepre.2016.04.005. PMID: 27647060.
https://www.ncbi.nlm.nih.gov/pubmed/27647060
24. Mahabee-Gittens EM, Khoury JC, Ho M, et al. A smoking cessation intervention for low-income smokers in the ED. Am J Emerg Med. 2015 Aug;33(8):1056-61. doi: 10.1016/j.ajem.2015.04.058. PMID: 25976268.
https://www.ncbi.nlm.nih.gov/pubmed/25976268
25. Liebmann EP, Scheuermann TS, Faseru B, et al. Critical steps in the path to using cessation pharmacotherapy following hospital-initiated tobacco treatment. BMC Health Serv Res. 2019 Apr 24;19(1):246. doi: 10.1186/s12913-019-4059-4. PMID: 31018852.
https://www.ncbi.nlm.nih.gov/pubmed/31018852
26. Muladore E, Brown JA, Haefner J, et al. Improving patient education about tobacco withdrawal and nicotine gum use by registered nurses in inpatient psychiatry: A feasibility study. J Psychiatr Ment Health Nurs. 2018 Oct;25(8):496-505. doi: 10.1111/jpm.12495. PMID: 30129262. https://www.ncbi.nlm.nih.gov/pubmed/30129262
27. Burn E, Nghiem S, Jan S, et al. Cost-effectiveness of a text message programme for the prevention of recurrent cardiovascular events. Heart. 2017 Jun;103(12):893-4. doi: 10.1136/heartjnl-2016-310195. PMID: 28235776.
https://www.ncbi.nlm.nih.gov/pubmed/28235776
28. Auer R, Gencer B, Tango R, et al. Uptake and efficacy of a systematic intensive smoking cessation intervention using motivational interviewing for smokers hospitalised for an acute

coronary syndrome: a multicentre before-after study with parallel group comparisons. BMJ Open. 2016 Sep 20;6(9):e011520. doi: 10.1136/bmjopen-2016-011520. PMID: 27650761. https://www.ncbi.nlm.nih.gov/pubmed/27650761
29. Bernstein SL, Rosner J, DeWitt M, et al. Design and implementation of decision support for tobacco dependence treatment in an inpatient electronic medical record: a randomized trial. Transl Behav Med. 2017 Jun;7(2):185-95. doi: 10.1007/s13142-017-0470-8. PMID: 28194729. https://www.ncbi.nlm.nih.gov/pubmed/28194729
30. Vander Weg MW, Holman JE, Rahman H, et al. Implementing smoking cessation guidelines for hospitalized Veterans: Cessation results from the VA-BEST trial. J Subst Abuse Treat. 2017 Jun;77:79-88. doi: 10.1016/j.jsat.2017.03.015. PMID: 28476277. https://www.ncbi.nlm.nih.gov/pubmed/28476277
31. Duffy SA, Ronis DL, Karvonen-Gutierrez CA, et al. Effectiveness of the Tobacco Tactics Program in the Trinity Health System. Am J Prev Med. 2016 Oct;51(4):551-65. doi: 10.1016/j.amepre.2016.03.012. PMID: 27647056. https://www.ncbi.nlm.nih.gov/pubmed/27647056
32. Duffy SA, Ronis DL, Ewing LA, et al. Implementation of the Tobacco Tactics intervention versus usual care in Trinity Health community hospitals. Implement Sci. 2016 Nov 4;11(1):147. doi: 10.1186/s13012-016-0511-6. PMID: 27814722. https://www.ncbi.nlm.nih.gov/pubmed/27814722
33. Duffy SA, Ewing LA, Louzon SA, et al. Evaluation and costs of volunteer telephone cessation follow-up counseling for Veteran smokers discharged from inpatient units: a quasi-experimental, mixed methods study. Tob Induc Dis. 2015;13(1):4. doi: 10.1186/s12971-015-0028-9. PMID: 25674045. https://www.ncbi.nlm.nih.gov/pubmed/25674045
34. Duffy SA, Cummins SE, Fellows JL, et al. Fidelity monitoring across the seven studies in the Consortium of Hospitals Advancing Research on Tobacco (CHART). Tob Induc Dis. 2015;13(1):29. doi: 10.1186/s12971-015-0056-5. PMID: 26336372. https://www.ncbi.nlm.nih.gov/pubmed/26336372
35. Duffy SA, Ronis DL, Karvonen-Gutierrez CA, et al. Effectiveness of the tobacco tactics program in the Department of Veterans Affairs. Ann Behav Med. 2014 Oct;48(2):265-74. doi: 10.1007/s12160-014-9605-z. PMID: 24823842. https://www.ncbi.nlm.nih.gov/pubmed/24823842
36. Ylioja T, Cochran G, Chang Y, et al. Postdischarge smoking cessation in subgroups of hospitalized smokers: A latent class analysis. Subst Abus. 2017 Oct-Dec;38(4):493-7. doi: 10.1080/08897077.2017.1355870. PMID: 28727541. https://www.ncbi.nlm.nih.gov/pubmed/28727541
37. Scheuermann TS, Richter KP, Rigotti NA, et al. Accuracy of self-reported smoking abstinence in clinical trials of hospital-initiated smoking interventions. Addiction. 2017 Dec;112(12):2227-36. doi: 10.1111/add.13913. PMID: 28834608. https://www.ncbi.nlm.nih.gov/pubmed/28834608
38. Bjornson WG, Gonzales DH, Markin CJ, et al. Two Years in the Life of a University Hospital Tobacco Cessation Service: Recommendations for Improving the Quality of Referrals. Jt Comm J Qual Patient Saf. 2016 May;42(5):209-18. PMID: 27066924. https://www.ncbi.nlm.nih.gov/pubmed/27066924
39. Mussulman LM, Scheuermann TS, Faseru B, et al. Rapid relapse to smoking following hospital discharge. Prev Med Rep. 2019 Sep;15:100891. doi: 10.1016/j.pmedr.2019.100891. PMID: 31193919. https://www.ncbi.nlm.nih.gov/pubmed/31193919
40. Nahhas GJ, Wilson D, Talbot V, et al. Feasibility of Implementing a Hospital-Based "Opt-Out" Tobacco-Cessation Service. Nicotine Tob Res. 2017 Aug 1;19(8):937-43. doi: 10.1093/ntr/ntw312. PMID: 27928052. https://www.ncbi.nlm.nih.gov/pubmed/27928052

