

# Quality of smoking cessation advice in guidelines of tobacco-related diseases: An updated systematic review

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## ABSTRACT

Tobacco smoking is a major risk factor for a wide range of diseases, and smoking cessation significantly reduces these risks. Clinical guidelines for diseases associated with smoking should therefore include guidance on smoking cessation. This review updated evidence on the proportion of clinical guidelines that do so. We conducted a systematic review investigating clinical guidelines and recommendations developed by UK national or European transnational medical specialty associations and societies between January 2014 and October 2019 on 16 diseases to be at least twice as common among smokers than non-smokers. Outcomes of interest were the reporting of smoking as a risk factor, and the inclusion either of smoking cessation advice or referral to other cessation guidance. We compared our findings with an earlier review of guidelines published between 2000 and 2013. We identified 159 clinical guidelines/recommendations. Over half (51%) made no mention of smoking, while 43% reported smoking as a risk factor for the development of the disease, 31% recommended smoking cessation and 19% provided detailed information on how to deliver smoking cessation support. These proportions were similar to those in our earlier review. Smoking cessation continues to be neglected in clinical management guidance for diseases caused by smoking.

**KEYWORDS:** Smoking, smoking cessation, guidelines, systematic review

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## Introduction

Tobacco smoking is the largest avoidable cause of premature death and disability in the UK, and is more prevalent in the

European region than in any other region of the world.<sup>1–4</sup> Smoking kills predominantly by causing lung cancer, chronic obstructive pulmonary disease and myocardial infarction, but also by causing or contributing to the development of a wide range of communicable and other non-communicable disorders.<sup>5,6</sup> This burden of disease, which in the UK alone accounts for nearly half a million hospital admissions, 16% of all deaths each year and a substantial societal economic burden, can be prevented by helping smokers to quit.<sup>7–11</sup> However, since quitting smoking also generates substantial improvements in disease progression for many of the conditions caused by smoking, treating smoking dependence should be a key component of the management of all diseases caused by smoking.

Clinical management guidelines for diseases caused by smoking should therefore include, or refer to, guidance on smoking cessation. In 2014, we conducted a review of clinical disease guidelines for a sample of diseases more common among smokers, published between 2000 and 2013, to determine the extent to which smoking cessation was addressed.<sup>12</sup> Our review found that only 60% of guidelines reported smoking as a risk factor for the development of the selected diseases, 40% recommended smoking cessation in disease management and 19% provided detailed information on smoking cessation support. We have now updated this investigation by exploring the extent to which smoking cessation measures have been incorporated into UK or European clinical management guidelines for a range of diseases recently demonstrated to be at least twice as common among smokers and published since January 2014.<sup>5</sup>

## Methods

We used the same methods as in our previous review to identify guidelines and recommendations published between January 2014 to 2019 relating to any of the 16 diseases established in an extensive review by the Royal College of Physicians to be at least twice as common among smokers, and produced or endorsed by a relevant UK national or European transnational medical specialty association, international professional society or government agency.<sup>5,12</sup> Of the diseases that met the criterion of being at least twice as common among smokers, seven diseases (cancers of the pharynx and oral cavity, larynx and lung; ischaemic heart disease (IHD); abdominal aortic aneurysm (AAA); chronic obstructive pulmonary disease (COPD) and pneumonia) were included in our previous study (other diseases previously included did not meet

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the criterion for being twice as common among smokers) and an additional nine were bulimia, hearing loss, hernia, laboratory-confirmed influenza (LCI), peripheral artery disease (PAD), psychosis, rheumatoid arthritis (RA), schizophrenia and sleep apnoea.<sup>12</sup> We performed comprehensive searches of five electronic databases (Medline, EMBASE, National Institute for Health and Care Excellence (NICE) evidence, Guideline International Network (GIN), and Turning Research Into Practice (TRIP)) to October 2019. We also hand-searched all relevant UK and EU authorised organisation websites, such as the websites of European associations or societies for cardiothoracic surgery (EACTS), cardiology (ESC), hernia (EHS), rheumatism (EULAR), medical oncology (ESMO), respiratory (ERS), and clinical microbiology and infectious diseases. We excluded guidelines produced by and for individual European countries outside the UK (non-UK EU country specific guidelines), quality indicator and social care guidance documents. For updated guidelines, only those published from 2014 were considered. The search strategy for Medline is presented in supplementary material S1.

