IN-DEPTH REVIEW

Smoking cessation in the workplace

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Background
The workplace is an important setting for reaching potentially large numbers of smokers.

Aims
To review the evidence about smoking cessation in the workplace.

Methods
Literature review including a synthesis of findings from recent systematic reviews and meta-analyses of workplace smoking cessation programmes, a separate review of the qualitative evidence, case studies and an expert panel assessment.

Results
We found advantages, identified or confirmed from the mixed methods used in this work to holding smoking cessation programmes in the workplace. These included: (i) easy access to large numbers of worker populations for large workplaces, (ii) the potential improved recruitment to such programmes given this, (iii) the opportunity to access young men, traditionally difficult to achieve, (iv) access to occupational health and other staff who can assist with support and delivery and (v) ability for workers to attend relatively easily. Evidence on the importance of developing peer support at work was mixed. The simple provision or availability of programmes and interventions was unlikely to provide any beneficial behaviour change. Interventions should target workers that actively want to stop smoking, use elements that workers have identified as useful or focus on altering beliefs about smoking and the need to stop.

Conclusions
Smoking cessation programmes at work can provide useful support for workers wishing to stop smoking. They are only likely to be effective if participants have moved beyond the contemplation stage regarding smoking cessation, so that stopping smoking is a personal priority.

Key words
Case studies; cessation; focus group; qualitative; review; smoking; work.

Introduction
The workplace is an ideal setting for reaching potentially large numbers of smokers with key health messages. Such access is particularly important, in light of recently developed policy and guidance. For example, national smoke-free policies introduced in the UK have been further complemented by government guidelines on how to implement these policies and how best to assist employees with smoking cessation during this process (National Institute for Clinical Excellence (NICE)) [1].

More recent research indicates that more complex approaches, combining two or more different elements, may achieve better success rates for smoking cessation. For example the US Task Force on Community Preventive Services found insufficient evidence to determine if worksite-based incentives and competitions alone were effective in reducing tobacco use among workers Leeks et al. [2]. However, strong evidence was found for worksite-based incentives and competitions, when combined with additional interventions to reduce tobacco use among workers.

Similarly, screening interventions based on assessment of health risks with feedback (AHRF) alone have not been found to be generally effective, whereas workplace AHRF in addition to health education, with or without additional interventions for smoking cessation,
was recommended for smoking cessation. The accompanying guidance highlighted the need for a combined approach based on organizational policies and treatment benefits through health plans [3]. However, some of the findings of the Leek’s review, for example with regard to the efficacy of smoke-free workplaces, differ from other established sources of information such as the Cochrane Systematic Review [4]. In addition, the situation is different in the UK specifically, with the National Health Service (NHS) now acting as the primary provider of smoking cessation support.

Given these differing views, this work, carried out on behalf of the British Occupational Health Research Foundation, was designed to identify practical factors influencing effective workplace smoking cessation interventions. Four main areas of activity are summarized here as part of a single project: (i) a summary of organizationally relevant findings from previous reviews of workplace smoking cessation interventions, (ii) a summary of a systematic review of the relevant published qualitative literature, (iii) the findings from two case studies and (iv) an expert focus group.

Methods

Review of reviews

This summarized findings from systematic reviews and meta-analyses of workplace smoking cessation interventions over the last three decades. Potential reviews for inclusion were identified through searches of PsycINFO, MEDLINE and web searches using the terms [workplace] and [smoking cessation], or their synonyms, combined with [review] or [meta-analysis]. This was supplemented by reference checking of included studies.

Before the process commenced, it was decided to include only reviews that met the following inclusion criteria: they included information relating to evaluations of smoking cessation interventions, evidence on interventions based in the workplace and evidence relating to smoking cessation or ‘quit’ rates. For each review meeting these criteria, or if it was unclear, the full paper was retrieved and checked against the inclusion criteria. Data were extracted from the reviews and meta-analyses.

Information was then extracted relating to study populations, smoking cessation interventions, outcome measures, successful interventions, relevance of the workplace setting, what successful interventions achieved and the cost effectiveness of approaches.

Qualitative evidence synthesis

A review of qualitative evidence was carried out using ‘best-fit’ framework synthesis [5] as part of this project, the findings of which are described in detail elsewhere [6]. This component of the work was carried out to explore the views of workers about workplace interventions to restrict smoking or encourage smoking cessation.