41. Goldberg DN, Krantz AJ, Semal S, et al. Outcomes for a Public Hospital Tobacco Cessation Program: The Cook County Health and Hospitals System Experience. J Community Health. 2016 Dec;41(6):1130-9. doi: 10.1007/s10900-016-0215-5. PMID: 27393143. https://www.ncbi.nlm.nih.gov/pubmed/27393143
42. Khara M, Okoli C, Nagarajan VD, et al. Smoking cessation outcomes of referral to a specialist hospital outpatient clinic. Am J Addict. 2015 Sep;24(6):561-70. doi: 10.1111/ajad.12259. PMID: 26303966. https://www.ncbi.nlm.nih.gov/pubmed/26303966
43. Cruvinel E, Richter KP, Stoney C, et al. CHARTing a Path to Pragmatic Tobacco Treatment Research. Am J Prev Med. 2016 Oct;51(4):630-6. doi: 10.1016/j.amepre.2016.05.025. PMID: 27647063. https://www.ncbi.nlm.nih.gov/pubmed/27647063
44. Cartmell KB, Dismuke CE, Dooley M, et al. Effect of an Evidence-based Inpatient Tobacco Dependence Treatment Service on 1-Year Postdischarge Health Care Costs. Med Care. 2018 Oct;56(10):883-9. doi: 10.1097/MLR.0000000000000979. PMID: 30130271. https://www.ncbi.nlm.nih.gov/pubmed/30130271
45. Ramsey AT, Prentice D, Ballard E, et al. Leverage points to improve smoking cessation treatment in a large tertiary care hospital: a systems-based mixed methods study. BMJ Open. 2019 Jul 2;9(7):e030066. doi: 10.1136/bmjopen-2019-030066. PMID: 31270124. https://www.ncbi.nlm.nih.gov/pubmed/31270124
46. Buchbinder M, Wilbur R, Zuskov D, et al. Teachable moments and missed opportunities for smoking cessation counseling in a hospital emergency department: a mixed-methods study of patient-provider communication. BMC Health Serv Res. 2014 Dec 20;14:651. doi: 10.1186/s12913-014-0651-9. PMID: 25526749. https://www.ncbi.nlm.nih.gov/pubmed/25526749
47. Adsit R, Wisinski K, Mattison R, et al. A Survey of Baseline Tobacco Cessation Clinical Practices and Receptivity to Academic Detailing. WMJ. 2016 Jun;115(3):143-6. PMID: 27443091. https://www.ncbi.nlm.nih.gov/pubmed/27443091
48. Heath J, Butler KM, Anderson JG, et al. Tobacco-Cessation Interventions and Attributes of Individual and Organizational Excellence in Acute Care. Am J Crit Care. 2016 Dec;26(1):53-61. doi: 10.4037/ajcc2017373. PMID: 27965230. https://www.ncbi.nlm.nih.gov/pubmed/27965230
49. Katz DA, Stewart K, Paez M, et al. "Let Me Get You a Nicotine Patch": Nurses' Perceptions of Implementing Smoking Cessation Guidelines for Hospitalized Veterans. Mil Med. 2016 Apr;181(4):373-82. doi: 10.7205/MILMED-D-15-00101. PMID: 27046185. https://www.ncbi.nlm.nih.gov/pubmed/27046185
50. Li IC, Lee SY, Chen CY, et al. Facilitators and barriers to effective smoking cessation: counselling services for inpatients from nurse-counsellors' perspectives--a qualitative study. Int J Environ Res Public Health. 2014 May 6;11(5):4782-98. doi: 10.3390/ijerph110504782. PMID: 24806190. https://www.ncbi.nlm.nih.gov/pubmed/24806190
51. Grau LE, Weiss J, O'Leary TK, et al. Electronic decision support for treatment of hospitalized smokers: A qualitative analysis of physicians' knowledge, attitudes, and practices. Drug Alcohol Depend. 2019 Jan 1;194:296-301. doi: 10.1016/j.drugalcdep.2018.10.006. PMID: 30469101. https://www.ncbi.nlm.nih.gov/pubmed/30469101
52. Okoli CTC, Otachi JK, Manuel A, et al. A cross-sectional analysis of factors associated with the intention to engage in tobacco treatment among inpatients in a state psychiatric hospital. J Psychiatr Ment Health Nurs. 2018 Feb;25(1):14-25. doi: 10.1111/jpm.12435. PMID: 28976063. https://www.ncbi.nlm.nih.gov/pubmed/28976063
53. Newhouse R, Byon HD, Storkman Wolf E, et al. Multisite Studies Demonstrate Positive Relationship Between Practice Environments and Smoking Cessation Counseling Evidence-Based Practices. Worldviews Evid Based Nurs. 2018 Jun;15(3):217-24. doi: 10.1111/wvn.12277. PMID: 29528194. https://www.ncbi.nlm.nih.gov/pubmed/29528194