Titles, abstracts and full texts were screened to select eligible guidelines and data extracted using previously piloted checklist forms. Disagreements were resolved by discussion among the authors. The three outcomes of interest were inclusion in the guidance of identification of smoking as a risk factor or major cause of disease; recommending smoking cessation intervention; and provision of, or reference to, smoking cessation guidelines or recommendations of evidence-based treatments for smoking cessation. Simple descriptive summary statistics were used to report the findings.

## Results

Our searches identified 114,038 hits representing 75,222 separate titles, 389 of which were assessed for eligibility from full text; while those excluded were mostly research studies or non-EU publications (supplementary material S2). Of these, 230 were excluded because they did not report on the conditions of interest (199 papers), were English versions of guidelines produced by non-UK EU countries (22 papers) or were guidelines published for the first time before 2014 (nine papers). Thus, there were 159 disease management guidelines eligible for inclusion in the review. For some of the conditions of interest, guidelines were found where multiple conditions were included together in the same guidelines (pharynx/oral cavity and larynx cancers; ischaemic heart disease and peripheral artery disease; and psychosis and schizophrenia), in such cases these conditions were reported together. A full list of eligible guidelines is provided in supplementary material S3.

Just under half (78; 49%) of the 159 included guidelines, comprising 37 UK and 41 European specialty association, international professional society or government agency publications mentioned smoking.<sup>13–90</sup> Of the 81 that made no reference to smoking, 48% were from the UK (Table 1).<sup>90–170</sup> Smoking was mentioned as a risk factor for the development of the disease by 69 (43%) guidelines, a statement recommending smoking cessation was included in 50 (31%) and reference to specific treatments for smoking cessation or to a smoking cessation guideline in 30 (19%). The numbers of guidelines including smoking guidance, and the nature of the guidance included, are summarised in relation to the study disease groups in Table 1.

## Comparison with previous review findings

Although different smoking related diseases were considered, the proportions of guidelines reporting smoking as a risk factor, offering cessation advice or referring to specific cessation guidance in this present review of guidelines published from 2014 to 2019 are very similar to those published between 2000 and 2013 in our previous report (50%, 40% and 19%, respectively).<sup>12</sup> Direct comparisons for guidelines on diseases included in both our earlier and current review are presented in Table 2.

## Discussion

This study demonstrates that acknowledgement of the role of smoking in disease aetiology and management remains widely ignored in clinical guidelines for diseases strongly related to smoking.

Since the clinical management of smoking-related diseases should include ascertainment of smoking status and delivery of effective smoking cessation support, this represents a significant and sustained neglect of a major reversible cause of disease.

Quitting smoking reduces the progression of COPD, the incidence of acute lung infections and asthma exacerbations, improves lung cancer survival, and reduces the risk of recurrence of myocardial infarction and stroke.<sup>171–178</sup> Smoking cessation also improves the outcome of head and neck cancer, peripheral artery disease, rheumatoid arthritis, and a range of other conditions.<sup>5,179–186</sup> Encouraging patients with diseases caused by smoking should therefore be a routine component of disease management, and systematic intervention to treat smoking is a fundamental component of evidence-based smoking cessation guidance.<sup>187,188</sup> For nearly half of the guidelines on managing diseases caused by smoking included in this study to fail to even mention smoking cessation is clearly a neglect of the overriding duty of care in medical practice.