A systematic search across eight bibliographic databases, supplemented by reference tracking, was undertaken to identify primary research concerning employees’ attitudes to, or views about, workplace smoking cessation or reduction interventions. Full details of the search are provided elsewhere [6,7]. The process identified 15 relevant studies. The ‘best-fit’ framework synthesis method of qualitative evidence synthesis was used [5], which works by building a pre-existing framework based on relevant theories of health behaviour change. In this case, the theories or models used for the framework were the Transtheoretical Model of Behaviour Change, including its related stages and processes of change elements [7]; the Theory of Planned Behaviour [8] and the Health Belief Model [9]. Evidence from the 15 included studies was then coded against this framework. Evidence not captured by the framework was analysed using the principles of thematic analysis [10] to generate additional themes. The final product of the synthesis was a new thematic and conceptual framework, specific to the setting and context of interest, and composed of a combination of the pre-existing and new themes. Critical appraisal of this qualitative evidence was undertaken using published criteria [11]. The aim of this appraisal was to determine the internal validity of the evidence and whether the synthesis findings were sensitive to the assessed quality of the included studies.

Case studies and focus group

In order to place the findings from the review of reviews and qualitative literature review into a real-world context, two case studies and a study expert focus group were carried out. The latter was performed following completion of all other components of this research, in order to discuss the findings of this process with workers and health care workers.

Case study one used a semi-structured interview approach to identify smoking cessation themes in two large independent employers (organizations A and B). Each organization was approached via a senior member of the relevant occupational health department, the intent of each interview being to provide an insight into how differing organizational cultures influenced smoking cessation in the workplace.

Case study two used an identical methodology but was based in a single large health care delivery organization. The interviewee was an experienced occupational health technician responsible for the delivery of smoking cessation services.

Expert focus group

The expert focus group was held following the above steps, in order to discuss the relevant findings of the
research with workers. A summary of the research findings was developed and circulated, prior to the focus group, to the panel, consisting of six pre-selected individuals, chosen to represent potentially differing pre-existing attitudes to smoking and the workplace. These included occupational health professionals, a sociologist, smokers, non-smokers and a trade union representative. In addition, an occupational health physician, who was unable to attend face to face, provided written comments.

The panel meeting was run by a trained facilitator, recorded and analysed at a level of emergent themes. A semi-structured approach was used, and discussions were carried out in relation to nine main areas: (i) general perceptions held about smoking at work; (ii) what differences had the indoor smoking legislation made to the individual; (iii) to what extent was smoking merely another lifestyle risk that should not be addressed at work; (iv) what were the main drivers for developing smoking cessation programmes at work; (v) who is best placed in a workplace to deliver smoking cessation programmes; (vi) ‘the review identified that high-intensity individual counselling and pharmacological treatments had the best cessation rates’, how did this relate to their own knowledge and experience; (vii) which elements of a smoking cessation programme might improve success and why and (viii) any other areas highlighted in the brief summary not covered.

Results

Searches and screening identified 39 reviews for possible inclusion in the review of reviews. Thirty-three were ultimately excluded as (i) the paper was not a review, or was solely a review of policy, not a review of interventions; (ii) the paper did not cover smoking cessation interventions in the workplace, or it did not report results for workplace programmes separately to those for programmes in other settings; (iii) the paper was an earlier review for which there was an updated version or (iv) the review did not contain data on smoking cessation rates.

Data were extracted from six reviews or meta-analyses. The two most recent reviews were generated from the Cochrane collaboration [12]. Cahill et al. [4] considered studies aimed primarily at assessing the effects of cessation programmes for individual workers who smoke, whilst Callinan et al. [13] examined studies of legislative bans on exposure to second-hand smoke, smoking prevalence and tobacco consumption in a range of settings including workplaces. The remaining systematic review [1] was a rapid review of the cost effectiveness of smoking cessation programmes. Only the two meta-analyses and the literature review considered effectiveness data.

The reviews included in this work represented a considerable overlap of original studies, the most comprehensive review being that of Cahill et al. [4], covering 51 studies from 1980 onwards, including randomized controlled studies only, using cessation rates at 6 months or more as an outcome. Callinan et al. included reduction in second-hand smoke exposure as a result of legislative smoking bans and restrictions and included workplace bans and smoking cessation data where reported.

