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Availability and Content of Clinical Guidance for Tobacco Use and Dependence Treatment – United States, 2000–2019

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Abstract

Evidence-based treatments for tobacco use and dependence can increase cessation success but remain underutilized. Health professional societies and voluntary health organizations (advising organizations) are uniquely positioned to influence the delivery of cessation treatments by providing clinical guidance for healthcare providers. This study aimed to review the guidance produced by these organizations for content and consistency with current evidence.

Documents discussing healthcare providers' role in treatment of tobacco use and dependence produced by US-based advising organizations between 2000–2019 were identified in both peer-reviewed and grey (i.e., informally or non-commercially published) literature. Extraction of variables, defined in terms of healthcare provider role and endorsement of specific treatment(s), was completed by two independent reviewers.

Review of 38 identified documents sponsored by 57 unique advising organizations revealed deficits in the direction of comprehensive care and incorporation of the most recent evidence for treatment of tobacco use and dependence. Documents endorsed: screening (74%), pharmacotherapy (68%), counseling (89%), or follow-up (37%). Few documents endorsed more recent evidence-based treatments including combination nicotine replacement therapy (18%), and text- (11%) and web-based (11%) interventions.

Advising organizations have opportunities to address identified gaps and enhance clinical guidance to contribute toward expanding the provision of comprehensive tobacco cessation support.

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Keywords

clinical guidelines; tobacco use and dependence; tobacco cessation; tobacco use treatment

Introduction

Tobacco dependence is a chronic, relapsing disease driven by addiction to nicotine, often requiring multiple treatment interventions and long-term support.[1, 2] Most adults who smoke want to quit, and over half have made a quit attempt in the past year, but few successfully quit in a given year.[1, 3] Evidence-based treatments, including behavioral counseling and pharmacotherapy, can increase cessation success but remain underutilized.[1, 3] Healthcare professionals play an important role in both motivating patients to quit and providing cessation treatments.[4, 5]

The U.S. Surgeon General has concluded that evidence-based clinical practice guidelines increase the delivery of smoking cessation clinical interventions.[1] Such guidelines are available from federal entities; the 2020 Surgeon General's report additionally provides an updated review of the latest research on cessation treatments.[1, 4, 5] Health professional societies and voluntary health organizations (hereafter: "advising organizations") are uniquely positioned to influence and support healthcare professionals' clinical decision making, including through development and dissemination of clinical guidance.[6–8] Numerous advising organizations have produced tobacco-related clinical guidance, but it is unclear if this guidance comprehensively reflects current evidence-based treatments which increase cessation success. This study aimed to identify and describe the content of tobacco-related clinical guidance produced by U.S.-based advising organizations prior to the publication of the 2020 Surgeon General's Report which is currently the most up to date comprehensive review of the evidence regarding cessation treatments.

Methods

We conducted a review of tobacco-related clinical guidance produced by U.S.-based advising organizations between 2000 and 2019. Documents were identified in peer-reviewed and grey (informally or non-commercially published) literature (search parameters in Table A.1). Grey literature was searched for professional societies representing healthcare professionals with prescription authority and voluntary health organizations primarily focused on tobacco-related disease (Table A.2). Only grey literature available in the public domain was included (e.g., policy or position statements available on an organization's website).

Identified documents were screened for inclusionary criteria: sponsored or endorsed by a U.S.-based advising organization; published between 01/01/2000 and 12/31/2019; most recent version of guidance; discussed healthcare professionals' role in treating tobacco use and dependence; and addressed (at a minimum) cessation from combustible tobacco products for any patient population. Documents meeting inclusion criteria were independently reviewed by two researchers; data were abstracted in a blinded fashion

with discrepancies collaboratively reconciled. Data were collected in 2020 and analysis conducted in 2021 using Microsoft Excel.

Variables were defined regarding healthcare professionals' role in treatment delivery and endorsement of treatment(s). Role of provider was coded "yes" if the document specifically instructed or encouraged a healthcare professional to conduct various services: screening; advising quitting; treatment with pharmacotherapy; treatment with behavioral counseling; referral to cessation services; and follow-up. Endorsement of treatment was coded "yes" if the document actively approved or encouraged various aspects of treatment: screening; treatment with pharmacotherapy (and specific types); treatment with behavioral counseling (and specific modalities); treatment with a combination of counseling and pharmacotherapy (hereafter "combined care"); and follow-up (and specific methods). Table A.3 further details variable definitions.

