NICE RAPID REVIEW

The Effectiveness of National Health Service Intensive Treatments for Smoking Cessation in England

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Updated November 2007

November 2021: NICE guidelines PH10 (February 2008) and PH14 (July 2008) have been updated and replaced by NG209.
The recommendations labelled [2008] or [2008, amended 2021] in the updated guideline were based on these evidence reviews.
See www.nice.org.uk/guidance/NG209 for all the current recommendations and evidence reviews.

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1. Executive Summary

The National Health Service (NHS) smoking cessation services in England provide interventions to affect smoking cessation across the population. This rapid review examines the effectiveness of the NHS intensive smoking cessation treatments in England. The review contains assessments of available data, in a background reflecting other relevant literature. The available data has been assessed to answer nine preset questions examining in detail the effectiveness of the NHS cessation services and their mode of delivery, delivery settings and their effects on specific sub-groups. This review was commissioned by the National Institute for Health and Clinical Excellence and the search was conducted before May 5 2006. A second search was conducted in September 2007 to identify any relevant literature published in 2006 and 2007.

Method: A comprehensive search was conducted. A total of 5,131 titles and abstracts were screened and full paper copies of 6 SRs, 12 RCTs, 25 UK studies and 12 published reports identified in the literature search and 9 unpublished reports were obtained and screened by two reviewers. 38 studies were data extracted and quality assessed by two reviewers.

Results: There is a dearth of good quality evidence in relation to many of the research questions and the available evidence is indicative rather than definitive.

NHS services affect cessation rates. NHS intensive interventions for smoking cessation are effective in the short-term (4 weeks) and reasonably effective in the long term, with between 13-23% of the successful short-term quitters remaining abstinent (based on self-report) at 52 weeks.

The content of the interventions may influence their effectiveness. 'Intermediate interventions' appear to be effective in facilitating smoking cessation at 4 weeks and pharmacy-delivered interventions achieve CO-validated cessation rates at 4 weeks of approximately 20%.

There is also evidence that the mode of delivery influences effectiveness. Group interventions may be more effective than those delivered one-on-one, although both types of intervention are essential for the continuation of the services. While 'buddy' systems do not increase the effectiveness of group interventions, they do increase the effectiveness of one-to-one interventions.

The settings may have an effect. There is some indirect evidence that the setting may influence effectiveness, but this evidence is not conclusive. However, there is strong evidence that inpatient interventions in hospital settings are effective in facilitating smoking cessation.

External factors may affect the effectiveness of NHS services. A number of external factors, such as target setting and timeliness of national guidance, appear to have influenced the effectiveness of intensive smoking cessation interventions delivered through the NHS, although this qualitative evidence has not been evaluated.

The characteristics of certain sub-groups also have an effect on the effectiveness of the NHS services. Age, sex, level of addictedness and previous quit attempts are all correlated with quitting success. While females set more quit dates than males, they are less likely to succeed in quitting than males. Older smokers (both male and female) are also more likely to quit successfully than younger smokers. While heavily addicted smokers find it harder to quit, the evidence regarding the role played by previous quit attempts is inconclusive.

Several sub-populations face unique barriers in attempting to quit smoking. Pregnant women, smokers from routine and manual groups and institutionalised populations all face substantial barriers that impede smoking cessation attempts, although further research is needed to provide a fuller picture of the effectiveness of NHS stop smoking services for these sub-populations.

All of these assessments reflect the quality of the data available and therefore do not provide a comprehensive picture. In particular, the consistent collection *and* reporting of specific data reflecting on sex, gender, age, occupation and diversity criteria would allow for finer analyses and more tailored assessments to take place.

EVIDENCE STATEMENTS

No	Statements on strength and applicability of evidence	Grade	Evidence
	General Evidence Statement		
	Overall, there is a limited body of available evidence on many of the research questions posed for this rapid review. In many cases the quality of the evidence is low and in other cases there are very few available studies on the issue under examination. There are also several general problems with the data that are routinely collected or embedded in intervention studies. These problems affect the comprehensiveness of the data, its generalisability and its utility in indicating intervention improvements and new research questions.		P. 24
	Overall success of NHS stop smoking services		
1	Six 3- reports and one 2++ study provide evidence that intensive interventions for smoking cessation through the NHS Stop Smoking Services appear to be effective in the short term; on average over half of the clients setting quit dates through the services self-report as quit at 4 weeks. However, these statistics should be treated with some caution as it appears that PCTs are using different baselines to measure success. As all seven studies took place within the English smoking cessation services, they are directly applicable to the target population.	six 3-case reports and one 2++ study	DH2001a (3-), DH2001b (3-), DH2002 (3-), DH2003 (3-), DH2004 (3-), DH2005 (3-), Judge et al. 2005 (2++) (P. 26)
2	One 3- report, one 2- study, two 2+ studies and one 2++ study provide evidence that intensive interventions for smoking cessation through the NHS stop smoking services appear to be reasonably effective in the long term. On average between 13-23% of the clients who self-report as successful quitters at 4 weeks through the services self-report as abstinent at 52 weeks – a long term success rate that is broadly consistent with international findings. As all studies took place within the English smoking cessation services, they are directly applicable to the target population.	One 3-case report, two 2+ studies, one 2-study and one 2++ study	DH2001a (3-), Ferguson et al. 2005 (2++), Smith 2006 (2+), Jones et al. 2005 (2+), Watt 2005 (2-) (P. 28)
	Internal factors that have influenced the effectiveness of NHS stop smoking services		
3	Evidence from two 3- bulletins indicates	Two 3-	DH2001a (3-);

	that intermediate interventions delivered by community advisors achieve self-reported cessation rates of between 34-45% at 4 weeks – although these results do not necessarily reflect the outcomes currently being achieved these inventions given the substantial development of the services since 2001. As these studies took place within English smoking cessation services, they are directly relevant to the target population.	case reports	DH2001b (3-) (P. 29)
4	Evidence from a 1++ systematic review indicates that pharmacy-delivered interventions may have a positive effect on smoking cessation rates. This finding is confirmed in a recent 2++ study which reports that pharmacy-delivered interventions in Glasgow produce 4 week CO-validated quit rates of approximately 20%. The study also indicates that pharmacy-delivered interventions have the potential to reach and treat large numbers of smokers – especially those from disadvantaged areas. As these studies took place within UK smoking cessation services, they are directly relevant to the target population.	One 1++ systematic review and one 2++ study	Sinclair et al. 2004 (1++), Bauld et al. 2006 (2++) (P. 30)
5	Two studies provide a body of 2++ evidence that group interventions may produce higher CO-validated quit rates at 4 weeks than one-on-one interventions. However, one-to-one interventions are also effective and many clients express a clear preference for one-to-one treatment. Moreover, in some contexts (particularly rural areas), group treatment is simply unfeasible. Therefore, one-to-one interventions are a crucial component of the NHS stop smoking services as smokers need to be given a choice of treatment options. As both studies all took place within the English smoking cessation services, they are directly applicable to the target population.	Two 2++ studies	McEwen et al. 2005 (2++), Judge et al. 2005 (2++) (P. 31)
6	Two studies provide some limited (2-) evidence that drop in/rolling groups may be as effective as other models of smoking cessation in supporting smokers to quit. These studies also highlight that clients, including those in deprived areas, value the flexibility of a drop in service. As both studies took place within the English smoking cessation services, they are directly applicable to the target population.	Two 2 - studies	Owens and Springett, 2006 (2 -), Springett et al, 2007 (2 -) (P. 32)
7	Evidence from one 1++ study suggests that	2 1++	May et al. 2006

	buddy systems more than double the CO-validated 4 week effectiveness of one-to-one interventions; however, another 1++ study found that they do not substantially increase the effectiveness of group interventions for smoking cessation. As both studies all took place within the English smoking cessation services, they are directly applicable to the target population.	RCTs	(1++), West et al. 1998 (1++) (P. 33)
8	Information on how the site/setting impacts on the effectiveness of smoking cessation interventions is limited. Evidence from a 2 (++) study indicates that the location of treatment may indirectly influence the effectiveness of smoking cessation interventions. As this study took place within the UK smoking cessation services, it is directly applicable to the target population.	One 2++ study	Bauld et al. 2006 (2++) (P. 34)
9	Two 1++ systematic reviews provide strong evidence that smoking cessation interventions amongst inpatients can be effective in creating modest to substantial increases in CO-validated smoking cessation rates up to 12 months in this population. Findings from four more recent 1++ studies and one 1+ study are mixed; however, on the whole they indicate that interventions with at least two months post-discharge telephone follow up are more likely to be successful than programmes of short duration. The majority of the studies took place outside of the UK in a wide range of countries, including Australia, Canada, the USA and Norway. However, it is likely that their findings are applicable to the UK, given the broad similarities in these populations.	Two 1++ systematic reviews and 5 RCTs (four 1++, one 1+)	Hand, et al. 2002 (1+), Chouinard et al. 2005 (1++), Nagle 2005 (1++), Froelicher 2004 (1++), Quist-Paulsen 2003 (1++), Rice 2004 (1++), Rigotti 2002 (1++) (P. 38)
10	A 2++ study suggests that more intensive one-to-one interventions achieve higher CO-validated success rates at 4 weeks than less intensive interventions. However, a 1++ RCT in a primary care setting suggests that intensity alone does not increase the effectiveness of one-to-one interventions in this setting. The findings of this study suggest that more intensive one-to-one interventions may be more effective if they are accompanied by external motivations or pressures to quit (such as 'buddy' support or smoking-related health problems). As these studies took place within the English smoking cessation services, their findings are directly applicable to the target population.	One 1++ RCT and one 2++ study	Aveyard et al. 2007 (1++), Bauld et al. 2003 (2++) (P. 39)

	External factors that have influenced the effectiveness of NHS stop smoking services		
11 **Background Evidence**	Although target setting encouraged senior management to prioritise the services and ensured adequate funding in the early phase of service delivery, the pressure to meet targets has resulted in significant differences in reporting processes and there are concerns that different outcomes are actually being compared on a 'like for like' basis. It also appears that target setting has impeded the ability of the services to focus on the priority groups they are supposed to be targeting.		(P. 40)
12 **Background Evidence**	The smoking cessation services developed in line with the evidence base and government guidelines and it appears that guidance to service providers was adequate in the initial phase of service delivery.		(P. 41)
13 **Background Evidence**	Although guidance has been broadly adequate to date, structural changes within the NHS and important policy developments have created the need for further guidance. A standardised model of payment and training for primary care providers have been highlighted as particularly important.		(P. 42)
	Variation in effectiveness of stop smoking interventions based on factors such as age, sex, level of addiction, previous quit attempts and history of quitting		
14	One 3- bulletin demonstrates that age and sex are both correlated with setting a quit date. Females are more likely to set quit dates than males and smokers under the age of 18 are far less likely to set quit dates than other age groups, although smoking prevalence is this age set is high. As this study took place within the English smoking cessation services, it is directly applicable to the target population.	One 3- case report	DH2004 (3-) (P. 44)
15	Two 2++ studies, one 2- study and one 3- study demonstrate that age and sex are both correlated with quitting success. Although females are more likely to set quit dates than males, they are less likely to be CO-validated as successful quitters at 4 weeks. Older smokers are more likely to quit successfully than younger smokers – although the high rates of loss to follow up among young smokers make it difficult to draw definitive conclusions on the relationship between age and quitting success. As these studies took place within the UK smoking cessation services, they are	Two 2++ studies, one 2- study and one 3- study	Judge et al. 2005 (2++), DH2004 (3-), Bauld et al. 2006 (2++), Watt et al. 2005 (2-) (P. 45)

	directly applicable to the target population.		
16	Two 2++ studies demonstrate that level of addiction is inversely correlated with quitting success. Findings in relation to the connection between previous quit attempts and quitting success are less clear. One study reports a positive correlation between the two and another study reports a negative correlation between the two. As these studies were conducted on the smoking cessation services in the UK, their results are directly applicable to the population under study.	Two 2++ studies	Judge et al. 2005 (2++), Bauld et al. 2006 (2++) (P. 46)
	Variations in the effectiveness of stop smoking interventions by ethnicity		
17	The evidence on how readily black and minority ethnic groups are accessing the stop smoking services is inconclusive. Five 3- studies appear to demonstrate that black and minority groups on the whole are accessing stop smoking services in proportion with their representation within the total population; however, a high level of missing data undermines the conclusiveness of the available statistics. Moreover, indicative evidence raises some doubts about how readily BMEG are accessing NHS stop smoking services. As these studies were conducted on the smoking cessation services in the UK, their results are directly applicable to the population under study.	Five 3- studies	DH2001b (3-), DH2002 (3-), DH2003 (3-), DH2004 (3-), DH2000 (3-) (P. 47)
18 **Background Evidence**	There is no direct evidence on how minority ethnic status intersects with gender in relation to smoking and quit status in the context of interventions delivered through the stop smoking services. Background evidence indicates that females from BMEG appear to be less likely (significantly less likely in South Asian communities) to smoke than males. However, given the stigma that attaches to female smoking in many minority ethnic groups (especially South Asians), it is probable that smoking rates amongst minority ethnic females are underreported. Amongst Bangladeshi women in particular, although self-reported smoking prevalence is low, use of tobacco itself is very high (over 25%).		(P. 50)
19 **Background Evidence**	There is no direct evidence on how minority ethnic status intersects with social class in relation to smoking and quit status in the context of interventions delivered through the stop smoking services. Overall, background evidence indicates that for the most part BMEG smoking does not appear to be connected with social		(P. 51)

	class, expect in relation to Bangladeshi males – whose high smoking rates may be partly accounted for by the relative levels of social disadvantage in this ethnic group.		
20	The evidence on how successful black and minority ethnic groups are in quitting smoking through the stop smoking services is inconclusive. One 2+ study found that CO-validated quitting success at 4 weeks did not vary by ethnicity. However, because of the small numbers of people from BMEG in the study, interpretation of their results is difficult. As this study was conducted on the smoking cessation services in the UK, its results are directly applicable to the population under study.	One 2+ study	NEPHO 2005 (2+) (P. 52)
21 **Background Evidence**	There is no direct evidence on how culturally appropriate the NHS stop smoking services are, although it seems to be the case that there are relatively few programmes overall that cater to ethnic minorities – in most cases people from these groups are incorporated into the broader NHS. However, it appears that smoking cessation interventions tailored for ethnic minorities can achieve high levels of success.		(P. 53)
	Effectiveness of NHS stop smoking services for pregnant smokers		
22	Five 3- bulletins, one 2+ and one 2++ study provide a body of evidence that between 23-51% of pregnant women self-report as successful quitters at 4 weeks through the NHS stop smoking services. However, given the unique challenges that pregnant smokers face, the utility of 4 week quit rates as a measure of service effectiveness is questionable. As all seven studies took place within smoking cessation services in the UK, they are directly applicable to the target population.	Five 3-case reports, one 2+ study and one 2++ study	DH2001a (3-), DH2001b (3-), DH2002 (3-), DH2003 (3-), DH2004 (3-), Bryce et al. 2007 (2+) Judge et al. 2005 (2++) (P. 55)
23 **Background Evidence**	Background evidence shows that pregnant smokers face numerous barriers when trying to quit. They are more likely to be from routine and manual groups and may experience more pressing issues such as financial and relationship difficulties, and may also fear being judged for their smoking behaviour.		(P. 55)
24 **Background Evidence**	Background evidence indicates that there are numerous barriers to recruiting pregnant women into smoking cessation programmes. One of the most fundamental barriers to recruitment is the problem of misreport amongst pregnant		(P. 57)

	smokers – which indicates the importance of biochemically validating smoking status. Health care professionals are also often unwilling to address smoking with their pregnant clients in the fear that it will jeopardise their relationship with the clients.		
	Variations in the effectiveness of stop smoking interventions for routine and manual groups		
25	Three 2++ studies and one 2+ study provide a body of evidence that the NHS stop smoking services have been effective overall in reaching routine and manual groups. However, one of these studies reports that there is variation within regional services, and some SHAs have been less successful in deprived smokers than other authorities. As all four studies took place within the English smoking cessation services, they are directly applicable to the target population.	Three 2++ studies and one 2+ study	Baker et al. 2006 (2++), Chesterman et al. 2005 (2++), Lowey 2002 (2++), NEPHO 2005 (2+) (P. 61)
26	Six 3- bulletins, one 2- study, two 2+ studies and three 2++ studies provide a consistent body of evidence that people from routine and manual groups are less successful in quitting successfully (based on both self-report and CO validation) at 4 weeks than other smokers. As all twelve studies took place within the English smoking cessation services, they are directly applicable to the target population.	Six 3- case reports, one 2- study, two 2+ studies and three 2++ studies	DH2001a (3-), DH2001b (3-), DH2002 (3-), DH2003 (3-), DH2004 (3-), DH2005 (3-), Watt et al. 2005 (2-), Smith 2006 (2+), Jones et al. 2005 (2+), Lowey 2002, Chesterman et al. 2005 (2++), Baker et al. 2006 (2++) (P. 63)
27	One 2+ study found that NHS stop smoking services are making a modest contribution to reducing smoking-related inequalities in health in England. As the study took place within the English smoking cessation services, it is directly applicable to the target population	One 2+ study	Bauld et al, 2007 (2+) (P. 63)
28 **Background Evidence**	Background evidence shows that smokers from routine and manual groups face numerous social and economic barriers that may inhibit their ability to quit. In many areas of deprivation, smoking is perceived as the norm and there is no culture of quitting. Moreover, those deprived smokers who are willing to quit may have little knowledge about the effectiveness of smoking cessation interventions and may also find it difficult to attend sessions.		(P. 64)
29 **Background**	Background evidence shows that smokers from routine and manual groups are often more highly addicted, have been smoking		(P. 65)