The two meta-analyses included dealt with workplace smoking cessation interventions. The first, Smedslund et al. [14], included 19 controlled studies from 1989–2001. There was some overlap with the Cochrane-based reviews; the Smedslund meta-analysis included eight non-randomized studies excluded from Cahill et al. [4]. The second meta-analysis, Fisher et al. [15], covered 20 studies from 1980–1990, eleven of which were also included in the Cahill review.

The final effectiveness review included here, Curry et al. [16], was a literature review covering 15 studies of smoking cessation, only two of which were in a workplace setting. One of the studies was also included in Cahill et al. [4].

Finally, Flack et al. [17] was included, a rapid review conducted for NICE addressing cost effectiveness evidence for workplace smoking cessation studies. Ten studies were included, spanning the years 1990–2006, one of which was also included in Cahill et al. [4].

Table 1 shows the details of the effectiveness review findings, and Table 2 details cost effectiveness reviews. All of the reviews considered the outcome of smoking cessation rates at 6 months or more, and this was the primary outcome. In terms of the outcome measure of cost effectiveness, this varied from cost effectiveness of interventions in general to cost effectiveness broken down by intervention, age, sex, addiction level and a number of other variables.

The included reviews included studies with participants from a range of countries, although the majority of studies were set in the USA. For example Cahill et al. covered 29 studies in the USA and 6 in the UK. Studies included participants from a range of sectors, although many of the participants worked in the health, hospitality or manufacturing sectors.

Smoking cessation interventions

The types of intervention techniques and combinations of techniques evaluated in the studies included, but were not limited to, the following: self-help, individual counselling, cessation groups, wider health education, nicotine replacement, incentives and competitions. There were also examples of multiple interventions, where workplaces combined techniques to create comprehensive programmes. The findings from these reviews consistently indicated that group behavioural interventions, individual counselling and pharmacological therapy were all effective interventions in achieving smoking cessation.

Cahill et al. concluded that there is strong evidence for the effectiveness of individual and group counselling and pharmacological therapy, which focused on individual
Table 1. Findings of the effectiveness reviews

<table>
<thead>
<tr>
<th>Review</th>
<th>Review type</th>
<th>Review question/ objective</th>
<th>No. studies included/ Outcome measures</th>
<th>No. and type of interventions</th>
<th>Results</th>
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<tr>
<td>Callinan et al. [13]</td>
<td>Systematic review including: randomized, controlled trials, quasi-experimental studies, controlled before and after studies, interrupted time series, and uncontrolled pre- and post-ban data.</td>
<td>To what extent do legislation-based smoking bans reduce exposure to second-hand smoke, help people who smoke to reduce tobacco consumption or lower smoking prevalence and affect health?</td>
<td>50 (of which eight appear to have relevant data, i.e. study population are workers and pre-/post-ban smoking status is reported, with a minimum 6-month follow-up period)/ 1. Second-hand smoke exposure; 2. Active smoking; 3. Total tobacco consumption; 4. Health indicators; 5. Hospital admissions</td>
<td>1. Legislative smoking bans</td>
<td>Limited findings are reported in relation to workplace smoking bans:  – Hospitality workers experienced a greater reduction in exposure to second-hand smoke after implementing the ban compared with the general population (no overall findings on smoking cessation given). For all settings (including workplaces):  – No consistent evidence of reduction in smoking prevalence attributable to the ban.  – Total tobacco consumption was reduced in studies where prevalence declined.  – There is limited impact on active smoking, but the trend is downwards. Findings are reported in relation to eight intervention categories (based on Moher et al. [18]):  (Behavioural interventions; individual behavioural interventions; self-help interventions; pharmacological therapy; social support for not smoking; environmental support; incentives and competitions; and comprehensive programmes). Authors’ conclusions:  – We found strong evidence that interventions directed towards individual smokers increase the likelihood of quitting smoking. These include individual and group counselling and pharmacological treatment to overcome nicotine addiction. All these interventions show similar effects whether offered in the workplace or elsewhere. Self-help interventions and social support are less effective. Although people taking up these interventions are more likely to stop, the absolute numbers who quit are low.  – There was limited evidence that participation in programmes can be increased by competitions and incentives organized by the employer.  – We failed to detect an effect of comprehensive programmes in reducing the prevalence of smoking.</td>
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<tr>
<td>Cahill et al. [4]</td>
<td>Systematic review including: randomized and quasi-randomized controlled trials (individuals, workplaces or companies allocated to intervention or control conditions).</td>
<td>To categorize and evaluate workplace interventions aimed at helping individuals to stop smoking.</td>
<td>51/Employee smoking behaviour (cessation rates at greater than 6 months for programmes and workplace prevalence data).</td>
<td>53 Cessation programmes for individual workers who smoke (rather than for the workforce as a whole).</td>
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<td>Review</td>
<td>Review type</td>
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<td>Smedslund et al. [14]</td>
<td>Meta-analysis.</td>
<td>Controlled interventions of smoking cessation at the workplace. No baseline outcomes, but post-intervention outcomes at three different time points.</td>
<td>19/Smoking cessation rate at 6 months, 12 months and at more than 12 months.</td>
<td>32</td>
<td>Cessation @ 6 months&lt;br&gt;–9/19 studies measured a 6-month quit rate.&lt;br&gt;–78% of studies suggested a higher quit rate in the intervention group than the control group.</td>
</tr>
<tr>
<td>Curry and McBride [16]</td>
<td>Literature Review.</td>
<td>No study inclusion criteria given.</td>
<td>15 (of which two were in the workplace)/Abstinence rates at 6 and 12 months.</td>
<td>2 (one per workplace study).</td>
<td>Workplace findings&lt;br&gt;–Intervention 1 = biochemical monitoring = @ 12 months, 0% abstinence in control group versus 33% in the intervention group.&lt;br&gt;–Intervention 2 = biochemical monitoring and contingency payments = @ 12 months, no difference between the intervention and control groups.</td>
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<tr>
<td>Fisher et al. [15]</td>
<td>Meta-analysis.</td>
<td>Controlled interventions of smoking cessation at the workplace. No baseline outcomes, but post-intervention outcomes at a minimum of one time-point.</td>
<td>20/Quit rate (cessation) at 6 months or more.</td>
<td>5 (types).</td>
<td>Cessation @ 6 months&lt;br&gt;–9/19 studies measured a 6-month quit rate.&lt;br&gt;–78% of studies suggested a higher quit rate in the intervention group than the control group.</td>
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*As defined by the Cochrane Effective Practice and Organization of Care Group.*
smokers. The meta-analysis by Fisher et al. [15] found an overall significant impact for workplace smoking cessation interventions. Five different types of intervention were examined, with a suggestion that cessation groups were more effective, achieving 18% quit rates compared with 12% for self-help materials, physician advice or incentives and competitions.