Results

Thirty-eight documents sponsored by 57 unique organizations met inclusion criteria. Most (76%) documents were written primarily for a healthcare professional audience and nearly half (47%) were consensus or scientific statements (Table 1). More than half of documents (58%) focused specifically on treatment of tobacco use ("tobacco-specific"), while the remainder addressed tobacco use treatment within the context of another health condition ("tobacco-inclusive").

Most documents indicated that a provider's role included screening for tobacco use (74%), advising patients to quit (79%), and treating patients with counseling (71%) (Table 2). Fewer documents indicated that a provider's role included treating patients with pharmacotherapy (58%) or referring patients to cessation services (50%). Less than half the documents indicated that a provider's role included provision of follow-up (32%).

Most documents endorsed screening for tobacco use (74%), pharmacotherapy (68%), and counseling (89%), though few endorsed combined care (24%) (Table 2). Approximately half specifically endorsed nicotine replacement therapy (NRT) (50%) or oral prescription medication (45%), but few endorsed combination NRT (18%). Specific counseling modalities were variously endorsed: in-person (61%), quitline (34%), text (11%), and web (11%). Less than half endorsed follow-up (37%).

Compared to tobacco-inclusive documents, more tobacco-specific documents indicated that a provider's role included screening (86% vs 56%), follow-up (45% vs. 13%), and referral to cessation services (59% vs. 38%) (Table 2). Similarly, more tobacco-specific documents endorsed screening (86% vs. 56%), pharmacotherapy (73% vs. 63%), and follow-up (45% vs. 25%), though somewhat fewer endorsed counseling (86% vs 94%).

Discussion

The results of this study suggest gaps in clinical guidance provided by advising organizations regarding treatment of tobacco use and dependence. These gaps include absence in guidance of important treatment elements such as screening, pharmacotherapy,

combined counseling/pharmacotherapy, and follow-up. Additional gaps were identified in the suggested role of clinicians in tobacco-related care provision. Such gaps may be reflected in care delivery.

In one national study, only about half of adults who smoked who saw a healthcare professional in the last year reported receiving clinician advice to quit.[3] National-level data suggest only 25% of hospital outpatient encounters with adults who use tobacco include documentation of tobacco cessation assistance provision.[9] Another national survey indicated that, among patients who smoked and expressed interest in quitting to their provider, only 38% received referral to counseling and 58% were recommended or prescribed pharmacotherapy.[10] Physicians themselves report a lack of awareness of clinical guidelines and a low prevalence of assisting patients with quit attempts, with notable variance by subspecialty.[11] Evidence-based clinical practice guidelines increase the delivery of clinical cessation interventions.[1] Enhancing tobacco-related clinical guidance to better encourage comprehensive treatment approaches, inclusive of screening, counseling, pharmacotherapy, and follow-up care, may help drive improvements in tobacco-related clinical care.

This study additionally reveals opportunities to augment guidance for some sub-specialty clinicians. While we identified tobacco-related guidance for most sub-specialties with a tobacco-related disease in their practice scope, much of this guidance was embedded in tobacco-inclusive documents which had, generally, more identified content gaps. These gaps may be reflected in patient care. In a national survey, more patients received cessation counseling and medication when visiting their primary care physician than when visiting a non-primary care physician.[1] Clinical care teams in all specialties have a role in supporting patient cessation; cigarette smoking affects nearly every organ of the body, and smoking cessation decreases the risk for many adverse health effects.[1] This study's results suggest there may be relatively low-investment, high-yield opportunities to strengthen guidance by revising existing tobacco-inclusive guidance to include comprehensive treatment approaches.

This study also indicates gaps in clinical guidance related to recent evidence. A majority of documents did not endorse telephone, text-based, or web-based cessation services, all of which have been shown to help adults quit smoking.[1] These interventions have an added potential benefit of increased reach of cessation support, particularly to individuals with limited access to other services.[1] Similarly, despite substantial evidence that combination NRT increases quit success, this was not endorsed by the majority of documents.[1, 2] The recency of evidence for some treatments, particularly for web- and text-based interventions, may explain their absence from most clinical guidance. However, these findings highlight an opportunity to increase clinician awareness of newer, evidence-based treatment approaches.

Study Limitations

This study is subject to some limitations. First, the literature review may have excluded existing non-published clinical guidance, such as professional presentations. Second, advising organizations were not contacted directly, so some published guidance may have been inadvertently excluded. Third, as this review included only the most recent version of any given guidance document, an analysis of document content over time was not possible.

