Public Health England

Protecting and improving the nation's health

Encouraging health professionals to promote behaviour change through making every contact count (MECC), alcohol and smoking brief interventions

Systematic review and strategic behavioural analysis

Contents

Executive Summary

The aim of this work was to develop evidence-based recommendations for interventions that support healthcare proonefessionals (HCPs) in their delivery of screening and brief interventions (SBI)[1] for Making Every Contact Count (MECC)[2], alcohol and smoking. The recommendations were developed using models and tools from behavioural science and are intended for those directly delivering SBIs and also for those who are managing or commissioning these services. A selection can be found in the Recommendations section, with the full list provided in Appendix 4.

HCPs have the potential to promote behaviour change among their patients by delivering SBI for smoking, alcohol and weight-related behaviours. However, research on the MECC approach suggests that HCPs do not always deliver SBIs, even when they recognise a need in their patients (1).

This project explored the barriers and facilitators for HCPs in delivering SBIs as part of routine appointments and contacts. The project also assessed nationally-available interventions (for example, resources and programmes) that aim to encourage the delivery of SBIs by HCPs (note that additional interventions have been made available since this work was undertaken). A mapping exercise was used to understand whether the behaviour change techniques (BCTs) used in these interventions aligned with those deemed to be most effective for targeting common barriers to delivery of SBI by HCPs. The project aimed to find opportunities to improve nationally-delivered interventions (such as workforce training and programmes) that encourage SBI delivery in practice.

The project was the first of its kind to conduct a behavioural analysis of implementation interventions that aim to help the healthcare workforce support population level behaviour change. This was approached by identifying workforce barriers and facilitators, which were then categorised into the components of the Capability Opportunity Motivation model of Behaviour (COM-B) and the domains of the Theoretical Domains Framework (TDF).

Three systematic reviews were conducted to identify the most common workforce barriers and facilitators for each of the topic areas under investigation. To reflect the existing national CQUIN and alcohol, tobacco and MECC programmes underway, this work was grouped into 3 reviews on MECC, alcohol and smoking SBIs. Barriers to SBI delivery observed in all 3 reviews included

[1] Please note that the term ‘screening and brief interventions’ is used here as a broad term to capture all recommended brief intervention approaches, including the screening and brief intervention approach used to target alcohol consumption behaviours but also the very brief intervention approach used to target smoking and tobacco consumption behaviours.

[2] MECC is an approach that refers to the opportunistic delivery of brief or very brief interventions within routine appointments or contacts to help facilitate behaviour change linked to key risk factors such as smoking, alcohol, weight management, physical activity and mental wellbeing. The MECC approach has also been applied to other wider determinants such as addressing debt and social isolation but these MECC+ areas were outside scope of this project.

a lack of time (for example, competing priorities and a high workload), absence of training, SBI delivery not forming part of the job role description or believing it was somebody else's responsibility, and low levels of knowledge (for example, on how to deliver SBIs).

Considering these barriers from the perspective of the TDF, environmental context and resources was the most prominent theme across all 3 topic areas. As well as time pressures, barriers that came under this theoretical domain included a lack of funding for incentives and remuneration (MECC, alcohol, smoking), limited referral options (MECC, alcohol, smoking), poor access to resources (MECC, alcohol, smoking), a culture of focusing on treatment rather than prevention (MECC), a lack of proper assessment procedures (alcohol), low levels of managerial support (MECC, alcohol) and a lack of guidelines (MECC, smoking, alcohol).

Other theoretical domains common to all 3 topic areas were:

- beliefs about capabilities (for example, lack of confidence facilitating behaviour change, difficulty dealing with challenging patients)
- beliefs about consequences (for example, fear of negative patient reactions, fear of damaging patient-HCP relationship)
- knowledge (for example, lack of knowledge regarding guidelines and referral options)
- skills (for example, lack of experience with SBIs and behaviour change)
- emotion (for example, lack of empowerment, feeling bad about own unhealthy lifestyle)

Key stakeholders were consulted in each field to identify the nationally-available workforce interventions that were available at the time. Nine interventions aiming to facilitate the implementation of MECC were identified, along with 6interventions facilitating delivery of alcohol SBI and 7 for smoking SBI. Assessing the content of these interventions revealed that all involved a training component, with the majority also involving education, modelling (providing an example to imitate or aspire to), persuasion and enablement (reducing barriers or increasing means to perform the behaviour). Less common strategies included environmental restructuring (changing the social or physical context; MECC only) and incentivisation (alcohol only).

Across all 3 topics, environmental restructuring, restriction (using rules to increase the target behaviour) and coercion (creating an expectation of punishment or cost) were highlighted as underutilised intervention strategies, based on a mapping exercise between the most important theoretical domains and appropriate intervention content. Environmental restructuring in particular was linked to the most important theoretical domain for all 3 topic areas (environmental context and resources) but was only identified in 3 out of 9 MECC interventions and none of the alcohol or smoking SBI interventions.

Examining the content of interventions in closer detail revealed that very few BCTs had been used when developing national interventions to support workforce delivery of SBI. The mapping exercise indicated that the majority of these BCTs were considered appropriate for addressing

the barriers or facilitators identified in the reviews. However, many appropriate BCTs had not been used at all in any interventions. This highlighted a number of opportunities for future adaptation or development of national interventions to support HCPs to deliver SBIs. These included:

- adding objects to the environment (for example, providing resources that could be used in HCPs' interactions with patients)
- prompts or cues (for example, adding a prompt to computer systems to encourage SBI delivery in the moment)
- problem solving (for example, helping HCPs to identify strategies to overcome their own barriers to delivery)

A full list of recommended BCTs can be found in Appendix 4.

Abbreviations and glossary

Abbreviation	Explanation
BCT	Behaviour change technique; the 'active ingredient' of a behaviour change intervention.
BCW	Behaviour Change Wheel; a behaviour change tool used for intervention development (please see the 'Achieving Behaviour Change' guide for local government for more information on how to use this tool). (2)
COM-B	Capability, Opportunity, Motivation – Behaviour; a model for understanding influences on human behaviour
HCP	Healthcare professional
MECC	Making Every Contact Count; a programme that aims to utilise everyday interactions between healthcare professionals and the public as a channel for delivering brief behaviour change interventions to the public.
SBI	Screening and brief intervention; used here as a broad term to capture all recommended brief intervention approaches, including the screening and brief intervention approach used to target alcohol consumption behaviours but also the very brief intervention approach used to target smoking and tobacco consumption behaviours. The term SBI is also used here to help distinguish these patient-facing interventions from the workforce interventions reviewed in this work.
TDF	Theoretical Domains Framework; a list of broad categories (or domains) into which behavioural influences (for example, barriers and facilitators) can be categorised, to understand which theories and intervention approaches are most likely to be useful for targeting the behaviour in question.
Theoretical domains	The categories that make up the TDF, into which barriers and facilitators can be grouped (see TDF above).

Introduction

Drinking alcohol, using tobacco, eating a poor diet and not engaging in adequate levels of physical activity all pose a significant risk to public health (3, 4, 5). Screening and brief interventions (SBI) (1), consisting of a few minutes of advice and information engaging individuals in a conversation about their health with healthcare professionals (HCPs), can be effective in helping enable individuals to make changes to behaviours linked to morbidity and mortality risks (6, 7). Unfortunately, the potential for HCPs to support behaviour change contrasts with current practice, with HCPs delivering SBIs on only 50% of occasions, even when a need for behaviour change is perceived (1).

Making Every Contact Count (MECC) is an approach to the opportunistic delivery of SBI. Specifically it is: “an approach to behaviour change that uses the millions of day to day interactions that organisations and people have with other people to encourage changes in behaviour that have a positive effect on the health and wellbeing of individuals, communities and populations” (Making Every Contact Count). The MECC approach can include:

1. Brief interventions – engaging, discussing, supporting goal setting, encouraging change and a referral to further support. This often takes no longer than a few minutes.
2. Very brief interventions – engaging, providing information, signposting, recording of information, and a referral to further support. This can often be delivered between 30 seconds and up to 2 to 3 minutes.

Despite evidence of effectiveness, opportunities for the delivery of SBIs are not always seized by HCPs (8). More could be done to help encourage HCPs to deliver brief interventions within their everyday practice.

Aims

The aims of this work were to:

1. Identify the barriers and facilitators associated with the delivery of MECC, alcohol and smoking SBIs by HCPs.
2. Identify nationally available interventions that aim to facilitate HCPs’ delivery of MECC, alcohol and smoking SBIs, and examine the BCTs used within them.
3. Develop an evidence-based list of opportunities for enhancing interventions that aim to support HCPs in their delivery of MECC, alcohol and smoking SBIs, using models and tools from behavioural science. These recommendations are intended for those directly delivering SBIs and also for those who are managing or commissioning these services.

Methods

Due to individual bodies of literature existing for the barriers and facilitators associated with delivery of MECC, alcohol and smoking SBIs, and to reflect the existing programmes of work for these 3 areas, 3 separate but linked behavioural analyses were conducted.

Three systematic reviews of the literature were conducted to identify barriers and facilitators associated with the delivery of MECC, alcohol and smoking SBIs by HCPs. The MECC review included empirical studies published from 2005, the alcohol review included peer-reviewed systematic review and meta-analyses published from 2000, and the smoking review included empirical studies published from 2000. All 3 reviews were conducted in March 2018. Appendix 1 contains details of the review methodology, including PICOS criteria, databases searched, search terms, study selection, quality assessment and PRISMA flow charts.

The barriers and facilitators identified in the studies included in these reviews were then categorised into the components of the Capability Opportunity Motivation model of Behaviour (COM-B) and the domains of the Theoretical Domains Framework (TDF). This allowed identification of the key domains that are most likely to underpin whether or not HCPs deliver MECC, alcohol and smoking SBIs. Domains were prioritised based on (i) the number of studies that discussed at least one barrier related to the domain, and (ii) the number of individual barriers related to that domain.

Main stakeholders were engaged in generating a list of national workforce interventions aimed at promoting the delivery of MECC, alcohol and smoking SBIs. Intervention content was assessed and categorised into:

- intervention types – drawing from a list of overarching functions that interventions can serve such as Education or Restriction, described as “intervention functions or types” in the Behaviour Change Wheel (BCW) (2, 9)
- behaviour change techniques – BCTs: specific techniques or ‘active component[s]’ that make up interventions at a granular level, as listed in the Behaviour Change Technique Taxonomy V1 (10)

It is possible for interventions to fall within more than one intervention type and to contain many different BCTs. In a mapping exercise, expert consensus tables were consulted to match the key domains (that is, those that were most strongly associated with workforce barriers to SBI delivery) to appropriate intervention types and BCTs. The results of this exercise were then compared against the lists of intervention types and BCTs actually identified in the existing interventions. The BCTs identified in interventions were classified as having low, medium or high theoretical congruence according to whether they matched up with the most important workforce barrier domains. Missed opportunities for behavioural intervention content were identified by listing the intervention types and BCTs that would have been appropriate for targeting the most important domains but had not been used.

Main findings

MECC

Twenty-seven studies were identified in the systematic review that examined barriers and facilitators to the delivery of MECC in health, pharmacy (including community pharmacy) and dental care settings by HCPs. The quality of the studies ranged from very good (n=8) through good (n=9) and fair (n=8) to poor (n=2). No studies were rated as very poor. Eight theoretical domains were identified as important and are listed in the table below.

Table 1. Most important TDF domains, with associated barriers and facilitators – MECC

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
1	Environmental context and resources (physical opportunity)	• lack of time • lack of funding for reimbursement or incentive schemes • lack of continuity of advice given • problems getting referrals or lack of referral options • limited capacity of the practice (for example, personnel and time) • the organisation of care (for example priority given to routine tasks, no continuity of care) • tack of support from middle management • lack of access to further support for patients or clients • complexity of recording system for MECC • lack of resources (for example, health promotion leaflets) • lack of cooperation with other disciplines	• reimbursement • information about other services and where to refer • access to resources such as interventions and leaflets in the practice • staff availability • management support • support via professional networks • continuity of care • collaboration with other disciplines and programmes • signposting

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
		• contradictory government policy • focus on treatment versus prevention culture • the focus of acute settings on discharge • absence of guidelines • lack of staff • lack of overview of local health promoting programmes • lack of privacy for discussions in hospital environment • lack of communication between organisations	
2	Beliefs about capabilities (reflective motivation)	• lack of confidence in facilitating behaviour change or speaking to patients about topic • perceptions of whether MECC is part of their role or someone else's responsibility • difficulty in dealing with challenging patients • own (negative) lifestyle behaviour • concern about providing for individuality in behaviour change needs • perception that patient ability to change reduces effectiveness of brief intervention • lack of empowerment or feelings of being undervalued	• lifestyle behaviours of clinicians or personal experience of change • local knowledge (for example, understanding of community, relationships) • ability to identify opportunities to intervene • positive experiences with prevention • confidence in addressing lifestyle risk factors

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
3	Knowledge (psychological capability)	• lack of knowledge (for example, of guidelines and services to refer to and so on) • lack of knowledge of evidence for effectiveness or appropriateness of brief advice, behaviour change or MECC • perceptions that MECC is not part of their role or someone else's responsibility • concern about providing for individuality in behaviour change needs • ethical concerns about giving lifestyle advice without accounting for patients' wider circumstances • perception that discussing behaviour change is futile if patient is perceived to lack knowledge on its importance	• knowledge of effectiveness of brief advice • knowledge of benefits of using the skills • information about other services and where to refer • education (health promotion included in the undergraduate curriculum)
4	Beliefs about consequences (reflective motivation)	• concerns about damaging the doctor patient relationship • lack of knowledge of evidence for effectiveness or appropriateness of brief advice, behaviour change or MECC • difficulty in dealing with challenging patients	• rapport or relationship with patients • perception that it will improve health in the future • perception that it will bring benefits to patients • knowledge of effectiveness of brief advice • knowledge of the benefits of using the skills

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
		• concern that intervention is too late • ethical concerns about giving lifestyle advice without accounting for patients' wider circumstances • patient considered to be too high risk for brief intervention alone • perceived patient attitudes towards behaviour change	
5	Intentions (reflective motivation)	• perceptions that MECC is not part of their role or someone else's responsibility • personal lack of interest in providing preventive services • perceptions of lack of patient motivation to change	• personal interests (for example, in prevention)
6	Skills (psychological capability and physical Capability)	• lack of training • concern about providing for individuality in behaviour change needs	• training • positive experiences with prevention • education (health promotion included in the undergraduate curriculum)
7	Social professional role and identity (reflective motivation)	• perceptions that MECC is not part of their role or someone else's responsibility • view that non-clinical staff are not appropriate advice providers • lack of empowerment or feelings of being undervalued	• perception that MECC is part of role

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
8	Emotions (automatic motivation)	• difficulty in dealing with challenging patients • own (negative) lifestyle behaviour • lack of empowerment or feelings of being undervalued	• lifestyle behaviours of clinicians or personal experience of change
9	Reinforcement (automatic motivation)	• lack of funding for reimbursement or incentives	• reimbursement
10	Social influences (social opportunity)	• family and peer pressure for patients	• improved relationships with patients • management support
Not identified in any papers	Memory, attention, and decision making (psychological capability), behavioural regulation (psychological capability), goals (reflective motivation), optimism (reflective motivation)		

We identified 9 nationally-available interventions that were developed to promote the delivery of MECC by HCPs such as e-learning modules (see Table 2 for intervention details and links; note that some interventions have been updated since this research was undertaken, and new interventions have been made available since). Intervention types and BCTs identified in each intervention are listed in the table below.

The table also highlights the extent to which the BCTs identified in the interventions were considered to be a match for the 8 domains identified as important for prioritisation (theoretical congruence). Theoretical congruence is shown as low (red), medium (yellow) or high (green) and indicates whether individual BCTs are appropriate for targeting the barriers identified in the systematic review.

The intervention that contained the most highly theoretically congruent BCTs was the All Our Health guidance and resources (containing 6highly congruent BCTs), followed by Health Education England e-Learning for Healthcare MECC module , MECC Online Training (Wessex), Everyday Interactions, Healthy Living Pharmacy, CQUIN Guidance 2017 to 2019, and Making Every Contact Count e-Learning Package for West Midlands (each containing 5 highly congruent BCTs).

The BCTs of feedback on behaviour, information about health consequences, and behavioural practice or rehearsal were present in all of the reviewed national workforce interventions to support MECC delivery. These BCTs were all observed to have a high theoretical congruence as they were paired with 2 key theoretical domains for delivery of SBI – knowledge and beliefs about consequences. Instruction on how to perform the behaviour was also found in all of the reviewed national workforce interventions, but this BCT was observed to have low theoretical congruence as it did not match with any of the important theoretical domains identified for enabling delivery of MECC[3].

Of the 11 unique BCTs identified in national workforce MECC interventions, one had low theoretical congruence (red), 4 had medium congruence (yellow) and 6 had high theoretical congruence (green) (see Table 2). BCTs with high congruence related to providing feedback on HCPs' behaviour, delivering information about health and social and environmental consequences, enabling behavioural practice, providing information about antecedents and using a credible source to deliver messages.

Table 2. National MECC interventions, the intervention types they serve and the BCTs they contain along with theoretical congruence with important TDF domains (that is, influences on MECC delivery)

Key

H (green) = high theoretical congruence between BCT and key theoretical domains for MECC delivery. M (yellow) = medium theoretical congruence. L (red) = low theoretical congruence. Please note that web pages signposted in links may have been updated since this research was conducted, and are provided to indicate sources only.

Intervention name and link	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
MECC Level 2 TEnT PEGS training	Education Modelling Persuasion Training	Feedback on behaviour	H
		Information about antecedents	H
		Information about health consequences	H
		Behavioural practice or rehearsal	H
		Demonstration of the behaviour	M

[3] Based on the expert consensus tables used for this research, the BCT instruction on how to perform the behaviour was not linked to any of the key domains identified here. However, it is acknowledged that information of this kind is a pre-requisite for behaviour. Since this work was completed, an updated tool linking the domains of the Theoretical Domains Framework (plus additional mechanisms of action) to BCTs has been released. This updated tool shows instruction on how to perform the behaviour to be linked to some of the key domains identified here.