54. Shelley D, Goldfeld KS, Park H, et al. System Changes to Implement the Joint Commission Tobacco Treatment (TOB) Performance Measures for Improving the Treatment of Tobacco Use Among Hospitalized Patients. Jt Comm J Qual Patient Saf. 2017 May;43(5):234-40. doi: 10.1016/j.jcjq.2017.02.008. PMID: 28434457. https://www.ncbi.nlm.nih.gov/pubmed/28434457
55. Ylioja T, Reddy V, Ambrosino R, et al. Using Bioinformatics to Treat Hospitalized Smokers: Successes and Challenges of a Tobacco Treatment Service. Jt Comm J Qual Patient Saf. 2017 Dec;43(12):621-32. doi: 10.1016/j.jcjq.2017.06.010. PMID: 29173282. https://www.ncbi.nlm.nih.gov/pubmed/29173282
56. Rigotti NA, Stoney CM. CHARTing the Future Course of Tobacco-Cessation Interventions for Hospitalized Smokers. Am J Prev Med. 2016 Oct;51(4):549-50. doi: 10.1016/j.amepre.2016.07.012. PMID: 27647055. https://www.ncbi.nlm.nih.gov/pubmed/27647055
57. Rojewski AM, Baldassarri S, Cooperman NA, et al. Exploring Issues of Comorbid Conditions in People Who Smoke. Nicotine Tob Res. 2016 Aug;18(8):1684-96. doi: 10.1093/ntr/ntw016. PMID: 26783291. https://www.ncbi.nlm.nih.gov/pubmed/26783291
58. Smoking Cessation Leadership Center. Destination Tobacco-Free. A Practical Tool for Hospitals and Health Systems. 2013. Accessed Sept 5, 2019. https://smokingcessationleadership.ucsf.edu/resources/toolkits
59. Catherine Chojenta, Alemu Melka, Catherine Chojenta, Deborah Loxton, Elizabeth Holiday. Pharmacological interventions for smoking cessation: review and quality assessment of systematic review. PROSPERO 2017 CRD42017080906 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42017080906
60. Yuvaraj Krishnamoorthy, Karthiga Vijayakumar, Karthika Ganesh. Comparison of the effectiveness of different non-pharmacological interventions for tobacco cessation: a systematic review and network meta-analysis. PROSPERO 2019 CRD42019135547 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42019135547
61. Rigotti NA. Smoking Cessation Following Psychiatric Hospitalization. Clinical Trials.gov Identifier: NCT 02204956. https://clinicaltrials.gov/ct2/show/NCT02204956
62. French KM, Gonzalez SZ, Sherman SE, Link AR, Malik SZ, Tseng CH, Jumkhawala SA, Tejada B, White A, Ladapo JA. Financial IncEntives for Smoking TreAtment: protocol of the FIESTA trial and FIESTA Oral Microbiome Substudy. Trials. 2018 Nov 21;19(1):646. doi: 10.1186/s13063-018-3003-y.
63. Rigotti NA Post-Discharge Smoking Cessation Strategies: Helping HAND 4 (HH4). Clinical Trials.gov Identifier: NCT 03603496. https://clinicaltrials.gov/ct2/show/NCT03603496

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Appendix A: Methods

We assessed nomination for priority for a systematic review or other AHRQ Effective Health Care report with a hierarchical process using established selection criteria. Assessment of each criteria determined the need to evaluate the next one. See Appendix B for detailed description of the criteria.