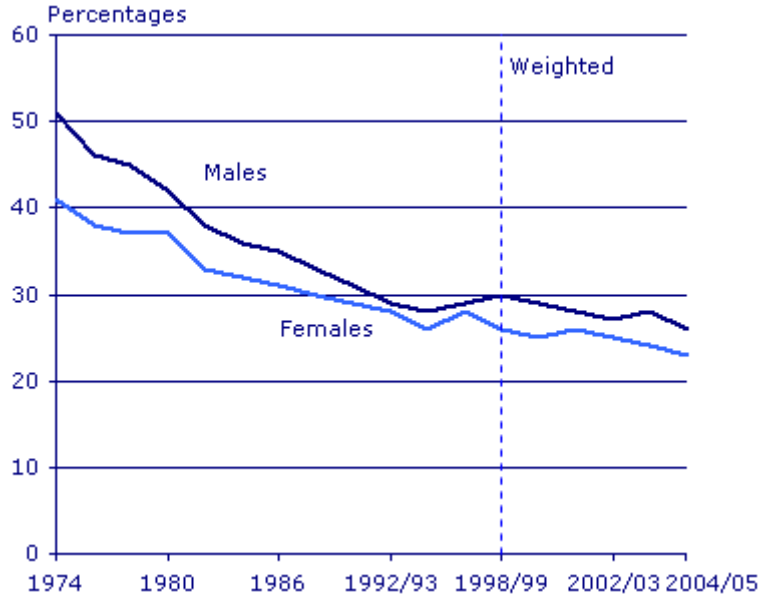
Evidence	since a young age, and smoke more cigarettes per week compared to professional workers, which is a key factor in explaining the lower cessation rates achieved by the NHS stop smoking services in deprived areas.		
30	According to a 2- study, more flexible modes of delivery help to make smoking cessation interventions more accessible for people from deprived groups and produce 12 month self-reported quit rates of 16% - which is comparable with the long-term effectiveness of the NHS stop smoking services more broadly.	One 2- study	Schultz & Richie 2005 (2-) (P. 66)
	Variations in the effectiveness of stop smoking interventions for institutionalised populations		
31	Although up to 80% of prisoners in UK correctional facilities smoke, according to a recent 2++ report, overall a relatively small proportion of smokers (less than 10%) access smoking cessation support whilst in prison. However, prisoners can achieve CO-validated 4 week quit rates of over 40%, although there appear to be substantial differences in the success rates of different prisons. As this study looks at the effectiveness of the smoking cessation services in UK prisons, it is directly applicable to the target population.	One 2++ study	MacAskill 2005 (2++) (P. 67)
32 **Background Evidence**	Smoking is a central feature of prison life and provides relief from boredom, the stressful environment as well as facilitating group membership. Therefore, prisoners face unique problems when making a quit attempt because of the endemic levels of smoking, the lack of opportunities for distraction from cravings and negative attitudes to cessation amongst staff and fellow prisoners. Despite these barriers, a number of prisoners recognise the negative aspects of smoking, including its health and financial costs and available evidence indicates that up to 50% of smokers in prison want help in quitting smoking.		(P. 68)
33 **Background Evidence**	Although it appears that rates of smoking are particularly high amongst people in mental health institutions in the UK, there is no available information on how effective smoking cessation support is in this setting.		(P. 68)
34 **Background Evidence**	People with mental illnesses in institutional settings face a variety of barriers in accessing services and quitting smoking. Smoking cessation in this setting can be complicated by factors such as physiological vulnerability to nicotine addiction, the fact that nicotine may reduce the side effects of some medications, the		(P. 69)

	positive effects of nicotine on the brain, and the use of cigarettes as a behavioural reward and lack of access to cessation support.		
	Barriers and facilitators to implementing successful interventions		
35 **Background Evidence**	Overall, it seems evident that the key barrier to implementing successful interventions is a general lack of awareness of the services and their potential effectiveness in helping smokers to quit. The key facilitators to implementing successful interventions appears to be providing flexibility and choice, assessing the individual need of the smoker, while recognising that local conditions will to some extent determine the most appropriate models of delivery.		(P. 70)

2. Background

Cigarette smoking is the leading cause of preventable death in the United Kingdom today. Although the prevalence of smoking has declined over the twentieth century from a peak in the 1940s when it is estimated that 65% of men and 40% of women in Britain regularly smoked manufactured cigarettes (Royal College of Physicians 2000), the rates of smoking in the UK levelled out in the 1990s at around 27% (McNeill et al. 2005) (see figure 1).

Figure 1. Cigarette Smoking Prevalence in Great Britain, 1974-2004/05



(Reproduced from General Household Survey 2004/05).

In England between 1998-2002, smoking was estimated to be responsible for 86,500 deaths per year (Twigg et al. 2004) and currently costs the National Health Service (NHS) between approximately 1.4-1.5 billion pounds annually, from health care expenditure on smoking induced disease to sickness/invalidity benefits, widows' pensions and other social security benefits for dependents (Parrot and Godfrey 2004).

However, despite the economic and health impacts of smoking, it was not until 1997 that smoking finally became a political priority (McNeill et al. 2005). During this period, the new labour government announced an international summit on smoking and advice was sought from international experts about the most effective tobacco control policies (McNeill et al. 2005). Following this summit, 1998 saw the publication of the White Paper *Smoking Kills,* which outlined a national strategy to reduce smoking in the UK. *Smoking Kills* laid out a comprehensive agenda for reducing the prevalence of smoking in the UK and entailed measures such as a ban on tobacco advertising, increases in the price of tobacco, strategies to reduce smoking in work and public places, to reduce smoking uptake in children and a significant injection of funding into smoking cessation treatment services (McNeill et al. 2005). It was recognised that smoking cessation treatment would not influence smoking prevalence directly; rather, treatment was identified as an important component of overall tobacco control measures (McNeill et al. 2005).

Smoking cessation treatment was defined as including behavioural and pharmaceutical interventions such as brief advice and counselling, intensive support and the administration of nicotine replacement therapy (NRT) and bupropion. Nevertheless, when the services were initially set up NRT was not available on

prescription. Smokers who were eligible to receive free prescriptions were offered vouchers for one week's supply of NRT which they could use at participating pharmacies; however, this policy received a great deal of criticism because of the time and resources it drained and the dubious merits of limiting NRT to one week, which ran counter to good practice (McNeill et al. 2005). From April 2000 a national voucher scheme was introduced and from September of that year, eligible smokers could obtain a free weekly supply of NRT for up to 4-6 weeks of treatment. In June 2000 bupropion was introduced to the market as an NHS reimbursable drug treatment and in April 2001 NRT was finally made available on NHS prescription (McNeill et al. 2005). A month later, 4-mg gum, 1-mg lozenge and nicotine patches became available over the counter (McNeill et al. 2005).

Early guidance emphasised the importance of two extremes of smoking cessation interventions: brief, opportunistic smoking cessation interventions by health care professionals and smoking cessation clinics (McNeill et al. 2005). It was expected that the former would have maximum reach but minimum effectiveness and the latter would have minimum reach and maximum effectiveness (McNeill et al. 2005). Three levels of smoking cessation service were envisioned:

1) Specialist services (e.g. smokers' clinics)
2) Intermediate services (e.g. in primary care and/or pharmacies)
3) Brief interventions made opportunistically by any health professional.

Only the top two categories could be funded by the new smoking cessation service monies (McNeill et al. 2005). However, the distinction between top two categories was discontinued in 2001 as many coordinators found it unhelpful. Moreover, from the inception of the services, the intermediate services were more extensively used than the specialist services. For example, between 2000-2001 73% of those setting quit dates went through the intermediate services (DH 2001b).

Funding for the smoking cessation services was provided on a three-year basis contingent on the success of the first year and in 2003 a further three years of funding was allocated (138 million pounds) which ran out in March 2006 (Wanless 2004). Initially the services were located in areas of greatest need – the Health Action Zones (HAZs). However, in years two and three funding was made available to develop the services more broadly.

Currently, the future funding arrangements of the stop smoking services are uncertain. However, it is anticipated that funding will continue, given the general consensus that the services remain a cost effective and important means of improving the health of the nation.

In light of the ambitious and unprecedented attempt to very rapidly implement nation-wide smoking cessation services, there were numerous challenges to be confronted in the early years of service delivery. There were several factors which slowed the initial development of the smoking cessation services, including the lack of available work-force with experience in smoking cessation methods and the fact that services were largely set up outside existing primary and secondary health care services in England (Bauld et al. 2005; Coleman et al. 2005).

Very few smoking cessation coordinators had clinical experience in smoking cessation and the new smoking cessation services had difficulties in recruiting staff because of the short term contracts that were on offer as result of funding arrangements (Bauld et al. 2005). Moreover, negotiation with primary care services proved more difficult than anticipated and a great deal of time was spent attempting to convince health professionals that smoking cessation services were needed –

health care professionals often felt that this new stop smoking agenda merely added to their already overburdened workload.

Despite these issues, the stop smoking services appear to have been successful overall in their goal of delivering smoking cessation. According to the Department of Health statistical bulletins (DH 2005; DH 2004; DH 2003; DH 2002; DH 2001a; DH 2001b), between 1999 and 2005 the number of quit dates set have steadily increased and the percentage of those successfully quitting (self-report) at 4 weeks follow-up has also steadily increased.

The success of the overall tobacco control programme is evident in the decline in smoking prevalence since 1999, with current smoking prevalence rates at 25% (Lader and Goddard 2005) and the reduction in smoking prevalence of approximately 0.4% per year since 1999 (Jarvis 2003). Nevertheless, the overall smoking rate masks marked socioeconomic differences in smoking patterns – and smoking remains particularly high amongst manual and routine groups. These inequalities have been recognised in a series of national targets to further reduce the prevalence of smoking. The targets in England[1] are as follows:

1) Reduce adult smoking rates to 21% or less by 2010, with smoking prevalence amongst manual groups reduced to 26% or less by 2010 from 32% in 1998.
2) Reduce the proportion of women who smoke during pregnancy to 15% by 2010 with a fall to 18% by 2005.

If these targets are reached, an analysis of the cost benefits has shown that £524 million could be saved as a result of a reduction in the number of heart attacks and strokes (Parrot and Godfrey 2004; Hajek et al. 2006; ASH 2005a).

2.1. Smoking and Manual Groups

In the United Kingdom, as in most developed countries, inequalities in mortality and morbidity are strongly linked to socio-economic factors such as social class (occupation), income, level of education and area of residence (Chesterman et al. 2005). Indeed, tobacco is responsible for more than half the difference in male mortality between those in the highest and lowest socio-economic groups living in the UK (Jarvis and Wardle 1999). Routine and manual workers are more likely to suffer from health problems such as cancer, heart disease, respiratory diseases and stroke and smoking is the single largest contributor to these health inequalities (Royal College of Physicians 2000). Thus, although the health of the UK population is improving steadily, manual workers on average die at a younger age than non-manual workers.

Routine and manual groups continue to smoke at significantly higher rates than other members of the UK population and the smoking prevalence rate for 'unskilled manual' classes in Great Britain is 32% for men and 30% for women, compared with 20% of men and 17% of women in 'professional and managerial' groups (ONS 2006). Moreover, the gap between the smoking rates of manual and non-manual groups in the UK appears to be widening as there has been a sharper decline in smoking prevalence among non-manual compared with manual social groups (Killoran et al. 2006).

Despite the high smoking prevalence amongst routine and manual groups, smokers in these groups tend to be less interested in quitting smoking than those in professional and managerial classes. According to the 2004 *Smoking-Related Behaviour and Attitudes Survey* (Lader and Goddard 2005), a larger percentage of

[1] Different targets were set for Scotland and Wales.

smokers in Social Class 1 and 2 (Managerial and Professional Occupations) would like to give up smoking compared to those in Social Class 4 and 5 (routine and manual occupations): 77% versus 71%, respectively. The largest percentage (80%) of smokers who intended to give up smoking were in intermediate occupations (Social Class 3). Moreover, smokers from routine and manual groups often find quitting more difficult (see section 4.7). Despite these challenges, implementing effective (and accessible) smoking cessation interventions for smokers from routine and manual groups is crucial to ensuring the equity of the stop smoking services (Killoran et al. 2006).

2.2 Smoking and Pregnancy

Smoking in pregnancy is associated with a number of women's health issues as well as foetal and neo-natal problems, including pre-term delivery, reduced birth weight, placenta damage, miscarriage, and sudden infant death syndrome (SIDS) (Royal College of Physicians 2000). Therefore, quitting smoking during pregnancy carries benefits for both the pregnant woman and the foetus. However, tobacco reduction and cessation interventions have produced low long term overall reductions in most international settings (Greaves et al. 2003).

It is clear that the percentage of women in the United Kingdom who smoke during pregnancy has decreased substantially over the past thirty years. A HEA survey on pregnancy and smoking found that in England in 1999 45% of pregnant women reported smoking in the twelve months before they became pregnant and 35% of women continued to smoke during pregnancy[2] (Owen and Penn 1999). However, rates of both spontaneous quitting and quitting due to intervention during pregnancy can be high, but misleading, as there are also generally high relapse rates post partum (Greaves et al. 2003).

These broader statistics mask some significant societal differences in smoking patterns during pregnancy. Smoking prevalence amongst pregnant women in the UK is strongly related to social class and rates of smoking amongst single mothers-to-be and pregnant women from manual and routine groups are significantly higher than average (Hamlyn et al. 2000). According to the *Infant Feeding Survey*, in 2000 8% of women from the 'higher occupations' group smoke throughout pregnancy compared with 29% of women from the 'lower occupations' group (Hamlyn et al. 2000).

In 2000/01 it was recognised that pregnant smokers require special resources and attention and the NHS stop smoking services received funding to create dedicated services, appoint champions and spread good practice – a move that is expected to contribute to the national target of reducing the smoking prevalence amongst pregnant women to 15% by 2010 (Killoran et al. 2006).

2.3 Conclusion

In summary, the introduction of a national programme for tobacco control in England in 1998 entailed a number of measures, including the creation of smoking cessation services for those smokers wishing to quit. The smoking cessation services were established from 1999 and despite some initial hiccups appear to have been

[2] These figures are significantly higher than those reported in the Infant Feeding Survey (2000) the following year, which reports that 35% of mothers smoked before pregnancy and 23% continued to smoke during pregnancy. However, the IFS survey is limited by the fact that it relies on a retrospective account of smoking activities, rather than taking a snap shot of current smoking behaviour (Owen et al. 1999; Owen and Penn 1999).

successful in contributing to an overall decline in smoking prevalence. However, smoking rates remain particularly high in several sub-populations – especially routine and manual groups and pregnant women – and delivering effective smoking cessation interventions to these groups, as well as 'hard to reach' populations more generally, poses an ongoing challenge for the NHS stop smoking services.