Intervention name and link	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
		Instructions on how to perform the behaviour	L 
Health Education England e-Learning for Healthcare MECC module	Education Enablement Modelling Persuasion Training	Feedback on behaviour	H 
		Information about antecedents	H 
		Information about health consequences	H 
		Information about social and environmental consequences	H 
		Behavioural practice or rehearsal	H 
		Demonstration of the behaviour	M 
		Habit formation	M 
		Restructuring the physical environment	M 
		Instructions on how to perform the behaviour	L 
Making Every Contact Count E-Learning Package for Essex	Education Enablement Persuasion Training Modelling	Feedback on behaviour	H 
		Information about health consequences	H 
		Behavioural practice or rehearsal	H 
		Demonstration of the behaviour	M 
		Restructuring the physical environment	M 
		Instructions on how to perform the behaviour	L 
MECC Online Training (Wessex)	Education Environmental restructuring Modelling Persuasion	Feedback on behaviour	H 
		Information about antecedents	H 

Intervention name and link	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
	Training	Information about health consequences	H
		Information about social and environmental consequences	H
		Behavioural practice or rehearsal	H
		Demonstration of the behaviour	M
		Habit formation	M
		Restructuring the physical environment	M
		Restructuring the social environment	M
		Instructions on how to perform the behaviour	L
All our health guidance	Education Environmental restructuring Modelling Persuasion Training	Feedback on behaviour	H
		Information about antecedents	H
		Information about health consequences	H
		Information about social and environmental consequences	H
		Behavioural practice or rehearsal	H
		Credible source	H
		Demonstration of the behaviour	M
		Habit formation	M
		Restructuring the physical environment	M
		Instructions on how to perform the behaviour	L

Intervention name and link	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
Everyday interactions	Education Enablement Modelling Persuasion Training	Feedback on behaviour	H
		Information about antecedents	H
		Information about health consequences	H
		Information about social and environmental consequences	H
		Behavioural practice or rehearsal	H
		Demonstration of the behaviour	M
		Habit formation	M
		Restructuring the physical environment	M
		Instructions on how to perform the behaviour	L
Healthy Living Pharmacy	Education Enablement Modelling Persuasion Training	Feedback on behaviour	H
		Information about antecedents	H
		Information about health consequences	H
		Information about social and environmental consequences	H
		Behavioural practice or rehearsal	H
		Demonstration of the behaviour	M
		Habit formation	M
		Restructuring the physical environment	M
		Instructions on how to perform the behaviour	L

Intervention name and link	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
CQUIN Guidance and Training 2017 to 2019	Education Enablement Environmental restructuring Modelling Persuasion Training	Feedback on behaviour	H
		Information about antecedents	H
		Information about health consequences	H
		Information about social and environmental consequences	H
		Behavioural practice or rehearsal	H
		Demonstration of the behaviour	M
		Habit formation	M
		Restructuring the physical environment	M
		Restructuring the social environment	M
		Instructions on how to perform the behaviour	L
Making Every Contact Count E-Learning Package for West Midlands	Education Enablement Modelling Persuasion Training	Feedback on behaviour	H
		Information about antecedents	H
		Information about health consequences	H
		Information about social and environmental consequences	H
		Behavioural practice or rehearsal	H
		Demonstration of the behaviour	M
		Habit formation	M
		Restructuring the physical environment	M

Intervention name and link	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
		Instructions on how to perform the behaviour	L 

The analysis highlighted a number of ways that existing national initiatives to support the delivery of brief interventions can be strengthened. The majority of BCTs linked to 7 of the 8 most important domains (beliefs about capabilities, beliefs about consequences, skills, social professional role and identity, environmental context and resources, emotion and intentions) were not used at all in existing interventions (Appendix 3). This finding indicates numerous missed opportunities for intervention design and behaviour change. Some missed opportunity BCTs are listed in the Recommendations section of this report, and all appropriate BCTs for the 8 most important domains have been listed in Appendix 4, along with suggestions for their implementation. Opportunity seized was the highest for the knowledge domain, with 4 out of 7 relevant BCTs being used at least once in interventions. This suggests that the reviewed national interventions promoting the delivery of MECC by HCPs mostly focus on imparting knowledge.

Some intervention types had not been used in the reviewed national interventions, despite their relevance to key theoretical domains for enabling delivery of SBI (Appendix 3). These missing intervention types included:

- restriction (using rules to increase the target behaviour by reducing the opportunity to engage in competing behaviours)
- coercion (creating an expectation of cost)
- and incentivisation (creating an expectation of reward

Environmental restructuring, which is particularly relevant for the most important domain environmental context and resources, was only identified in 3 of the reviewed national interventions, indicating that the majority of reviewed interventions and resources missed opportunities to target barriers relating to this key theoretical domain.

Alcohol

For this topic, a systematic review of reviews was conducted, due to a number of pre-existing systematic reviews on the topic. Through this review of reviews, 5 systematic reviews were identified examining barriers and facilitators to delivery of alcohol SBI in health, pharmacy (including community pharmacy) and dental care settings worldwide by HCPs. The quality of the reviews was either very good (n=4) or good (n=1). 7 domains, listed in the table below, were identified as important and are suggested for prioritisation.

Table 3. Most important TDF domains with associated barriers and facilitators – alcohol brief interventions

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
1	Environmental context and resources (physical opportunity)	• lack of time • competition with other pressing healthcare needs or heavy workload • lack of proper or standardised assessment procedures (for example, of alcohol use) • lack of financial incentives or re-imbursement • alcohol use perceived as too serious problem to be dealt by social services • language barriers for patients • lack of structural and managerial support • lack of privacy or counselling facilities • lack of staff • lack of resources • lack of therapeutic work (workplace) • limited access to specialist centres for referrals • lack of guidelines	• financial incentives • adequate organisational support and resources • appropriate context • involvement of non-clinical staff • availability of screening and brief intervention materials
2	Beliefs about consequences (reflective motivation)	• fear of damaging HCP or patient relationship • brief intervention too impersonal and worked against person-centred care • practitioners concerns about upsetting patients • clinical inertia	• positive beliefs about screening measures • clarity of the intervention

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
		• views on the appropriateness of alcohol screening in emergency departments • views on the effectiveness of interventions • perceived complexity of intervention • compatibility of beliefs (for example, religious) • drinking viewed as a difficult topic to raise • negative consequences of self-disclosure when SBI delivered in workplace	
3	Skills (psychological capability)	• lack of experience and knowledge • problems with detecting 'at-risk' individuals • lack of training or follow up training • severity of injury in patients seen in emergency departments	• training • prior experience
4	Beliefs about capability (reflective motivation)	• own alcohol use • lack of confidence or self-efficacy • perceived complexity of intervention	• clarity of the intervention
5	Social professional role and identity (reflective motivation)	• unclear role definition for addressing alcohol use	• none
Joint sixth and seventh	Knowledge (psychological capability)	• views on the effectiveness of interventions • lack of experience and knowledge	• sufficient knowledge

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
		• problems with detecting 'at-risk' individuals • clinical inertia	
	Emotions (automatic motivation)	• own alcohol use • dissatisfaction with training • fear of negative patient reaction • stigma for patients	• none
8	Intentions (reflective motivation)	• lack of professionals' commitment to the aims of training • lack of motivation in staff • reluctance to bring up the topic of drinking with young people • perceived lack of motivation among patients	• none
9	Reinforcement (automatic motivation)	• lack of financial incentives or reimbursement	• financial incentives
Joint 10th and 11th	Social influences (social opportunity)	• drinking alcohol is perceived as a social 'norm'	• adequate organisational support and resources • team work
	Memory, attention, and decision making (psychological capability)	• severity of patient injury in emergency departments	• none
Not identified in any papers	Goals (reflective motivation), behavioural regulation (psychological capability), optimism (reflective motivation)		

We identified 6 nationally-available interventions to promote delivery of alcohol SBI by HCPs (see Table 4 for intervention details and links; note that some interventions have been updated since this research was undertaken, and new interventions have been made available since). Intervention types and BCTs identified from intervention materials are listed in Table 4. The

table also highlights the extent to which the BCTs identified in the interventions were considered to be a match for the 7 domains identified as important for prioritisation (theoretical congruence). Theoretical congruence is shown as low (red), medium (yellow) or high (green) and indicates whether individual BCTs are appropriate for targeting the barriers identified in the systematic review.

The BCTs included in the majority of reviewed national workforce interventions were:

- feedback on behaviour
- goal setting
- information about social or environmental consequences
- behavioural practice or rehearsal

These BCTs were all observed to have high theoretical congruence as they were paired with theoretical domains rated as important in the review of barriers and faciltators – beliefs about capabilities, knowledge, beliefs about consequences, and skills. As before, the BCT instruction on how to perform the behaviour was present in all interventions and was observed to have low theoretical congruence as it did not match with any of the most important domains (see footnote 5 on page 15 for a brief discussion on this point). The BCT information about others' approval was also observed to have low theoretical congruence as it was only found to match with one low-rated domain, social influences.

Of the 10 unique BCTs identified in interventions, 2 had low theoretical congruence, 3 had medium congruence and 5 had high congruence. BCTs with high congruence related to providing feedback on HCPs' behaviour, encouraging goal setting, providing information about social and environmental consequences, enabling behavioural practice, and providing information about health consequences.

The interventions with the highest number of highly theoretically congruent BCTs were the NHS Health Check Guidance and Preventing Ill Health CQUIN Guidance (each containing 5 highly congruent BCTs), followed by e-Learning for Healthcare - Alcohol and Tobacco Brief Interventions and E-learning slides from Have a Word (each containing 4 highly congruent BCTs).

Table 4. Interventions, the intervention types they serve and the BCTs they contain along with theoretical congruence with important TDF domains

Key

H (green) = high theoretical congruence between BCT and key theoretical domains for MECC delivery. M (yellow) = medium theoretical congruence. L (red) = low theoretical congruence. Please note that web pages signposted in links may have been updated since this research was conducted, and are provided to indicate sources only.

Intervention name and link	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
NHS Health Check Guidance [Link no longer active]	Education Enablement Modelling Persuasion Training	Goal setting (behaviour)	H
		Feedback on behaviour	H
		Information about health consequences	H
		Information about social and environmental consequences	H
		Behavioural practice or rehearsal	H
		Demonstration of the behaviour	M
		Restructuring the physical environment	M
		Instructions on how to perform the behaviour	L
E-Learning for Healthcare - Alcohol and Tobacco Brief Interventions	Education Enablement Modelling Persuasion Training	Goal setting (behaviour)	H
		Feedback on behaviour	H
		Information about social and environmental consequences	H
		Behavioural practice or rehearsal	H
		Demonstration of the behaviour	M
		Information about others' approval	L
		Instructions on how to perform behaviour	L
Preventing Ill Health CQUIN Supplement Guide (July 2017)	Education Enablement Modelling	Goal setting (behaviour)	H
		Feedback on behaviour	H

Intervention name and link	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
[Link no longer active]	Persuasion Training	Information about health consequences	H
		Information about social and environmental consequences	H
		Behavioural practice or rehearsal	H
		Demonstration of the behaviour	M
		Restructuring the physical environment	M
		Information about others' approval	L
		Instructions on how to perform behaviour	L
NICE Guidance: Alcohol-use disorders: prevention: Public health guideline (PH24)	Enablement Training	Goal setting (behaviour)	H
		Restructuring the physical environment	M
		Instructions on how to perform the behaviour	L
Screening and Treating Tobacco and Alcohol Use (TAM) in hospitals	Education Incentivisation Training	Information about health consequences	H
		Information about social and environmental consequences	H
		Material incentive (behaviour)	M
		Instructions on how to perform the behaviour	L
E-learning slides from Have a Word	Education Enablement Modelling Persuasion Training	Goal setting (behaviour)	H
		Feedback on behaviour	H
		Information about social and environmental consequences	H
		Behavioural practice or rehearsal	H

Intervention name and link	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
		Demonstration of the behaviour	M
		Information about others' approval	L
		Instructions on how to perform the behaviour	L

The analysis highlighted a number of ways that existing national initiatives to support the delivery of brief interventions can be strengthened. The majority of BCTs that would be considered a match for (that is, are theoretically congruent with) the 7 most important theoretical domains were not used at all in existing interventions (see Appendix 3). This finding indicates numerous missed opportunities for intervention design. A selection of relevant BCTs that were not present in any interventions are listed in the Recommendations section and a full list is provided in Appendix 4, along with suggested examples for their implementation. Opportunity seized was the highest for the domain knowledge (3 of the 7 theoretically congruent BCTs were used at least once in interventions. See Appendix 3). The most missed opportunities at the level of individual BCTs were observed for the domains social professional role and identity, and emotion.

Some intervention types had not been used in the reviewed national interventions, despite their relevance to key theoretical domains for enabling delivery of SBI (Appendix 3). These missing intervention types included:

- restriction (using rules to increase the target behaviour by reducing the opportunity to engage in competing behaviours)
- coercion (creating an expectation of cost)
- environmental restructuring (changing the physical or social context)

Environmental restructuring is a particularly relevant intervention type for the theoretical domain identified as most important for delivery of alcohol SBI (environmental context and resources).

Smoking

Forty studies were identified in the systematic review examining barriers and facilitators to delivery of smoking SBI in health, pharmacy (including community pharmacy) and dental care settings worldwide by HCPs. The quality of the studies ranges from very good (n=6) through good (n=26) and fair (n=6) to poor (n=2). No studies were rated as very poor. The top 6 domains listed in Table 5, below, were identified as important and are suggested for prioritisation for change.

Table 5. Most important TDF domains with associated barriers and facilitators – smoking brief interventions

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
1	Environmental context and resources (physical opportunity)	• lack of time • competing priorities • lack of remuneration • lack of adequate resources • unsupportive organisational context • lack of staff or high turnover • the lack of smoking cessation protocols or guidelines • lack or too few available cessation programmes • insurance coverage • lack of privacy • feasibility or technical concerns • lack of demonstration material • perception that the intervention was complex or difficult	• adequate time • adequate funding for health promotion or prevention • providing follow-up visits helps patients stay off cigarettes • adequate autonomy in role • tension or motivation for change due to a lack of training and need for skill building • a strong sense of collective efficacy to provide tobacco cessation services • organisational or managerial support • measurement characteristics (for example, online, self-administered, brief) • pre-established referral system • existence of Health Checks • setting (higher in medical or surgical versus oncology)
2	Beliefs about consequences (reflective motivation)	• negative attitudes towards conducting brief interventions with smokers • concern that patient may not be receptive • fear of negative patient reaction	• perceived effectiveness or cost-effectiveness of intervention • perceived importance of intervention • positive attitude • expectations of a positive outcome

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
		• negative views on the effectiveness of intervention • worry of losing business • concerns SBI could affect the patient or practitioner relationship • concern that intervention is irrelevant • may interfere with therapy goals • respect for patient's self-determination • Being perceived as giving a 'sales pitch' • not seen by clinician as a risk for patient • lack of patient interest or compliance • patient (dis)honesty and confidentiality • feasibility or technical concerns	• risk perception • belief that providing follow-up visits helps patients stay off cigarettes • belief that physicians can be effective in helping their patients stop smoking • belief that advice from a physician is one of the best ways to help people stop smoking • perceptions that delivering SBI is 'normative' • feeling that the behaviour was easy to enact • seeing the effects of tobacco use on the health of patients • belief in the positive impact of smoking cessation interventions on sobriety • perception that patients expect to receive the intervention • perception that patients appreciate provision of smoking cessation counselling • perception that SBI enhances overall client health • perception that smoking cessation helps reduce client's

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
			psychological symptoms
3	Skills (psychological capability)	• lack of training • lack of knowledge about how to help patients to stop smoking • lack of experience • unfamiliar with referral options	• training • education • positive experiences
4	Beliefs about capabilities (reflective motivation)	• personal use of tobacco • lack of confidence • perception that the intervention was complex or difficult • not patient's presenting problem • perception that SBI isn't part of role	• self-efficacy or confidence in ability • perception that SBI makes the client feel confident that their best interests are being considered
5	Knowledge (psychological capability)	• lack of knowledge about how to help patients to stop smoking • negative views on the effectiveness of intervention • perception that the intervention was complex or difficult • unfamiliar with referral options • lack or too few available cessation programmes	• increased awareness or knowledge (for example, burden of tobacco use, of guidelines) • perceived effectiveness or cost-effectiveness of intervention
6	Emotions (automatic motivation)	• personal use of tobacco • fear of negative patient reaction	• none
7	Intentions (reflective motivation)	• smoking cessation support not seen as a priority • lack of patient interest or compliance	• motivation and goals • making an effort to make SBI happen • a strong sense of collective efficacy to

Order	TDF (COM-B) domain	Associated barriers	Associated facilitators
		• patient (dis)honesty and confidentiality	provide tobacco cessation services • patients' motivation
8	Social professional role and identity (reflective motivation)	• SBI not seen as part of role	• SBI perceived as part of the role
9	Reinforcement (automatic motivation)	• lack of remuneration	• adequate funding for health promotion or prevention
10	Memory, attention, and decision making (psychological capability)	• forgetting to ask patient about smoking	• making an effort to make SBI happen
11	Social influences (social opportunity)	• lack of social pressure	• perceptions that doing SBI was 'normative'
Joint 12th to 14th	Goals (reflective motivation)	• none	• motivation and goals
Not identified In any papers	Behavioural regulation (psychological capability), optimism (reflective motivation)		

We identified 7 nationally-available workforce interventions to promote the delivery of smoking SBI by HCPs (see Table 6 for intervention details and links; note that some interventions have been updated since this research was undertaken, and new interventions have been made available since). Intervention types and BCTs identified from intervention materials are listed in the Table 6, below. Table 6 also highlights the extent to which the BCTs identified in the interventions were considered to be a match for the 6domains identified as important for prioritisation (theoretical congruence). Theoretical congruence is shown as low (red), medium (yellow) or high (green) and indicates whether individual BCTs are appropriate for targeting the barriers identified in the systematic review.

The following BCTs were found to be included in the majority of interventions, and were also observed to have high theoretical congruence as they were paired with domains rated as important – skills, knowledge, and beliefs about consequences:

- behavioural practice or rehearsal
- information about health consequences

Opportunities for intervention improvement were also identified. The BCT feedback on behaviour was observed to have high theoretical congruence as it was paired with the domains beliefs about consequences, beliefs about capabilities, and knowledge, however it only featured in one of the included interventions. As before, the BCT instruction on how to perform the behaviour, was observed to have low theoretical congruence as it was not paired with any domain, however it was identified in all interventions (see footnote 5 on page 15 for a brief discussion on this point).