Appropriateness and Importance

We assessed the nomination for appropriateness and importance.

Desirability of New Review/Absence of Duplication

We searched for high-quality, completed or in-process evidence reviews published in the last three years (9/2016-9/2019)on the questions of the nomination from these sources:

- AHRQ: Evidence reports and technology assessments
  - AHRQ Evidence Reports https://www.ahrq.gov/research/findings/evidence-based-reports/index.html
  - EHC Program https://effectivehealthcare.ahrq.gov/
  - US Preventive Services Task Force https://www.uspreventiveservicestaskforce.org/
  - AHRQ Technology Assessment Program https://www.ahrq.gov/research/findings/ta/index.html
- US Department of Veterans Affairs Products publications
  - Evidence Synthesis Program https://www.hsrd.research.va.gov/publications/esp/
  - VA/Department of Defense Evidence-Based Clinical Practice Guideline Program https://www.healthquality.va.gov/
- Cochrane Systematic Reviews https://www.cochranelibrary.com/
- University of York Centre for Reviews and Dissemination database https://www.crd.york.ac.uk/CRDWeb/
- PROSPERO Database (international prospective register of systematic reviews and protocols) http://www.crd.york.ac.uk/prospero/
- PubMed https://www.ncbi.nlm.nih.gov/pubmed/
- Campbell Collaboration http://www.campbellcollaboration.org/
- McMaster Health System Evidence https://www.healthsystemsevidence.org/
- UBC Centre for Health Services and Policy Research http://chspr.ubc.ca/
- Joanna Briggs Institute http://joannabriggs.org/
- WHO Health Evidence Network http://www.euro.who.int/en/data-and-evidence/evidence-informed-policy-making/health-evidence-network-hen
- <add other sources searched>

Impact of a New Evidence Review

The impact of a new evidence review was qualitatively assessed by analyzing the current standard of care, the existence of potential knowledge gaps, and practice variation. We considered whether it was possible for this review to influence the current state of practice through various dissemination pathways (practice recommendation, clinical guidelines, etc.).

Feasibility of New Evidence Review

We conducted a limited literature search in PubMed for the last five years from September 2014-September 2019. Because a large number of articles were identified, we reviewed a random sample of 200 titles and abstracts for each question for inclusion. We classified identified studies by question and study design, to assess the size and scope of a potential evidence review. We

then calculated the projected total number of included studies based on the proportion of studies included from the random sample.

PubMed search strategy
Search ((((((((((outcomes) OR barriers) AND (tobacco treatment OR tobacco cessation) AND hospital) AND "last 5 years"[PDat] AND Humans[Mesh])))))) Sort by: PublicationDate
N=546
September 9, 2019

Clinicaltrials.gov search strategy
Search hospitalized | tobacco cessation
Also searched for Tobacco Use Cessation
N=12
September 9, 2019

Value

We assessed the nomination for value. We considered whether or not the clinical, consumer, or policymaking context had the potential to respond with evidence-based change; and if a partner organization would use this evidence review to influence practice.

Appendix B. Selection Criteria Assessment

Selection Criteria	Assessment
1. Appropriateness	
1a. Does the nomination represent a health care drug, intervention, device, technology, or health care system/setting available (or soon to be available) in the U.S.?	Yes
1b. Is the nomination a request for an evidence report?	Yes
1c. Is the focus on effectiveness or comparative effectiveness?	Yes
1d. Is the nomination focus supported by a logic model or biologic plausibility? Is it consistent or coherent with what is known about the topic?	Yes
2. Importance	
2a. Represents a significant disease burden; large proportion of the population	Smoking cessation is one of the most impactful public health treatment interventions and affects a large number of individuals in the US.
2b. Is of high public interest; affects health care decision making, outcomes, or costs for a large proportion of the US population or for a vulnerable population	Yes
2c. Incorporates issues around both clinical benefits and potential clinical harms	Yes
2d. Represents high costs due to common use, high unit costs, or high associated costs to consumers, to patients, to health care systems, or to payers	Yes
3. Desirability of a New Evidence Review/Absence of Duplication	
3. A recent high-quality systematic review or other evidence review is not available on this topic	There are 4 recent SRs that cover part of the KQs, but none are considered duplicative. • Cochrane review "Interventions for smoking cessation in hospitalized patients (Review)". [3] This SR relates to the scope of KQ 1 and 3; however it is 7 years old and is not considered current indicated at least 30 studies have been published since 2013. • Cochrane review "System change interventions for smoking cessation (Review). [4] This SR is 2 years old and covers organizational change interventions within healthcare settings to increase smoking cessation