The evidence suggested that both self-help materials and social support for not smoking (for example, support from a spouse, workmate or close friend) were less successful [4], although the latter finding was based on a limited number of evaluations of interventions. Incentives and competitions, although successfully increasing the numbers who enrol on smoking cessation programmes, were less successful in terms of achieved cessation rates.

The evidence was more mixed in relation to comprehensive programmes. This may in part be due to the fact that programmes differed in the constituent services or support they offered, making comparison difficult. Workplace tobacco bans also appeared to be partially successful [13]. Specifically, there was evidence that bans could succeed in decreasing cigarette consumption by smokers during the working day, but there was conflicting evidence about whether bans decreased the prevalence of smoking or overall consumption of tobacco. There was no consistent evidence of reduction in smoking prevalence attributable to bans in general settings [13].

### Relevance of the workplace setting

Successful interventions, that is individual and group counselling and pharmacological interventions, appeared to have comparable effects whether offered in the workplace or in other settings. Although the workplace offered opportunities to access smokers, there was no evidence that it was a more effective setting for smoking cessation interventions.

### What do successful interventions achieve?

There was considerable variation in the absolute levels of reported quit rates for individual interventions. For example for counselling and behavioural smoking cessation approaches, typical cessation rates ranged from 6 to 43% at 6 months [4]. Pharmacological interventions tended to be evaluated at 12 months, when cessation rates varied from 12 to 32% [4].
It was also noted that participation rates in workplace interventions were generally low, resulting in small absolute numbers of quitters [4]. Fisher et al. [15] identified average cessation rates of 13%, across 20 workplace smoking cessation programmes, and concluded that although lower than the 20% rate accepted as the benchmark for clinic-based interventions, factors such as less-motivated quitters and low-intensity interventions may be relevant in the workplace.