Of the 6 BCTs identified in interventions, one had low theoretical congruence (red), 2 had medium congruence (yellow) and 3 had high congruence (green). BCTs with high congruence related to providing feedback on the HCPs' behaviour, enabling behavioural practice, and providing information about health consequences. The intervention with the highest number of highly theoretically congruent BCTs was e-Learning for Health - Alcohol and Tobacco Brief Interventions (containing 3 highly congruent BCTs).

Table 6. Interventions, the intervention types they serve and the BCTs they contain along with theoretical congruence with important TDF domains

Key

H (green) = high theoretical congruence between BCT and key theoretical domains for MECC delivery. M (yellow) = medium theoretical congruence. H (red) = low theoretical congruence. Please note that web pages signposted in links may have been updated since this research was conducted, and are provided to indicate sources only.

Intervention name	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
The National Centre for Smoking Cessation and Training (NCSCT) online training or materials	Education Enablement Modelling Persuasion Training	Information about health consequences	H 
		Behavioural practice or rehearsal	H 
		Demonstration of the behaviour	M 
		Instructions on how to perform the behaviour	L 
Preventing Ill Health CQUIN [Link no longer active]	Education Enablement Modelling Persuasion Training	Information about health consequences	H 
		Behavioural practice or rehearsal	H 
		Demonstration of the behaviour	M 
		Instructions on how to perform the behaviour	L 
	Training Enablement	Restructuring the physical environment	M 

Intervention name	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
Quality and Outcomes Framework (QOF)		Instructions on how to perform the behaviour	L 
NICE Guideline - Stop smoking interventions and services	Education Enablement Modelling Persuasion Training	Information about health consequences	H 
		Behavioural practice or rehearsal	H 
		Demonstration of the behaviour	M 
		Instructions on how to perform the behaviour	L 
NICE public health guideline - Smoking harm reduction	Education Enablement Modelling Persuasion Training	Information about health consequences	H 
		Behavioural practice or rehearsal	H 
		Demonstration of the behaviour	M 
		Instructions on how to perform the behaviour	L 
Guidelines in practice - Very brief advice can be effective in encouraging smokers to quit	Education Enablement Modelling Persuasion Training	Information about health consequences	H 
		Behavioural practice or rehearsal	H 
		Demonstration of the behaviour	M 
		Restructuring the physical environment	M 
		Instructions on how to perform the behaviour	L 
e-Learning for Health - Alcohol and Tobacco Brief Interventions	Education Enablement Modelling Persuasion Training	Feedback on behaviour	H 
		Information about health consequences	H 
		Behavioural practice or rehearsal	H 
		Demonstration of the behaviour	M 
		Restructuring the physical environment	M 

Intervention name	Intervention types served by the intervention	BCTs identified in the interventions plus theoretical congruence	
		Restructuring the physical environment	L 

The analysis highlighted a number of ways that existing national initiatives to support the delivery of brief interventions can be strengthened. The majority of BCTs considered to be a match for (that is, were theoretically congruent with) the 6most important domains were not used at all in existing interventions (Appendix 3). This finding indicates numerous missed opportunities for intervention design. A selection of these BCTs are listed in the Recommendations section of this report, and a full list is provided in Appendix 4 along with suggestions for their implementation. Opportunity seized was the highest for the domain knowledge, but only 2 out of 7 of the theoretically coherent BCTs were used at least once in interventions. The most missed opportunities were for the domains emotion and skills (Appendix 3).

Some intervention types had not been used in the reviewed national interventions, despite their relevance to key theoretical domains for enabling delivery of SBI (Appendix 3). These missing intervention types included:

- environmental restructuring (changing the physical or social environment)
- coercion (creating an expectation of cost)
- restriction (using rules to encourage a behaviour by reducing opportunities to engage in a competing behaviour)

Recommendations

We recommend that developers and commissioners of behaviour change interventions continue to employ the BCTs used in current interventions that were identified as theoretically congruent (high or medium congruence). We also recommend the use of BCTs that were not identified in reviewed national workforce interventions but were highlighted as relevant (theoretically congruent) for targeting the key barriers to delivering SBI in each topic area. We have highlighted some of these unused BCTs below along with examples of how these could be implemented in practice. The BCTs in this table have been identified as relevant for addressing barriers to SBI delivery in all areas (that is, MECC, alcohol and smoking).

Appendix 4 includes a full list of relevant BCTs that were not used in the reviewed national workforce interventions. When selecting BCTs for the design or development of workforce interventions, we recommend consulting the APEASE criteria, which can be used to narrow down options for intervention based on their acceptability, practicability, effectiveness, affordability, side-effects and equity (2, 9).

Table 7. A selection of theoretically congruent but unused BCTs, plus examples for implementation

BCT (targeted domains)	Definition	Examples for implementation
Adding objects to the environment (environmental context and resources)	Add objects to the environment in order to facilitate performance of the behaviour	• provide checklist for SBI conversations, or provide checklists for appointment procedures that include SBIs as a usual step • establish or simplify and streamline existing systems for recording SBI interactions and referring patients • provide materials for HCPs – for example, leaflets on different risk factors, treatment or self-help options, top tips document with case studies of HCPs overcoming common barriers in various roles or specialisms (11) • provide patient-facing intervention materials such as food diaries to use during SBI interactions
Prompts or cues (environmental context and resources)	Introduce or define environmental or social stimulus with the purpose of prompting or cueing the behaviour. The prompt or cue would	• place a prompt on the computer system to ensure SBI is completed before moving on through system • use posters, badges or stickers (for example, badges for HCPs saying “I will ask you about your smoking and offer you support”) in the environment • questionnaires assessing smoking, drinking or diet and so on could be handed out by receptionists for

BCT (targeted domains)	Definition	Examples for implementation
	normally occur at the time or place of performance.	patients to complete in waiting room – patient handing this to HCP at start of appointment would be a prompt and would also involve the patient in actively opening this conversation, making SBI initiation easier
Verbal persuasion to boost self-efficacy (beliefs about capabilities; intentions)	Tell the person that they can successfully perform the wanted behaviour, arguing against self-doubts and asserting that they can and will succeed	• provide regular line manager feedback persuading staff member they are capable of overcoming barriers to delivery of SBIs, discussing specific barriers to delivery for that staff member • during face-to-face training sessions or workshops, include discussion on perceived barriers so that training can address these concerns • establish online communities with social network champions or other points of support who can encourage HCPs and problem solve • provide examples of SBIs and show the HCP how they can successfully incorporate these strategies into short appointments (11) for example, using videos from Health Education England
Self-monitoring of behaviour (beliefs about capabilities; beliefs about consequences; skills)	Establish a method for the person to monitor and record their behaviour(s) as part of a behaviour change strategy	• provide a space for HCPs to record whether a SBI conversation occurred at the end of each appointment (for example, a tick-box in existing systems for recording patient notes) and provide visual progress charts • encourage self-reflection at the end of consultations to note down where they delivered well and where improvements could be made (technique could be combined with other strategies such as developing a toolkit to overcome identified barriers)
Problem solving, including coping skills (beliefs about capabilities; intentions)	Analyse, or prompt the person to analyse, factors influencing the behaviour and generate or select strategies that include	• ask HCPs to identify their own personal barriers to delivering SBIs and ask them to list practical solutions for overcoming these barriers (or, if no solutions available, identify viable alternatives for example, if no local services are available for referrals, direct patients to other resources such as digital tools) • develop a toolkit to help support HCPs in identifying and overcoming common barriers

BCT (targeted domains)	Definition	Examples for implementation
	overcoming barriers and/or increasing facilitators	
Social support – unspecified (beliefs about capabilities; intentions; social professional role and identity)	Advise on, arrange or provide social support (for example, from friends, relatives, colleagues,' buddies' or staff) or noncontingent praise or reward for performance of the behavior. It includes encouragement and counselling, but only when it is directed at the behavior	• designate certain members of staff to act as community social support for other HCPs who may be less confident with delivering SBIs • provide online network for HCPs to share concerns and solutions
Information on emotional consequences (knowledge; beliefs about consequences; emotions)	Provide information (for example written, verbal, visual) about emotional consequences of performing the behaviour	• video for HCPs such as '30 Seconds to Save a Life' highlighting the benefits of delivering SBIs and emphasising the positive emotional consequences for the HCP (for example, pride, satisfaction at having helped patients)

Conclusions

Across the 3 reviews and analyses (MECC, alcohol and smoking), there were many similarities regarding the theoretical domains into which barriers to delivery of SBIs by HCPs clustered. In particular, the following domains were all identified as key for prioritisation in any future programme or workforce initatives:

- environmental context and resources
- beliefs about capabilities
- beliefs about consequences
- knowledge
- skills

The majority of interventions identified in this research used BCTs that were relevant to the barriers they aimed to target. However, a very narrow range of possible behaviour change strategies was observed across the reviewed national interventions, with the majority targeting HCPs' knowledge without addressing the environmental and contextual factors that may constrain translating this knowledge into action. To better address the barriers to HCPs delivering SBI within everyday practice, interventions could consider incorporating a wider range of theoretically congruent BCTs that address a greater number of barriers to SBI delivery, to better enable healthcare professionals to promote positive behaviour change amongst their patients.

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Appendix 1. Systematic review methodology

PICOS criteria

Table 8. PICOS inclusions and exclusions for the 3 systematic reviews

Include	Exclude
Participants Health care professionals, doctors, nurses, allied health professionals, pharmacists, healthy living pharmacies counter staff, drug and alcohol staff, auxiliary staff within healthcare settings (such as porters, healthcare assistants and reception or booking teams), dentists, dental staff, paramedics	Firefighters, police officers
Interventions **Making every contact count** (MECC) (defined as opportunistic brief intervention by trained workforce to enable individuals to make changes in lifestyle behaviours) **Alcohol** brief intervention (defined as a single session, and up to a maximum of 4 sessions of engagement with a patient and the provision of information and advice that is designed to achieve a reduction in risky alcohol consumption or alcohol-related problems) **Smoking** very brief intervention (defined as a simple opportunistic intervention that involves establishing and recording smoking status (ASK), advising on how to stop (ADVISE), and offering help (ACT). It may take as little as 30 seconds up to a couple of minutes to deliver. It is mainly about giving people information or directing them where to go for further help. It may also include other activities such as raising awareness of risks or providing encouragement and support for change)	**Making every contact count** (MECC): Extended interventions, Health Coaching, MECC plus **Alcohol** brief intervention: Extended interventions **Smoking** very brief intervention: Extended interventions
Comparators Not applicable.	
Outcomes Barriers or facilitators to uptake and embedding delivery of intervention	
Context Health, pharmacy (including community pharmacy) and dental care settings worldwide	

Include	Exclude
Study Design **Making every contact count** (MECC): Any empirical studies either published or grey literature from 2005 onwards **Alcohol** brief intervention: Peer reviewed full systematic reviews and/or meta-analyses (involving: a pre-specified question and protocol; a defined search strategy; clear inclusion and exclusion criteria for studies; a clear quality assessment of included studies and, if appropriate, meta-analysis or pooling of data across similar research studies in a field). Published from 2000 **Smoking** very brief intervention: Peer reviewed empirical studies published from 2000	**Making every contact count** (MECC): Opinion pieces, editorials, studies carried out before 2005 **Alcohol** brief intervention: Any other study designs, unpublished systematic reviews, literature published before 2000 **Smoking** very brief intervention: Opinion pieces, editorials, unpublished studies, literature published before 2000

Databases searched

MECC

- Medline
- EMBASE
- PsycINFO
- Scopus
- OpenGrey
- The Healthcare Management Information Consortium (HMIC) database
- The National Technical Information Service (NTIS)
- PsycEXTRA
- NICE evidence search

Alcohol

- Medline
- EMBASE
- PsycINFO
- Scopus
- NICE evidence search
- Cochrane Database of Systematic Reviews (including DARE and HTA)
- DoPHER

Smoking

- Medline
- EMBASE

- PsycINFO
- Scopus
- NICE evidence search

Search terms

MECC

"making every contact count" OR "healthy conversation skill*" OR "health chat*" OR "every contact a health improvement contact"
AND
Accept* OR Access* OR Adher* OR Attitude* OR Awareness OR Barrier* OR Begin OR Behaviour* OR Belief* OR Block* OR Cease OR Cessation OR Change OR Compliance OR Comply OR Complie* OR Confiden* OR Constrain* OR Decreas* OR Delay* OR Deliver* OR Driver* OR Efficacy OR Effect* OR Enable* OR Embed* OR Encourag* OR Enhance* OR Facilitat* OR Factor* OR Hindrance* OR Hinder* OR Impact* OR Impede* OR Implement* OR Improve* OR Incentive* OR Increas* OR Influence* OR Inhibit* OR Initiate OR Intention* OR Knowledge OR Motivat* OR Norm* OR Obstacle* OR Obstruct* OR Offer OR Opportunit* OR Optimi?* OR Percept* OR Practice* OR Prevent* OR Provision* OR Provid* OR Promot* OR Reduc* OR Refer* OR Refus* OR Restrict* OR Restrain* OR Satisfact* OR Support* OR Sustain OR "Take up" OR Uptake OR Utili?* OR View* OR Willing*

Alcohol

Alcohol* OR "Alcohol consumption" OR "Alcohol use" OR "Alcohol misuse" OR "Alcohol abuse" OR "Alcohol intoxication" OR "Alcohol drinking" OR "Alcohol disorder" OR "Binge drinking" OR "Social drinking" OR "Risky drinking" OR "Drinking occasion" OR Alcoholism OR Alcoholic OR Drunk OR Beverage OR Intoxicate OR "Alcohol dependence" OR Drink* OR Substance* OR "Substance use" OR "Substance misuse" OR "Substance abuse" OR Booze OR Pissed OR Wrecked
AND
"Brief intervention*" OR "Very brief intervention*" OR "BI" OR "Alcohol brief intervention*" OR "ABI" OR "Brief advice" OR "Screening and brief intervention*" OR "SBI" OR "Identification and brief advice" OR "IBA" OR "Very brief advice" OR "VBA" OR "Screening, brief intervention and referral for treatment" OR "SBIRT" OR "motivational interview*" OR "MI" OR "Brief lifestyle counselling" OR "Brief advice for alcohol" OR "Brief opportunistic alcohol intervention*"
AND
Accept* OR Access* OR Adher* OR Attitude* OR Awareness OR Barrier* OR Begin OR Behaviour* OR Belief* OR Block* OR Cease OR Cessation OR Change OR Compliance OR Comply OR Complie* OR Confiden* OR Constrain* OR Decreas* OR Delay* OR Deliver* OR Driver* OR Efficacy OR Effect* OR Enable* OR Embed* OR Encourag* OR Enhance* OR Facilitat* OR Factor* OR Hindrance* OR Hinder* OR Impact* OR Impede* OR Implement* OR Improve* OR Incentive* OR Increas* OR Influence* OR Inhibit* OR Initiate OR Intention* OR Knowledge OR Motivat* OR Norm* OR Obstacle* OR Obstruct* OR Offer OR Opportunit* OR

Optimi?* OR Percept* OR Practice* OR Prevent* OR Provision* OR Provid* OR Promot* OR Reduc* OR Refer* OR Refus* OR Restrict* OR Restrain* OR Satisfact* OR Support* OR Sustain OR "Take up" OR Uptake OR Utili?* OR View* OR Willing*
AND
“Systematic review” OR Review OR Meta-analys* OR Metaanalys* OR Meta analys* OR Meta-synthesis OR Metasynthesis OR Meta synthesis OR Synthesis OR Literature

Smoking

Smoking OR Smoke* OR Tobacco OR Cigarette OR Nicotine OR Fags OR “Hand-Rolled Tobacco” OR HRT OR “Tobacco Dependence”
AND
“Very brief advice” OR VBA OR “Brief intervention” OR “Very brief intervention” OR “Brief advice for smoking” OR AAA OR “Ask, advise, act” OR “Brief opportunistic smoking cessation” OR “advice to quit”
AND
Accept* OR Access* OR Adher* OR Attitude* OR Awareness OR Barrier* OR Begin OR Behaviour* OR Belief* OR Block* OR Cease OR Cessation OR Change OR Compliance OR Comply OR Complie* OR Confiden* OR Constrain* OR Decreas* OR Delay* OR Deliver* OR Driver* OR Efficacy OR Effect* OR Enable* OR Embed* OR Encourag* OR Enhance* OR Facilitat* OR Factor* OR Hindrance* OR Hinder* OR Impact* OR Impede* OR Implement* OR Improve* OR Incentive* OR Increas* OR Influence* OR Inhibit* OR Initiate OR Intention* OR Knowledge OR Motivat* OR Norm* OR Obstacle* OR Obstruct* OR Offer OR Opportunit* OR Optimi?* OR Percept* OR Practice* OR Prevent* OR Provision* OR Provid* OR Promot* OR Reduc* OR Refer* OR Refus* OR Restrict* OR Restrain* OR Satisfact* OR Support* OR Sustain OR "Take up" OR Uptake OR Utili?* OR View* OR Willing*