	and the provision of smoking cessation. It covers part of KQ #1 and KQ#3. However it found a small number of studies and does not cover effectiveness by looking at patient characteristics, readiness to quit, or post-discharge treatment. • Cochrane review "Healthcare financing systems for increasing the use of tobacco dependence treatment (Review). [5] This SR is 2 years old and covers the impact of reducing costs for smokers or healthcare providers to use/provide tobacco cessation treatment through healthcare financing interventions within healthcare settings to increase smoking cessation and the provision of smoking cessation. It covers part of KQ#1 and KQ #2 (directed at smokers). It does not cover financial implications at the healthcare systems level. • Cochrane review "Relapse prevention interventions for smoking cessation (Review)". [6] Published this year, this SR covers interventions for relapse prevention to reduce the proportion of recent quitters who return to smoking. Although not specific to the hospitalized population, this review included a minimum follow-up of 6 months, which could include discharged patients and part of KQ#1. • Cochrane review " Interventions to increase adherence to medications for tobacco dependence (Review)". [7] Published this year, this SR covers interventions to increase adherence to medications. Although not specific to the hospitalized population, it covers part of KQ #1 in that it could include effective interventions for adherence in patients that are discharged to the community.
4. Impact of a New Evidence Review	
4a. Is the standard of care unclear (guidelines not available or guidelines inconsistent,	Performance standards from the Joint Commission are available but clinical

indicating an information gap that may be addressed by a new evidence review)?	guidance is needed for implementation and results have not been fully effective.
4b. Is there practice variation (guideline inconsistent with current practice, indicating a potential implementation gap and not best addressed by a new evidence review)?	An updated report and subsequent guidelines could established a minimum standard of support for tobacco users across hospitals. A guideline could provide guidance on how to place the necessary systems and policies in place to encourage and enable consistent and effective support to tobacco users.
5. Primary Research	
5. Effectively utilizes existing research and knowledge by considering: - Adequacy (type and volume) of research for conducting a systematic review - Newly available evidence (particularly for updates or new technologies)	There are a large number of studies available on health outcomes, and few studies are available for certain patient characteristics (i.e., readiness to quit) and sub-topics such as harm from hospital –based interventions, or performance-based strategies for financing at the health systems level. Based on our targeted literature search this will likely be a medium-sized systematic review.
6. Value	
6a. The proposed topic exists within a clinical, consumer, or policy-making context that is amenable to evidence-based change	Yes
6b. Identified partner who will use the systematic review to influence practice (such as a guideline or recommendation)	Yes. The nominator the American College of Chest Physicians (CHEST). CHEST has a wide array of evidence based guidelines through the CHEST journal, as well as serving as an educational resource for clinicians. AHRQ has partnered successfully with CHEST many times in the past. They plan to develop a clinical practice guideline, informed by this proposed review.

Abbreviations: AHRQ=Agency for Healthcare Research and Quality; KQ=key question; SR=systematic review

Appendix C: Topic Nomination

Date submitted: April 24, 2019

1. Describe your topic

Tobacco treatment interventions are often referred to as the 'gold standard' of healthcare cost effectiveness because they achieve more life-years gained for fewer resources than other interventions. There are several effective, guideline-recommended tobacco cessation treatments, including in-person behavioral counseling, telephone quitlines, nicotine replacement therapy, and prescription pharmacotherapies. Yet, treatments have shown disappointing impact due to limited reach, variable treatment fidelity and other dissemination and implementation challenges. Thus, there is a clear need to optimize both interventions and delivery strategies that enhance the effectiveness and reach of tobacco treatment interventions.

Hospitalization offers an opportunity to engage smokers who may not spontaneously seek tobacco treatment. It serves as a "teachable moment" of cognitive focus and emotional arousal, when smokers may be acutely aware of the consequences of smoking and thus, more receptive to tobacco treatment interventions. Hospital-based interventions, particularly when pharmacotherapy is provided with counseling and post-discharge support, are highly effective in increasing motivation for quit attempts and rates of smoking cessation.

Recognizing this opportunity, in 2012, the Joint Commission recommended global (population) tobacco quality standards that would address all hospitalized smokers regardless of diagnosis and clinical condition. These recommendations are evidence-based and consistent with the 2008 United States Public Health Service Guideline, Treating Tobacco use and Dependence and have been pilot tested in a range of hospital settings [24 hospitals from 19 states; ranging in size from 15 to 900 beds; 8 were Veterans Administration (VA) Hospitals; 7 hospitals used electronic health records (EHR) and seven used paper medical records; the remainder used a combination of electronic and paper records].

The Joint Commission's reporting measures for tobacco quality standards include:

- Tob-1: Tobacco Use Screening among Inpatients (retired measure 2019)
- Tob-2: Tobacco Use Treatment, Counseling & Medication during Hospitalization
- Tob-3: Tobacco Use Treatment Management at Discharge
- Tob-4: One-Month Follow-Up Assessing Treatment Use/Cessation (retired measure 2018) (from: https://www.jointcommission.org/assets/1/18/5_Joint_Commission_Measures_...)