3. Methodology

3.1 Key Definitions

NHS stop smoking service: *'A specialist NHS supported service with staff who have nationally recognised training and dedicated time for group and 1-1 support for a series of planned sessions where the client is followed up at 1 month and the data is recorded*.'[3]

Definition	Explication of terms
A specialist NHS supported service service	A NHS funded service in some way dedicated and provided by specially trained staff. Staff comprise: 1) 'core' specialist advisors employed full time in the service 2) 'community advisors' (such as pharmacists and GP practice nurses) employed part time in the service
with staff who have nationally recognised training and dedicated time	Nationally recognised would mean PATH, Maudsley or local training. All community and core advisors receive formal training (level two and level three, respectively).
for group and 1-1 support	Evidence and current guidelines support group work, but 1-1 is desirable in some cases and because of geographical constraints. Community advisors invariably provide 1-1 sessions, whereas the core specialist services also offer group sessions. These services also use nicotine replacement therapy.
for a series of planned sessions	This would normally be a minimum of 4, usually around 7 sessions where the first and last would generally last at least 20 minutes. However, the 'intermediate'[4] (level 2) support provided by community advisors tends to be less structured and intense than that provided by the core advisors.
where the client is followed up at 1 month 3 months and 1 year post quit date and the data is recorded	This would ideally include CO-validation at 1 month, but while those clients attending interventions through the core services are almost universally CO-validated, fewer of the clients attending interventions delivered by community advisors are.

Successful quitter: *'a successful quitter is defined as someone who has not smoked at all from two weeks after their initial quit date'* (DH2001a).

[3] This definition of the services has been adapted from a definition currently being employed in the Scottish stop smoking services.

[4] This report retains the original service distinction employed by the NHS (brief, intermediate and intensive): the term 'intermediate intervention' is used to refer to the interventions delivered by community advisors and 'intensive intervention' is used to refer to the interventions delivered by core specialist advisors

3.2 Literature Search

Lindsey Myers (Centre for Reviews and Dissemination, University of York) conducted the searches for this rapid review in May 2006, with input from NICE and the British Columbia Centre of Excellence for Women's Health team. The first literature search covered systematic reviews in the standard databases. Two Medline searches were then undertaken to identify: 1) other relevant reviews and 2) other relevant studies (from 1990 onwards). This search originally produced over 24,000 records and the search strategy was modified and the keyword NHS introduced to limit the number of extraneous records. A detailed report of processes, databases, and search terms used in the review is presented in Appendix C. Studies not published in English were excluded from the review.

The searches for systematic reviews and Medline searches for reviews and RCTs and non-randomised studies identified 807, 664 and 3231 citations respectively, totalling 4702 citations. The search was repeated in November 2007 to identify any new studies and update the review and an additional 329 citations were identified at that stage. The total number of citations was therefore 5131. The BCCEWH team also conducted an independent search of relevant websites which identified a further 100 published reports.

3.3 Selection of Studies for Inclusion

Once the literature search was complete the project team selected relevant studies based on the criteria outlined in section 4.1 of the *Public Health Guidance Methods Manual*. Before acquiring papers for assessment, preliminary screening of the literature search was carried out to discard irrelevant material. Titles were initially scanned by one reviewer who removed the clearly irrelevant studies. The remaining 292 abstracts were independently scrutinised in relation to the research questions by two reviewers and those that did not directly deal with the issues raised in the research questions were eliminated. Once this sifting process was complete, paper copies of the 63 selected studies, reports and reviews were acquired for assessment.

3.3.1 Participants

To be included in the review, the studies had to examine smoking cessation interventions in the United Kingdom. The vast majority of studies identified in the literature search were deemed irrelevant as they covered interventions that took place outside of the UK. The only studies falling outside of this location included for review were those relating to inpatient interventions in secondary care – as this was an area the research team was specifically asked to follow up on by NICE.

3.3.2 Grey Literature

From the outset it was apparent that the most relevant studies would be found in the grey literature. Grey literature was accessed through four avenues:

1) National Research Register (NRR)

The NRR listings produced in the original literature search were scrutinised by two team members (Kirsten Bell and Linda Bauld). Studies that were too early to be of benefit (because they took place before the services were established or during the early period of the service when policies and practices were still in flux) or those that did not relate directly to the key research questions were eliminated and others were followed up on to obtain paper copies of the studies (see appendix A for list of excluded NRR studies). Lindsay Myers conducted a separate search for published papers from the NRR studies. Papers or reports from 12 relevant studies listed in the NRR could not be obtained (see appendix B for details).

2) Linda Bauld provided copies of other 5 unpublished reports, primarily on the Scottish services.
3) Andy McEwen, Director of the Smoking Cessation Services Research Network (SCSRN), put out a call to members of the network asking for relevant reports and evaluations on projects conducted through the services.
4) Background telephone interviews were conducted with 12 people working in the tobacco cessation area, many of whom provided access to unpublished reports and evaluations.

26 reports were obtained through these four sources.

3.3.3 Interventions

The review included all smoking cessation interventions aimed at populations in England and other parts of the UK. The review focused on interventions that took place through the NHS, although studies on smokers within the UK population more broadly were also identified and included (mainly as background) within the review. Interventions of interest included:

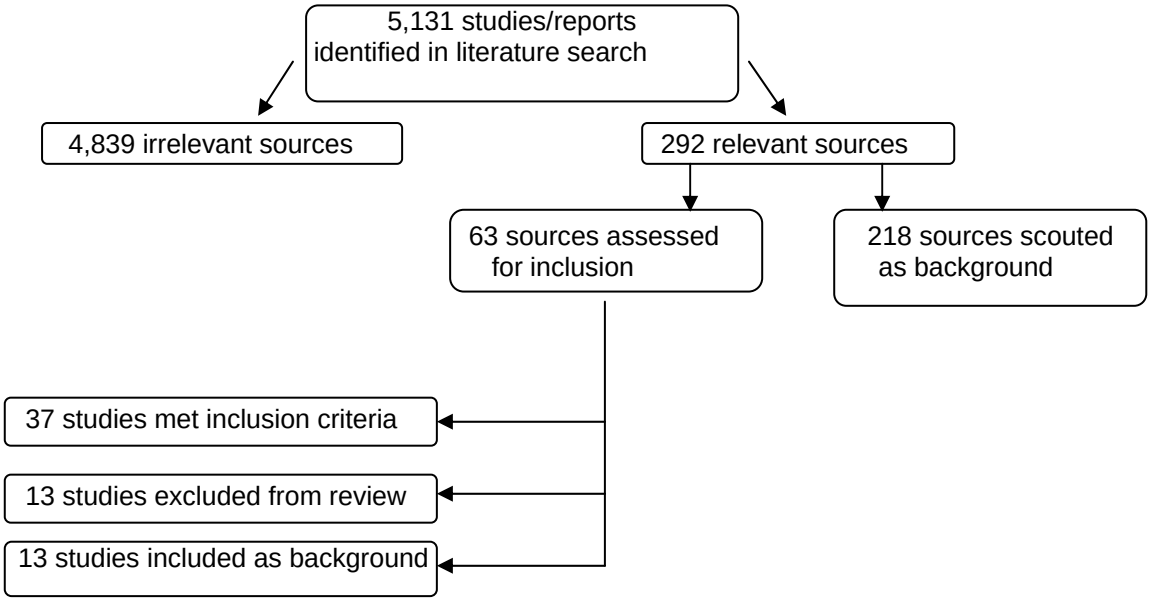
- Intensive interventions for smoking cessation conducted through the NHS
- Intermediate interventions for smoking cessation conducted through the NHS
- Smoking cessation interventions aimed at pregnant women
- Smoking cessation interventions aimed at black and minority ethnic groups (BMEG)
- Smoking cessation interventions aimed at manual and routine groups.

3.3.4 Outcomes

The key outcome of interest was changes in smoking status following the intervention (with biochemical validation where recorded).

63 sources were assessed for inclusion. Full paper copies of 5 SRs, 12 RCTs, 25 UK studies and 12 published reports identified in the literature search and 9 unpublished reports were independently assessed for inclusion by two reviewers (1 paper did not arrive in time, and has not been included in the review). Of the 63 appraised studies, 3 of the SRs, 8 of the RCTs, 11 of the published studies, 9 of the published reports and 6 of the unpublished reports met the inclusion criteria for this rapid review. These 37 were used as evidence, 13 were incorporated into the review as background and 13 were excluded. A list of the 13 excluded studies with reasons for exclusion is presented in Appendix A.

Figure 2. The evidence



3.4 Quality Appraisal

3.4.1 Tested Evidence

All of the studies that met the inclusion criteria were rated by two independent reviewers in order to determine the strength of the evidence. Once the research design of each study was determined (using the NICE algorithm), studies were assessed for their methodological rigour and quality based on the critical appraisal checklists provided in Appendix B of the *Public Health Guidance Methods Manual* (see table 1). Each study was categorised by study type and graded using a code '++', '+' or '–', based on the extent to which the potential sources of bias had been minimised. Those studies that received discrepant ratings from the two reviewers were given to a third reviewer for final evaluation.

Table 1. Level and quality of evidence

Type and quality of evidence	
1^{++}	High quality meta-analyses, systematic reviews of RCTs, or RCTs (including cluster RCTs) with a very low risk of bias
1^{+}	Well conducted meta-analyses, systematic reviews of RCTs, or RCTs (including cluster RCTs) with a low risk of bias
1^{-}	Meta-analyses, systematic reviews of RCTs, or RCTs (including cluster RCTs) with a high risk of bias
2^{++}	High quality systematic reviews of these types of studies, or individual, non-RCTs, case-control studies, cohort studies, CBA studies, ITS, and correlation studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal
2^{+}	Well conducted non-RCTs, case-control studies, cohort studies, CBA studies, ITS and correlation studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal
2^{-}	Non-RCTs, case-control studies, cohort studies, CBA studies, ITS and correlation studies with a high risk – or chance – of confounding bias, and a significant risk that the relationship is not causal
3	Non-analytic studies (for example, case reports, case series)
4	Expert opinion, formal consensus

Grading the evidence	
++	All or most of the quality criteria have been fulfilled Where they have been fulfilled the conclusions of the study or review are thought *very unlikely* to alter
+	Some of the criteria have been fulfilled Where they have been fulfilled the conclusions of the study or review are thought *unlikely* to alter
-	Few or no criteria fulfilled The conclusions of the study are thought *likely or very likely* to alter

Several qualitative studies were included in the review; while the *Public Health Guidance Methods Manual* provides guidance on how their methodological rigour should be assessed, the BCCEWH team had to make a judgement about the level the qualitative studies should be assigned, based on their relevance to the research question. The research team decided that qualitative studies containing some form of quantitative analysis of survey results should receive a level 2 rating.

3.4.2 Background Evidence

Tested evidence from studies and reports provides the primary source of evidence for this review and statements regarding the strength and applicability of the evidence have been drawn solely from this material. However, direct evidence on the effectiveness on the NHS stop smoking services was not available for a number of the sub-populations highlighted in this review – although several background studies and reports exist that provide useful information regarding the smoking behaviours and attitudes amongst these sub-populations. This unrated material has been incorporated into the review as 'background evidence'; it has been used to illustrate general trends in smoking behaviours and attitudes amongst the sub-populations of interest and should not be taken as direct evidence on the effectiveness of the NHS stop smoking services. It has been separately sign-posted in the evidence statements as 'background evidence' for this reason. Furthermore, several of the research questions (especially Q3 and Q9) were qualitative in nature and could not be answered through tested evidence. In response to these questions, the review also draws on background evidence and the evidence statements in these sections have been separately signposted for this reason.

3.5 Synthesis

Due to heterogeneity of design among the studies, a narrative synthesis was conducted.

4. Summary of Findings

The key question for this rapid review is: *What evidence is there of the effectiveness of intensive treatments for smoking within the NHS Stop Smoking Services?*

Within this broader question 9 specific research questions were devised:
1) What is the short term (4 week) and longer term (one year) success of the NHS stop smoking services?
2) What internal factors may have influenced the effectiveness of the NHS stop smoking services?
3) What external factors may have influenced the effectiveness of the NHS stop smoking services?
4) How does the effectiveness of stop smoking interventions vary with factors such as age, sex, level of addiction, previous quit attempts and history of quitting?
5) How does the effectiveness of stop smoking interventions vary with factors such as ethnicity?
6) How effective have the NHS stop smoking services been in reaching pregnant smokers?
7) How does the effectiveness of stop smoking interventions vary for routine and manual groups?
8) How does the effectiveness of stop smoking interventions vary for institutionalised populations?
9) What are the facilitators and what are the barriers to implementing effective smoking cessation interventions?

38 studies met the inclusion criteria for this rapid review. However, as indicated in section 3.3, some studies (particularly grey literature) that might otherwise have been excluded have still been discussed in the review on topics where limited available evidence exists. Relevant background literature has also been discussed for a number of research questions, although because it does not pertain specifically to the NHS stop smoking services, it has not been evaluated.

Overall Strength of the Evidence
There is a limited body of available evidence on many of the research questions posed for this rapid review. In many cases the quality of the evidence is low and in other cases there are very few available studies on the issue under examination. There are several general problems with the data that are routinely collected or embedded in intervention studies. These problems affect the comprehensiveness of the data, its generalisability and its utility in indicating intervention improvements and new research questions.

First, various studies and the NHS stop smoking services define “access” to services differently. The vast majority of services record details of people who have set quit dates, not those who have accessed the services. Furthermore, this number does not represent the number of people setting quit dates but rather quit dates themselves, as one person can set a quit date more than once in a year and the date will be counted twice.

Second, services appear to be using different baselines to measure ‘success’ – with some services using more inclusive criteria to measure 4 week quit rates than others. This undermines the validity of the monitoring data on the effectiveness of the NHS Stop smoking services as it is unclear whether like is being compared with like.

Third, there is a general lack of sex and diversity-disaggregated data collection and reporting, making it difficult to comprehensively answer some of the questions. As a

result, it is not possible to fully describe and effectively analyse the specific patterns and needs of women and men, or of women and men of diverse ethnic groups. There is also a lack of gendered and diversity-based analysis of the results of most of the studies, eliminating a full understanding of how any differences may have arisen, and the full context for understanding results and informing services. Therefore, the findings of this review should be treated as tentative rather than absolute.

GENERAL EVIDENCE STATEMENT

Strength and applicability of evidence

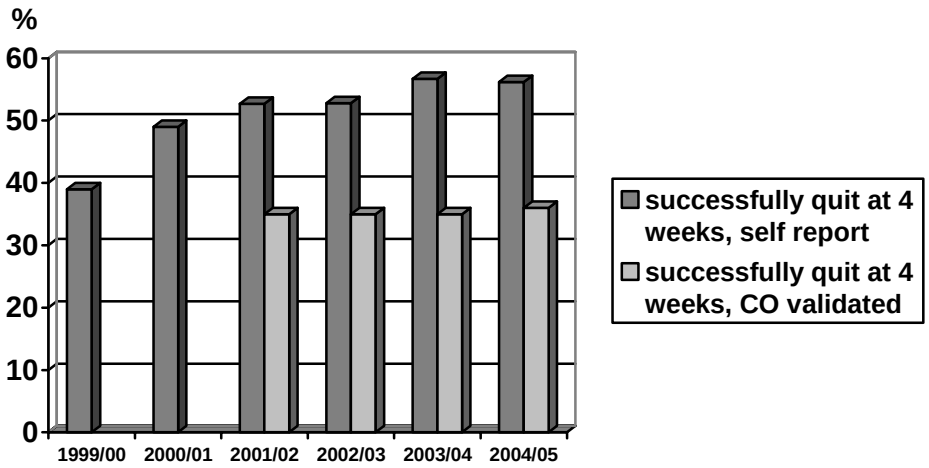
Overall, there is a limited body of available evidence on many of the research questions posed for this rapid review. In many cases the quality of the evidence is low and in other cases there are very few available studies on the issue under examination. There are also several general problems with the data that are routinely collected or embedded in intervention studies. These problems affect the comprehensiveness of the data, its generalisability and its utility in indicating intervention improvements and new research questions.