Study selection and quality assessment

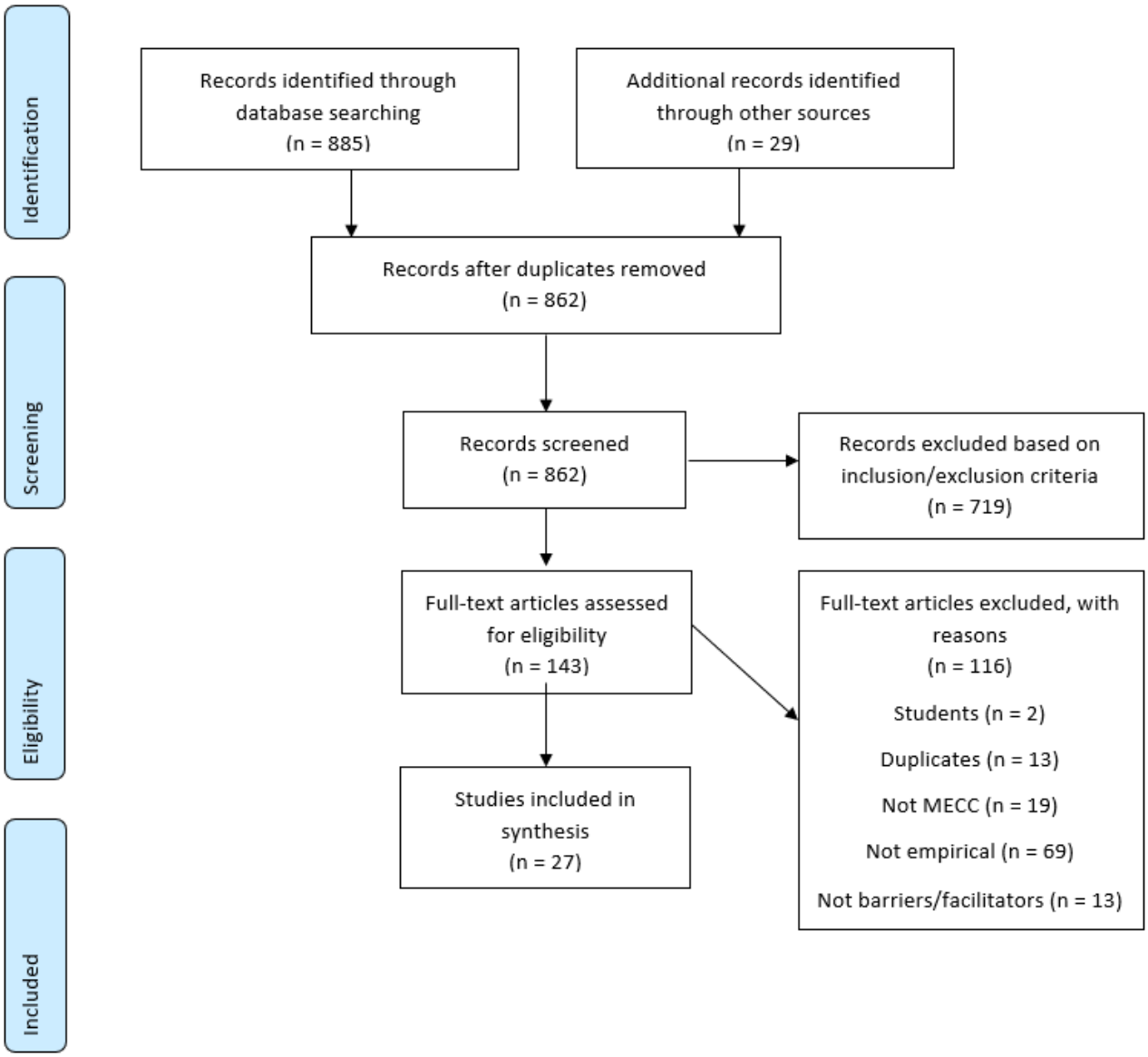
An initial screening of titles and abstracts against the inclusion criteria was made by one author (Dr. Katie Haighton) to identify potentially relevant papers followed by screening of the full papers identified as possibly relevant in the initial screening. The first 10% of the sample was checked at each stage by an additional author (Professor Dorothy Newbury-Birch). The quality of each study selected for inclusion was examined by one author (Dr. Katie Haighton) using the Critical Appraisal Skills Programme tool for Systematic Reviews, the Critical Appraisal Skills Programme tool for Qualitative Studies and the Centre for Evidence-Based Management Critical Appraisal of Survey tool as appropriate. The first 10% of the sample was checked by an additional author (Professor Dorothy Newbury-Birch).

PRISMA flow charts

MECC

Figure 1. PRISMA flow chart for the MECC review

This figure describes the stages of identifying articles for the MECC systematic literature review, in accordance with PRISMA guidelines for systematic reviews. There are 4 stages: identification, screening, eligibility and included. An accessible text version of the figure is given on the next page.



Text summary of figure 1. PRISMA flow chart for the MECC review

Stage 1: Identification

Records were identified through database searching (885 records) or from other sources (29 records). After duplicates had been removed, a total of 862 records was carried forward to Stage 2.

Stage 2: Screening

The 862 records identified in Stage 1 were then subjected to a title and abstract screening. A total of 719 records were excluded at this stage, based on inclusion and exclusion criteria. This left a total of 143 records to be carried forward to Stage 3.

Stage 3: Eligibility

The 143 records retained at the end of Stage 2 were subjected to a full-text article eligibility assessment. A total of 116 articles were excluded at this stage, for the following reasons; 2 were excluded because the article focused on student participants, 13 were duplicate studies, 19 did not focus on MECC or similar programmes, 69 were not empirical studies, and 13 did not assess barriers and facilitators. This left a total of 27 articles to be carried forward to Stage 4.

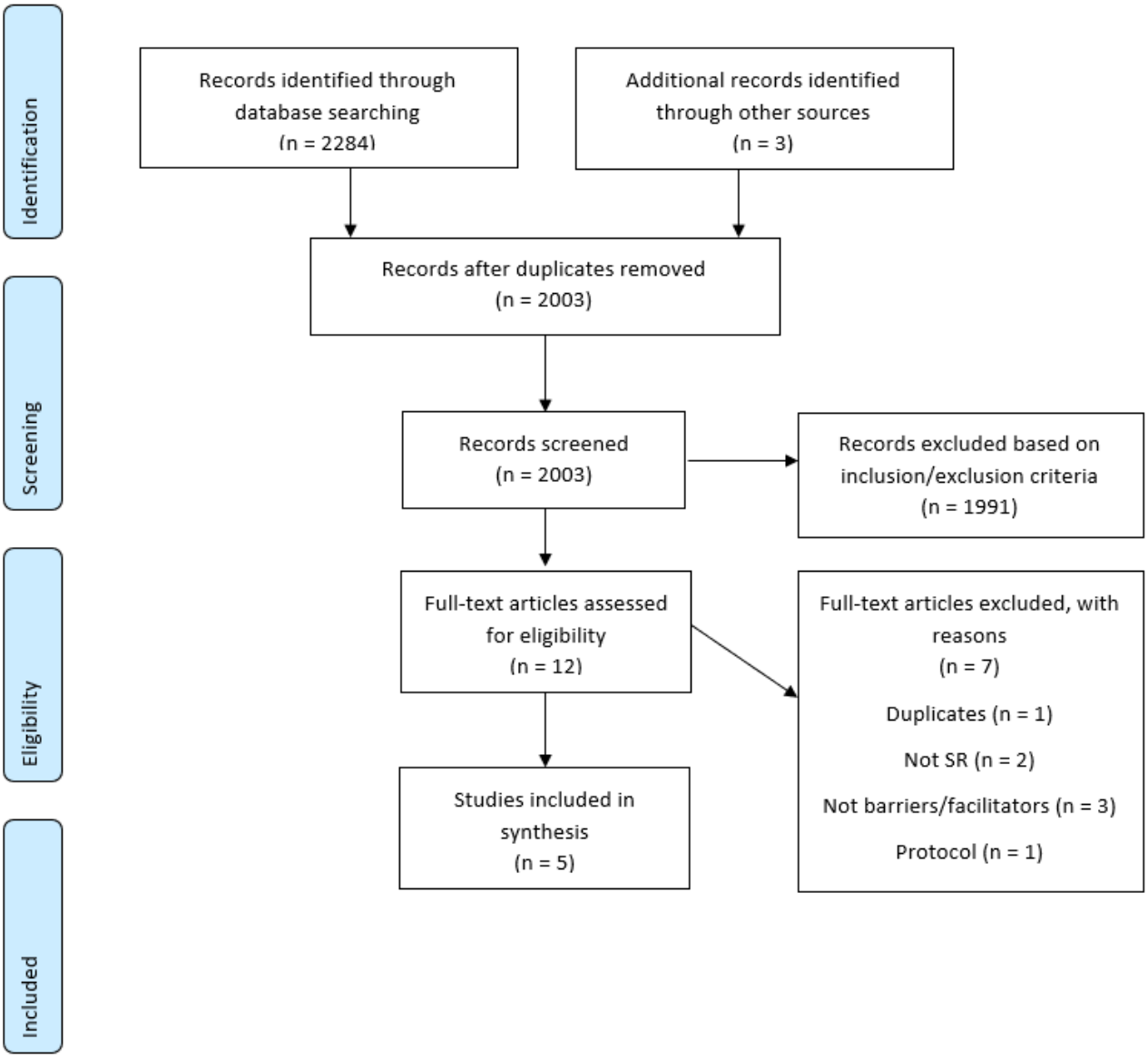
Stage 4: Included

No further exclusions were made, and 27 articles were included in the narrative synthesis.

Alcohol

Figure 2. PRISMA flow chart for the alcohol review

This figure describes the stages of identifying articles for the alcohol systematic literature review, in accordance with PRISMA guidelines for systematic reviews. There are 4 stages: identification, screening, eligibility and included. An accessible text version of the figure is given on the next page.



Text summary of Figure 2. 'PRISMA flow chart for the alcohol review'

Stage 1: Identification

Records were identified through database searching (2,284 records) or from other sources (3 records). After duplicates had been removed, a total of 2,003 records was carried forward to Stage 2.

Stage 2: Screening

The 2,003 records identified in Stage 1 were then subjected to a title and abstract screening. A total of 1,991 records were excluded at this stage, based on inclusion and exclusion criteria. This left a total of 12 records to be carried forward to Stage 3.

Stage 3: Eligibility

The 12 records retained at the end of Stage 2 were subjected to a full-text article eligibility assessment. A total of 7 articles were excluded at this stage, for the following reasons; one was a duplicate study, 2 were not systematic reviews, one was a study protocol, and 3 did not assess barriers and facilitators. This left a total of 5 articles to be carried forward to Stage 4.

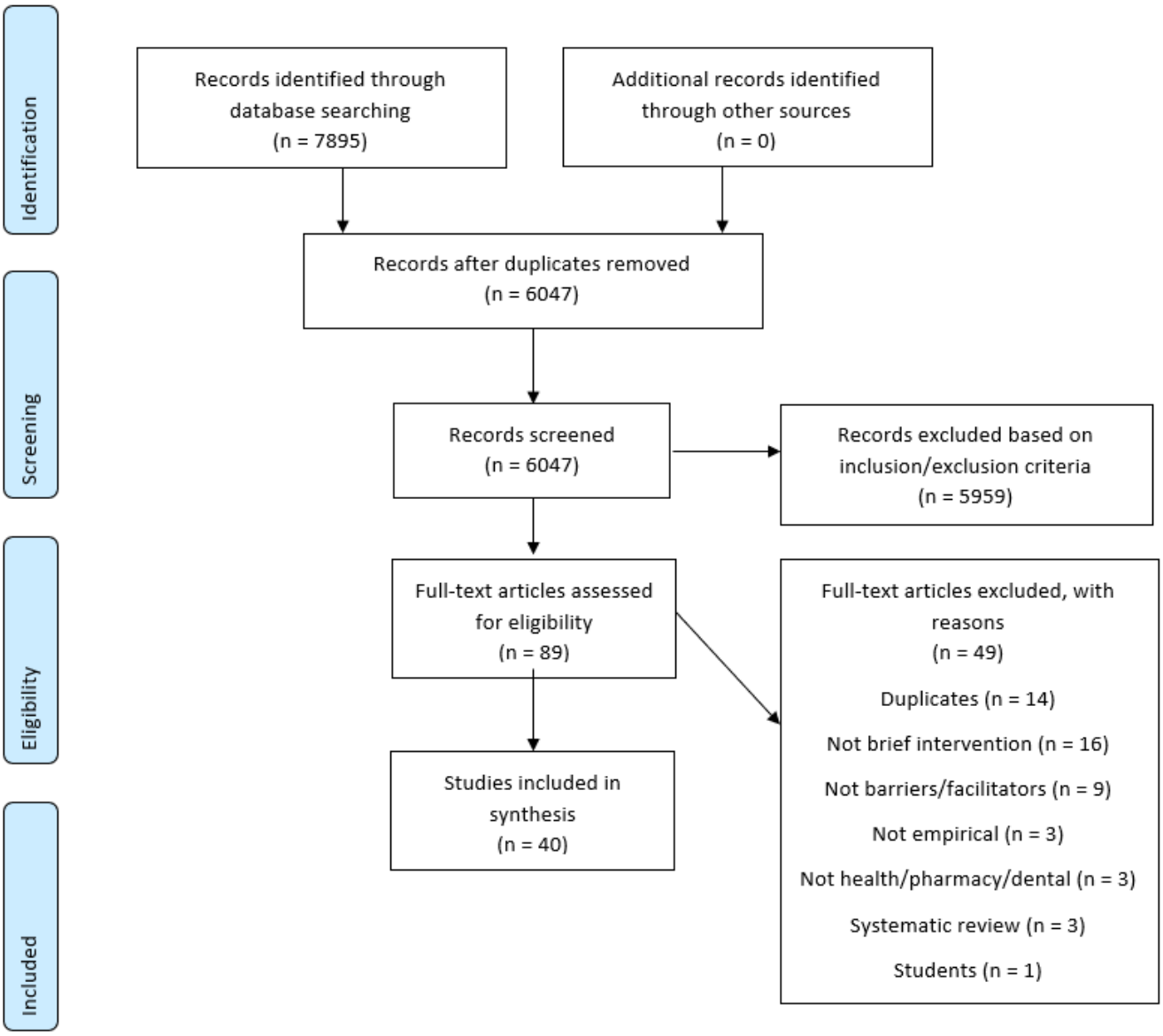
Stage 4: Included

No further exclusions were made, and 5 articles were included in the narrative synthesis.

Smoking

Figure 3. PRISMA flow chart for the smoking review

This figure describes the stages of identifying articles for the smoking systematic literature review, in accordance with PRISMA guidelines for systematic reviews. There are 4 stages: identification, screening, eligibility and included. An accessible text version of the figure is given on the next page.



Text summary of Figure 3. 'PRISMA flow chart for the smoking review'

Stage 1: Identification

Records were identified through database searching only (7,895 records), with no further records being identified from other sources. After duplicates had been removed, a total of 6047 records was carried forward to Stage 2.

Stage 2: Screening

The 6,047 records identified in Stage 1 were then subjected to a title and abstract screening. A total of 5,959 records were excluded at this stage, based on inclusion and exclusion criteria. This left a total of 89 records to be carried forward to Stage 3.

Stage 3: Eligibility

The 89 records retained at the end of Stage 2 were subjected to a full-text article eligibility assessment. A total of 49 articles were excluded at this stage, for the following reasons; one was excluded because the article focused on student participants, 14 were duplicate studies, 16 did not focus on brief interventions, 3 were not empirical studies, 3 were systematic reviews, 3 did not focus on healthcare, pharmacy or dental settings, and 9 did not assess barriers and facilitators. This left a total of 40 articles to be carried forward to Stage 4.

Stage 4: Included

No further exclusions were made, and 40 articles were included in the narrative synthesis.

Study summary tables

MECC

Table 9. Summary of studies included in systematic review

Reference	Behaviour (as described in article)	Participants	Measure of behaviour	Country	Study sample trained in MECC prior to measure of behaviour?
1. Al-Doghether M, A Al-Tuwijri and A Khan. 'Obstacles to prevention intervention: Do physicians' health habits and mind-set towards preventive care play any role?' Saudi Medical Journal, 2007. Volume 28(8): pages 1,269-1,274 (12)	Preventive intervention for alcohol, smoking, nutrition, human immunodeficiency virus (HIV), blood pressure control, and so on.	Family and general physicians (164 out of 182) from 5 health sectors of Riyadh	Self-report questionnaire	Saudi Arabia	No
2. Ampt A and others. 'Attitudes, norms and controls influencing lifestyle risk factor management in general practice.' BMC Family Practice, 2009. Volume 10 issue 59 (13)	Lifestyle behavioural risk factor screening and management within a 45–49 year old health check consultation	15 GPs and one practice nurse from 2 geographical areas in Sydney	Qualitative interviews (n=29)	Australia	No
3. Brotons C and others. 'Prevention and health promotion in clinical practice: the views of general practitioners in Europe'. Preventive	Evidence-based health promotion and disease prevention recommendations in primary care	2,082 GPs listed from national colleges of each country	Self-report questionnaire	Eleven European countries	No

Reference	Behaviour (as described in article)	Participants	Measure of behaviour	Country	Study sample trained in MECC prior to measure of behaviour?
Medicine, 2005: volume 40, pages 595-601 (14)					
4. Casey D. 'Nurses' perceptions, understanding and experiences of health promotion.' Journal of Clinical Nursing, 2007: volume 16, pages 1039-1049 (15)	Health promotion by enabling people to increase control over and to improve their health	Eight nurses from an acute 33-bed surgical ward	Qualitative observations and interviews	Republic of Ireland	No
5. Chisholm A and others. 'Current challenges of behavior change talk for medical professionals and trainees.' Patient Education and Counseling, 2012: volume 87, pages 389-394 (16)	Behaviour change talk - engaging in theoretically derived effective behaviour change techniques for a wide range of health-related behaviour such as smoking, diet and exercise (for example, goal setting and motivational interviewing) with patients	Medical professionals (doctors) and trainees (n = 29) in a large urban conurbation in the North West	Qualitative interviews	UK	No
6. Dewhirst S and V Speller. 'Wessex Making Every Contact Count (MECC) Pilot'. 2015 (15)	Making Every Contact Count	Staff from therapy services, diabetes services, occupational health, minor injuries, heart	Self-report questionnaires (pre n=100, post n=101), qualitative interviews (pre	UK	Yes

Reference	Behaviour (as described in article)	Participants	Measure of behaviour	Country	Study sample trained in MECC prior to measure of behaviour?
		failure, respiratory teams, housing office in 3 pilot sites in Wessex	n=14, post n=18), Organisation Assessment Tool (OAT)		
7. Donoghue G and others. 'Assessment and management of risk factors for the prevention of lifestyle-related disease: a cross sectional survey of current activities, barriers and perceived training needs of primary care physiotherapists in the Republic of Ireland.' Physiotherapy, 2014: volume 100, pages 116-122 (17)	Assessment and management of behavioural risk factors	Primary care physiotherapists (163 out of 220)	Self-report questionnaire	Republic of Ireland	No
8. Donovan H and Davies N. 'The value and contribution of nursing to public health in the UK: Final report'. 2016 (18)	Public health via making every contact count using all opportunities to provide accurate and up-to-date advice so that people are supported to make good lifestyle choices.	Nurses and commissioners	Self-report questionnaire (n=219) Qualitative interviews (n=16)	UK	No
9. Elwell L and others. 'Patients' and practitioners' views on health behaviour	Lifestyle behaviour change	Health professionals	Qualitative focus groups	UK	No