Most studies have reported an increase in long-term quit rates with hospital-based tobacco treatment services consistent with Joint Commission's standards (Tob-2 and Tob-3). However, understanding how to effectively translate this evidence into real-world clinical practice represents a host of challenges. Difficulty exists in adopting inpatient tobacco treatment and post-discharge interventions given limited resources,

time, and expertise in the majority of real-world settings. Few hospitals have fully implemented the Joint Commission quality standards.

Relevant References

1. U.S. Cancer Statistics Working Group, United States Cancer Statistics: 1999-2013 Incidence and Mortality Web-based Report. 2016, Department of Health and Human Services, Centers for Disease Control and Prevention, and National Cancer Institute: Atlanta (GA). http://www.cdc.gov/uscs.
2. Jamal, A., et al., Current Cigarette Smoking Among Adults - United States, 2005-2015. MMWR Morb Mortal Wkly Rep, 2016. 65(44): p. 1205-1211.
3. Vidrine, I.J., et al The role of tobacco in cancer health disparities. Curr Oncol Rep, 2009. 11(6): p. 475-81.
4. Danaei, G., et al., The promise of prevention: the effects of four preventable risk factors on national life expectancy and life expectancy disparities by race and county in the United States. PLoS Med, 2010. 7(3): p. e1000248.
5. Delva, J., et al., Cigarette smoking among low-income African Americans: a serious public health problem. Am J Prev Med, 2005. 29(3): p. 218-20.
6. Cokkinides, V.E., et al., Racial and ethnic disparities in smoking-cessation interventions: analysis of the 2005 National Health Interview Survey. Am J Prev Med, 2008. 34(5): p. 404-12.
7. 2008 PHS Guideline Update Panel, L.a., and Staff, Treating tobacco use and dependence: 2008 update U.S. Public Health Service Clinical Practice Guideline executive summary. Respir Care, 2008. 53 (9): p. 1217-22.
8. Anthenelli, R.M., et al., Neuropsychiatric safety and efficacy of varenicline, bupropion, and nicotine patch in smokers with and without psychiatric disorders (EAGLES): a double- blind, randomised, placebo-controlled clinical trial. Lancet, 2016. 387(10037): p. 2507-20.
9. Rigotti, N.A., et al., Interventions for smoking cessation in hospitalised patients. Cochrane Database Syst Rev, 2012(5): p. CD001837.
10. The Joint Commission. Tobacco treatment measure set. 2012 http://www.jointcommission.org/tobacco_treatment/.
11. Fiore, M.C. and R. Adsit, Will Hospitals Finally "Do the Right Thing"? Providing Evidence- Based Tobacco Dependence Treatments to Hospitalized Patients Who Smoke. Jt Comm J Qual Patient Saf, 2016. 42(5): p. 207-8.
12. Leone, F.T., et al., An Official American Thoracic Society Research Statement: Current Understanding and Future Research Needs in Tobacco Control and Treatment. Am J Respir Crit Care Med, 2015. 192(3): p. e22-41.
13. Fiore, M.C., E. Goplerud, and S.A. Schroeder, The Joint Commission's new tobacco-cessation measures--will hospitals do the right thing? N Engl J Med, 2012. 366(13): p. 1172-4.

Please provide the following information about your topic suggestion:

Question 1:

- What is the issue or question?
    - Among hospitalized patients receiving inpatient treatment for tobacco dependence, is extending treatment for 1-month post-discharge more effective at promoting abstinence than inpatient treatment alone?

- Identify the population of interest, including details such as age range, gender, coexisting diagnoses, and reasons for therapy.
    - Hospitalized patients who are current users of tobacco (stratify by severity of tobacco dependence if data allows)
- Identify the interventions (treatments, tests, or strategies) that you want to know more about, and what are the appropriate comparisons.
    - **Intervention:** Inpatient tobacco treatment + 1 month post-discharge treatment
    - **Comparator:** inpatient tobacco treatment alone
- Identify the important outcomes (health related benefits and harms) in which you are interested, such as improvements in symptoms or problems with diagnosis.
    - Smoking abstinence, and tobacco use relapse rates following treatment.