Although the identified guidelines for smoking cessation are available, there are people who find it difficult to quit in one-step, and a group who are unwilling. Recommendations for those who would like to quit, but cannot overcome the barriers or are unable to do so using a single intervention, is to provide a combination of options. For instance, pharmacological treatment and electronic interventions in combination with psychosocial interventions, intensive counselling, and interactive and tailored advice and support.<sup>61,189–192</sup> Several Cochrane reviews have supported the effectiveness of these options and have showed enhanced behavioural support focusing on adherence to smoking cessation medications can improve adherence, and therefore recommends that interventions to increase adherence should address the practicalities and perception changes about taking medication.<sup>191–195</sup> As such, counselling interventions given outside routine clinical care by smoking cessation counsellors, including health educators and psychologists, could assist smokers to quit.<sup>195</sup>

In respect to unwillingness to quit, in the UK about 40% of smokers do not want to quit, and despite the reduction in smoking rates across Europe since 2000, these rates are less pronounced compared to Australia and North America.<sup>1,196,197</sup> Reasons for this are influenced by the poor smoke-free legislation and enforcement.<sup>196,197</sup> Intention and willingness to quit smoking is associated with a variety of different characteristics, especially socio-demographic factors, and includes a combination of low awareness of smoking-associated health risks and lack of previous

**Table 1. Summary of clinical guidelines and recommendations with the reference to smoking**

Disease	Number of included guidelines	Number mentioning smoking, n (%)	Type of reference to smoking, n (%)			Number not mentioning smoking, n (%)
			Smoking as a risk factor	Smoking cessation advice	Specific treatment / reference to guideline	
Cancer						
Pharynx/oral cavity cancer and larynx cancer	10 (8 UK, 2 EU)	6 (60) (5 UK, 1 EU)	6 (60) (5 UK, 1 EU)	3 (30) (2 UK, 1 EU)	2 (20) (2 UK)	4 (40) (3 UK, 1 EU)
Lung cancer	17 (4 UK, 13 EU)	8 (47) (2 UK, 6 EU)	6 (35) (2 UK, 4 EU)	6 (35) (2 UK, 4 EU)	4 (24) (2 UK, 2 EU)	9 (53) (3 UK, 6 EU)
Cardiovascular						
Abdominal aortic aneurysm	11 (4 UK, 6 EU, 1 Intl)	7 (64) (3 UK, 4 EU)	7 (64) (3 UK, 4 EU)	5 (45) (1 UK, 4 EU)	2 (18) (2 EU)	4 (36) (1 UK, 2 EU, 1 Intl)
Ischaemic heart disease and peripheral artery disease	28 (10 UK, 18 EU)	20 (71) (8 UK, 12 EU)	17 (61) (7 UK, 10 EU)	15 (54) (5 UK, 10 EU)	7 (25) (3 UK, 4 EU)	8 (29) (2 UK, 6 EU)
Mental health						
Psychosis and schizophrenia	18 (11 UK, 5 EU, 2 Intl)	9 (50) (7 UK, 2 EU)	6 (33) (4 UK, 2 EU)	9 (50) (7 UK, 2 EU)	8 (44) (6 UK, 2 EU)	9 (50) (4 UK, 3 EU, 2 Intl)
Respiratory						
COPD	16 (5 UK, 11 EU)	13 (81) (5 UK, 8 EU)	13 (81) (5 UK, 8 EU)	6 (36) (2 UK, 4 EU)	5 (31) (2 UK, 3 EU)	3 (19) (3 EU)
Pneumonia	7 (5 UK, 2 EU)	1 (14) (1 UK)	1 (14) (1 UK)	1 (14) (1 UK)	1 (14) (1 UK)	6 (86) (4 UK, 2 EU)
Lab confirmed influenza	4 (4 UK)	0 (0)	0 (0)	0 (0)	0 (0)	4 (100) (4 UK)
Sleep apnoea	5 (1 UK, 1 EU, 3 Intl)	1 (20) (1 Intl)	1 (20) (1 Intl)	0 (0)	0 (0)	4 (80) (1 UK, 1 EU, 2 Intl)
Others						
Bulimia	5 (5 UK)	0 (0)	0 (0)	0 (0)	0 (0)	5 (100) (5 UK)
Hearing loss	8 (3 UK, 2 EU, 3 Intl)	1 (12) (1 Intl)	1 (12) (1 Intl)	0 (0)	0 (0)	7 (88) (3 UK, 1 EU, 3 Intl)
Hernia	13 (5 UK, 5 EU, 3 Intl)	7 (54) (3 UK, 2 EU, 2 Intl)	7 (54) (3 UK, 2 EU, 2 Intl)	1 (8) (1 UK)	2 (15) (2 Intl)	6 (46) (2 UK, 3 EU, 1 Intl)
Rheumatoid arthritis	17 (10 UK, 7 EU)	5 (29) (3 UK, 2 EU)	4 (24) (3 UK, 1 EU)	4 (24) (2 UK, 2 EU)	0 (0)	12 (71) (7 UK, 5 EU)
Total	159 (75 UK, 72 EU, 12 Intl)	78 (49%) (37 UK, 38 EU, 3 Intl)	69 (43%) (33 UK, 33 EU, 3 Intl)	50 (31%) (23 UK, 27 EU)	30 (19%) (17 UK, 13 EU)	81 (51%) (38 UK, 34 EU, 9 Intl)