Evidence from Smedslund et al. [14] suggested consistent effects for smoking cessation interventions over time. Approximately three-quarters of studies identified higher rates of smoking cessation amongst intervention groups compared with control groups, regardless of measurement point (at 6, 12 and more than 12 months). Findings from Fisher et al. [15] also suggested that more successful smoking cessation interventions were associated with smaller workplaces (<750 workers), interventions that target heavy smokers, interventions where workers used their own time, and amongst those aged between 35 and 40.

Cost effectiveness

Findings on cost effectiveness were mixed. The most recent Cochrane Review in this area [4] concluded that economic data on workplace smoking cessation interventions were limited and the different economic perspectives used for cost effectiveness analyses could limit the relevance of certain data. It was recommended that future work should include measurement of direct and indirect costs, and economically relevant outcomes including absenteeism and productivity.

By contrast, the NICE Rapid Review [17] found that intensive counselling, comprehensive programmes, programmes financed 50% by the worker and 50% by an insurer and programmes with between 8 and 16 workers participating were the most cost effective. However, this seems at odds with some of the effectiveness findings, which suggested that intensive counselling was no more effective than less-intensive counselling, and that comprehensive programmes had mixed evidence for their effectiveness in terms of cessation rates. There is very little overlap in the studies considered by both Cahill et al. [4] and Flack et al. [17], which may explain the variation in results.

Barriers to participation

The findings of the qualitative synthesis are highly relevant here. The synthesis was informed by 15 relevant studies, only two of which were judged to be inadequately reported. The evidence base therefore appeared to be relatively robust, and study quality was not a moderator of the principal findings of the synthesis. In particular, it was concluded that the effectiveness of any relevant workplace smoking cessation intervention would be influenced by the readiness of individual workers to quit.

Specifically, programmes and interventions at work that were designed to assist with smoking cessation would only be effective if workers were ready and prepared to make a change regarding smoking, so that quitting was actually a personal priority for them. If individuals were not ‘ready to change’, then even an intervention deemed by employees to be both acceptable and convenient was unlikely to have an effect. Workplace smoking cessation interventions should therefore either (i) focus on changing smokers’ attitudes to the problem behaviour or (ii) only target smokers who express a desire to quit smoking.

Employer’s perspective

Case study 1

Organization A identified that recent UK-based legislation to ban public place smoking was supportive to achieving their goal of creating a smoke-free environment at work. In addition, it was identified that it was easier to integrate smoke-free policies into new, rather than established, worksites. Use was made of existing NHS facilities in the UK, with this organization now referring workers to NHS-based smoking cessation services, rather than replicating these in-house. Organization A had also noted that consultation with employees had assisted compliance with its own internal smoking policies and with national legislation. It had also made use of online material and health assessments, and stressed that these should not be too onerous to carry out.

Organization B identified that high-level leadership and management support of initiatives were particularly key to effecting change for the better in the workplace. Discussions with trades unions and works councils, for example, had assisted in defining the type and level of support that their company should offer to workers. In a similar way to organization A, it was not felt important to duplicate ‘in-house’ any components of smoking cessation advice and support that were already provided by the NHS. However, it was also felt that co-funding for worker smoking cessation support could be an option where national smoking cessation programmes were not available free of cost.

Case study 2

This focused specifically on the practical aspects of the delivery of smoking cessation programmes to a large health care provider. It was evident that the main drivers for smoking cessation were financial and professional for the health care workers themselves, and primarily health related for smoking cessation services offered to their patients. Use of an experienced and dedicated individual to deliver and coordinate smoking cessation services was felt to be an important component of the perceived
success of the programme, although no formal evaluation had been performed.

This organization also identified the importance of developing and adhering to internal policies and procedures and the requirement to ensure that these were regularly appraised and modified.

Expert focus group

General perceptions held about smoking at work

The majority felt that smoking should not be allowed in the workplace but recognized the need for designated areas for this activity. The issue of where those designated areas should be placed was discussed, and whether in certain settings, such as hospitals or health centres, their presence sets a ‘poor example’. There was a general perception that smokers took more frequent, or longer, work breaks than their non-smoking colleagues, although this was contested specifically by a smoker, and others who thought that restricting smoking breaks could be counterproductive and result in smoking workers becoming less productive. Additionally, the general consensus was that as smoking constituted a proven health risk, employers should include smoking cessation as part of an overall well-being package.

What differences has the indoor smoking legislation made to the individual?

Two panellists cited evidence from recent studies that had indicated a reduction in certain smoking-related health issues, such as myocardial infarction, since the introduction of smoking bans in public places. There was a general consensus that indoor smoking legislation has helped employers enforce their own internal smoking cessation programmes.