Reference	Behaviour (as described in article)	Participants	Measure of behaviour	Country	Study sample trained in MECC prior to measure of behaviour?
change: A qualitative study. Psychology and Health.' 2013: volume 28, issue 6, pages 653-674 (19)		(n=13) in general practice surgeries in Leeds			
10. Elwell L and others. 'Health professional perspectives on lifestyle behaviour change in the paediatric hospital setting: a qualitative study.' BMC Pediatrics, 2014: volume 14, issue: 71 (20)	Lifestyle behaviour change brief advice	33 health professionals (nurses, junior doctors, allied health professionals and clinical support staff in an acute children's hospital	Qualitative interviews	UK	No
11. Geense W and others. 'Barriers, facilitators and attitudes influencing health promotion activities in general practice: an explorative pilot study BMC Family Practice.' 2013: volume 14, issue 20 (21)	Lifestyle interventions	Dutch GPs (n=16) and Practice Nurses (n=9) in primary care	Qualitative interviews (n=25)	Netherlands	No
12. Jacobsen E and others. 'Perspectives on lifestyle intervention: The views of general practitioners who have taken part in a health promotion study.' Scandinavian Journal of Public	Health promotion: administering preventive health checks and initiating health discussions on aspects of lifestyle	5 general practitioners	Qualitative focus groups	Denmark	No

Reference	Behaviour (as described in article)	Participants	Measure of behaviour	Country	Study sample trained in MECC prior to measure of behaviour?
Health 2005, volume 33, pages 4-10 (22)					
13. John Dawson Associates. 'Every Contact Counts: Evaluation of Training Programme for Front Line Staff.' 2013 (23)	Every Contact Counts	Front line staff in 8 organisations in Liverpool	Self-report questionnaire (n=75, 36 pre training, 39 post-training – train the trainer) (n=336, 168 pre training, 168 post-training - cascade training) Semi-structured interviews or focus groups	UK	Yes
14. Lambe B and Collins C. 'A qualitative study of lifestyle counselling in general practice in Ireland.' Family Practice 2010: volume 27 pages 219-223 (24)	Lifestyle behaviour change	56 primary health care practitioners (GPs, practice nurses, public health nurses, social workers,	Qualitative focus groups (n=6)	Republic of Ireland	No

Reference	Behaviour (as described in article)	Participants	Measure of behaviour	Country	Study sample trained in MECC prior to measure of behaviour?
		physiotherapists, occupational therapists)			
15. Laws R and others. 'An exploration of how clinician attitudes and beliefs influence the implementation of lifestyle risk factor management in primary healthcare: a grounded theory study.' Implementation Science 2009: volume 4, issue 66 (25)	Lifestyle risk factor management	23 clinicians (community nurses, allied health practitioners, Aboriginal health workers), 5 managers, and 2 project officers in 3 community health teams in New South Wales	Qualitative interviews (n=48)	Australia	No
16. Laws R and others. '"Should I and Can I?": A mixed methods study of clinical beliefs and attitudes in the management of lifestyle risk factors in primary health care.' BMC Health Services Research 2008: volume 4, issue 44 (26)	Lifestyle risk factor management	Primary health care clinicians from 3 community health teams from 2 Area Health Services in the state of New South Wales	Self-report questionnaires (n=59) and qualitative interviews (n=22)	Australia	No

Reference	Behaviour (as described in article)	Participants	Measure of behaviour	Country	Study sample trained in MECC prior to measure of behaviour?
17. McMahon N and Connolly C. 'Health promotion knowledge, attitudes and practices of chartered physiotherapists in Ireland: A national survey.' Physiotherapy Practice and Research 2013: volume 34, pages 21-28 (27)	Health promotion: the process of enabling people to increase control over, and to improve their health	2,753 registered members of the Irish Society of Chartered Physiotherapists	Self-report questionnaires (n=526)	Republic of Ireland	No
18. Nelson A, de Normanville C and Payne K. 'Making every contact count: an evaluation.' 2013 (28)	Making Every Contact Count (MECC)	Key stakeholders (n=12) engaged in the delivery of MECC in organisations in Yorkshire, Humber and the North West of England	Qualitative interviews	UK	Yes
19. Pattinson L and Jessop A. 'The delivery of health improvement information during radiotherapy treatment: a survey of UK therapy radiographers.' Journal of Radiotherapy in Practice 2016: volume 15, issue 2, pages 114-130 (29)	Providing health improvement information to patients	Society and College of Radiographers (SCoR) (n=102)	Self-report questionnaires	UK	No

Reference	Behaviour (as described in article)	Participants	Measure of behaviour	Country	Study sample trained in MECC prior to measure of behaviour?
20. Percival J. 'Promoting health: making every contact count.' Nursing Standard (2014+) 2014: volume 28, issue 29, page 37 (30)	Make every patient contact count	40 nurses in London and Manchester	Self-report questionnaire	UK	Yes
21. Royal Society for Public Health. 'Healthy Conversations and the Allied Health Professional.' 2015 (30)	Healthy conversations	Over 2,000 Allied Health Professionals	Self-report questionnaire, qualitative interviews and focus groups	UK	Yes
22. Tinati T and others. 'Implementation of new Healthy Conversation Skills to support lifestyle changes - what helps and what hinders? Experiences of Sure Start Children's Centre staff.' Health and Social Care in the Community 2012: volume 20, issue 4, pages 430-437 (32)	Healthy conversation skills	Sure Start Children's Centre staff (n=110) attending one of 13 follow-up workshops in Southampton	Self-report questionnaires	UK	Yes
23. 'Uscreates: Insight into patient and staff attitudes on the appropriates of receiving and delivering healthy lifestyle advice.' 2012 (33)	Brief lifestyle advice	49 doctors, nurses, health care professionals, health care assistants, rehab	Qualitative interviews	UK	No

Reference	Behaviour (as described in article)	Participants	Measure of behaviour	Country	Study sample trained in MECC prior to measure of behaviour?
		assistants, health trainers, clinic or reception staff, porters and house keepers in primary and secondary care in NHS Midlands and East			
24. Walkenden S and Walker K. 'Perceptions of Physiotherapists about their role in health promotion at an acute hospital: a qualitative study.' Physiotherapy 2015: volume 101, pages 226-231 (34)	Health promotion via making every contact count	22 physiotherapists in an acute inpatient setting	Qualitative focus groups (n=3)	UK	No
25. Walter U and others. 'Putting prevention into practice: qualitative study of factors that inhibit and promote preventive care by general practitioners, with a focus on elderly patients'. BMC Family Practice 2010: volume 11, issue 68 (35)	Preventive care	German general medical practitioners in Berlin and Hannover	Qualitative interviews (n=32)	Germany	No
26. The Roundhouse Consultancy MK Ltd. 'Opportunities, barriers and	Making every contact count	Practising optometrists and	Interviews	UK	No

Reference	Behaviour (as described in article)	Participants	Measure of behaviour	Country	Study sample trained in MECC prior to measure of behaviour?
enablers for “Making Every Contact Count” (MECC) to be introduced into the optometry curriculum and workforce training and development.’ 2016 (36)		members of the Local Eye Health Ne2rk in the West Midlands			
27. Chisholm A and others. ‘Public health practitioners’ views of the “Making Every Contact Count” initiative and standards for its evaluation.’ Journal of Public Health 2018 (37)	Making every contact count	13 public health practitioners	Qualitative interviews	UK	Yes

Alcohol

Table 10. Summary of systematic reviews included in systematic review

Reference	Behaviour	Participants	Measure of behaviour
1. Derges J and others. 'Alcohol screening and brief interventions for adults and young people in health and community-based settings: a qualitative systematic literature review.' BMC public health 2017: volume 17, issue 1, pages 562 (38)	Alcohol screening and brief intervention both for adults and young people in healthcare and community-based settings	15 included papers (14 healthcare, 1 community based) (13 adults, 2 young people)	Systematic review of qualitative studies
2. Schulte B and others. 'Alcohol screening and brief intervention in workplace settings and social services: a comparison of literature.' Front Psychiatry 2014: volume 5, issue 131 (39)	Alcohol screening and brief intervention in non-medical settings	9 included papers – workplace 6 included papers – social services (including counselling services)	Systematic review of RCTs and prospective observational studies
3. Johnson M and others. 'Barriers and facilitators to implementing screening and brief intervention for alcohol misuse: a systematic review of qualitative evidence.' Journal of Public Health, Oxford, England 2011: volume 33, issue 3, pages 412-421 (40)	Screening and brief intervention for alcohol misuse in adults and children over 10 years	47 included papers	Systematic review
4. Jackson R. and others. 'Screening and brief interventions for prevention and early identification of alcohol use disorders in adults and young people.' 2010 Sheffield:	Screening and brief interventions for alcohol misuse in adults and young people	45 included papers	Systematic review

Reference	Behaviour	Participants	Measure of behaviour
University of Sheffield, School of Health and Related Research (ScHARR) Public Health Collaborating Centre (41)			
5. Peltzer K. 'Brief intervention of alcohol problems in sub-Saharan Africa: A review.' Journal of Psychology in Africa 2009: volume 19, issue 3, pages 415-422 (42)	Brief interventions for alcohol problems in sub-Saharan Africa	21 included papers	Systematic review

Smoking

Table 11. Summary of studies included in systematic review

Reference	Behaviour	Participants	Measure of behaviour	Country
1. VanDevanter N and others. 'Application of the Consolidated Framework for Implementation Research to assess factors that may influence implementation of tobacco use treatment guidelines in the Viet Nam public health care delivery system.' BioMed Central 2017 (43)	Tobacco guideline implementation	Community Health Centre (CHC) medical directors, health care providers, and village health workers in 8 CHCs (n=40)	Qualitative interviews	Vietnam
2. Nguyen N and others. 'Tobacco cessation in Vietnam: Exploring the role of village health workers.' Global Public Health 2017: pages 1-11 (44)	Smoking cessation interventions	449 Village Health Workers (VHWs) from 26 communes in Thai Nguyen province	Self-report questionnaire	Vietnam
3. Martinez C and others. 'Factors associated with implementation of the 5A's smoking cessation model.' Tobacco Induced Diseases 2017: volume 15, issue 1 (41) (45)	The 5A's (Ask, Advise, Assess, Assist, Arrange)	Clinical health workers enrolled in an online smoking cessation training course in Catalonia (n=580)	Self-report questionnaire	Spain
4. Sarna L and others. 'Helping smokers quit: Behaviours and attitudes of Chinese registered nurses.' Journal of Advanced Nursing 2016: volume 72, issue 1, pages 107-117 (46)	The 5 As (Ask, Advise, Assess, Assist, Arrange)	Nurses from 8 hospitals in Beijing and Hefei (n=2,440)	Self-report questionnaire	China

Reference	Behaviour	Participants	Measure of behaviour	Country
5. Ridenour T and others. 'Barriers and facilitators for a well-child screening and brief intervention to prevent substance abuse.' European Journal of Pediatrics 2016: volume 175, issue 11, pages 1632 (47)	Screening, brief intervention, and referral for treatment (SBIRT)	Paediatricians (n=95) and family therapists (n=161) in regions of North Carolina	Self-report questionnaire	USA
6. Newhal, K and others. 'Smoking cessation counseling in vascular surgical practice using the results of interviews and focus groups in the Vascular Surgeon offer and report smoking cessation pilot trial.' Journal of Vascular Surgery 2016: volume 63, issue 4, pages 1,011-1,017e2 (48)	Smoking cessation program	Vascular surgeons (n=7)	Qualitative interviews (n=4) and focus group (n=1)	USA
7. Alateeq M and others. 'Smoking cessation advice: The self-reported attitudes and practice of primary health care physicians in a military community, central Saudi Arabia.' Patient Preference and Adherence 2016: volume 10, pages 651-658 (49)	Smoking cessation advice to smokers in a military community	Primary health care physicians (n=73)	Self-report questionnaire	Saudi Arabia
8. Muramoto ML and others. 'Intervention development for integration of conventional tobacco cessation interventions into routine CAM practice.' BMC Complementary and Alternative Medicine 2015: volume 15, issue 1, page 96 (50)	Helping conversations	Chiropractic, acupuncture and massage therapists (n=11)	Qualitative interviews	USA

Reference	Behaviour	Participants	Measure of behaviour	Country
9. McNamara RS and others. 'Motivational interviewing intervention with college student tobacco users: Providers' beliefs and behaviors.' Journal of American College Health 2015: volume 63, issue 4, pages 286-290 (51)	Brief interventions to help college student tobacco users quit	83 college student health clinicians from health clinics at 7 different universities in North Carolina	Self-report questionnaire from a cluster randomised trial	USA
10. Lawrenson J, Roberts C and Offord L. 'A pilot study of the feasibility of delivering a brief smoking cessation intervention in community optometric practice.' Public Health 2015: volume 129, issue 2, pages 149-151 (52)	Smoking cessation intervention	Optometrists practising within Shropshire, Telford and Wrekin	Self-report questionnaire	UK
11. Shelley D and others. 'Factors influencing tobacco use treatment patterns among Vietnamese health care providers working in community health centers.' BMC Public Health 2014: volume 14, issue 1 (53)	Screening and cessation interventions	134 health care providers including physicians, nurses, midwives, physician assistants and pharmacists working in 23 community health centres	Self-report questionnaire	Vietnam
12. Sarna L and others. 'Czech nurses' knowledge, attitudes and behaviors towards tobacco dependence and treatment.' European Journal of Cancer 2013: volume 2, page S374 (54)	Intervention in tobacco dependence treatment	157 nurses	Self-report questionnaire	Czech Republic

Reference	Behaviour	Participants	Measure of behaviour	Country
13. Alomari MA and others. 'Smoking cessation counselling practices of family physicians in Jordan.' Journal of Smoking Cessation 2013: volume 8, issue 2, pages 85-90 (55)	Smoking cessation practices	124 family physicians practicing in teaching and Ministry of Health medical centres	Self-report questionnaire	Jordan
14. Sheffer CE and others. 'Tobacco intervention practices of primary care physicians treating lower socioeconomic status patients.' American Journal of the Medical Sciences 2012: volume 343, issue 5, pages 388-396 (56)	Tobacco intervention practices	Physicians licensed in Arkansas (n=2,688)	Self-report questionnaire	USA
15. Bell K and others. 'Physician advice for smoking cessation in primary care: time for a paradigm shift?' Critical Public Health 2012; volume 22, issue 1, pages 9-24 (57)	Smoking cessation interventions	10 general practitioners in Vancouver	Qualitative interviews	Canada
16. Demmert A, Grothues JM, and Rumpf HJ. 'Attitudes towards brief interventions to reduce smoking and problem drinking behaviour in gynaecological practice.' Public Health 2011: volume 125, issue 4, pages 182-186 (58)	Brief interventions for smoking	358 primary care gynaecologists in the state of Schleswig-Holstein	Self-report questionnaire	Germany
17. Amemori M and others. 'Assessing implementation difficulties in tobacco use prevention and cessation counselling among dental providers.' BioMed Central 2011 (59)	Tobacco use prevention and cessation (TUPAC)	Dentists (n = 73) and dental hygienists (n = 22) in 36 dental clinics	Self-report questionnaire	Finland

Reference	Behaviour	Participants	Measure of behaviour	Country
	counselling guidelines			
18. Panaretto K and others. 'Evaluating performance of and organisational capacity to deliver brief interventions in aboriginal and torres strait islander medical services.' Australian and New Zealand Journal of Public Health 2010: volume 34, issue 1, pages 38-44 (60)	Brief intervention for smoking	Staff in 4 Aboriginal and Torres Strait Islander medical services in Queensland	Self-report questionnaire (n=39), qualitative focus groups and chart audits (n=150)	Australia
19. Knudsen HK and Studts JL. 'The implementation of tobacco-related brief interventions in substance abuse treatment: A national study of counselors.' Journal of Substance Abuse Treatment 2010: volume 38, issue 3, pages 212-219 (61)	Brief interventions	2,067 counsellors	Self-report questionnaires	USA
20. Akpanudo SM and others. 'Clinical psychologists and smoking cessation: Treatment practices and perceptions.' Journal of Community Health: The Publication for Health Promotion and Disease Prevention 2009: volume 34, issue 6, pages 461-471 (62)	Smoking cessation practices	Clinical psychologists (n=352)	Self-report questionnaires	USA
21. Vogt F, McEwen A and Michie S. 'What General Practitioners Can Do to Deliver More Brief Stop-Smoking Interventions: An Exploratory Study.' Journal of Smoking	Advice to quit and additional stop-smoking intervention	General practitioners (n=26) from London	Self-report questionnaires	UK

Reference	Behaviour	Participants	Measure of behaviour	Country
Cessation 2008: volume 3, issue 2, pages 110-116 (63)				
22. Thornton J and others. 'Smoking cessation support in community pharmacies: Is the association of smoking and eye disease an additional tool to increase uptake?' International Journal of Pharmacy Practice 2008: volume 16, issue 4, pages 251-256 (64)	Advice for smoking-cessation	2,080 community pharmacists in north west England	Self-report questionnaire	UK
23. Manfredi C and LeHew CW. 'Why implementation processes vary across the 5A's of the Smoking Cessation Guideline: administrators' perspectives.' Nicotine and tobacco research: official journal of the Society for Research on Nicotine and Tobacco 2008: volume 10, issue 11, pages 1,597-1,607 (65)	Smoking cessation program (ask, advise, assess, assist, and arrange)	Key administrative informants and agency case managers (n=63)	Qualitative interviews and self-report questionnaires	USA
24. Kai T and others. 'Perioperative tobacco use interventions in Japan: a survey of thoracic surgeons and anaesthesiologists.' British Journal of Anaesthesia 2008: volume 100, issue 3, pages 404-410 (66)	Tobacco use interventions	538 anaesthesiologists and 556 surgeons.	Self-report questionnaires	Japan
25. Brothwell DJ and Gelskey SC. 'Tobacco use cessation services provided by dentists and dental hygienists in Manitoba: part 1. Influence of practitioner demographics and	Brief intervention counselling (BIC)	514 oral health practitioners in Manitoba	Self-report questionnaires	Canada