4.1 What is the short term (4 week) and longer term (one year) success of the NHS stop smoking services?

4.1.1 Short Term Success

Six annual statistical bulletins (rating 3-) have been published by the Department of Health (DH 2004; DH 2003; DH 2002; DH 2001a; DH 2001b; DH 2005) that evaluate the short term (4 week) success[5] of the NHS stop smoking services between 1999 and 2005 – the findings of these statistical bulletins are graphically represented in figure 3.

Figure 3. NHS stop smoking services statistics on Successful Quitters at 4 Weeks, 1999-2005



According to these statistics, between 39 and 57% of those who set quit dates self report as successful quitters at 4 weeks.[6] Moreover, it appears that the short term success rate of the services has increased over time – with smokers entering the services in 2004/05 8% more likely on average to self-report as quitters at 4 weeks than those who entered the services in 1999/2000. However, the percentage of successful quitters at 4 weeks, where CO validation has been conducted, has remained relatively stable at approximately 35% since 2001.[7] Given that not all 4 week quitters are CO validated, the actual CO validated quit rate at 4 weeks may be higher than this figure reflects. Indeed, one external evaluation of the short term success of the services (Judge et al. 2005) (rating 2++), focusing on two contrasting areas of England (Nottingham and North Cumbria) where CO validation was systematically conducted, reports a 53% success rate based on CO validation (with a success rate of 60.7% based on self report).[8]

[5] A successful quitter is defined as someone who has not smoked at all from two weeks after their initial quit date.

[6] This number does not actually represent the number of people setting quit dates but rather quit dates themselves; one person can set a quit date more than once in a year and the date will be counted twice, although the amount of double counting is likely to be small.

[7] CO validation is recommended by the Department of Health but not required. Therefore, while smokers who go through the specialist services are almost universally CO validated, not all of the successful quitters at 4 weeks who go through the intermediate services are.

[8] The authors note that the services were better established in the two study areas which improved follow up rates, rather than reflecting real differences in quit rates across regions.

Table 2. Short term self-reported quit rate success distributions at the PCT level

	N=303 Primary Care Trusts			
Year	Min	Max	Mean	Coefficient of Variation
2004/2005	32	98	56	not available
2003/2004	34	90	57	19.51
2002/2003	27	96	53	19.42
2001/2002*	27	77	53	21.87
2000/2001*	36	79	49	not available
1999/2000*	24	79	39	not available

Although the services are reasonably successful in the short term, there is considerable variation in short term success from one individual service to another. As is evident from table 4.12, some PCTs report extremely high success rates (between 75-100%) while other PCTs report that less than one third of their smokers successfully quit at 4 weeks. This level of variation has been evident since the inception of the services and seems to be due in part to differences in the ways that quitting success is measured between PCTs. In at least some cases it is apparent that PCTs with extremely high success rates far in excess of the national average are using very inclusive criteria to measure quitting success, leading to artificially high quit rates that do not accurately reflect the 'real' number of quitters (see section 4.3.1 for further discussion of this issue). This raises a number of questions about the validity of the available evidence and these statistics should therefore be treated with some caution.

No. 1

Strength and applicability of evidence

Six 3- reports and one 2++ study provide evidence that intensive interventions for smoking cessation through the NHS Stop Smoking Services appear to be effective in the short term; on average over half of the clients setting quit dates through the services self-report as quit at 4 weeks. However, these statistics should be treated with some caution as it appears that PCTs are using different baselines to measure success.

As all seven studies took place within the English smoking cessation services, they are directly applicable to the target population.

4.1.2 Long Term Success

Although the Department of Health recommends the collection of statistics on the long term (one year) success of quitters, measuring long term cessation rates is difficult: as more time lapses the number of clients lost to follow up increases substantially (Ferguson et al. 2005). Therefore, collecting these statistics is both labour and resource intensive. However, there are a few available statistics on long term follow up (see table 3). One early DH bulletin (DH 2001b) (rating 3-) on the services discusses one year outcomes, but as the services expanded it became unfeasible for most stop smoking services to collect this data, and the requirement was dropped, although a few local services have attempted to follow up quitters beyond one year (North Derbyshire Stop Smoking Service 2005; Jones et al. 2005; Watt et al. 2005; Smith 2006).

Table 3. Long-term quit rates for UK smoking cessation services

Reference Quality	Region	Clients who were followed up	# of clients followed up	% lost to follow up	% of quitters at 52 weeks, self report	% of quitters at 52 weeks, CO validated
Watt et al., 2005 2-	Stop Smoking Services in Cornwall & the Isles of Scilly	Those attending services between May 2003-April 2004	551	- quota sampled	23.4%	CO validation was not conducted
Smith, 2006 2+	Blackpool, Fylde & Wyre NHS Stop Smoking Service	2003-2004	500	59.2%	16.8%	CO validation was not conducted
Jones et al., 2005 2+	Kingston & Richmond Stop Smoking Service	Those attending service between April 2002-March 2003	370	58%	19%	CO validation was not conducted
Ferguson et al., 2005 2++	Nottingham and North Cumbria (covering 9 PCTs)	October 2001-March 2003	2069	37.5%	17.7%	14.6%
DH, 2001c 3-	All HAZs	Those attending service between April 1999-March 2001	2850	18%	13%	CO validation was not conducted

According to the Department of Health Statistical Bulletin from 2000/2001 (DH 2001a) (rating 3-), the proportion of successful quitters at 52 weeks, based on self-report, was 13%. However, they note that this figure is likely to have been affected by the high percentage of clients lost to follow-up. These findings are echoed in the external evaluation of the services (Ferguson et al. 2005) (rating 2++). The researchers found a one year success rate of 17.7% based on self report, although only 14.6% were CO validated as successful quitters at 52 weeks (there were 44.7% non-quitters with a further 37.5% lost to follow-up). However, they note that when CO validated quitters at 4 weeks were separated from the self-reported quitters, 25.2% remained abstinent at 52 weeks.

The researchers asked smokers who had relapsed to identify when they had started smoking again. Of the 83% who responded, 39% had relapsed between 1 and 3 months following the 4 week quit date, 29% had relapsed between 4-6 months, 17% between 7-9 months and 15% between 10-12 months. Thus, more than two thirds of those who started smoking again relapsed within 6 months of treatment ending. Local stop smoking services that have conducted long-term follow up report slightly higher success rates of between 17-23%; however, these rates are based on self reported quitting success only. Moreover, their findings are also compromised by extremely high rates of loss to follow up (between 42-58%).

These findings indicate that between 77-87% of those who have successfully quit at 4 weeks through the NHS Stop Smoking Services will have relapsed by one year.[9] These results are broadly consistent with a meta-analysis conducted in 1998 that suggests that about two thirds of quitters at 6 week follow up will have relapsed by 52 weeks (see Ferguson et al. 2005 for a discussion).

No. 2

Strength and applicability of evidence

One 3- report, one 2- study, two 2+ studies and one 2++ study provide evidence that intensive interventions for smoking cessation through the NHS stop smoking services appear to be reasonably effective in the long term. On average between 13-23% of the clients who self-report as successful quitters at 4 weeks through the services self-report as abstinent at 52 weeks – a long term success rate that is broadly consistent with international findings.

As all studies took place within the English smoking cessation services, they are directly applicable to the target population.

4.2 What internal factors may have influenced the effectiveness of the NHS stop smoking services?

There are a variety of internal factors that may influence the effectiveness of intensive interventions for smoking cessation delivered through the NHS stop smoking services. Five factors were highlighted as potentially impacting the effectiveness of interventions: content, delivery, deliverer, setting and intensity and each will be considered in turn. Evidence statements have only been provided in those areas where available studies allow conclusions to be drawn.

4.2.1 What is the content of the intervention and how does it influence effectiveness?
In theory, the stop smoking services have all adopted variations on the Maudsley model (Hajek 1989). This model represents the gold standard for evidence-based practice (Raw et al. 1998; West et al. 2000) and entails structured withdrawal oriented behavioural group therapy for smokers utilising nicotine replacement therapy (NRT) and/or bupropion. Nevertheless, there is evidence that some services have deviated significantly from the Maudsley model (Moore et al. 2003) and the extent of modification may have increased as the services develop (Owens and Springett, 2006).

Intermediate interventions
Although the formal distinction between intermediate and intensive interventions was collapsed in April 2001, the interventions delivered in pharmacies and primary care

[9] Important questions have been raised about the ways that quitting at 12 months is defined (Watt et al. 2005). According to the present Department of Health definition, "a client should be regarded as a non-smoker at 52 weeks if they have not smoked at any time since 2 weeks after their original quit date" (Watt et al. 2005). However, this definition does not take into account:

1) someone who claims to have successfully quit smoking but still admits to smoking the occasional cigarette in social situations
2) someone who stopped smoking for three months, who smoked again for six months and then quit again for three
3) someone who made repeated attempts to quit in the early stages, eventually stopping 'for good', not having smoked for nine months (Watt et al 2005: 10).

settings by community advisors often differ substantially in content to the intensive interventions delivered by the core advisors. There are few available studies which disaggregate the cessation rates of 'intermediate' and intensive interventions, although two early DH bulletins (DH 2001b; DH 2001a) (rating 3-) disaggregate this data. These bulletins found that intermediate services had a success rate at 4 weeks of between 34-45% based on self-report. However, as the services have developed considerably since 2001, these results do not necessarily reflect the outcomes currently being achieved by these types of interventions.

No. 3

Strength and applicability of evidence

Evidence from two 3- bulletins indicates that intermediate interventions delivered by community advisors achieve self-reported cessation rates of between 34-45% at 4 weeks – although these results do not necessarily reflect the outcomes currently being achieved these inventions given the substantial development of the services since 2001.

As these studies took place within English smoking cessation services, they are directly relevant to the target population.

- *Pharmacy interventions*

Pharmacies have been incorporated into the stop smoking services since their inception. It has been recognised that pharmacists are in an excellent position to reach a wide variety of smokers, particularly those people who are not interested in attending interventions through the core services. Moreover, many pharmacists are able to prescribe NRT and bupropion directly under the Patient Group Direction (PGD) scheme[10], which helps to streamline service delivery.

Pharmacy-based services are one of the most rapidly expanding elements of NHS stop smoking services and a number of useful resources have now been developed to support their delivery and the wider health improvement efforts of pharmacists. These include summaries of relevant literature and examples of promising practice published on-line by Pharmacy Health Link, a charity which supports the public health and health promotion roles of pharmacists in the UK (Blenkinsopp et al, 2003, PharmacyHealthLink, 2003, 2005).

However, there are very few robust studies examining the effectiveness of pharmacy-based smoking cessation interventions in the UK, particularly those delivered as part of NHS stop smoking services (Bauld et al. 2006). A recent Cochrane Review (Sinclair et al. 2004) (rating 1++) which focused on two UK trials found that trained community pharmacists providing a counselling and record keeping support programme may have a positive effect on smoking cessation rates. However, only one of the trials, which were conducted before NHS stop smoking services were widely established, showed a statistically significant effect. The review concluded that training health professionals in smoking cessation counselling has a measurable effect on professional performance, but there is no strong evidence that it changes clients' smoking behaviour.

[10] A PGD is a local mechanism which is normally set up to allow for the supply of prescription only medicine on the NHS by health professionals who do not have prescribing rights. In the context of smoking cessation interventions, this scheme supports pharmacists to supply NRT and prevents smokers from having to make unnecessary visits to GP practices in order to obtain a prescription (see http://www.ash.org.uk/html/cessation/pgd.pdf).

Although more research is clearly needed in this area, a more recent study on the smoking cessation services in Glasgow (Bauld et al. 2006) (rating 2++) provides further evidence that pharmacy services may be effective in facilitating smoking cessation. In their report on the outcomes achieved through the Starting Fresh service[11], the researchers found that pharmacy services produced CO-validated cessation rates of around 20% at 4 weeks, and the researchers indicate that these kinds of cessation rates are what might be expected of the relatively 'brief' interventions provided by pharmacists – which produce small numbers of quitters in the long term (Bauld et al. 2006). However, although long-term quit rates may be quite low, pharmacy based services could prove to be very cost effective. In Glasgow, for example, pharmacies have succeeded in providing a high volume of services (treating 13,000 smokers in 2004), reaching a far larger number of smokers than specialist services (Bauld et al. 2006). Moreover, pharmacies may be located in disadvantaged neighbourhoods and may be more accessible to local smokers than core services. Therefore, pharmacy-delivered interventions have the potential to reach and treat large numbers of smokers (Bauld et al. 2006).

No. 4

Strength and applicability of evidence

Evidence from a 1++ systematic review indicates that pharmacy-delivered interventions may have a positive effect on smoking cessation rates. This finding is confirmed in a recent 2++ study which reports that pharmacy-delivered interventions in Glasgow produce 4 week CO-validated quit rates of approximately 20%. The study also indicates that pharmacy-delivered interventions have the potential to reach and treat large numbers of smokers – especially those from disadvantaged areas.

As these studies took place within UK smoking cessation services, they are directly relevant to the target population.

4.2.2 How does the way that the intervention is carried out influence effectiveness?

Group vs. One-on-One Interventions

Although the Maudsley model is ideally implemented in groups[12], community advisors provide one-to-one treatment and many of the core services have increasingly moved towards this model of delivery. However, two recent studies indicate that group treatment for smoking cessation may be more effective than one-to-one treatment.

In their evaluation of the NHS smoking cessation services, Judge and co-workers (2005) (rating 2++) found that although the vast majority of users received one-to-one support, group counselling substantially improved (odds ratio 1.38) CO-validated quit rates. McEwen and co-workers (McEwen et al. 2006) (rating 2++) in their study of specialist group treatment for smoking cessation vs. one-to-one treatment in primary care, similarly found that the group treatment was more successful: 30% of clients receiving group and 19% of clients receiving one-to-one treatment were CO-validated as continuously abstinent at 4 weeks (odds ratio 2.27).

[11] Starting Fresh is a network of accredited community pharmacists across greater Glasgow who aim to offer an accessible, cost-effective cessation service by means of weekly behavioural support and access to NRT (Bauld et al. 2006).

[12] It is presently unclear whether Maudsley one-on-one interventions can claim the same evidence-base as the classical Maudsley model.

However, clients express a clear preference for one-to-one treatment (Bauld et al. 2005). Many clients are reluctant to discuss their smoking in a group setting and others find the flexibility provided by one-to-one treatment attractive (group sessions require a regular and ongoing commitment, given that they are held at the same time every week). Moreover, in some contexts (particularly rural areas), group treatment is simply unfeasible. Overall, given that one-to-one treatment is effective (if less effective than group treatment) and examples of high quality and innovative one-to-one services exist[13], it is a crucial component of the NHS stop smoking services, not least because it is important to offer smokers intending to quit a choice of treatment options.

No. 5

Strength and applicability of evidence

Two studies provide a body of 2++ evidence that group interventions may produce higher CO-validated quit rates at 4 weeks than one-on-one interventions. However, one-to-one interventions are also effective and many clients express a clear preference for one-to-one treatment. Moreover, in some contexts (particularly rural areas), group treatment is simply unfeasible. Therefore, one-to-one interventions are a crucial component of the NHS stop smoking services as smokers need to be given a choice of treatment options.

As both studies all took place within the English smoking cessation services, they are directly applicable to the target population.

Drop-in/rolling groups

Some stop smoking services have modified the Maudsley group model to include a 'drop in' element. This involves offering groups at specific times in specific locations each week and treating any smokers that turn up, irrespective of the stage they are at in their quit attempt. Smokers who have not yet set a quit date or have recently quit are therefore supported in the same group as those who are at a later stage in their quit attempt or have relapsed and are returning to the service.