Fourth, as this review spans only through 2019, clinical guidance published in 2020 or later was not captured.

Conclusion

Given the substantial public health and economic impact of tobacco product use, providing patients who smoke with comprehensive cessation treatment remains critical.[1, 12, 13] Advising organizations are uniquely positioned to support healthcare providers' clinical decision making, including through provision of clinical guidance for evidence-based tobacco cessation treatment; this study suggests gaps in such guidance. Advising organizations have opportunities to enhance tobacco-related clinical guidance to contribute toward expanding the provision of comprehensive tobacco cessation support.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Declaration of Competing Interest:

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References

1. U.S. Department of Health and Human Services. Smoking Cessation. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2020;
2. Fiore MC, Jaén CR, Baker TB, et al. Treating tobacco use and dependence: 2008 update. Rockville, MD: US Department of Health and Human Services. 2008;
3. Babb S, Malarcher A, Schauer G, Asman K, Jamal A. Quitting smoking among adults—United States, 2000–2015. Morbidity and Mortality Weekly Report. 2017;65(52):1457–1464. [PubMed: 28056007]
4. Clinical Practice Guideline Treating Tobacco U, Dependence Update Panel, Liaisons, and Staff. A clinical practice guideline for treating tobacco use and dependence: 2008 update. A U.S. Public Health Service report. Am J Prev Med. 2008;35(2):158–176. doi:10.1016/j.amepre.2008.04.009 [PubMed: 18617085]
5. Krist AH, Davidson KW, Mangione CM, et al. Interventions for tobacco smoking cessation in adults, including pregnant persons: US Preventive Services Task Force Recommendation Statement. Jama. 2021;325(3):265–279. [PubMed: 33464343]
6. Dalsing MC. Industry working with physicians through professional medical associations. Journal of vascular surgery. 2011;54(3):41S–46S. [PubMed: 21872115]
7. Schwartz S The role of professional medical societies in reducing practice variations. Health Affairs. 1984;3(2):90–101. [PubMed: 6469199]
8. Twa MD. Evidence-based Clinical Practice: The Role for Professional Societies. Optometry and Vision Science. 2020;97(1):1–2. [PubMed: 31895270]
9. Jamal A, Dube SR, King BA. Peer Reveiwed: Tobacco Use Screening and Counseling During Hospital Outpatient Visits Among US Adults, 2005–2010. Preventing chronic disease. 2015;12

10. King BA, Dube SR, Babb SD, McAfee TA. Patient-reported recall of smoking cessation interventions from a health professional. Preventive medicine. 2013;57(5):715–717. [PubMed: 23872172]

11. Schaer DA, Singh B, Steinberg MB, Delnevo CD. Tobacco Treatment Guideline Use and Predictors Among US Physicians by Specialty. Am J Prev Med. 2021;61(6):882–889. [PubMed: 34364726]

12. National Center for Chronic Disease Prevention and Health Promotion (US) Office on Smoking and Health. The Health Consequences of Smoking--50 years of Progress: A Report of the Surgeon General. Atlanta (GA): Centers for Disease Control and Prevnetion (US); 2014.

13. Xu X, Bishop EE, Kennedy SM, Simpson SA, Pechacek TF. Annual healthcare spending attributable to cigarette smoking: an update. Am J Prev Med. Mar 2015;48(3):326–33. doi:10.1016/j.amepre.2014.10.012 [PubMed: 25498551]

Table 1.

Characteristics of Tobacco-Related Clinical Guidance Documents from U.S.-Based Health Professional Societies and Voluntary Health Organizations, 2000–2019