Reference	Behaviour	Participants	Measure of behaviour	Country
psychosocial factors.' Journal (Canadian Dental Association) 2008: volume 74, issue 10, pages 905 (67)				
26. Applegate BW and others. 'A survey of tobacco-related knowledge, attitudes and behaviours of primary care providers in Mississippi.' Journal of Evaluation in Clinical Practice 2008: volume 14, issue 4, pages 537-544 (68)	Tobacco-related intervention	Mississippi's Family Medicine, Dentistry and Nurse Practitioner professional organisations (n= 2,043)	Self-report questionnaires	USA
27. Thompson C and others. 'Attitudes of community optometrists to smoking cessation: An untapped opportunity overlooked?' Ophthalmic and Physiological Optics 2007: volume 27, issue 4, pages 389-393 (69)	Smoking cessation advice	Community optometrists in north-west England	Self-report questionnaire	UK
28. Milne B and Towns S. 'Do paediatricians provide brief intervention for adolescents who smoke?' Journal of Paediatrics and Child Health 2007: volume 43, issue 6, pages 464-468 (70)	Brief interventions for adolescents who smoke	57 clinicians at The Children's Hospital at Westmead	Self-report questionnaire	Australia
29. Kerr S and others. 'An exploration of the knowledge, attitudes and practice of members of the primary care team in relation to smoking and smoking cessation in later life.' Primary Health Care Research and	Smoking cessation in later life	A purposive sample of health visitors, district nurses, practice nurses and general practitioners (n=41)	Qualitative interviews	UK

Reference	Behaviour	Participants	Measure of behaviour	Country
Development 2007: volume 8, issue 1, pages 68-79 (71)		working in the west of Scotland		
30. Stacey F and others. 'Smoking cessation as a dental intervention - views of the profession.' British Dental Journal 2006: volume 201, issue 2, pages 109-13 (72)	Smoking cessation advice	Dentists, hygienists and dental nurses in the Northern Deanery	Self-report questionnaires	UK
31 Edwards D, Freeman T, and Roche AM. 'Dentists' and dental hygienists' role in smoking cessation: An examination and comparison of current practice and barriers to service provision.' Health Promotion Journal of Australia 2006: volume 17, issue 2, pages 145-151 (73)	Smoking cessation activities	58 dental hygienists and 334 dentists in South Australia	Self-report questionnaires	Australia
32. Twardella D and Brenner H. 'Lack of training as a central barrier to the promotion of smoking cessation: a survey among general practitioners in Germany.' European Journal of Public Health 2005: volume 15, issues 2, pages 140-145 (74)	Smoking cessation promotion	657 general practitioners practising in the Rhein-Neckar Region	Self-report questionnaires	Germany
33. McLeod D, and others. 'Can Quit Practice: A comprehensive smoking cessation programme for the general practice team.' New Zealand Medical Journal 2005: volume 118, issue 1213 (75)	Smoking cessation provision	22 General Practitioners and Practice Nurses	Qualitative interviews	New Zealand

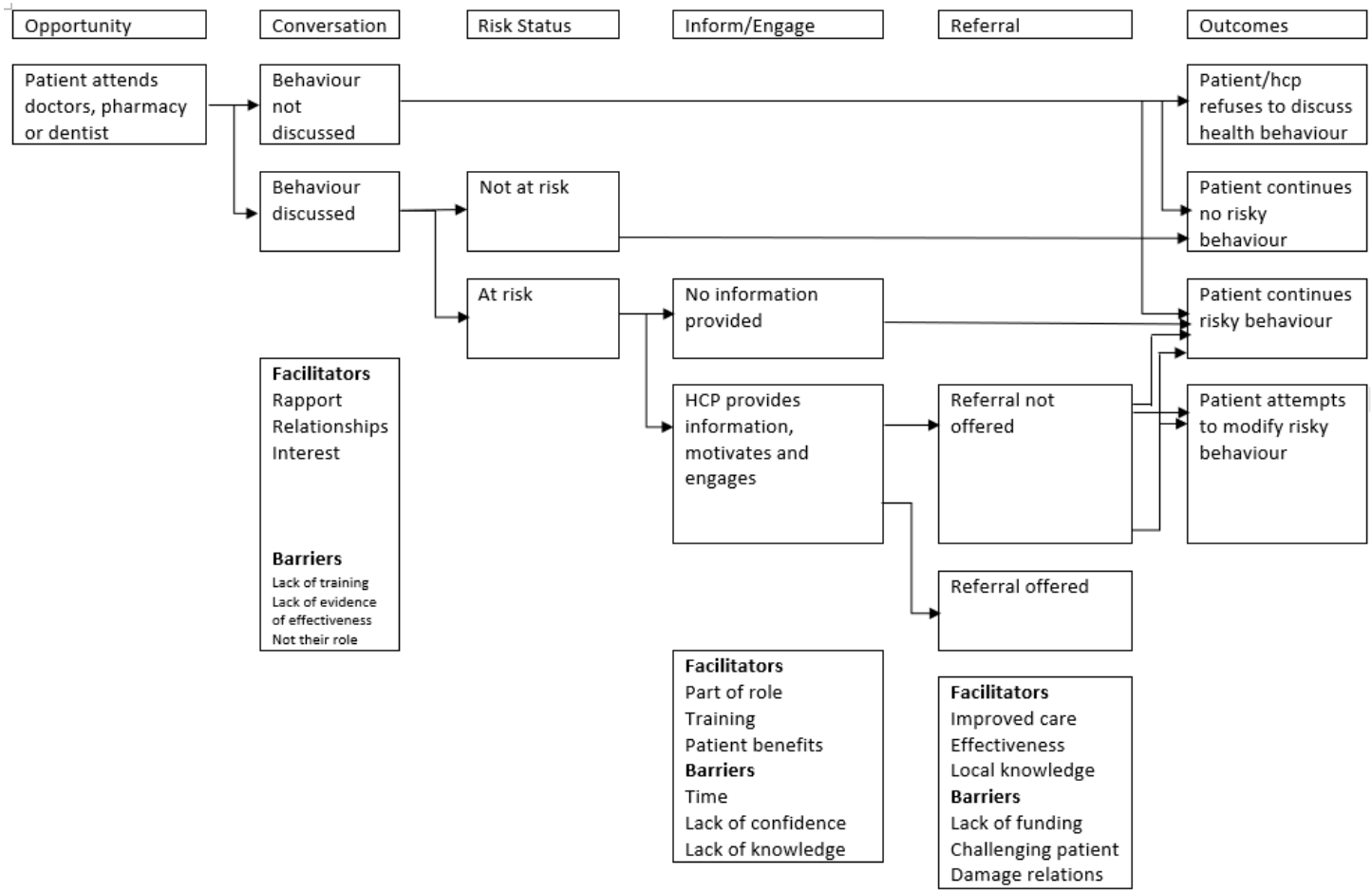
Reference	Behaviour	Participants	Measure of behaviour	Country
34. Phillips KM and Brandon TH. 'Do Psychologists Adhere to the Clinical Practice Guidelines for Tobacco Cessation? A Survey of Practitioners.' Professional Psychology: Research and Practice 2004: volume 35, issue 3, pages 281-285 (76)	Intervention for patients who smoke	281 psychologists.	Self-report questionnaires	USA
35. Braun BL and others. 'Smoking-Related Attitudes and Clinical Practices of Medical Personnel in Minnesota.' American Journal of Preventive Medicine 2004: volume 27, issue 4, pages 316-322 (77)	Smoking-cessation practices	Primary care physicians (MDs), advanced practice nurses (APRNs), registered nurses (RNs), licensed practical nurses (LPNs), and medical assistants (MAs).	Self-report questionnaires	USA
36. Bremberg S and others. 'GPs facing reluctant and demanding patients: Analyzing ethical justifications.' Family Practice 2003: volume 20, issue 3, pages 254-261 (78)	Advice to quit smoking	GPs in Slovenia (n = 160) and Sweden (n = 200)	Self-report questionnaires	Slovenia, Sweden
37. Gomm M and others. 'Helping hospitalised clients quit smoking: a study of rural nursing practice and barriers.' The Australian Journal of Rural Health 2002: volume 10, issue 1, pages 26-32 (79)	Brief intervention for smoking cessation	Rural nursing staff	Self-report questionnaires	Australia

Reference	Behaviour	Participants	Measure of behaviour	Country
38. Park E and others. ‘The development of a decisional balance measure of physician smoking cessation interventions.’ Preventive Medicine 2001: volume 33, issue 4, pages 261-267 (80)	Smoking cessation interventions	155 primary care physicians	Self-report questionnaires	USA
39. Easton A and others. ‘Non-primary care physicians and smoking cessation counseling: Women physician's health study.’ Women and Health 2001: volume 34, issue 4, pages 15-29 (81)	Counselling on smoking cessation	4,501 women physicians representing all major specialties	Self-report questionnaires	USA
40. Borrelli B and others. ‘Smoking-cessation counseling in the home: Attitudes, beliefs, and behaviors of home healthcare nurses.’ American Journal of Preventive Medicine 2001: volume 21, issue 4, pages 272-277 (82)	Counselling home care patients who smoke	Home healthcare nurses (n=98) from the Visiting Nurse Association of Rhode Island	Self-report questionnaires	USA

Appendix 2. Conceptual maps of healthcare professionals' behaviours

MECC

Figure 4. Conceptual map of healthcare professionals' behaviours for MECC (text summary on next page)



Text summary of Figure 4. 'Conceptual map of healthcare professionals' behaviours for MECC'

Figure 4 provides a conceptual map of the proposed behavioural pathway followed by healthcare professionals when delivering brief interventions for MECC. There are 6 possible stages: opportunity, conversation, risk status, inform or engage, referral and outcomes.

Stage 1: Opportunity

Stage 1 offers one option – option 1.A. This represents the occurrence of an opportunity for a MECC brief intervention to be delivered.
Option 1.A: The opportunity for a MECC brief intervention to be delivered arises when a patient attends a doctor's surgery, a pharmacy or a dentist appointment. Go to Stage 2 (conversation).

Stage 2: Conversation

Stage 2 offers 2 options – options 2.A and 2.B. These represent whether a conversation occurs to discuss the behaviour or not. A note describes some proposed facilitators to the behaviour being discussed (rapport, relationships and interest), and some barriers to the behaviour being discussed (lack of training, lack of evidence of effectiveness, not perceived to be part of the role).
Option 2.A: The behaviour is discussed. Go to Stage 3 (risk status).
Option 2 B: The behaviour is not discussed. Skip to Stage 6 (outcomes) where possible options are 6.A (patient or healthcare professional refuses to discuss behaviour), 6.B (patient continues as they are – no risky behaviour) or 6.C (patient continues as they are – risky behaviour present).

Stage 3: Risk Status

Stage 3 offers 2 options – options 3.A and 3.B. These represent whether the patient is considered to be at risk or not.
Option 3.A: The patient is considered to be at risk. Go to Stage 4 (inform or engage)
Option 3.B: The patient is considered not to be at risk. Go to Stage 6 (outcomes) where the possible option is 6.B (patient continues as they are – no risky behaviour).

Stage 4: Inform or Engage

Stage 4 offers 2 options – options 4.A and 4.B. These represent whether or not the healthcare professional informs and engages with the patient. A note describes some proposed facilitators to the healthcare professional informing and engaging with the patient (considered to be part of their role, having received training, and believing it will benefit the patient) and some proposed barriers (lack of time, lack of confidence, lack of knowledge).

Option 4.A: No information is provided. Go to Stage 6 (outcomes) where the possible option is 6.C (patient continues as they are – risky behaviour present).
Option 4.B: The healthcare professional provides information to, motivates, and engages with the patient. Go to Stage 5 (referral).

Stage 5: Referral

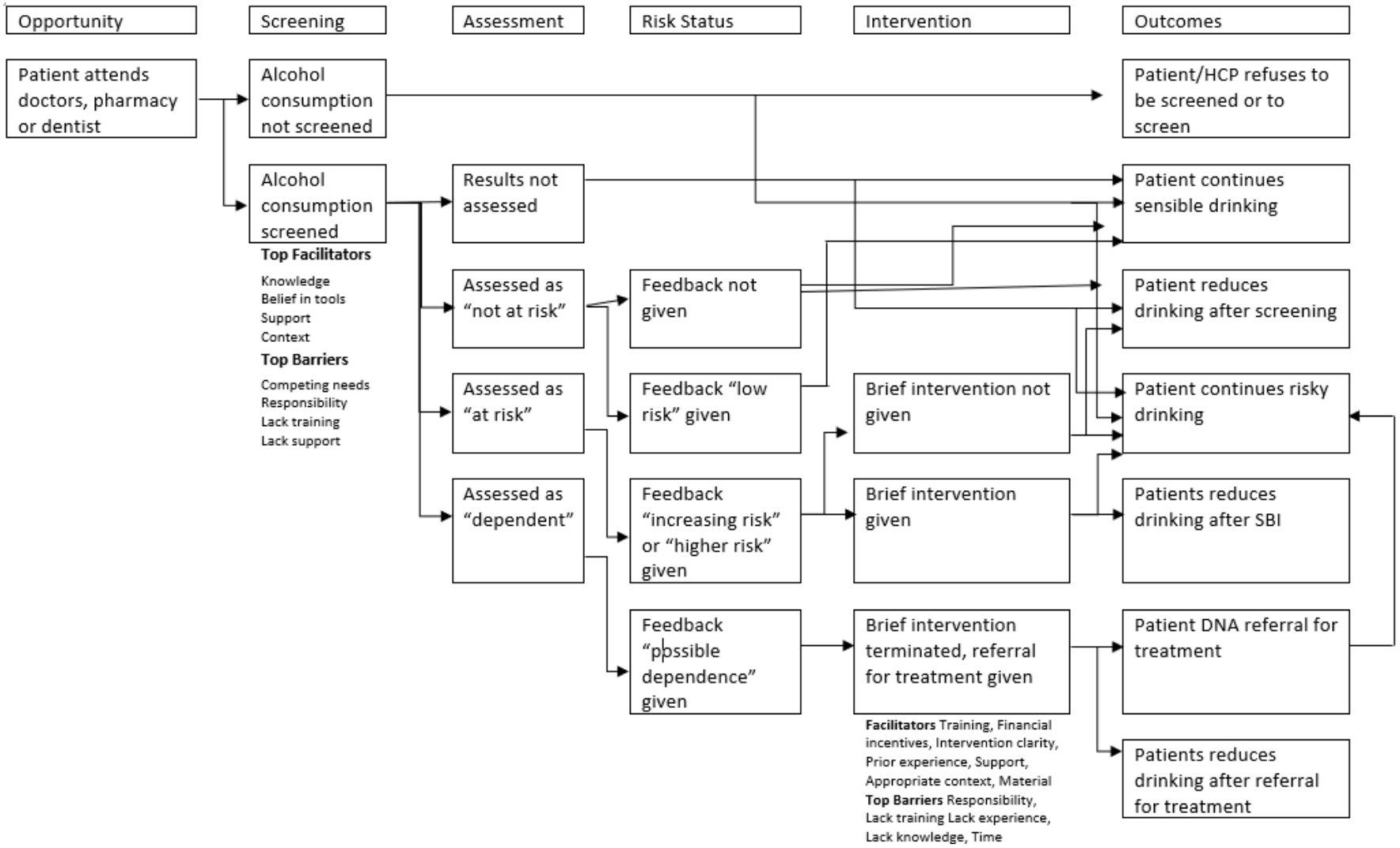
Stage 5 offers 2 options – options 5.A and 5.B. These represent whether or not the healthcare professional makes a referral for the patient. A note describes some proposed facilitators to the healthcare professional making a referral (local knowledge, improved care, and belief in effectiveness), and some barriers (lack of funding, challenging patients, and belief that it will damage the patient-professional relationship).
Option 5.A: Referral not offered. Go to Stage 6 (outcomes) where the possible options are 6.C (patient continues as they are – risky behaviour present) and 6.D (patient attempts to modify risky behaviour).
Option 5.B: Referral offered. This pathway ends here.

Stage 6: Outcomes

Stage 6 presents 4 options – options 6.A, 6.B, 6.C and 6.D. These represent possible outcomes that can occur if the MECC brief intervention and referral is not delivered.
Option 6.A: The patient or healthcare professional refuses to discuss the behaviour. This pathway ends here.
Option 6.B: The patient continues as they are – no risky behaviour. This pathway ends here.
Option 6.C: The patient continues as they are – risky behaviour present. This pathway ends here.
Option 6.D: The patient attempts to modify their risky behaviour. This pathway ends here.

Alcohol

Figure 5. Conceptual map of healthcare professionals' behaviours for alcohol (text summary on next page)



Text summary of Figure 5. 'Conceptual map of healthcare professionals' behaviours for alcohol brief interventions

Figure 5 provides a conceptual map of the proposed behavioural pathway followed by healthcare professionals when delivering brief interventions to reduce alcohol intake. There are 6 possible stages: opportunity, screening, assessment, risk status, intervention, and outcomes.

Stage 1: Opportunity

Stage 1 offers one option – option 1.A. This represents the occurrence of an opportunity for a brief intervention to be delivered.
Option 1.A: The opportunity for a brief intervention to be delivered arises when a patient attends a doctor's surgery, a pharmacy or a dentist appointment. Go to Stage 2 (conversation).

Stage 2: Conversation

Stage 2 offers 2 options – options 2.A and 2.B. These represent whether a patient's alcohol consumption is screened or not. A note describes some proposed facilitators to the screening being conducted (knowledge, belief in tools, support and context), and some barriers (competing needs, responsibility, lack of training and lack of support).
Option 2.A: Alcohol consumption is screened. Go to Stage 3 (assessment).
Option 2 B: Alcohol consumption is not screened. Skip to Stage 6 (outcomes) where possible options are 6.A (patient or healthcare professional refuses to be screened or to screen), 6.B (patient continues sensible drinking) or 6.D (patient continues risky drinking).

Stage 3: Assessment

Stage 3 offers 4 options – options 3.A, 3.B, 3.C and 3.D. These represent whether the patient's alcohol consumption is assessed, and the outcome of this assessment in terms of their risk assessment.
Option 3.A: The patient's screening results are not assessed. Go to Stage 6 (outcomes) where the possible options are 6.B (patient continues sensible drinking) or 6.D (patient continues risky drinking).
Option 3.B: The patient is assessed to be "not at risk". Go to Stage 4 (risk status) where the possible options are 4.A (feedback not given) or 4.B (feedback "low risk" given).
Option 3.C: The patient is assessed to be "at risk". Go to Stage 4 (risk status) where the possible option is 4.C (feedback "increasing risk" or "higher risk" given).
Option 3.D: The patient is assessed to be "dependent". Go to Stage 4 (risk status) where the possible option is 4.D (feedback "possible dependence" given).