COPD = chronic obstructive pulmonary disease; EU = European; Intl = international.

**Table 2. Comparison of clinical guidelines reporting on smoking as a risk factor and smoking recommendations of conditions assessed in both the previous and current review**

Conditions reported in both reviews	Number of guidelines		Number providing smoking cessation advice		Number providing specific cessation treatment / guideline reference	
	2000–13	2014–19	2000–13	2014–19	2000–13	2014–19
Pharynx/oral cancer	2	10	2	3	2	2
Lung cancer	26	17	14	6	4	4
Cardiovascular disease	21	29	16	20	13	9
Respiratory disease	11	32	9	7	6	6

quit attempts.<sup>1,198</sup> Hence, for those unwilling to quit, evidence has shown provision of incentives improve smoking cessation rates and the effectiveness that could be sustained even after the withdrawal of incentives.<sup>198,199</sup> In addition, use of comprehensive tobacco control programmes, which include mass media campaigns, can be effective in changing smoking behaviour; and this may be combined with other components of a comprehensive tobacco control policy.<sup>200</sup> This approach would help address environments where there are other non-personal influences on smoking.<sup>200,201</sup> Hence, health impact and promotion information, and improving awareness about quit options and combinations might increase willingness to use smoking cessation.

Our study has one main limitation related to the use of only documents published in the English language. However, we used robust search strategies and screening methods to identify and assess the eligibility of the clinical guidelines included in the review. It is therefore unlikely that any guidelines we did not identify would have a significant impact on our findings. Since the indexing of clinical guidelines is still being developed, we ensured that our search strategies were sensitive and hence identified many publications that were not relevant. Some of the included guidelines were in the form of a very short consensus document or a shortened updated guideline; therefore, due to the restrictions on the length of the documents it is likely that smoking or smoking cessation practice could not be included, but in many cases these documents made no reference to smoking.

The consequence of the omission of smoking cessation management from clinical guidance is likely to be that smoking is not addressed by practitioners delivering care for people with these conditions. We conclude that the role of smoking as a cause of disease, and of smoking cessation in disease management, remains substantially overlooked and neglected in clinical practice, even in relation to the diseases most strongly related to smoking. ■

### Supplementary material

Additional supplementary material may be found in the online version of this article at [www.rcpjournals.org/clinmedicine](http://www.rcpjournals.org/clinmedicine):

S1 – Search strategy for Medline for cancer diseases.

S2 – PRISMA flow chart of search.

S3 – List of eligible guidelines.

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