	Tobacco Specific[a] n (%)[c]	Tobacco Inclusive[b] n (%)[c]	Total n (%)[c]
Total	22 (58%)	16 (42%)	38 (100%)
Primary Audience			
Healthcare Professional	13 (59%)	16 (100%)	29 (76%)
Healthcare and Public Health Professionals	9 (41%)	0 (0%)	9 (24%)
Year Published			
2000–2008	2 (9%)	2 (13%)	4 (11%)
2009–2019	20 (91%)	14 (88%)	34 (90%)
Document Type			
Clinical Practice Guideline[d]	2 (9%)	5 (31%)	7 (18%)
Consensus or Scientific Statement[e]	8 (36%)	10 (63%)	18 (47%)
Position Statement[f]	12 (55%)	1 (6%)	13 (34%)
Clinical Focus [g]			
General Adult Health	7 (32%)	3 (19%)	10 (26%)
Cardiovascular	1 (5%)	5 (31%)	6 (16%)
Emergency Medicine	1 (5%)	1 (6%)	2 (5%)
Endocrinology	0 (0%)	1 (6%)	1 (3%)
Musculoskeletal	0 (0%)	1 (6%)	1 (3%)
Obstetrics and Gynecology	1 (5%)	0 (0%)	1 (3%)
Oncology	6 (27%)	1 (6%)	7 (18%)
Pediatrics	3 (14%)	0 (0%)	3 (8%)
Psychiatry	1 (5%)	0 (0%)	1 (3%)
Pulmonology	0 (0%)	1 (6%)	1 (3%)
Rheumatology	0 (0%)	1 (6%)	1 (3%)
Surgery	2 (9%)	2 (13%)	4 (11%)

[a] Document focuses specifically on the treatment of tobacco use and dependence.

[b] Document addresses the treatment of tobacco use and dependence within the context of the treatment, management, or prevention of another health condition.

[c] Column percentage totals may not sum to 100% due to rounding.

[d] A recommendation, intended to optimize patient care, informed by a systematic review of evidence of an assessment of benefits and harms of alternative care options

[e] A detailed report to advance the understanding of an issue/procedure/method developed, reviewed, or approved by a panel of experts convened to review the research and intended to support provider decision making when amount/quality of evidence is lacking to develop a clinical practice guideline.

[f] A detailed report explaining, justifying, or suggesting a course of action; comprehensively affirms an organizations' position on a specific topic or policy.

[g] The specific population subgroup, disease process, or care setting in which the article discusses tobacco use and dependence treatment.

Table 2.

Content of Tobacco-Related Clinical Guidance Documents from U.S.-Based Health Professional Societies and Voluntary Health Organizations, 2000–2019

	Tobacco Specific[a]	Tobacco Inclusive[b]	Total
	Yes - n (%)	Yes - n (%)	Yes - n (%)
Provider Role [c]			
Screen	19 (86%)	9 (56%)	28 (74%)
Advise to Quit	17 (77%)	13 (81%)	30 (79%)
Treat with Pharmacotherapy	13 (59%)	9 (56%)	22 (58%)
Treat with Counseling	16 (73%)	11 (69%)	27 (71%)
Refer to Cessation Services	13 (59%)	6 (38%)	19 (50%)
Follow-Up	10 (45%)	2 (13%)	12 (32%)
Endorse[d] Screening	19 (86%)	9 (56%)	28 (74%)
Endorse[d] Pharmacotherapy[e]	16 (73%)	10 (63%)	26 (68%)
Any NRT	11 (50%)	8 (50%)	19 (50%)
Combination NRT	6 (27%)	1 (6%)	7 (18%)
Oral Prescription Medication	9 (41%)	8 (50%)	17 (45%)
Not Specified	4 (18%)	2 (13%)	6 (16%)
Endorse[d] Counseling	19 (86%)	15 (94%)	34 (89%)
In-Person	15 (68%)	8 (50%)	23 (61%)
Quitline	9 (41%)	4 (25%)	13 (34%)
Text-based	4 (18%)	0 (0%)	4 (11%)
Web-based	3 (14%)	1 (6%)	4 (11%)
Not Specified	4 (18%)	7 (44%)	11 (29%)
Endorse[d] Combined Care[f]	5 (23%)	4 (25%)	9 (24%)
Endorse[d] Follow-Up	10 (45%)	4 (25%)	14 (37%)
Telephone	4 (18%)	0 (0%)	4 (11%)
Appointment	3 (14%)	0 (0%)	3 (8%)
Next Visit	3 (14%)	1 (6%)	4 (11%)
Not Specified	5 (23%)	3 (19%)	8 (21%)

[a] Document focuses specifically on the treatment of tobacco use and dependence.

[b] Document addresses the treatment of tobacco use and dependence within the context of the treatment or management of another health condition.

[c] Document instructs, directs, or encourages healthcare providers to conduct an action as part of their role as a provider.

[d] Document approves, supports, or encourages an action (more than passive discussion).

[e] Pharmacotherapy indicates any of the 7 FDA approved smoking cessation medications.

[f] Treatment with a combination of behavioral counseling and pharmacotherapy