Stage 4: Risk status

Stage 4 offers 4 options – options 4.A, 4.B, 4.C and 4.D. These represent whether or not the healthcare professional provides feedback to the patient regarding the outcome of their assessment.

Option 4.A: No feedback given. Go to Stage 6 (outcomes) where the possible options are 6.B (patient continues sensible drinking) or 6.C (patient reduces drinking after screening).

Option 4.B: Feedback “low risk” given. Go to stage 6 (outcomes) where the possible option is 6.B (patient continues sensible drinking).

Option 4.C: Feedback “increasing risk” or “higher risk” given. Go to Stage 5 (intervention) where the possible options are 5.A (brief intervention not given) or 5.B (brief intervention given).

Option 4.D: Feedback “possible dependence” given. Go to Stage 5 (intervention) where the possible option is 5.C (brief intervention terminated, referral for treatment given).

Stage 5: Intervention

Stage 5 offers 3 options – options 5.A, 5.B and 5.C. These represent whether or not the healthcare professional delivers a brief intervention. A note describes some proposed facilitators to the healthcare professional delivering the intervention (training, financial incentives, intervention clarity, prior experience, support, appropriate context and material), and some barriers (lack of training, lack of experience, lack of knowledge, responsibility and time).

Option 5.A: Brief intervention not given. Go to Stage 6 (outcomes) where the possible options are 6.C (patient reduces drinking after screening) and 6.D (patient continues risky drinking).

Option 5.B: Brief intervention given. Go to Stage 6 (outcomes) where the possible options are 6.D (patient continues risky drinking) and 6.E (patient reduces drinking after SBI).

Option 5.C: Brief intervention is terminated, referral for treatment is given. Go to Stage 6 (outcomes) where possible options are 6.F (patient does not attend referral for treatment) and 6.G (patient reduces drinking after referral for treatment).

Stage 6: Outcomes

Stage 6 presents 7 options – options 6.A, 6.B, 6.C, 6.D, 6.E, 6.F and 6.G. These represent possible outcomes that can occur at the end of all of the pathways described above.

Option 6.A: The patient or healthcare professional refuses to be screened or to screen. This pathway ends here.

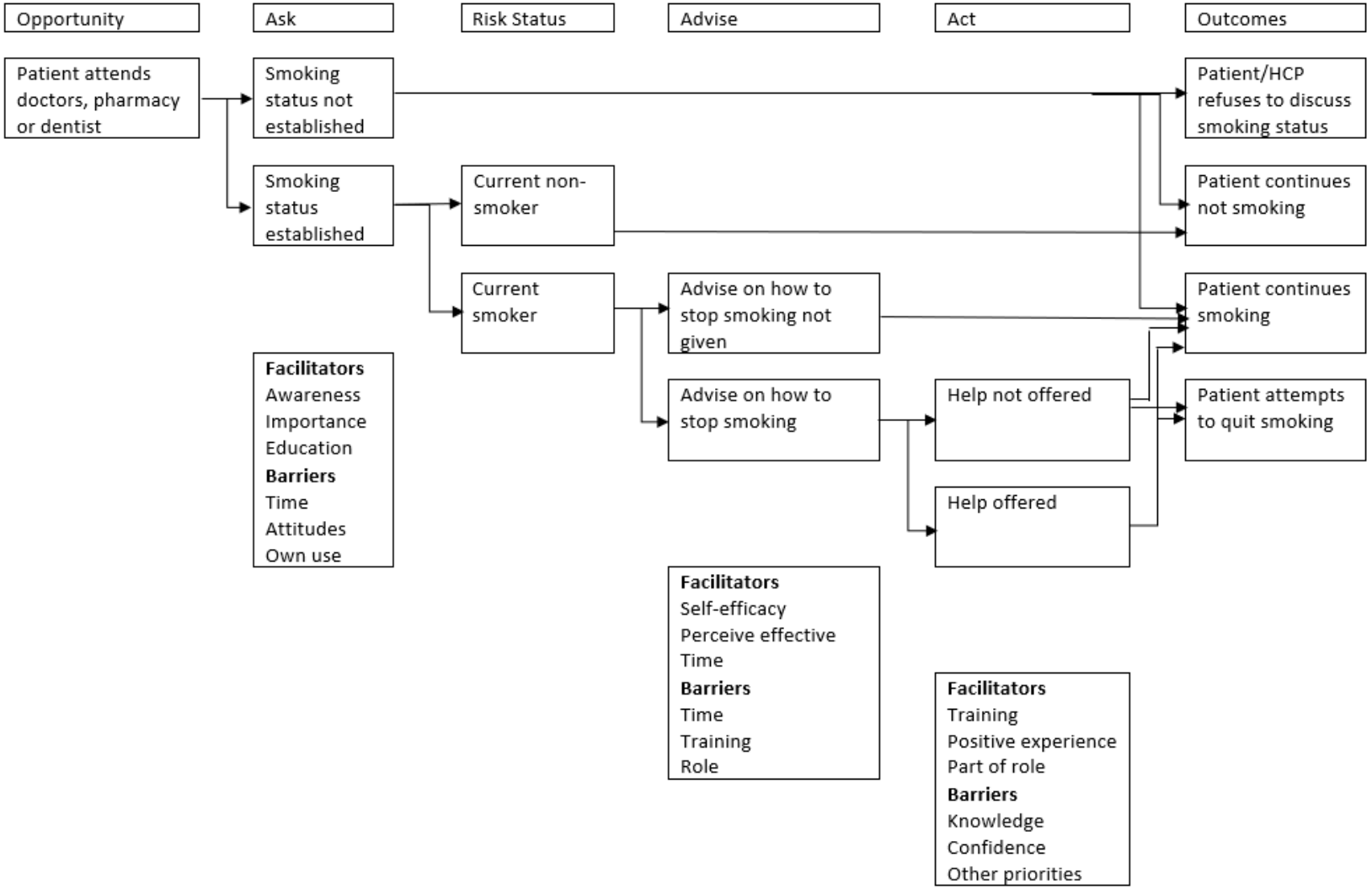
Option 6.B: The patient continues sensible drinking. This pathway ends here.

Option 6.C: The patient reduces their drinking after screening. This pathway ends here.

Option 6.D: The patient continues risky drinking. This pathway ends here.
Option 6.E: The patient reduces their drinking after SBI. This pathway ends here.
Option 6.F: The patient does not attend referral for treatment. Go to Option 6.D.
Option 6.G: The patient reduces their drinking after referral for treatment. This pathway ends here.

Smoking

Figure 6. Conceptual map of healthcare professionals' behaviours for smoking (text summary on next page)



Text summary of Figure 6. 'Conceptual map of healthcare professionals' behaviours for smoking'

Figure 6 provides a conceptual map of the proposed behavioural pathway followed by healthcare professionals when delivering brief interventions for smoking. There are 6 possible stages: opportunity, ask, risk status, advise, act and outcomes.

Stage 1: Opportunity

Stage 1 offers one option – option 1.A. This represents the occurrence of an opportunity for a smoking brief intervention to be delivered.
Option 1.A: The opportunity for a smoking brief intervention to be delivered arises when a patient attends a doctor's surgery, a pharmacy or a dentist appointment. Go to Stage 2 (ask).

Stage 2: Ask

Stage 2 offers 2 options – options 2.A and 2.B. These represent whether the healthcare professional asks the patient about their smoking status or not. A note describes some proposed facilitators to the healthcare professional asking the patient about their smoking status (awareness, importance, education), and some barriers to the behaviour being discussed (time, attitudes, own use).
Option 2.A: Smoking status is established. Go to Stage 3 (risk status).
Option 2 B: Smoking status is not established. Skip to Stage 6 (outcomes) where possible options are 6.A (patient or healthcare professional refuses to discuss smoking status), 6.B (patient continues not smoking) or 6.C (patient continues smoking).

Stage 3: Risk status

Stage 3 offers 2 options – options 3.A and 3.B. These represent whether the patient is currently a smoker or a non-smoker.
Option 3.A: The patient is currently a smoker. Go to Stage 4 (advise)
Option 3.B: The patient is currently a non-smoker. Go to Stage 6 (outcomes) where the possible option is 6.B (patient continues not smoking).

Stage 4: Advise

Stage 4 offers 2 options – options 4.A and 4.B. These represent whether or not the healthcare professional advises the patient on how to stop smoking. A note describes some proposed facilitators to the healthcare professional advising the patient (self-efficacy, perceived effectiveness, time) and some proposed barriers (time, training, role).

Option 4.A: Advice on how to stop smoking not given. Go to Stage 6 (outcomes) where the possible option is 6.C (patient continues smoking).
Option 4.B: Advice on how to stop smoking given. Go to Stage 5 (act).

Stage 5: Act

Stage 5 offers 2 options – options 5.A and 5.B. These represent whether or not the healthcare professional offers help to the patient. A note describes some proposed facilitators to the healthcare professional making a referral (training, positive experience, part of role), and some barriers (knowledge, confidence, other priorities).
Option 5.A: Help not offered. Go to Stage 6 (outcomes) where the possible options are 6.C (patient continues smoking) and 6.D (patient attempts to quit smoking).
Option 5.B: Help offered. Go to Stage 6 (outcomes) where the possible options are 6.C (patient continues smoking) and 6.D (patient attempts to quit smoking).

Stage 6: Outcomes

Stage 6 presents 4 options – options 6.A, 6.B, 6.C and 6.D. These represent possible outcomes that can occur at the end of the pathways described above.
Option 6.A: The patient or healthcare professional refuses to discuss smoking status. This pathway ends here.
Option 6.B: The patient continues not smoking. This pathway ends here.
Option 6.C: The patient continues smoking. This pathway ends here.
Option 6.D: The patient attempts to quit smoking. This pathway ends here.

Appendix 3. Frequency of use of theoretically appropriate intervention techniques in national interventions

MECC

Table 12. Frequency of use of behaviour change techniques associated with key TDF domains, and proportion used per domain

BCTs paired with TDF domains	BCT Frequency, *n* interventions	% Potential relevant BCTs used at least once
Beliefs about capabilities		
Verbal persuasion to boost self-efficacy	0	13%
Focus on past success	0	
Self-monitoring of behaviour	0	
Self-monitoring of outcome of behaviour	0	
Graded tasks	0	
Problem solving	0	
Goal setting (behaviour)	0	
Goal setting (outcome)	0	
Coping skills	0	
Behavioural practice or rehearsal	9	
Social support (unspecified)	0	
Social support (emotional)	0	
Social support (practical)	0	
Feedback (behaviour)	9	
Feedback (outcome)	0	
Self-talk	0	
Knowledge		
Information on health consequences	9	57%
Biofeedback	0	

BCTs paired with TDF domains	BCT Frequency, *n* interventions	% Potential relevant BCTs used at least once
Antecedents	8	
Feedback on behaviour	9	
Information on social or environmental consequences	7	
Information on emotional consequences	0	
Salience of consequences	0	
Beliefs about consequences		
Information about emotional consequences	0	
Salience of consequences	0	
Covert sensitization	0	
Anticipated regret	0	
Information on social or environmental consequences	7	
Pros and cons	0	
Vicarious reinforcement	0	
Threat	0	
Comparative imagining of future outcomes	0	25%
Self-monitoring of behaviour	0	
Self-monitoring of outcome of behaviour	0	
Information on health consequences	9	
Feedback on behaviour	9	
Biofeedback	0	
Feedback on outcome(s) of behaviour	0	
Persuasive communication (credible source)	2	
Skills		
Graded tasks	0	19%

BCTs paired with TDF domains	BCT Frequency, *n* interventions	% Potential relevant BCTs used at least once
Behavioural rehearsal or practice	9	
Habit reversal	0	
Body changes	0	
Habit formation	7	
Goal setting (outcome)	0	
Goal setting (behaviour)	0	
Monitoring by others without feedback	0	
Self-monitoring	0	
Reward (outcome)	0	
Self-reward	0	
Incentive	0	
Material reward	0	
Non-specific reward	0	
Demonstration of the behaviour (modelling)	9	
Generalisation of target behaviour	0	
Social professional role and identity		
Social support (unspecified)	0	
Social support (emotional)	0	0
Social support (practical)	0	
Environmental context and resources		
Restructuring the physical environment	8	
Discriminative (learned) cue	0	
Prompts or cues	0	
Avoidance or changing exposure to cues for the behaviour	0	33%
Adding objects to the environment	0	
Restructuring the social environment	2	

BCTs paired with TDF domains	BCT Frequency, *n* interventions	% Potential relevant BCTs used at least once
Emotion		
Reduce negative emotions	0	0
Information about emotional consequences	0	
Self-assessment of affective consequences	0	
Social support (emotional)	0	
Conserving mental resources	0	
Intentions		
Commitment	0	0
Behavioural contract	0	

Table 13. Frequency of use of intervention types associated with key TDF domains

Key

Green (G) = opportunity seized, red (R) = opportunity missed, grey (Gr) = match between COM-B component and intervention type but not relevant for key TDF domains. Social opportunity was not matched to any of the key TDF domains.

	Intervention types (number of interventions for each type)								
TDF domain (COM-B)	**Education (n=9)**	**Enablement (n=6)**	**Environmental restructuring (n=3)**	**Incentivisation (n=0)**	**Coercion (n=0)**	**Modelling (n=9)**	**Persuasion (n=9)**	**Training (n=9)**	**Restriction (n = 0)**
Skills (Physical Capability)		Gr						G	
Knowledge, Skills (Psychological Capability)	G	Gr						G	
Professional role, Beliefs about capabilities; Beliefs About Consequences; Intentions (Reflective Motivation)	G	G		R	R	G	G		
Emotion (Automatic Motivation)		G	Gr	R	R	G	G	Gr	
Environmental context and resources (Physical Opportunity)		G	G					G	R
(Social Opportunity)		Gr	Gr			Gr			Gr

Alcohol

Table 14. Frequency of use of behaviour change techniques associated with key TDF domains, and proportion used per domain

BCTs paired with TDF domains	BCT Frequency, n interventions	% Potential relevant BCTs used at least once
Beliefs about capabilities		
Verbal persuasion to boost self-efficacy	0	19%
Focus on past success	0	
Self-monitoring of behaviour	0	
Self-monitoring of outcome of behaviour	0	
Graded tasks	0	
Problem solving	0	
Goal setting (behaviour)	5	
Goal setting (outcome)	0	
Coping skills	0	
Behavioural practice or rehearsal	4	
Social support (unspecified)	0	
Social support (emotional)	0	
Social support (practical)	0	
Feedback (behaviour)	4	
Feedback (outcome)	0	
Self-talk	0	
Knowledge		
Information on health consequences	3	43%
Biofeedback	0	
Antecedents	0	
Feedback on behaviour	4	
Information on social or environmental consequences	5	
Information emotional consequences	0	
Salience of consequences	0	
Beliefs about consequences		

BCTs paired with TDF domains	BCT Frequency, n interventions	% Potential relevant BCTs used at least once
Information about emotional consequences	0	19%
Salience of consequences	0	
Covert sensitization	0	
Anticipated regret	0	
Information about social or environmental consequences	5	
Pros and cons	0	
Vicarious reinforcement	0	
Threat	0	
Comparative imagining of future outcomes	0	
Self-monitoring of behaviour	0	
Self-monitoring of outcome of behaviour	0	
Information on health consequences	3	
Feedback on behaviour	4	
Biofeedback	0	
Feedback on outcome(s) of behaviour	0	
Persuasive communication (credible source)	0	
Skills		
Graded tasks	0	25%
Behavioural rehearsal or practice	4	
Habit reversal	0	
Body changes	0	
Habit formation	0	
Goal setting (outcome)	0	
Goal setting (behaviour)	5	
Monitoring by others without feedback	0	
Self-monitoring	0	
Reward (outcome)	0	
Self-reward	0	
Incentive	0	

BCTs paired with TDF domains	BCT Frequency, n interventions	% Potential relevant BCTs used at least once
Material reward	1	
Non-specific reward	0	
Demonstration of the behaviour (modelling)	4	
Generalisation of target behaviour	0	
Social professional role and identity		
Social support (unspecified)	0	
Social support (emotional)	0	0
Social support (practical)	0	
Environmental context and resources		
Restructuring the physical environment	3	
Discriminative (learned) cue	0	
Prompts or cues	0	
Avoidance or changing exposure to cues for the behaviour	0	17%
Adding objects to the environment	0	
Restructuring the social environment	0	
Emotion		
Reduce negative emotions	0	
Information about emotional consequences	0	
Self-assessment of affective consequences	0	0
Social support (emotional)	0	
Conserving mental resources	0	

Table 15. Frequency of use of intervention types associated with key TDF domains

Key: Green (G) = opportunity seized, red (R) = opportunity missed, grey (Gr) = match between COM-B component and intervention type, but not relevant for key TDF domains. Social opportunity was not matched to any of the key TDF domains.