To what extent is smoking merely another lifestyle risk that should not be addressed at work?

The panel disagreed with the statement that smoking should not be addressed at work, the consensus being that smoking cessation services should be part of an overall package of well-being measures provided by employers. Various concerns were raised that employers might ‘blame’ or target smokers for their lifestyle choices. There was discussion about the potential return of investment for employers, in terms of reduced sickness absence, should smoking cessation be addressed in the workplace.

A question was raised about the extent to which services should be offered by an employer, and when they may be viewed as intrusive. A smoker gave an example of how his employer had sent him and other smokers an email about attending a smoking cessation programme in the workplace. He felt he had been targeted, as attendance was not optional, and suggested an alternate approach would have been to send an email to all workers.

What are the main drivers for developing smoking cessation programmes at work?

The main driver for developing smoking cessation programmes at work was thought to be the return on investment that employers can achieve through a healthier workforce.

Who is best placed in a workplace to deliver smoking cessation programmes?

There was a range of views about who might be best placed to deliver a smoking cessation programme, from in-house occupational health professionals to ex-smokers who are given the appropriate training. In all cases, it was felt that the person needed to be a trusted individual, without any ‘hidden agenda’ and should not have line management responsibility for the individual participating worker. It was also noted that as smoking was often a safety issue at work, the additional support of safety officers could be used.

The review identified that high-intensity individual counselling and pharmacological treatments had the best cessation rates; how does this relate to your own knowledge and experience?

One of the smokers cited their own experience of attending a smoking cessation programme, within which he and a colleague were ‘just’ given pharmacological treatments. He felt this was disappointing and felt that had he better understood the reasoning behind starting smoking this would have improved his chances of stopping smoking.

Which elements of a smoking cessation programme may improve success and why?

It was felt that high-level support within an organization for meaningful workplace well-being and not ‘blaming’ individuals for their personal circumstances or lifestyle choices might be conducive to a more supportive culture. Furthermore, recognition that individual habits may not have developed through active choice, but as a consequence of social coercion, and that this point should be considered when defining help and support to assist smoking cessation.

Accessibility to smoking cessation was also thought important. One of the panellists gave an example of a teaching hospital where staff had to attend smoking cessation away from the main campus or in a programme held at a cardiac unit where patients may also be attending. Both these issues were identified as potential barriers to uptake and continued participation in smoking cessation services.

The panel also believed that giving smokers a set time frame in which to stop smoking was counterproductive, with a view that it should be made clear that it was acceptable not to succeed and that individuals should have the opportunity to return to the programme at a time right for themselves.

One-to-one support was thought to be more likely to be successful than group interventions, although
there was recognition that some may prefer the support received in a group. The most important element was giving smokers choice in relation to this.

Any other areas highlighted in the brief summary not covered?

One panellist thought that more could be done to educate smokers about how life expectancy improved following smoking cessation, given that certain risk factors improve quickly, particularly if smoking cessation occurs by a certain age. Another view expressed was that workplace-based smoking cessation might be complementary to workplace health surveillance already present to identify early cases of respiratory ill-health. Smoking cessation services could complement, or be integrated into, this type of health surveillance, particularly as smoking was identified potentiate the harm caused by certain other workplace hazards.

Discussion

The combination of methods used in this study has identified various practically useful approaches that can be used when considering developing workplace-based smoking cessation programmes. Cahill et al. [4] cited a number of reasons why it might be specifically helpful to consider workplace-based initiatives; these included access to a large number of people who make up a relatively stable population, higher participation rates than non-workplace environments, sustained peer group support and positive peer pressure and the opportunity to target young men, who traditionally have low general practitioner consultation rates and are thus less likely to benefit from opportunistic health promotion activity in primary care. Additionally, workplaces may have easier access to relevant staff to help with the delivery of such initiatives and provide professional support. These skills may be more difficult to assemble outside the workplace.

These are compelling arguments, alongside the traditional benefits such as improved health outcomes for non-smokers. However, findings from this summary of reviews challenged a number of these preconceptions and raised interesting questions about how workplace smoking cessation interventions could be made more effective. For example the most effective interventions (pharmacotherapy, group and individual counselling) appeared to be equally effective whether offered in the workplace or other settings. In other words, there did not appear to be any particular benefit to the workplace as a setting for this type of intervention. In particular, the review findings suggested that, although based on a small number of studies, social support from workplace peers did not improve outcomes, and one meta-analysis indicated that better outcomes were achieved where employees were required to commit their own personal time to the smoking cessation intervention. Indeed, the extent to which employees are willing to commit their own resources (personal time or finances) to smoking cessation is perhaps a proxy for their personal readiness to quit.