This model is the main mode of delivery for the Fag Ends stop smoking service in Liverpool which is managed and delivered by a charity, the Roy Castle Lung Cancer Foundation. The service was in existence before the establishment of NHS cessation services and operated with a 'self-help' ethos. Two published studies of the service have been conducted. The first (Owens and Springett, 2006, quality rating 2-) describes the service and reports outcomes from local monitoring. They report that

[13] For example, Help2Quit (H2Q) in Shropshire. This service was established in 1995, aiming to make smoking cessation support a routine part of clinical practice. The service is delivered by health professionals based in primary care settings. Every GP in Shropshire participates in the service and H2Q also has specialist nurses working in hospitals. Although people can self refer to the service, in many cases GPs refer smokers to the H2Q nurse in the practice who provides both counselling and NRT over a three month period. More recently the service has developed a mobile clinic which visits workplaces and offers confidential weekly support (http://www.shropshire.gov.uk/help2quit.nsf). This service appears to have been particularly successful in addressing inequalities in health and is successful in reaching smokers from the most deprived areas, although their 4-week quit rate is lower than those from more affluent areas (Help2Quit 2005).

the majority of clients (74% in 2004-2005) self-refer to the service and that the reach of the service in the same year amounted to approximately 8% of smokers in Liverpool. CO-validated four week quit rates were between 34 and 45% between 2001 and 2005, rising to between 47 and 56% in the same period when self-report cases were included. These results are broadly comparable with national monitoring figures described earlier in this review. The second study (Springett et al, 2007, quality rating 2-) reports the findings of a process evaluation of the service employing qualitative methods. Interviews were conducted with a range of service staff and a sample of clients – including clients using the service for the first time and a group of those that had relapsed and returned to the service. The study found that the flexibility of the service was valued by both staff and clients and that support from other smokers at different stages in the quitting process was perceived as a positive element of the service. The authors argued that the model differs from the existing evidence base regarding 'what works' in smoking cessation but appeared to be effective and popular, including with more deprived smokers in disadvantaged areas of Liverpool.

No. 6

Strength and applicability of evidence

Two studies provide some limited (2-) evidence that drop in/rolling groups may be as effective as other models of smoking cessation in supporting smokers to quit. These studies also highlight that clients, including those in deprived areas, value the flexibility of a drop in service.

As both studies all took place within the English smoking cessation services, they are directly applicable to the target population.

Buddy Interventions

A number of NHS stop smoking services are experimenting with 'buddy' interventions, where individual smokers partner up with a 'buddy' who is given special responsibility in helping them to quit (May et al. 2006). However, their effectiveness seems to vary depending on the context of treatment. One study (West et al. 1998) (rating 1++) compared the effectiveness of 'solo' and 'buddy' conditions in a 4 week intervention which included weekly individual counselling and the offer of NRT at a general practice clinic. The researchers found that the odds of patients in the buddy condition remaining abstinent (based on CO validation) after 4 weeks were 2.6 times those of solo patients. The authors conclude that a buddy system can provide an effective element of a smoking cessation intervention at minimal cost. However, a recent study (May et al. 2006) (rating 1++) found that buddy interventions do not increase the effectiveness of group smoking cessation interventions. They found that although buddy systems provide a low cost addition to group treatment programmes they do not substantially add to CO-validated 4 week success rates.

No. 7

Strength and applicability of evidence

Evidence from one 1++ study suggests that buddy systems more than double the CO-validated 4 week effectiveness of one-to-one interventions; however, another 1++ study found that they do not substantially increase the effectiveness of group interventions for smoking cessation.

As both studies all took place within the English smoking cessation services, they are directly applicable to the target population.

4.2.3 Does the effectiveness depend on the job title/position of the deliverer (leader)? What are the significant features of an effective deliverer (leader)?

No studies were identified in the literature search that address whether the effectiveness of intensive smoking cessation interventions delivered in the NHS depends on the job title or position of the deliverer. However, anecdotal evidence indicates that the position of the deliverer does not generally influence the effectiveness of interventions (with the possible exception of interventions aimed at South Asians – see section 4.5) and that their level of training and interpersonal skills are far more significant.

In 2005 the Health Development Agency produced a document entitled *Skills and competencies framework for trainers of smoking cessation treatment* which outlined core skills and competencies. However, while this framework appears to have been implemented to varying degrees around the country, no UK-based studies were identified in the literature search that outlined findings on the significant features of an effective deliverer except in the context of interventions aimed at pregnant women – these will be discussed in section 4.6.

4.2.4 Does the site/setting of delivery of the intervention influence effectiveness?

All settings

Many PCTs run their specialist service in a wide range of settings aside from fixed clinics (e.g. intensive groups run in community centres, libraries, bingo halls, GP practices, etc) in order to be as accessible to the public as possible (Bauld et al. 2005). There are no available UK studies which explore whether these settings independently influence the effectiveness of the intervention being delivered. However, the results of Bauld and co-workers' (Bauld et al. 2006) evaluation of the stop smoking services in Glasgow do indicate that the setting might indirectly influence the effectiveness of the interventions delivered.

Bauld and co-workers (Bauld et al. 2006) (rating 2++) found that although the type of treatment provided to smokers in Glasgow by LHCCs (Local Health Care Co-operatives)[14] was broadly consistent from one LHCC to the next, the one element that differed significant was the location of treatment. They conclude that "the manner in which local groups are organised and possibly factors such as the quality of facilitation can affect outcomes, even when a similar model of service is being delivered" (Bauld et al. 2006). It is therefore possible that the location of treatment might affect the way in which smoking cessation coordinators organise the sessions and therefore indirectly influence the effectiveness of the interventions delivered. However, the evidence on this topic remains inconclusive.

[14] The Scottish equivalent to PCTs at the time of the study.

No. 8

Strength and applicability of evidence

Information on how the site/setting impacts on the effectiveness of smoking cessation interventions is limited. Evidence from a 2 (++) study indicates that the location of treatment may indirectly influence the effectiveness of smoking cessation interventions.

As this study took place within the UK smoking cessation services, it is directly applicable to the target population.

Secondary care inpatient settings

At present the stop smoking services have not focused on conducting intensive smoking cessation interventions amongst inpatients. As Bauld and Williams (Bauld & Williams 2006) note, "In many parts of the UK secondary care services have been slow to develop and the links between hospital and community provision have been limited…". However, this is a setting where intensive interventions might be practically and successfully implemented – especially once the NHS in England goes smoke free at the end of 2006 (Neubeck 2006) and there is presently a great deal of interest in developing inpatient interventions in hospitals within the NHS stop smoking services.[15]

Following an admission to hospital, individuals may be more open to help in quitting smoking – especially if they require treatment for a smoking-related illness. People may also find it easier to quit in an environment where smoking is prohibited or heavily restricted (Rigotti et al. 2002). Therefore, international evidence is provided on the effectiveness of smoking cessation interventions in inpatient settings.

One systematic review (Rigotti et al. 2002) (rating 1++) has found that intensive interventions (inpatient contact plus follow-up for at least one month) conducted by physicians in various international settings are associated with a significantly higher quit rate compared to controls (Peto Odds Ratio 1.82, 95% CI). One systematic review (Rice and Stead 2004) (rating 1++) of nurse delivered intensive interventions found some evidence (although limited) that hospital-delivered interventions are also associated with a modest positive increase in smoking cessation.

Table 4. Studies on inpatient smoking cessation interventions

Reference **Quality rating**	**Country**	**Nature of Intervention**	**Target**	**How intervention was delivered – and by who**	**What effect did the intervention have**	**When assessed & how**
Chouinard & Robichaud-Ekstrand 2005 1++	Canada	1) Inpatient counselling with telephone follow-up, 2) inpatient counselling, 3) usual care	Patients with CVD	Inpatient intervention consisted of a 1-hr counselling session delivered by a nurse. The telephone follow-up included 6 calls during the first two months after discharge	Those who received inpatient smoking cessation intervention were 1.56X more likely to be abstinent than those receiving usual care. Participants who received the intervention plus telephone follow up were 2.75X more likely	Six months following discharge from hospital – CO validation and/or urine sample

[15] One PCT that appears to have had recent success in implementing in-patient interventions in primary care settings is Bolton PCT. Intermediate interventions in this setting have produced 4 week quit rates of between 40-50% (Bickerstaffe 2006). See Appendix

					to be abstinent compared with usual care (41.5% vs. 20%).	
Nagle et al.2005 1++	Australia	Brief intervention incorporating: tailored information, assessment of withdrawal, offer of NRT, booklets & discharge letter.	N/A	Inpatient intervention consisted of the delivery of brief opportunistic advice by a nurse, placement of a smoking cessation manual at the nurses' station on each ward, inclusion of NRT in hospital pharmacy.	The intervention did not significantly increase smoking cessation rates compared with the control group.	Three and twelve month follow-up with CO and salivary cotinine validation.
Froelicher et al.2004 1++	USA	Behavioural intervention and post-discharge telephone follow up with offer of NRT	Female patients with CVD	Inpatient intervention consisted of brief physician counselling plus nurse managed, cognitive behavioural, relapse prevention intervention. 5 Structured telephone contacts 2-90 days after discharge and relapse management counselling as needed.	The intervention did not significantly increase smoking cessation rates compared with the control group.	Twelve month follow-up verified by cotinine validation.
Quist-Paulsen & Gallefos 2003 1++	Norway	Brief intervention where booklet was provided with telephone follow-up following discharge.	Patients with CHD	Nurse provided patient with 17 page booklet on effects of smoking and risk reduction for CHD patients following cessation. Patients were advised not to smoke during hospital stay & encouraged to use NRT. Nurses contacted participants via phone 2 days, one week, three weeks, three months, and five months after discharge.	The intervention increased smoking cessation rates in the long term (57% of patients in the intervention group and 37% in the control group had quit smoking). However, the study shows that smoking cessation programmes of short duration are ineffective in preventing relapse.	Twelve months following discharge from hospital. Urinary validation undertaken.
Hand et al.2002 1+	U.K.	Intervention where patients attended counselling sessions with smoking cessation counsellor and received NRT	N/A	Interventions were delivered by a smoking cessation counsellor who provided 4 weekly sessions. At 1 month patient was asked to attend the hospital, at 2, 5 & 9 months the patient was contacted by phone or letter to encourage and support. At 3, 6, and 12 months the patient was contacted and seen by the counsellor.	NRT did not add to the smoking cessation rate achieved at one year by regular advice and support despite significantly increasing the cessation rate at one week.	One, three, six and twelve month follow-up with CO validation.

More recent studies on inpatient interventions have produced mixed results (see table 4.2). One study (Nagle et al. 2005) (rating 1++) found that a brief nurse-led intervention for hospitalised patients did not significantly affect smoking cessation rates – results that were echoed in another study (rating 1++), which focused on an intervention for hospitalised women with cardiovascular disease (Froelicher et al. 2004). In contrast, a similar study (rating 1++) focusing on patients with cardiovascular disease recorded a significant intervention effect (Chouinard and Robichaud 2005) – although they only followed up patients for six months, whereas Froelicher et al. followed up patients for one year.[16]

It appears that telephone follow-up increases the success of interventions – a factor apparent in Chouinard and Robichaud-Ekstrand's study (Chouinard and Robichaud 2005). Nagle and co-workers did not conduct any telephone follow-up at all, which makes their results difficult to compare with the other studies (Nagle et al. 2005). Quist-Paulsen and Gallefos' study (rating 1++) shows that longer term telephone contact is more effective than short term follow-up and they emphasise that smoking cessation programmes of short duration are ineffective in preventing smoking relapse (Quist-Paulsen and Gallefoss 2003).

While less directly relevant, Hand and co-workers' (quality 1+) study has been included because it is the only one that takes place within a UK setting (Hand et al. 2002). The goal of the study was to determine whether NRT increases the effectiveness of inpatient smoking cessation interventions, but it provides an example of a particularly intensive intervention where contact was maintained with patients for an extended period following discharge. This study found that NRT did not increase the effectiveness of the smoking cessation intervention[17] and for both the intervention and control group the percentage of quitters at one year was approximately 14% – which is in line with the quit rates found at one year follow up for the smoking cessation services more generally (see section 4.1.2).

The systematic reviews and newer studies highlight that inpatient interventions appear to be more successful when they consist of three primary components:

1) in-patient advice and counselling
2) the provision of NRT
3) extended post discharge proactive telephone follow up support.

Wolfenden and co-workers recommend the following steps for in-patient cessation interventions (Wolfenden et al. 2003).

[16] Although the authors of the study do not disaggregate the results of their studies by sex, given the lower success rates reported in Froelicher and co-workers' study of female patients, this appears to be a significant oversight, as it is likely that male and female inpatients have different success rates.

[17] Hand and co-workers nevertheless point out that NRT may help smokers to achieve their first quit attempt and that it would be presumptive to conclude that NRT has no place in hospital patients with smoking-related diseases. The Cochrane review on the effectiveness of smoking cessation interventions for hospitalised patients found that although the contribution that NRT makes to the effect of hospital interventions is impossible to determine, the data does support the usefulness of NRT in appropriate patients during and following hospitalisation.

ADMISSION

1.In-patient Advice and Counselling

1.1 Assessment of Patient Smoking Behaviour (health professionals)
- Develop strategies to routinely assess and document patient smoking status
- Reported non smoking should be verified with a patient family member or friend, or using a bogus pipeline procedure if the patient has been admitted for a smoking related disease

→ **Non-smokers**

Smoker

Recently Quit

1.2 Advising patients to quit smoking (all health professionals)
- Provide strong, clear advice to quit
- Advise of hospital smoke free policy (if applicable)
- Review with patients the benefits of quitting and the adverse consequences of continuing to smoke
- Assess interest in quitting and nicotine dependence

1.5 Reducing relapse in patients who have recently quit
- Reinforce the patient's decision to quit
- Review the benefits of quitting
- Address patient difficulties with remaining abstinent
- Consider appropriate strategies in 1.4 if have very recently quit

1.3 Encouraging cessation for patients not interested in quitting (nursing staff)
- Provide a motivational intervention, promoting patient autonomy and supporting patient self efficacy
- Discuss the personal relevance of cessation and the risks of continued tobacco use
- Correct inaccurate beliefs and perceptions
- Identify strategies to overcome cessation barriers

1.4 Assisting patients interested in cessation
- Reinforce the patient's decision to quit
- Identify strategies to remain abstinent during 'high risk' situations during hospitalisation and after discharge
- Establish inpatient social support from hospital staff
- Encourage the patient to seek social support from family, friends and work colleagues
- Provide basic self help material

All smokers & ex-smokers

DISCHARGE

3. Post discharge follow up
- Contact patient via telephone during the first week after discharge and periodically (>4) over 3 months (nursing or clerical staff)
- During the telephone contact:
  - Emphasise the importance of cessation and communicate support for a quit attempt
  - Congratulate abstinent patients and discuss methods to avoid relapse
  - For patients who have relapsed, encourage another quit attempt, and identify strategies to avoid future relapse
  - Recommend pharmacotherapy for dependent patients
  - Monitor drug compliance, dosage and duration for patients using pharmacotherapy
  - Other details of community cessation services

Given the steady decrease in the length of hospital stays over the last decade, post-discharge follow-up appears to be crucial as most patients are in the hospital for less than one week. France and co-workers recommend that for planned hospitalisations like elective surgery, pre-hospitalisation interventions may be efficacious in improving cessation rates. They also advise employing a dedicated hospital smoking cessation counsellor who can provide the interventions and follow up support via phone (France et al. 2001).

No. 9

Strength and applicability of evidence

Two 1++ systematic reviews provide strong evidence that smoking cessation interventions amongst inpatients can be effective in creating modest to substantial increases in CO-validated smoking cessation rates up to 12 months in this population. Findings from four more recent 1++ studies and one 1+ study are mixed; however, on the whole they indicate that interventions with at least two months post-discharge telephone follow up are more likely to be successful than programmes of short duration.

The majority of the studies took place outside of the UK in a wide range of countries, including Australia, Canada, the USA and Norway. However, it is likely that their findings are applicable to the UK, given the broad similarities in these populations.

4.2.5 Does the intensity (or length or frequency) of the intervention influence its effectiveness or duration of effect?

Group sessions – which tend to be more intensive (i.e. of a longer duration) than one-on-one sessions – appear to have a higher success rate (see section 4.2.2) than one-to-one interventions, which provides indicative evidence that intensity is positively correlated with effectiveness. However, two studies on the effectiveness of one-to-one interventions delivered through the NHS report seemingly contradictory findings on this issue.