	Intervention functions (number of interventions serving each function)								
TDF domain (COM-B)	**Education (n=5)**	**Enablement (n=5)**	**Environmental restructuring (n=0)**	**Incentivisation (n=1)**	**Coercion (n=0)**	**Modelling (n=4)**	**Persuasion (n=4)**	**Training (n=6)**	**Restriction (n = 0)**
Skills (Physical Capability)		Gr						G	
Knowledge; Skills (Psychological Capability)	G	Gr						G	
Professional role, Beliefs about capabilities; Beliefs About Consequences (Reflective Motivation)	G	G		Gr	Gr	G	G		
Emotion (Automatic Motivation)		G	Gr	G	R	G	G	Gr	
Environmental context and resources (Physical Opportunity)		G	R					G	R
(Social Opportunity)		Gr	Gr			Gr			Gr

Smoking

Table 16. Frequency of use of behaviour change techniques associated with key TDF domains, and proportion used per domain

BCT paired with TDF domains	BCT Frequency, *n* interventions	% Potential relevant BCTs used at least once
Beliefs about capabilities		
Verbal persuasion to boost self-efficacy	0	13%
Focus on past success	0	
Self-monitoring of behaviour	0	
Self-monitoring of outcome of behaviour	0	
Graded tasks	0	
Problem solving	0	
Goal setting (behaviour)	0	
Goal setting (outcome)	0	
Coping skills	0	
Behavioural practice or rehearsal	6	
Social support (unspecified)	0	
Social support (emotional)	0	
Social support (practical)	0	
Feedback (behaviour)	1	
Feedback (outcome)	0	
Self-talk	0	
Knowledge		
Information about health consequences	6	29%
Biofeedback	0	
Antecedents	0	
Feedback on behaviour	1	
Information about social or environmental consequences	0	
Information about emotional consequences	0	
Salience of consequences	0	
Beliefs about consequences		
Information about emotional consequences	0	13%

BCT paired with TDF domains	BCT Frequency, *n* interventions	% Potential relevant BCTs used at least once
Salience of consequences	0	
Covert sensitization	0	
Anticipated regret	0	
Information about social or environmental consequences	0	
Pros and cons	0	
Vicarious reinforcement	0	
Threat	0	
Comparative imagining of future outcomes	0	
Self-monitoring of behaviour	0	
Self-monitoring of outcome of behaviour	0	
Information on health consequences	6	
Feedback on behaviour	1	
Biofeedback	0	
Feedback on outcome(s) of behaviour	0	
Persuasive communication (credible source)	0	
Skills		
Graded tasks	0	6%
Behavioural rehearsal or practice	0	
Habit reversal	0	
Body changes	0	
Habit formation	0	
Goal setting (outcome)	0	
Goal setting (behaviour)	0	
Monitoring by others without feedback	0	
Self-monitoring	0	
Reward (outcome)	0	
Self-reward	0	
Incentive	0	
Material reward	0	
Non-specific reward	0	

BCT paired with TDF domains	BCT Frequency, *n* interventions	% Potential relevant BCTs used at least once
Demonstration of the behaviour (modelling)	6	
Generalisation of target behaviour	0	
Environmental context and resources		
Restructuring the physical environment	3	17%
Discriminative (learned) cue	0	
Prompts or cues	0	
Avoidance or changing exposure to cues for the behaviour	0	
Adding objects to the environment	0	
Restructuring the social environment	0	
Emotion		
Reduce negative emotions	0	0
Information about emotional consequences	0	
Self-assessment of affective consequences	0	
Social support (emotional)	0	
Conserving mental resources	0	

Table 17. Frequency of use of intervention types associated with key TDF domains

Key: Green (G) = opportunity seized, red (R) = opportunity missed, grey (Gr) = match between COM-B component and intervention type, but not relevant for key TDF domains. Social opportunity was not matched to any of the key TDF domains.

	Intervention types (number of interventions meeting each type)								
	Education (n=6)	**Enablement (n=7)**	**Environmental restructuring (n=0)**	**Incentivisation (n=2)**	**Coercion (n=0)**	**Modelling (n=6)**	**Persuasion (n=6)**	**Training (n=7)**	**Restriction (n = 0)**
Skills (Physical Capability)		Gr						G	
Knowledge; Skills (Psychological Capability)	G	Gr						G	
Beliefs About Capabilities; Beliefs About Consequences (Reflective Motivation)	G	G		Gr	Gr	G	G		
Emotion (Automatic Motivation)		G	Gr	G	R	G	G	Gr	
Environmental Context and Resources (Physical Opportunity)		G	R					G	R
(Social Opportunity)		Gr	Gr			Gr			Gr

Appendix 4. Behaviour change techniques not identified in interventions

We recommend that intervention developers and commissioners continue to employ the BCTs used in current interventions that were identified as theoretically congruent (high or medium congruence). We also recommend the use of BCTs that were not identified in current interventions but were identified as relevant for targeting the key barrier domains of each workstream. We present some of these BCTs below along with their definition and examples of how these could be implemented in practice. When selecting BCTs for intervention design or development, we recommend consulting the APEASE criteria, which can be used to narrow down options for intervention based on their acceptability, practicability, effectiveness, affordability, side-effects and equity (2, 9).

Note that some theoretically congruent BCTs (identified in Appendix 3) do not appear here as they were not judged to be appropriate on consultation with key stakeholders.

Table 18. Behaviour change techniques not identified in interventions with definitions and examples for implementation

Key

Column 3 M = MECC, in column 4 A = Alcohol, in column 5 S = Smoking. X = relevant BCT not identified in any interventions, * = relevant BCT identified at least one intervention.

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
Cue signalling reward (environmental context and resources)	Identify an environmental stimulus that reliably predicts that reward will follow the behaviour.	X	X	X	• add a cue in the environment (for example, on computer system) that links to an incentive scheme. For example, a MECC, alcohol or smoking screening and brief intervention (SBI) logging system that leads to a reward after achieving certain targets

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
					• reward HCPs for delivering SBIs to specific patient groups or characteristics (for example, based on age range, targand otherscohol consumption levels, smoking status or condition such as hypertension, mental health conditions).The patient characteristic acts as the cue signalling reward
Prompts or cues (environmental context and resources)	Introduce or define environmental or social stimulus with the purpose of prompting or cueing the behaviour. The prompt or cue would normally occur at the time or place of performance.	X	X	X	• place a prompt on the computer system to ensure SBI is completed before moving on through system • use posters, badges or stickers (for example, badges for HCPs saying “I will ask you about your smoking and offer you support”) in the environment • questionnaires assessing smoking, drinking or diet and so on; could be handed out by receptionists for patients to complete in waiting room – patient handing this to HCP at start of appointment would be a prompt and would also involve the patient in actively opening this conversation, making SBI initiation easier
Restructuring the social environment (environmental context and resources)	Change, or advise to change, the social environment in order to facilitate performance of the wanted behaviour or create barriers to the unwanted	*	X	X	• change the vocabulary and ‘culture’ around these interventions – use terms that staff are familiar with such as ‘having a word’, place posters in patient areas and consultation rooms to increase the expectation that this is a norm, avoid terms like

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
	behaviour (other than prompts or cues, rewards and punishments)				'interventions' and 'services' and use vocabulary to normalise and make it more patient-friendly • highlight positive social norms (for example, most patients expect medical professionals to ask them about risk factors such as smoking status; most HCPs in your practice have had positive experiences with these conversations) to HCPs • discuss referral rates and SBI successes in team meetings • use credible messengers (for example, authority figures or community champions) to deliver staff-facing messages encouraging HCPs to engage in SBI
Adding objects to the environment (environmental context and resources)	Add objects to the environment in order to facilitate performance of the behaviour	X	X	X	• provide checklist for SBI conversations, or provide checklists for appointment procedures that include SBIs as a usual step • establish or simplify and streamline existing systems for recording SBI interactions and referring patients • provide materials for HCPs (for example, leaflets on different risk factors, treatment or self-help options, top tips document with case studies of HCPs overcoming common barriers in various roles or specialisms [11])

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
					• provide patient-facing intervention materials such as food diaries to use during SBI interactions
Verbal persuasion to boost self-efficacy (beliefs about capabilities; intentions)	Tell the person that they can successfully perform the wanted behaviour, arguing against self-doubts and asserting that they can and will succeed	X	X	X	• provide regular line manager feedback persuading staff member they are capable of overcoming barriers to delivery of SBIs, discussing specific barriers to delivery for that staff member • during face-to-face training sessions or workshops, include discussion on perceived barriers so that training can address these concerns • establish online communities with social ne2rk champions or other points of support who can encourage HCPs and problem solve • provide examples of SBIs and show the HCP how they can successfully incorporate these strategies into short appointments (11), for example, using videos from Health Education England
Focus on past success (beliefs about capabilities)	Advise to think about or list previous successes in performing the behaviour (or parts of it)	X	X	X	• encourage HCPs to remember occasions when they have had positive experiences delivering lifestyle advice or SBIs; for example, where HCPs have successfully engaged in SBI conversations before • line managers could encourage focus on past success during feedback (however, may be important to avoid this strategy for HCPs who have not yet engaged in SBI or who have had negative

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
					experiences, as inability to recall past successes may reinforce perceptions of barriers)
Self-monitoring of behaviour (beliefs about capabilities; beliefs about consequences; skills)	Establish a method for the person to monitor and record their behaviour(s) as part of a behaviour change strategy	X	X	X	• provide a space for HCPs to record whether a SBI conversation occurred at the end of each appointment (for example, a tick-box in existing systems for recording patient notes) and provide visual progress charts • encourage self-reflection at the end of consultations to note down where they delivered well and where improvements could be made (technique could be combined with other strategies such as developing a toolkit to overcome identified barriers).
Graded tasks (beliefs about capabilities; skills)	Set easy-to-perform tasks, making them increasingly difficult, but achievable, until behaviour is performed	X	X	X	• break down the behaviours required to deliver SBIs into smaller steps or goals (for example, focusing on one particular MECC-relevant behaviour at a time, focusing on one particular patient group at a time, starting by delivering SBIs in settings such as the NHS Health Check where patients are more likely to be receptive) and set incremental goals for HCPs to build on this behaviour gradually (for example, starting to deliver SBIs in settings outside of the NHS Health Check, such as regular reviews of patients with long-term conditions). Ensure that the end-point is

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
					for HCPs to deliver SBIs to all patient groups and not just those who are perceived to be more receptive and motivated for behaviour change
Problem solving, including coping skills (beliefs about capabilities; intentions)	Analyse, or prompt the person to analyse, factors influencing the behaviour and generate or select strategies that include overcoming barriers and/or increasing facilitators	X	X	X	• ask HCPs to identify their own personal barriers to delivering SBIs and ask them to list practical solutions for overcoming these barriers (or, if no solutions available, identify viable alternatives for example, if no local services are available for referrals, direct patients to other resources such as digital tools). • develop a toolkit to help support HCPs in identifying and overcoming common barriers
Goal setting – behaviour (beliefs about capabilities; intentions; skills)	Set or agree on a goal defined in terms of the behaviour to be achieved	X	*	X	• encourage HCPs to set a goal (for example, for a target percentage of patients seen for whom they will aim to initiate SBI conversations each day or week)
Social support – unspecified (beliefs about capabilities; intentions; social professional role and identity)	Advise on, arrange or provide social support (for example, from friends, relatives, colleagues,' buddies' or staff) or noncontingent praise or reward for performance of the behavior. It includes encouragement and	X	X	X	• designate certain members of staff to act as community social support for other HCPs who may be less confident with delivering SBIs • provide online ne2rk for HCPs to share concerns and solutions

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
	counselling, but only when it is directed at the behavior				
Social support – emotional (beliefs about capabilities; intentions; social professional role and identity; emotions)	Advise on, arrange, or provide emotional social support (for example, from friends, relatives, colleagues, 'buddies' or staff) for performance of the behavior	X	X	X	• similar strategies to social support (unspecified) could be used, specifically to provide emotional support for HCPs who lack confidence or are worried or concerned about MECC conversations
Social support – practical (beliefs about capabilities; intentions; social professional role and identity)	Advise on, arrange, or provide practical help (for example, from friends, relatives, colleagues, 'buddies' or staff) for performance of the behaviour	X	X	X	• similar strategies to social support (unspecified) could be used, specifically to provide practical support for HCPs who experience barriers associated with resources (for example, time, capacity, administrative requirements) and other practical issues
Feedback – outcome (beliefs about capabilities; beliefs about consequences; intentions)	Monitor and provide feedback on the outcome of performance of the behaviour	X	X	X	• where possible, provide feedback to HCPs on numbers of patients who are engaging with services (for example, seeing stop smoking advisers, enrolled at weight management services)
Self-talk (beliefs about capabilities)	Prompt positive self-talk (aloud or silently) before and during the behaviour	X	X	X	• prompt HCPs to remind themselves of the benefits of SBIs (for example, empirical demonstrations of efficacy from evidence base) before patient interactions, and to encourage themselves of their

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
					likely successful performance; suggest this as a tip for dealing with anxiety around delivering SBI • encourage HCPs to write themselves encouraging notes or mantras
Covert conditioning (beliefs about consequences)	Advise to imagine performing the wanted behaviour in a real-life situation followed by imagining a pleasant consequence	X	X	X	• prompt HCPs to imagine delivering SBIs to their patients and being praised by colleagues for doing so, and those patients making positive lifestyle changes as a result
Information on emotional consequences (knowledge; beliefs about consequences; emotions)	Provide information (for example, written, verbal, visual) about emotional consequences of performing the behaviour	X	X	X	• video for HCPs such as “30 Seconds to Save a Life” highlighting the benefits of delivering SBIs and emphasising the positive emotional consequences for the HCP (for example, pride, satisfaction at having helped patients)
Salience of consequences (knowledge; beliefs about consequences)	Use methods specifically designed to emphasise the consequences of performing the behaviour with the aim of making them more memorable (goes beyond informing about consequences)	X	X	X	• emphasise the benefits of SBIs, including any statistics on number of patients helped, possible positive health outcomes, empirical evidence for effectiveness of this intervention approach and so on • use imagery, colour or case studies to make information more salient • tailor information on consequences to the outcomes likely to be of interest to that HCP (for

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
					example, impact of drinking or smoking on which medications patients can use for pharmacists, impacts on dental health for dentists…)
Anticipated regret (beliefs about consequences)	Induce or raise awareness of expectations of future regret about performance of the unwanted behaviour	X	X	X	• ask HCPs to think about how they might come to regret not helping their patients to make lifestyle changes that could have prevented future disease; for example, highlight reductions in life expectancy for smokers and the number of HCP interactions that could have been used as opportunities to help patients
Pros and cons (beliefs about consequences)	Advise the person to identify and compare reasons for wanting (pros) and not wanting to (cons) change the behaviour	X	X	X	• ask HCPs to list the pros and cons of delivering SBIs • provide a list of examples of ways in which SBI can be delivered and ask HCPs to list the pros and cons of each approach as related to their own practice
Comparative imagining of future outcomes (beliefs about consequences)	Prompt or advise the imagining and comparing of future outcomes of changed versus unchanged behaviour	X	X	X	• advise HCPs to imagine the positive benefits of SBIs to their patients and for themselves compared to inaction • ask HCPs to think of their own imagined outcomes for these 2 behaviours (for example, what benefits can you imagine?)

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
Commitment (intentions)	Ask the person to affirm or reaffirm statements indicating commitment to change the behaviour	X			• ask HCPs to write a statement committing themselves to achieving a specific, personalised MECC goal
Behavioural contract (intentions)	Create a written specification of the behavior to be performed, agreed on by the person, and witnessed by another	X			• ask HCPs to set a goal for MECC conversations in the presence of their line manager (that is, commitment contracts)
Review behaviour goals (intentions)	Review behavior goal(s) jointly with the person and consider modifying goal(s) or behaviour change strategy in light of achievement. This may lead to re-setting the same goal, a small change in that goal or setting a new goal instead of (or in addition to) the first, or no change	X			• review how HCPs performance with MECC aligns with a goal that they had set earlier and decide whether the goal needs to be adjusted to become more realistically achievable or more ambitious if already achieved
Action Planning or Implementation Intentions (intentions)	Prompt detailed planning of performance of the behaviour (must include at least one of context,	X			• ask HCPs to form if-then plans for how they will behave in certain situations (for example, how will they initiate a conversation when a patient is a smoker, or how will they overcome specific,

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
	frequency, duration and intensity). Context may be environmental (physical or social) or internal (physical, emotional or cognitive)				identified barriers – could be used in conjunction with problem solving) – other training materials such as top tips and case studies of other HCPs overcoming barriers could be used to help this process
Reduce negative emotions (intentions; emotions)	Advise on ways of reducing negative emotions to facilitate performance of the behaviour (includes 'Stress Management')	X	X	X	• advise HCPs on ways that they can reduce anxiety around seemingly difficult conversations with patients - could provide a list of strategies incorporating other BCTs discussed in this table such as positive self-talk, focus on past success and so on
Conserving mental resources (intentions; emotions)	Advise on ways of minimising demands on mental resources to facilitate behaviour change	X	X	X	• advise HCPs on strategies to make performance of MECC easier (for example, including their own prompts to minimise demands on memory; rehearsing conversations to make initial conversations less effortful) • provide checklists for appointment procedure to minimise demands on memory. • provide easy ways for HCPs to bring conversations up so that it becomes a natural part of the appointment and forms part of assessing the problem the patient originally attended for (for example, need to know about alcohol consumption for which medications can be prescribed, smoking

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
					may impact dental health, lifestyle factors are associated with certain conditions which might help with diagnoses and so on)
Monitoring by others without feedback (skills)	Observe or record behavior with the person's knowledge as part of a behavior change strategy	X	X	X	• emphasise SBI recording procedures to make the fact that these behaviours are monitored by others salient • arrange for HCPs to submit information to line managers about number or frequency of SBIs delivered
Generalisation of target behaviour (skills)	Advise to perform the wanted behaviour, which is already performed in a particular situation, in another situation	X	X	X	• if HCPs are engaging in SBI conversations in some scenarios (for example, NHS Health Check), ask them to extend them to other occasions on which they engage with patients (for example, other types of appointment)
Self-assessment of affective consequences (emotions)	Prompt assessment of feelings after attempts at performing the behavior	X	X	X	• ask HCPs to assess how they feel after delivering SBIs to patients (could also be combined with problem solving if behaviour has left them feeling anxious or if they have regrets about how the interaction went)
Persuasive communication or credible source (beliefs about consequences)	Present verbal or visual communication from a Credible Source in favour of or against the behaviour	*	X	X	• ensure that any materials (for example, training materials, leaflets, letters, posters, booklets and so on) are seen to come from someone with authority and whom the HCPs identify with

BCT (and associated TDF domain)	Definition	M	A	S	Example of how to implement the BCT
					• ensure that senior leaders of profession, CCG, Trust and so on are seen to endorse and reward delivery of SBI, and communicate the importance of these types of intervention (11)
Habit formation (skills)	Prompt rehearsal and repetition of the behaviour in the same context repeatedly so that the context elicits the behaviour	*	X	X	• create personalised plans for how the HCP will remember to deliver SBIs (for example, always initiate SBI conversations after talking about patient symptoms) • ask HCPs to practice delivering SBIs during patient interactions over a period of time (for example, for 2 weeks) • encourage HCPs to practice delivering SBIs in the same environments they will be delivering the SBIs in • prompt role play during training sessions to help HCPs get more familiar with these kinds of conversations and make them feel more natural
Information about social and environmental consequences (knowledge)	Provide information (for example, written, verbal, visual) about social and environmental consequences of performing the behaviour	*	*	X	• provide visual prompts or information about the benefits to society of delivering SBIs (for example, potential to reduce economic burden of disease)

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