Question 2:

- What is the issue or question?
    - For hospitalized patients who smoke cigarettes, is varenicline more effective at promoting abstinence than nicotine replacement therapy?
- Identify the population of interest, including details such as age range, gender, coexisting diagnoses, and reasons for therapy.
    - Hospitalized patients who are current users of tobacco.
- Identify the interventions (treatments, tests, or strategies) that you want to know more about, and what are the appropriate comparisons.
    - **Intervention:** Varenicline
    - **Comparator:** nicotine replacement therapy
- Identify the important outcomes (health related benefits and harms) in which you are interested, such as improvements in symptoms or problems with diagnosis.
    - Smoking abstinence, nicotine withdrawal symptoms, and tobacco use relapse rates following treatment, adverse events

Question 3:

- What is the issue or question?
    - For vulnerable patient populations [serious mental illness (SMI), low SES, and/or substance use disorders (SUD)] with co-morbid tobacco dependence, are enhanced strategies more effective at (1) facilitating uptake of evidence-based tobacco treatment during hospitalization inpatient and at discharge and (2) promoting abstinence compared to minimal standard inpatient tobacco treatment alone?
- Identify the population of interest, including details such as age range, gender, coexisting diagnoses, and reasons for therapy.
    - SMI/low SES/SUD patients with co-morbid tobacco dependence.
- Identify the interventions (treatments, tests, or strategies) that you want to know more about, and what are the appropriate comparisons.
    - **Intervention:** Minimal standard inpatient tobacco treatment* + enhanced strategies**
    - **Comparator:** Minimal standard inpatient tobacco treatment alone
    - *Minimal standard inpatient tobacco treatment: (1) NRT (nicotine replacement therapy) patch for management of acute nicotine withdrawal

while hospitalized and advice to quit and (2) offering NRT and referral to state quitline at hospital discharge
    - **Enhanced strategies: (1) Minimal standard inpatient tobacco treatment + (2) inpatient tobacco treatment counseling OR (3) interactive voice recognition at discharge OR other modality
- Identify the important outcomes (health related benefits and harms) in which you are interested, such as improvements in symptoms or problems with diagnosis.
    - Treatment engagement following hospital discharge, smoking abstinence, and tobacco use relapse rates following treatment, increase or decrease in other substance use, change in tobacco use

Question 4:

- What is the issue or question?
- How effective are performance-based payment strategies (e.g. pay-for-performance, accountable care organizations, and bundled payment) in meeting hospital-based tobacco treatment quality standards?
- Identify the population of interest, including details such as age range, gender, coexisting diagnoses, and reasons for therapy.
- Hospitalized patients who are current users of tobacco and/or hospital programs.
- Identify the interventions (treatments, tests, or strategies) that you want to know more about, and what are the appropriate comparisons.
- Intervention: Payment strategies
- Comparator: no payment strategies
- Identify the important outcomes (health related benefits and harms) in which you are interested, such as improvements in symptoms or problems with diagnosis.
- Delivery of tobacco treatment, meeting Joint Commission tobacco quality standards for hospitals, cost savings, effect on disparity
- Importance of Suggested Topic

2. Describe why this topic is important

Cigarette smoking is the leading cause of preventable death in the US, yet nearly 36.5 million Americans continue to smoke cigarettes. Smoking prevalence is inversely correlated with socioeconomic status (SES), and is more than twice the national average among the lowest income individuals. There are extraordinarily high smoking rates among certain populations admitted to the hospital, such as those with HIV, psychiatric and/or substance use disorders.

3. Tell us why you are suggesting this topic

The Department of Health and Human Services (DHHS) 2008 update on Clinical Practice Guidelines for Treating Tobacco Use and Dependence recommends that clinicians use hospitalization as an opportunity to promote tobacco treatment and to prescribe medications to alleviate withdrawal symptoms. Joint Commission, which sets quality standards for hospitals in the United States, recommended global (population) tobacco performance measures that would address all hospitalized smokers regardless of diagnosis and clinical condition. Despite evidence generally supporting the benefits of providing tobacco treatment services to hospitalized patients, few hospitals have fully implemented the Joint Commission quality standards.

With the Affordable Care Act (ACA) placing greater focus on prevention in healthcare, Medicaid coverage mandates, and other legislative and regulatory requirements (Meaningful Use requirements and Joint Commission Hospital Tobacco Cessation measures), there is a great opportunity to engage healthcare providers and systems in tobacco control efforts in the hospital setting.

The policy changes represented by the ACA and the Joint Commission Tobacco Cessation Measure Set, in combination with the increase in experience in treating smokers who are hospitalized, makes this is an opportune time to provide guidance on how to implement the most efficient and effective ways to treat hospitalized patients who smoke.

While studies have shown that tobacco treatment services can be effectively integrated into hospital workflows, adoption is low. There is considerable variability and controversies that could be resolved by development of an evidence report as detailed below:

Despite evidence supporting the benefits of providing tobacco treatment services to hospitalized patients, few hospitals have fully implemented the Joint Commission quality standards.

Most hospitals lack a common, feasible, cost-effective and sustainable approach to delivering tobacco treatment interventions.

Evidence-based tobacco treatment is not consistently provided to patients who are hospitalized.

There is the low proportion of smokers who complete all components of the originally recommended Joint Commission Tobacco Cessation Performance Measure Set.