In their review of the NHS stop smoking services, Bauld and co-workers (rating 2++) found that CO-validated 4 week quit rates were enhanced by the number of individual sessions in a complete treatment course (Bauld et al. 2003). However, a recent RCT (Aveyard et al. in press) (rating 1++) on behavioural support for smoking cessation in the context of primary care has found that extra support is ineffective in this setting. Nevertheless, the authors stress that these results do not indicate that one brief visit following quit day should replace intensive group support interventions. Indeed, their findings indicate that the success of one-to-one interventions in primary care seems to be affected by whether clients feel externally motivated to maintain their quitting behaviour (e.g. through the existence of buddy support or a smoking-related health problem). They point out that it is possible that if primary care behavioural support is provided in a context where patients who fail will be held accountable in some way (e.g. they will be contacted or their fortunes have been linked with those of a 'buddy') then more intensive support may be more effective than minimal support. Although further research is needed in this area, it appears that intensity, in conjunction with other specific service characteristics, may influence the effectiveness of interventions.

No. 10

Strength and applicability of evidence

A 2++ study suggests that more intensive one-to-one interventions achieve higher CO-validated success rates at 4 weeks than less intensive interventions. However, a 1++ RCT in a primary care setting suggests that intensity alone does not increase the effectiveness of one-to-one interventions in this setting. The findings of this study suggest that more intensive one-to-one interventions may be more effective if they are accompanied by external motivations or pressures to quit (such as 'buddy' support or smoking-related health problems).

As these studies took place within the English smoking cessation services, their findings are directly applicable to the target population.

4.3 What external factors may have influenced the effectiveness of the NHS stop smoking services?

There are a number of external factors relating to the broader context in which the NHS stop smoking services were developed which appear to have undermined their ability to operate effectively. Although there is a growing body of information on external factors such as the setting of targets and the level of support that service providers have received to date, it is impossible to quantify how these factors have affected service delivery and efficacy.

4.3.1 How does the setting of targets affect service provision?

In line with the recommendations from *Smoking Kills*, since the inception of the services, the Department of Health has set a series of rolling three year targets for PCTs. Between 2003 and 2006 a target of 800,000 successful quitters passing through the services was set. According to Hayes, the overall quit target was allocated amongst PCTs according to population (Hayes 2005). Each PCT then decided whether to apportion their target equally over the three year period or apply their own weighted formula. However, the figures were cumulative: under-achievement in one year was added to the following year's target. Because targets were not determined according to local smoking prevalence rates but were apportioned on a 'per head' of population basis, they were in effect set without any regard for the different character and needs of the communities being served (Hayes 2005).

Despite the artificiality of the set targets, the introduction of the PCT annual performance star ratings in 2001 led to a great deal of pressure on the stop smoking services to reach these targets, as PCT star ratings were partly determined on the basis of successful 4 week quit rates. Hayes points out that while there was considerable advantage to being part of the star rating, which encouraged senior management to prioritise the services and ensured adequate funding, it has also caused problems. According to Willis and co-workers (Willis et al. 2006), "this pressure has resulted in significant differences in clinical practice, reporting processes and adherence to the evidence base for smoking cessation across the service network. These differences have made it increasingly difficult to compare service results across the national network, evaluate clinical efficacy and demonstrate value for money."

There are concerns that different outcomes are actually being compared on a 'like for like' basis (Hayes 2005; Moore et al. 2003). As Hayes points out, successful quits are defined as those who 'quit smoking at the 4 week follow-up if s/he has not smoked at all since two weeks after the quit date'. Moreover, in a number of cases these are self-assessments which can be reported by telephone rather than in person, as CO validation is recommended by the Department of Health, but is not compulsory.[18]

It also appears that target setting has impeded the ability of the services to focus on the priority groups they are supposed to be targeting. From the beginning of the service, an inherent tension has existed between the need to meet throughput targets while also attracting priority groups to use services (Pound et al. 2005). To date, the efforts of stop smoking services have been focused almost exclusively on meeting the overall target numbers rather than attracting priority groups (West et al. 2003b). Thus, the setting of targets limits the level of effective service delivery that can be provided to priority groups who require more follow-up and more intensive treatment, because the targets are primarily concerned with the quantity of people accessing the services and setting quit dates, not long term cessation (Killoran et al. 2006; Wanless 2004). According to the Wanless Report "…targets may skew local priorities, such as four-week smoking cessation targets, and may not lead to equity between different groups in society, when variations in health by geographical region, age, sex, socio-economic, or ethnic groups are not considered. Most importantly targets may be set at unattainable levels, and they can lead to inefficient use of resources when other important objectives are not explicitly targeted"[19] (Wanless 2004).

No. 11

Background Evidence

Although target setting encouraged senior management to prioritise the services and ensured adequate funding in the early phase of service delivery, the pressure to meet targets has resulted in significant differences in reporting processes and there are concerns that different outcomes are actually being compared on a 'like for like' basis. It also appears that target setting has impeded the ability of the services to focus on the priority groups they are supposed to be targeting.

4.3.2 Has guidance to service providers been adequate to date?

National guidance on smoking cessation was published in 1998 (Raw et al. 1998) and updated in 2000 (West et al. 2000). Subsequent recommendations on how to meet Department of Health targets was also provided to both service providers (West et al. 2003a) and PCTs (West et al. 2003b). According to Bauld and co-workers, the smoking cessation services developed in line with the evidence base and government guidelines and it appears that guidance to service providers was adequate in the initial phase of service delivery (Bauld et al. 2005).

[18] It is partly for this reason that the DH statistical bulletins have received a 2- rating.

[19] The focus on target setting in the smoking cessation services appears to have meant that more emphasis has been placed on this area than the other equally important components of tobacco control policy. As it has been recognised (Wanless 2004) that smoking cessation services alone are unlikely to lead to a reduction in smoking prevalence, this is a potentially significant problem.

No. 12

Background Evidence

The smoking cessation services developed in line with the evidence base and government guidelines and it appears that guidance to service providers was adequate in the initial phase of service delivery.

4.3.3 What guidance or support would service providers most like to receive?
Although guidance has been broadly adequate to date, it appears that service providers are interested in more up-to-date guidance and national guidelines. Since the initial service evaluations were conducted structural changes within the NHS and important policy developments such as the pending smoke-free legislation in England have meant that services are facing new challenges. According to a recent survey of eighteen smoking cessation coordinators in the West Midlands (Johnson and Croghan 2005), 31% indicated that more good practice sharing amongst the local stop smoking services was important, 26% indicated that they wanted (updated) national guidance on best practice, 21% indicated that they wanted (updated) national guidelines and 21% thought that 52 week quit data would be useful. Clearly, many of the smoking cessation coordinators feel that existing guidance does not adequately reflect the changed circumstances in which the services are now operating.

One of the key changes that has occurred since the services were first set up is the breakdown of the distinction between core and intermediate services. However, while smoking cessation has been increasingly delivered in the context of primary care, there has been little standardisation of primary health care service delivery. There are two areas that smoking cessation advisors have highlighted as problematic: training and payment models.

Overall, the quality of training that community advisors receive is mixed (HDA 2003). For example, training programmes for pharmacists are fragmented and there is considerable variation in the amount and type of training they receive (NICE 2005). In their evaluation of the Starting Fresh programme in Glasgow, the research team found that the level and consistency of training provided to pharmacists varied significantly from pharmacy to pharmacy (Bauld et al. 2006). In some pharmacies all staff had undergone training, whereas in others only a minority of staff had been trained or were waiting to attend training. Furthermore, some pharmacists were trained during pharmacy visits by Nicorette representatives, as opposed to attending Health Board training sessions or completing an approved distance learning programme. Often the training was “cascaded”, with trained staff giving guidance to colleagues who had not attended formal training (with significant differences in the level of input provided to ‘informally’ trained staff). Finally, the intensity of the intervention provided often varied dramatically from pharmacy to pharmacy – in some cases as little as 30 seconds of counselling might be provided, or five minutes or more in others.

Second, different payment models are being used for pharmacy advisors (and GP practices) from one PCT to the next, with significant variation in the level of service pharmacies are expected to provide. For example, in some PCTs, pharmacies contracted to provide the service receive 20 pounds for each patient who enters the pharmacy smoking cessation programme and an additional 20 pounds for each patient who quits smoking for at least 4 weeks following the smoking cessation programme. Furthermore, a fee of 10 pounds is paid for self motivated quitters who quit for at least 4 weeks (Cornish 2006). Alternatively, in Glasgow under the Starting

Fresh scheme a more rigorous (and less financially lucrative) payment model exists as all participating pharmacies receive 30 pounds per client for full completion of the 12 week programme (Bauld et al. 2006).

The lack of standardisation in training and payment models further exacerbates the problems with attempting to ascertain reliable estimates on the effectiveness of the stop smoking services. First, the interventions provided through the intermediate services are being treated as comparable with the interventions provided through the core services. Second, variations in payment models affect the willingness of pharmacies and GP to participate in service delivery. Third, although financial incentives are necessary to ensure that pharmacies and GP practices collaborate with stop smoking service providers, without compulsory CO validation such incentives seem likely to discourage these providers from undertaking thorough follow up. Thus, many smoking cessation coordinators have indicated that national guidance in these areas is crucial to standardising and improving the quality of the services.

No. 13

Background Evidence

Although guidance has been broadly adequate to date, structural changes within the NHS and important policy developments have created the need for further guidance. A standardised model of payment and training for primary care providers have been highlighted as particularly important.

4.4. How does the effectiveness of stop smoking interventions vary with factors such as age, sex, level of addiction, previous quit attempts and history of quitting?

No studies were identified in the literature search that explored the effectiveness of stop smoking interventions for males and for females in relation to age, level of addiction, previous quit attempts and history of quitting.[20] However, studies addressing a number of these individual factors were available.

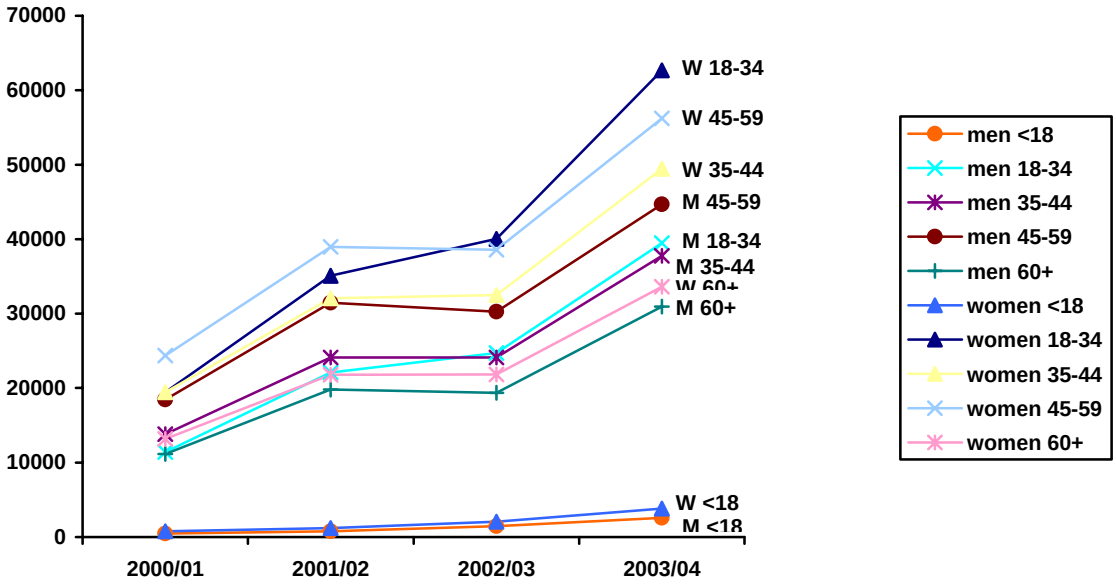
4.4.1. Effectiveness of stop smoking interventions (by sex and age)

Setting a quit date

One Department of Health Statistical Bulletin (DH 2004) (rating 3-) examines the relationship between sex and age in the numbers of males and females setting quit dates across time. Its findings are represented pictorially in figure 4.

[20] Although most studies explore the effectiveness of stop smoking interventions based on variables such as sex and age, invariably when factors such as level of addictedness and previous quit attempts are explored, the data are not sex-disaggregated. Given that there are likely to be important sex and gender differences between males and females in the intersections between level of addictedness, previous quit attempts and quitting success, this seems a significant oversight. Indeed, a failure to disaggregate quit rates by sex is apparent in a number of the studies discussed in this review.

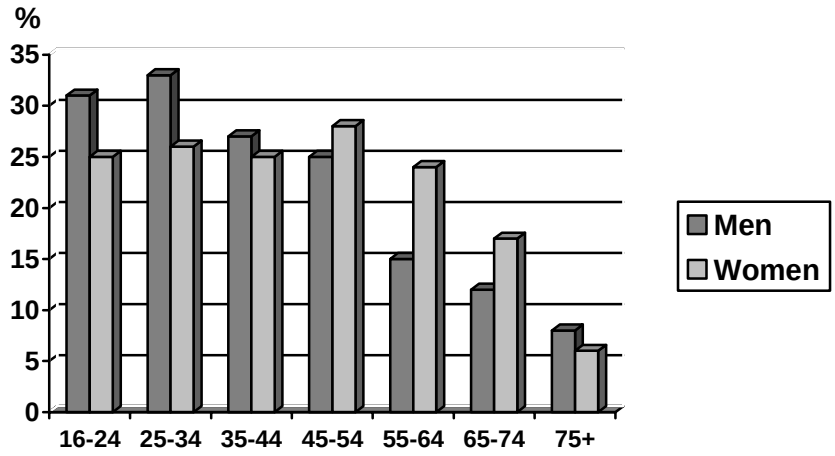
Figure 4. Number setting quit dates, by sex and age, 2000-2004



According to the DH bulletin, over the life of the NHS Stop Smoking Services there has been a substantial increase in the number of males and females over 18 setting quit dates; however, females consistently set more quit dates than males. The most common age group to set quit dates is women between 18-34 followed by women between 45-49 and women between 35 and 44. The males who most commonly set quit dates are those who are middle aged, between 45-49, followed by much younger men between 18 and 34. The proportion of females and males under the ages of 18 setting quit dates is extremely low – and very similar.

However, smoking prevalence for males and females varies significantly depending on age. According to the *Smoking Related Behaviour and Attitudes, 2004* survey (Lader and Goddard 2005), smoking prevalence for males is inversely correlated with age. Thus, males between the ages of 18-34 have the highest smoking prevalence (between 31-33%) and men over 64 have a smoking prevalence of between 8-15% (see figure 5). The pattern is more complicated for females, and the highest smoking prevalence in women is seen in 45-54 year olds (28%), although women between the ages of 16 and 44 have a smoking prevalence between 25-26%. As figure 4 shows, while males under 35 have a significantly higher smoking prevalence than females under 35, women over 45 have a much higher smoking prevalence than men of the same age.

Figure 5. Prevalence of cigarette smoking in the UK, by sex and age, 2004



(Reproduced from Lader & Goddard 2005)

It is difficult to ascertain which male and female age-sets are under-accessing services based on these figures, as the prevalence data represents a proportion of the total population and the DH statistics do not reflect a *rate* of setting quit dates but rather raw numbers without context. However, based on these figures it seems likely that males and females under 18 are under-accessing the stop smoking services, as they have a high smoking prevalence but access the services in extremely low numbers.

No. 14

Strength and applicability of evidence

One 3- bulletin demonstrates that age and sex are both correlated with setting a quit date. Females are more likely to set quit dates than males and smokers under the age of 18 are far less likely to set quit dates than other age groups, although smoking prevalence in this age set is high.

As this study took place within the English smoking cessation services, it is directly applicable to the target population.

Quitting success

There is a clear relationship between quit status at 4 weeks and age, as younger smokers are less likely to quit. However, younger smokers tend to be lost to follow up at much higher rates than older smokers, which makes it difficult to accurately estimate quitting success (Baker et al. 2006).