These findings therefore raise interesting questions about how employees decide to participate in smoking cessation interventions, why engagement with workplace interventions was generally low (and whether it could be improved) and why some of the predicted benefits of the workplace as a setting for smoking cessation interventions (such as peer support, no loss of personal time) are not as important as first thought.

The qualitative evidence synthesis identified that simple provision or availability of programmes and interventions, and participation, appeared unlikely to produce any change in the behaviour of employees. Incentives were found to potentially increase participation but were unlikely to affect action or maintenance. Employees’ attitudes and behaviours were actually principally shaped by subjective experience and priorities. It was felt that interventions should therefore either target employees who want to stop smoking or focus on altering beliefs about smoking. Specifically, participation in any programme or intervention was only felt to be potentially of benefit for the individual worker if they were in, or had moved beyond, the contemplation stage regarding this health behaviour, so that stopping smoking was actually a priority for them. Workplace interventions could assist at this point, but otherwise should aim directly to motivate smokers sufficiently so that stopping smoking does become a priority.

Evidence-based interventions could then be developed with assistance from the findings of this review. In particular, the use of workplace-based group behavioural interventions, individual counselling and pharmacological therapy should be strongly considered. Comprehensive, or mixed programmes should also be considered, particularly if the components have been discussed with, and identified by, smokers as important to include. It would be useful to measure the cost effectiveness of any new programmes, given the relatively mixed evidence and need for more data.

It is of interest that self-help materials and social support for not smoking, for example support from a spouse, workmate or close friend, appeared to be less successful approaches, although this conclusion was drawn based on a limited number of interventions.

Case study work complemented the main findings of the review and suggested that use of local free or subsidized services should also be considered. It was also felt important to discuss any new programmes fully with workers and their representatives and that high-level leadership and management support should be sought internally. The actual method of delivery of services should be considered carefully, these perhaps being separated from any line management responsibility for enrolled workers.

Finally, the expert focus group not only reinforced the main findings as making clinical sense but also raised various pertinent considerations. These included avoiding blame cultures when dealing with smokers, respecting confidentiality at work, setting realistic aims for smoking cessation, reinforcing the fact that failure was an acceptable option for smokers and even potential integration of programmes into other workplace-based health activities.
such as health surveillance. Using inventive methods of delivery that might include safety experts and trained co-workers was suggested.

**Key points**

**General summary points (all moderate evidence)**

- Group behavioural interventions, individual counselling and pharmacological therapy were all effective interventions in achieving smoking cessation at work.
- Self-help materials and social support for not smoking (for example support from a spouse, workmate or close friend) were less successful.
- Successful interventions appeared to have comparable effects whether offered in the workplace or in other settings. Workplace settings, however, offer an opportunity to recruit large numbers of smokers who wish to stop.

Those running or setting up smoking cessation initiatives at work should be aware that (all moderate evidence)

- Findings on cost effectiveness are mixed; future work should include measurement of direct and indirect costs.
- These initiatives are most likely to be successful if workers are ready and prepared to make a change regarding smoking and that quitting is a priority for them. Consequently, workplace smoking cessation interventions should therefore either focus on changing smokers’ attitudes to the problem behaviour or only target smokers who express a desire to quit smoking.
- Local National Health Service services may offer significant resources for workers. The use of these should be maximized, as should opportunities to develop co-funding of services with workers if free services are not available to all.
- Consultation with workers and their representatives may help compliance with internal and national smoking policies, and assist development of accessible smoking cessation initiatives.
- It is key to develop high-level leadership and management support for initiatives and proposals and that services should be delivered by an experienced and dedicated individual without line management responsibility for enrolled workers.
- Ideally smoking cessation services should be part of an overall package of well-being measures provided by employers and should be constructed to avoid a blame culture related to individual smoking habits.
- Combining initiatives with health education and health surveillance may be useful.

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**Disclaimer**

The contents of this paper, including any opinions and/or conclusions expressed, are those of the authors alone and do not necessarily reflect HSE policy.

**Conflicts of interest**

None declared.

**References**