Given limited resources, there is controversy on whether to focus tobacco treatment services to all smokers versus focusing on selected patient populations (e.g., motivated patients; patients willing to set a quit).

The goal of this evidence review and subsequent clinical practice guideline is to provide guidance to healthcare systems on implementing tobacco treatment strategies to hospitalized smokers that meet both national guideline recommendations and quality standards, support clinicians in these efforts, and most importantly improve patient care.

Target date

Month

Day

Year

Tell us if you have a target date for answering your question and whether you are under a specific timeline.

4. Describe what you are doing currently and what you are hoping will change because of a new evidence report.

As described above, there is still considerable variability in providing tobacco treatment services that could be resolved by the development of an evidence report, and subsequent clinical practice guideline:

Despite evidence supporting the benefits of providing tobacco treatment services to hospitalized patients, few hospitals have fully implemented the Joint Commission quality standards.

Most hospitals lack a common, feasible, cost-effective and sustainable approach to delivering tobacco treatment interventions.

Evidence-based tobacco treatment is not consistently provided to patients who are hospitalized.

There is the low proportion of smokers who complete all components of the originally recommended Joint Commission Tobacco Cessation Performance Measure Set.

Given limited resources, there is controversy on whether to focus tobacco treatment services to all smokers versus focusing on selected patient populations (e.g., motivated patients; patients willing to set a quit).

5. How will you or your group use the information from a new evidence report?

Systematic evidence reviews form the basis of all CHEST clinical practice guidelines. If this topic is selected for an AHRQ review, the results of the review will directly inform a guideline that establishes the minimum standard of support for tobacco users across hospitals. This guideline will provide guidance on how to place the necessary systems and policies in place to encourage and enable consistent and effective support to hospitalized tobacco users.

6. How would you or your group plan to disseminate information from the report? Who would you plan to disseminate it to?

The findings of the report will be disseminated in various ways: 1) Communication to CHEST membership (over 19,000 members) via electronic (i.e, eNews alerts), print (i.e., CHEST Physician Newsletter) and social media. There will be several opportunities to inform providers about the report through our eLearning and Live Learning platforms, including the CHEST Annual Meeting. We also intend to present results at other scientific forums high visibility to clinicians and stakeholders. We will present, as relevant, to the American Thoracic Society (ATS), the Society for Research on Nicotine and Tobacco (SRNT), Free to Breathe, a patient advocacy organization for lung cancer, American College Physicians (ACP), American Cancer Society (ACS), and the American Association for Cancer Research (AACR). We also plan to aggressively market the resulting guideline and resources in both academic forums and to the larger audience of hospitalized smokers and their clinicians.

Other Stakeholders Who Could Use a New Evidence Report

The EHC Program appreciates opportunities to collaborate with other organizations that can use or implement evidence report findings, whether through practice guidelines, decision support, education, policies, or new research.

Example types of organizations include: patient advocacy organizations, clinical professional societies, health care organizations, and Federal, State, or local agencies.

7. Do you know of organizations that could use an evidence report to change clinical practice? Are you a part of, or have you been in contact with, any organizations that might implement the research findings of an evidence report?

CHEST serves at the primary organization that will directly use this evidence report to develop a clinical practice guideline on this topic. However, we intend to collaborate with organizations that could also benefit from the use of this evidence report, including: the American Thoracic Society, Free to Breathe, The American College of Physicians, the American Cancer Society, the Association for the Treatment of Tobacco Use and Dependence, Society for Research on Nicotine and Tobacco, and the American Association for Cancer Research

8. Would you be willing to partner with another organization to develop policy, program, guidelines, or dissemination and implementation materials? This information is for internal discussion only and will not be displayed on the EHC Program Web site.

Yes, CHEST has a strong history of collaboration in the development of guidelines, educational programming, and dissemination & implementation tools.

Information About You

To help us understand the context of your topic suggestion, it would be helpful to know more about you. The answers you give will not influence the progress of your suggestion.

Provide a description of your role or perspective

e.g., patient/consumer, physician, professional society, administrator

The American College of Chest Physicians (CHEST) is a professional society, and is the global leader in advancing best patient outcomes through innovative chest medicine education, clinical research, and team-based care. With more than 19,000 members representing 100+ countries around the world, our mission is to champion the prevention, diagnosis, and treatment of chest diseases through education, communication, and research. This includes connecting health-care professionals to the latest clinical research and a wide array of evidence- based guidelines through the CHEST Journal, while also serving as a total education resource for clinicians through year-round meetings, books, mobile apps, and live courses in pulmonary, critical care, and sleep medicine.

If you are you making a suggestion on behalf of an organization, please state the name of the organization

The American College of Chest Physicians (CHEST)

Please tell us how you heard about the Effective Health Care Program

CHEST has collaborated with AHRQ in the past on evidence reviews, most recently the Venous Thromboembolism Prophylaxis in Orthopedic Surgery Update.