According to the DH statistical bulletin (2004) (rating 3-), which also evaluates male and female quitting success in the services between 2001-2004, men appear to be slightly more successful at quitting (2% more successful) at 4 weeks, based on self-report, than women overall. Judge and co-workers (rating 2++), in their evaluation of the services, similarly found that female smokers were more likely to access treatment services but men were more likely to be CO-validated as successful

quitters at 4 weeks[21] (Judge et al. 2005). This finding was echoed in Bauld and co-workers' (rating 2++) evaluation of the stop smoking services in Glasgow where they found that women were less likely to be CO-validated as successful quitters at 4 weeks than men (41% vs. 53%) although they constituted over two thirds of the clients accessing the services[22] (Bauld et al. 2006). Watt and co-workers (rating 2-), in their 52 week follow-up of clients accessing the stop smoking services in Cornwall and the Isles of Scilly, also found evidence of a higher self-reported success rate amongst male quitters than female quitters: 31.8% and 15.1%, respectively (Watt et al. 2005).

These studies support international research findings that while women are highly motivated to quit smoking, men tend to be more successful at doing so (Bjornson and Rand 1995). There are several factors that seem to explain the lower success rates of women such as lower levels of confidence in relation to quitting and differences in the meaning and role of tobacco in men and women's lives (Judge et al. 2005; Graham 1994; Jacobsen 1981; Jacobsen 1986; Greaves 1996). For example, significantly more women cited stress and habit than men, who were more likely to cite enjoyment (Lader and Goddard 2005; Watt et al. 2005).

No. 15

Strength and applicability of evidence

Two 2++ studies, one 2- study and one 3- study demonstrate that age and sex are both correlated with quitting success. Although females are more likely to set quit dates than males, they are less likely to be CO-validated as successful quitters at 4 weeks. Older smokers are more likely to quit successfully than younger smokers – although the high rates of loss to follow up among young smokers make it difficult to draw definitive conclusions on the relationship between age and quitting success.

As these studies took place within the UK smoking cessation services, they are directly applicable to the target population.

4.4.2 Effectiveness of stop smoking interventions (based on level of addiction and previous quit attempts)

Although information on a person's level of addiction and history of quit attempts is not currently part of the minimum data set[23] required by the Department of Health, two studies provide insights into the ways these factors influence the effectiveness of smoking cessation interventions delivered through the stop smoking services. Judge et al. (rating 2++) found that level of dependency and smoking behaviour influence quitting success (Judge et al. 2005). More heavily dependent smokers (those who smoke within five minutes of waking) were less likely to be successful in their quit attempt. They also found a negative association between previous quit attempts and successful CO-validated cessation at 4 weeks.

These findings are partly echoed in an evaluation of the Glasgow Stop Smoking Services (Bauld et al. 2006) (rating 2++) which found that smoking history and behaviour affect quit rates, with those smoking fewer than 10 cigarettes per day much more likely to be CO-validated quitters (61%) than those smoking 31 or more

[21] A multivariate approach to the relationship between each dependent variable and case characteristics was adopted in this study to account for potential confounders.
[22] A multivariate approach to the relationship between each dependent variable and case characteristics was also adopted in this study to account for potential confounders.
[23] Some stop smoking services do appear to be collecting information on this.

(44%). Moreover, those who began smoking within five minutes of waking were also more likely to fail in their quit attempt than those who begin smoking later in the day. However, they found that having made at least one quit attempt in the previous year was positively associated with a successful quit attempt.

No. 16

Strength and applicability of evidence

Two 2++ studies demonstrate that level of addiction is inversely correlated with quitting success. Findings in relation to the connection between previous quit attempts and quitting success are less clear. One study reports a positive correlation between the two and another study reports a negative correlation between the two.

As these studies were conducted on the smoking cessation services in the UK, their results are directly applicable to the population under study.

4.5. How does the effectiveness of stop smoking interventions vary with factors such as ethnicity?

The evidence on the effectiveness of stop smoking interventions for minority ethnic groups is inconclusive. Although a body of indicative information about the smoking patterns of black and minority ethnic groups (BMEG) exists, there is little definitive evidence on how effective the stop smoking services are for ethnic minorities.

4.5.1 How readily are members of BMEG accessing smoking cessation services?

According to the Department of Health Statistical Bulletins (DH 2005; DH 2004; DH 2003; DH 2002; DH 2001a) (rating 3-[24]), it is clear that the number of people from BMEG setting quit dates has increased dramatically since the inception of the services in 1999 (see table 5).

[24] There are numerous difficulties with attempting to determine how effectively the NHS stop smoking services are reaching black and minority ethnic groups (BMEG). First, there are large gaps in the ethnicity data provided by the NHS stop smoking services. In virtually all of the annual statistics collected, the instances where ethnicity is not known equals or exceeds the cases where BMEG status was recorded (see table 5). Moreover, there are also problems with the broader statistics on smoking rates for BMEG (Aspinall and Jacobson 2004; Bhopal et al. 2004), with marked inconsistencies across various surveys regarding the smoking status of ethnic minorities. These inconsistencies make it difficult to estimate with any certainty the actual smoking rate of BMEG (Aspinall and Jacobson 2004). There is also evidence that smoking prevalence amongst BMEG is underreported, particularly among women further emphasizing the need for reporting of sex-disaggregated statistics.

Table 5. People setting a quit date, by ethnic group
England, 2000/01 to 2004/05

Numbers/percentages

	2000/01		2001/02		2002/03		2003/04		2004/05	
	Number	%	Number	%	Number	%	Number	%	Number	%
Persons										
Total	132,544	100	227,335	100	234,858	100	361,224	100	529,567	100
White	121,752	92	214,059	94	221,234	94	330,505	91	473,082	89
Mixed	875	1	1,354	1	1,501	1	2,656	1	4,548	1
Asian	1,527	1	3,002	1	3,415	1	5,911	2	9,905	2
Black	1,072	1	1,948	1	2,102	1	3,766	1	6,385	1
Other	612	0	1,062	0	1,234	1	2,563	1	3,174	1
Unknown	3,966	5	3,403	3	3,076	2	8,543	4	18,389	6

Given that approximately 88% of England's total population is described as 'white'[25], it appears that the services have been generally effective in reaching BMEG. However, the large proportion of cases in which ethnic status was not recorded and the fact that smoking rates amongst ethnic minorities vary dramatically, make it difficult to draw definitive conclusions about this issue.

There is some indicative evidence that there may be a lack of awareness of the health effects of smoking in BMEG (HDA 2000; Williams et al. 2001) as well as a lack of knowledge about the range of available smoking cessation methods and services (Williams et al. 2001; Sehmi 2005; Ashgar 2001), which would seem to support the position that ethnic minorities are *less* likely to access the services than the white population. This may be partly explained by a common perception amongst BMEG that smoking aids are futile and will power is the main determinant of successfully quitting (HDA 2000). South Asian participants, in particular, did not readily acknowledge the addictive quality of nicotine, preferring to see themselves as light smokers who could give up any time (HDA 2000). One of the Bangladeshi participants in Croucher's (2003) study reports, "I do not think it (NRT) will work for me... Its [sic] in my mind not in that patch. I would not spend money on something which does not guarantee me success".

No. 17

Strength and applicability of evidence

The evidence on how readily black and minority ethnic groups are accessing the stop smoking services is inconclusive. Five 2- studies appear to demonstrate that black and minority groups on the whole are accessing stop smoking services in proportion with their representation within the total population; however, a high level of missing data undermines the conclusiveness of the available statistics. Moreover, indicative evidence raises some doubts about how readily BMEG are accessing NHS stop smoking services.

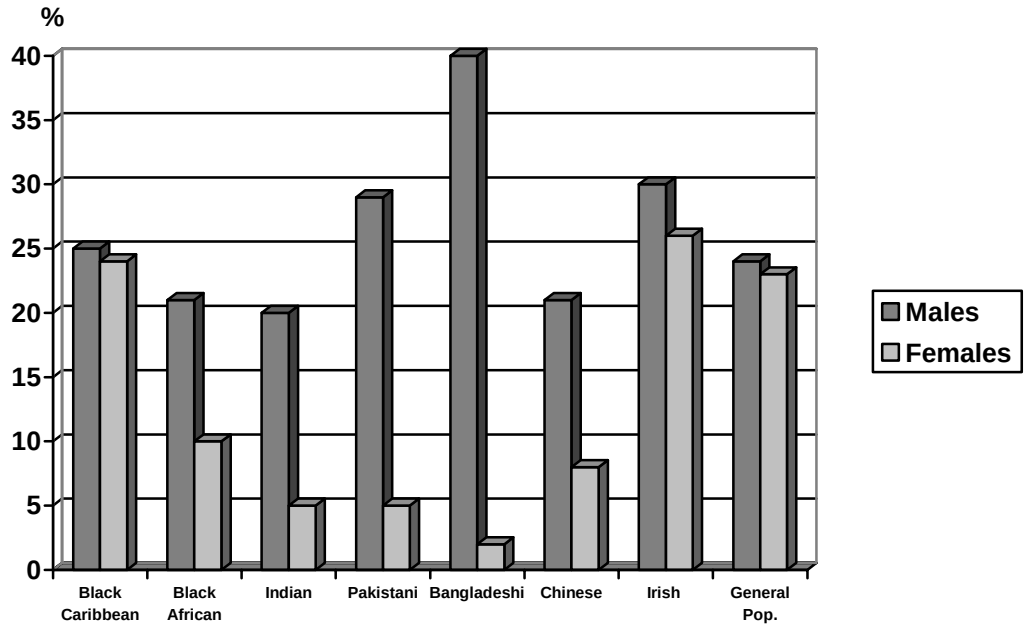
As these studies were conducted on the smoking cessation services in the UK, their results are directly applicable to the population under study.

[25]According to 2001 census figures, the white population of England (including Irish-born) was 88.2%.

4.5.2 How does ethnicity intersect with factors such as gender and class in relation to smoking and quit status?

Unlike smoking rates in the white population in England, which currently do not vary substantially by sex, the smoking rates of men and women from the same minority ethnic group tend to differ – often substantially (see figure 6). The greatest difference is seen in the self-reported smoking rates of Bangladeshi men and women (40% and 2%, respectively).

Figure 6. Current cigarette smokers, by ethnic group



(Reproduced from Health Survey for England 2004).

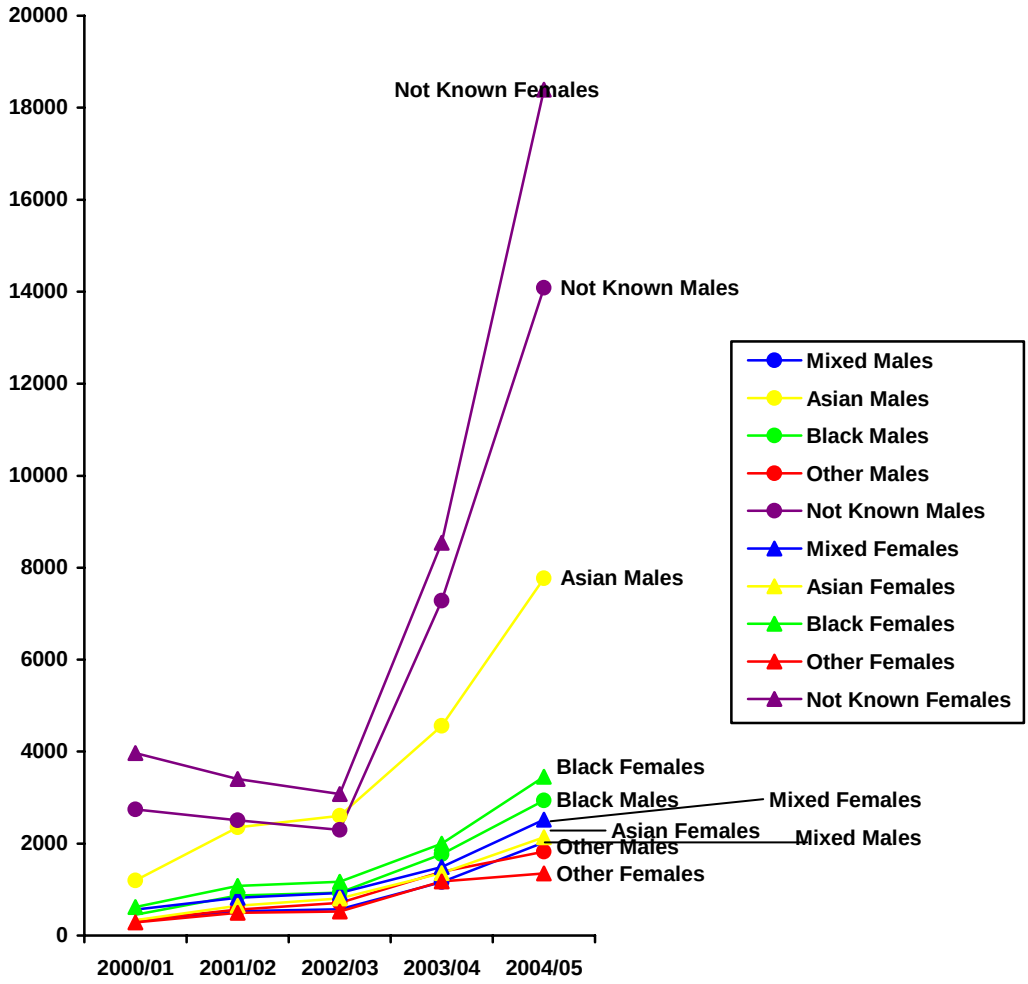
However, in all BMEG there is a gap between male and female smoking rates which appears to be largely attributable to cultural attitudes surrounding gender and smoking – this is particularly true for South Asian communities where the gap in male and female smoking prevalence is greatest.

According to Bush and co-workers' qualitative study of attitudes towards smoking in the Pakistani and Bangladeshi communities, smoking in men is socially acceptable and associated with social bonding, tradition, and normative masculinity itself (Bush et al. 2003). In contrast, smoking amongst women is stigmatised and regarded as taboo (Bush et al. 2003; Ashgar 2001). It is regarded as a sign of disreputability and may also be associated with prostitution and 'loose' behaviour (HDA 2000). However, it is worth noting that although the rates of smoking amongst BME females are low, the stigma surrounding smoking may also mean that it is underreported (Aspinall and Jacobson 2004). Indeed, the prevalence of smoking in young BME women appears to be increasing – a trend that may be partly explained by westernisation and a desire to rebel against family and community constraints (Bush et al. 2003; Ashgar 2001). This view is supported by the fact that women who migrate to the UK have significantly lower odds of smoking cigarettes than those born in the country – a difference not found for men (Cooper et al. 2000).

Given that the self-reported smoking rates of BME females are uniformly lower than the rates of their male counterparts (see figure 7) it is therefore interesting that in virtually every ethnic group (except Asians) more females are setting quit dates than males. Indeed, taking into account the broad smoking prevalence rates in each

ethnic group by sex[26], the number of ethnic minority women setting quit dates far outweighs the number of males. For example, although approximately only 2-8% of South Asian women smoke, according to the Department of Health statistical bulletins (DH 2005; DH 2004; DH 2003; DH 2002; DH 2001a) (rating 3-) each year they have represented at least 22% of the Asians accessing the service, indicating that they are proportionally accessing the service far more commonly than Asian men (see figure 7).[27] This pattern echoes the pattern for white females, who seem to be more highly motivated to quit smoking than men (see section 4.4). Unfortunately, quitting success rates at 4 weeks are not disaggregated on the basis of ethnicity and so it is impossible to ascertain whether ethnic minority females have similar rates of success to males.

Figure 7. People setting a quit date, by minority ethnic group and sex between 2000-2005



[26] Based on the 2004 Health Survey for England figures

[27] However, the ethnic group with the largest proportional increase in setting quit dates is Asian males. Since 2000 there has been a 6.5 fold increase in the number of Asian males setting quit dates through the NHS service.

However, it is worth pointing out that while smoking rates amongst minority ethnic women (especially Asian females) are reported to be low, rates of actual tobacco use may be higher. For example, amongst some South Asian communities women regularly chew tobacco – most commonly in the form of paan. Paan chewing is particularly prominent in the Bangladeshi community and is clearly a behaviour associated with women[28] (19% of Bangladeshi men and 26% of women report chewing compared with between 2% and 6% of Indian and Pakistani men and women). Interestingly, although smoking is seen as culturally unacceptable for women, chewing may be viewed in a quite positive light – because of the way it seems to uphold a distinct ethnic identity. For example, according to one study (HDA 2000) family members may be proud of female family members who chew paan. Moreover, people are not generally aware of the health risks of chewing; rather, the value of chewing as a cultural tradition appears to overshadow any potential concerns regarding its health risks (HDA 2000).

No. 18

Background Evidence

There is no direct evidence on how minority ethnic status intersects with gender in relation to smoking and quit status in the context of interventions delivered through the stop smoking services. Background evidence indicates that females from BMEG appear to be less likely (significantly less likely in South Asian communities) to smoke than males. However, given the stigma that attaches to female smoking in many minority ethnic groups (especially South Asians), it is probable that smoking rates amongst minority ethnic females are underreported. Amongst Bangladeshi women in particular, although self-reported smoking prevalence is low, use of tobacco itself is very high (over 25%).

Although cigarette smoking in general tends to be correlated with socioeconomic disadvantage, smoking amongst minority ethnic groups is generally reported to be lower than the national average, especially for women (Cooper et al. 2000). However, amongst certain ethnic groups – notably Bangladeshi males – the smoking rate is reported to be considerably higher than the national average. Indeed, it appears that the very high reported smoking rates amongst Bangladeshi men can be largely explained by their levels of socioeconomic disadvantage relative to other South Asian Britons as there is a consistently high correlation between cigarette smoking and material deprivation for Bangladeshi adults aged sixteen and over[29] (Cooper et al. 2000; HDA 2000). In addition, Bush and co-workers found few differences in beliefs or attitudes between Bangladeshis and Pakistanis that might explain the significantly higher Bangladeshi level of smoking (Bush et al. 2003) – which also supports the position that this difference stems from socio-economic factors rather than cultural influences per se. Therefore as the Health Development Agency (HDA 2000) has cautioned, it is dangerous to assume that the distinct smoking patterns in various BME males can be explained only in terms of cultural and religious factors.

[28] Chewing tobacco is associated with age and class as well as gender. According to Boreham (2000), amongst Bangladeshis, chewing prevalence increased with age and was higher in manual than in non-manual households (men: manual 22%, non-manual 12%; women: manual 26%, non-manual 17%).

[29] However, this correlation between smoking status and social class is only evident amongst the Bangladeshi community. There is no clear association between social class or household income and cigarette smoking for Indian, Pakistani or Chinese men. Moreover, among South Asian women, the social class gradient is in the opposite direction, as cigarette smoking is more prevalent amongst non-manual women (Boreham 2000).

Unlike the Indian and Pakistani communities, which have a long history of migration to the United Kingdom, the Bangladeshi community has been established more recently; and employment opportunities for Bangladeshi men tend to be concentrated in manual occupations that entail long working hours in unregulated environments (Bush et al. 2003). This factor may have an important role to play in the high smoking rates of Bangladeshi men. According to one study conducted by the HDA (2000), "A number of participants, particularly Bangladeshi men, saw smoking as a stress reliever. A large number of the Bangladeshi men worked in manual jobs and saw smoking as a distraction from the boredom and stress of their work". Findings from focus groups conducted with BMEG (Croucher 2003) support this. The Bangladeshi males who took part in the focus groups were predominantly manual labourers (most were restaurant workers) or unemployed. According to one male "English jobs or other jobs you can't smoke and work. See the white men, they go tie and suit, blue collar job and everything, they will have no smoking environment". Another participant noted, "Our people they work in restaurants and factories, it's like a little club in there innit, you go in to smoke... I think I managed to give up... Then I came back to it, 'cause I was working in Bengali working environment" (Croucher 2003).

No. 19

Background Evidence

There is no direct evidence on how minority ethnic status intersects with social class in relation to smoking and quit status in the context of interventions delivered through the stop smoking services. Overall, background evidence indicates that for the most part BMEG smoking does not appear to be connected with social class, expect in relation to Bangladeshi males – whose high smoking rates may be partly accounted for by the relative levels of social disadvantage in this ethnic group.

4.5.3 How successful are members of BMEG in quitting smoking?

At present there is a significant gap in our knowledge about the effectiveness of either individual or societal level smoking cessation interventions among racial and ethnic minorities (Lawrence et al. 2003). The evidence regarding the quitting success of BMEG is inconclusive and more research needs to be conducted to investigate the effectiveness of targeted versus generic interventions for different racial and ethnic minority populations (Lawrence et al. 2003).

Unfortunately, the DH statistical bulletins do not disaggregate 4 week quit rates by ethnicity and it is therefore impossible to determine with any certainty how successful people from BMEG are in actually quitting smoking. An equity profile conducted by the Northeast Public Health Observatory (NEPHO 2005) (rating 2+) found that CO-validated quit outcome at 4 weeks did not vary with the broad ethnic categories of 'white' and 'non-white'. However, they qualify this conclusion by stating that because the numbers of people setting quit dates from BMEG were small, interpretation of the data was difficult.

It is clear that stopping smoking appears to be a more recent phenomenon in minority ethnic groups than in the wider population (Brown 2004). Aside from Chinese men, all other men from minority ethnic groups are less likely than men in the general population to have stopped smoking. Moreover, Pakistani and Bangladeshi men are the least likely to have stopped smoking, and only

approximately one in five men who have ever smoked regularly have given up (Boreham 2000; HDA 2000).

No. 20

Strength and applicability of evidence

The evidence on how successful black and minority ethnic groups are in quitting smoking through the stop smoking services is inconclusive. One 2+ study found that CO-validated quitting success at 4 weeks did not vary by ethnicity. However, because of the small numbers of people from BMEG in the study, interpretation of their results is difficult.

As this study was conducted on the smoking cessation services in the UK, its results are directly applicable to the population under study.

4.5.4 How culturally appropriate are the NHS services?

The NHS services run a non-English language quitline that caters specifically to the South Asian community. There are also various projects that have been set up within a number of PCTs catering to communities containing a large proportion of ethnic minorities, as well as community based programmes and campaigns (e.g., the Pan London Ramadan campaign). However, it is fair to say that there are relatively few programmes overall that cater to ethnic minorities – in most cases people from these groups are incorporated into the broader NHS stop smoking services available. As D. Lawrence et al. (2003) in their study of smoking cessation interviews for minority populations in the United States note, although behavioural and pharmacological interventions have been successful in reducing smoking at an individual level, they have focused largely on majority populations.

Moreover, there is some evidence from Scotland that service providers often feel ill equipped to deal with ethnic minority smokers and unable to provide the necessary information and support in a culturally appropriate fashion (Ashgar 2001). The respondents in this particular study emphasised a need for specifically designed material that takes into account the cultural aspects of smoking amongst BMEG (Ashgar 2001). It is also clear that a number of ethnic minorities incur language difficulties when using health services (HDA 2000) and information and support also need to be linguistically appropriate.

Some studies have indicated that for certain ethnic minorities – particularly Bangladeshi and Pakistani smokers – advice from a doctor may be more effective than interventions by other service providers (HEA 1999). However, it appears that the ethnicity of the doctor is crucial, especially for members of the Indian community (HDA 2000).

Overall, available evidence indicates that programmes tailored to ethnic minorities can reach success levels well beyond the average, for both men and women. For example, in one programme run by Tower Hamlets (see table 7) specifically aimed at the Bangladeshi community, success rates for the last three years have ranged between 63-68% - well above the national average (Begum 2006).[30]

[30] However, it is interesting to note that Bangladeshi women in the Hamlet Towers project have been less successful in quitting smoking than men – despite their extremely high level of representation overall. Once again, this echoes broader findings within the literature that while women are highly motivated to quit smoking, they tend to be less successful in quitting than men.

Table 7. Tower Hamlets Bangladeshi Stop Tobacco Project 4 week C0 validated quit rates, by gender

	2003/04			2004/05			2005/06		
Females	120	79	66%	118	68	58%	177	110	62%
Males	190	133	70%	175	118	67%	187	129	69%
Total	310	212	68%	293	186	63%	364	239	66%

No. 21

Background Evidence

There is no direct evidence on how culturally appropriate the NHS stop smoking services are, although it seems to be the case that there are relatively few programmes overall that cater to ethnic minorities – in most cases people from these groups are incorporated into the broader NHS. However, it appears that smoking cessation interventions tailored for ethnic minorities can achieve high levels of success.

4.6 How effective have the NHS stop smoking services been in reaching pregnant smokers?

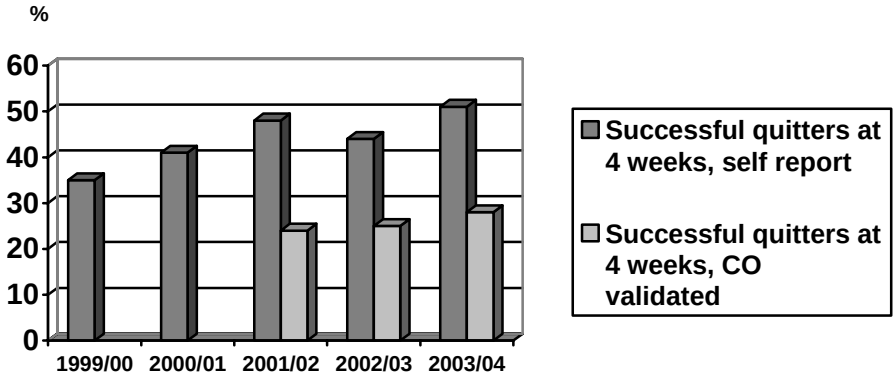
4.6.1 How successful are pregnant women in quitting smoking?

Five annual statistical bulletins (DH 2004; DH 2003; DH 2002; DH 2001a; DH 2001b) (rating 3-) have been published by the Department of Health that evaluate how successful pregnant women have been in quitting smoking through the services. The findings of these statistical bulletins are graphically represented in figure 8. According to the DH statistical bulletins, it appears that the percentage of pregnant women who self-reported as successful quitters at 4 weeks between 1999 and 2004 was between 35-51% (see figure 8). This is significantly lower than the self-reported quit rate at 4 weeks for England as a whole during the same period[31] (see section 4.1). Moreover, the percentage confirmed by CO validation is much smaller[32] – between 24 and 28%. Given that it has been established that self report is not a reliable way of ascertaining current smoking status – especially where pregnant women are concerned (see 4.6.2) – it is likely that overall quit rates at 4 weeks are reasonably low.

[31] Although the proportion of pregnant women who successfully quit smoking at 4 weeks is lower than average, there is evidence that many of these 'failed quitters' do cut down on the amount that they smoke even though they do not necessarily give up altogether. This would indicate that although the effectiveness of interventions for pregnant women may be limited in terms of their ability to facilitate smoking cessation, they may, in conjunction with wider social pressures, encourage smoking reduction. Although there is currently no established position on whether smoking reduction in pregnancy reduces the risks to the foetus (Lumley et al. 2004), there is review evidence that limiting or interrupting exposure to smoking and nicotine (especially when considering heavy smokers) has the potential to reduce harm to *both* the woman and the foetus (Greaves et al. 2003). It is therefore probable that despite the low rates of cessation amongst pregnant smokers, their involvement in the NHS stop smoking services has some positive health benefits. Indeed, a more accurate way of measuring the success of interventions might be to measure the level of CO in the system, rather than merely its presence or absence.

[32] A number of the pregnant quitters were not CO validated, so this should not be taken as an accurate reflection of how many pregnant women actually quit smoking at 4 weeks.

Figure 8. Percentage of successful pregnant quitters at 4 weeks, based on self report and CO validation



The evaluation of the NHS stop smoking services by Judge and co-workers (2005) (rating 2++) sheds further light on the actual quitting success of pregnant smokers at 4 weeks. They found a self-reported quit rate of 40.5% - which is in line with the DH statistical bulletins. However, the clients taking part in their study were more consistently CO-validated and the CO-validated success rate for pregnant women was 37.2%.

Although pregnant women are less successful at quitting at 4 weeks through the NHS stop smoking services than other members of the English population, given the unique barriers that pregnant women face in trying to quit (see section 4.6.2), questions can be raised about the utility of using the 4 week benchmark to measure the success of the services. A recent 'best practice' review of smoking cessation services for pregnant smokers (Lee et al. 2006) highlights that pregnant smokers require intensive and ongoing support for their cessation attempts and the three 'beacon' services discussed all provide between 8-12 weeks of intensive support for pregnant smokers, often with ongoing support as needed throughout the pregnancy and post-partum. Interestingly, although these services were found to offer exemplary support to pregnant smokers, they did not achieve the highest quit rates at 4 weeks. This study therefore demonstrates the problems with using the 4 week quit rates for pregnant women to measure service success.

Findings from local evaluations of NHS stop smoking services for pregnant women are now beginning to be published. A recent study by Bryce and colleagues describes a home-based cessation intervention targeted at pregnant women under the age of 25 in Paisley, Scotland (Bryce et al, 2007, quality rating 2+). The study reports that, during the 16 month period of the evaluation between November 2002 and February 2004, 52% of eligible women set a quit date through the service and CO validated quit rates were 20.3% and 12.7% at 4 and 52 weeks respectively. These rose to 22.8% at four weeks and16.5% at 52 weeks when self-report cases were included.

No. 22

Strength and applicability of evidence

Five 3- bulletins, one 2+ and one 2++ study provide a body of evidence that between 23-51% of pregnant women self-report as successful quitters at 4 weeks through the NHS stop smoking services. However, given the unique challenges that pregnant smokers face, the utility of 4 week quit rates as a measure of service effectiveness is questionable.

As all seven studies took place within smoking cessation services in the UK, they are directly applicable to the target population.

4.6.2 What barriers do women face when trying to quit smoking during pregnancy?
Barriers to quitting

The last fifteen years have witnessed an emphasis on the status of the foetus in medical and legal matters (Greaves et al. 2003). This 'supersubjectivity' of the foetus (Bordo 1993) has led to increased recognition of the effects of behaviours such as smoking, drinking and drug taking on the foetus, but has also solidified negative social and legal attitudes towards pregnant smokers (Greaves et al. 2003). Therefore, pregnant smokers are under immense pressure to quit smoking during pregnancy for the sake of their foetus.

The majority of pregnant women who quit smoking (between 9-45%) do so 'spontaneously', without any formal intervention (Lawrence et al. 2005; Greaves et al. 2003). These spontaneous quitters tend to be older, less addicted, more highly educated, and less likely to have a partner who smokes (Greaves et al. 2003). Indeed, spontaneous quitters are likely to differ in important (but often un-investigated[33]) ways from those pregnant smokers who take part in smoking cessation programmes, with the former less likely to return to smoking following the birth of their baby (Lawrence et al. 2005).

On the other hand, pregnant smokers who enrol in smoking cessation programmes are likely to wish to merely suspend their smoking behaviour for the duration of their pregnancy as opposed to quit altogether (Lawrence et al. 2005). They are also more likely to be from routine and manual groups and may experience multiple barriers that make long-term smoking cessation difficult.[34] For example, Butler and Bryce (Butler and Bryce 2005) in their study on young pregnant smokers in Renfrewshire, Scotland, found that for some clients, life was a struggle on a daily basis. Many of the pregnant smokers in the study had problems with housing, financial difficulties, relationships and mental health and emotional issues.

No. 23

Background Evidence

Background evidence shows that pregnant smokers face numerous barriers when trying to quit. They are more likely to be from routine and manual groups and may experience more pressing issues such as financial and relationship difficulties, and may also fear being judged for their smoking behaviour.

[33] An important exception is a series of HEA surveys commissioned between 1992 and 1999 that explore the changes in smoking behaviour of women over the course of their pregnancy (Owen and Penn 1999).
[34] See also Owen and Penn for a discussion of this issue.

Barriers to recruitment

Given the stigma that pregnant smokers experience and the broader barriers to quitting that they experience, attracting pregnant women into smoking cessation programmes poses significant challenges for the NHS services. One of the most fundamental barriers to recruitment is the problem of misreport amongst pregnant smokers. Smoking rates amongst pregnant women have usually been measured by self reports through questionnaires or interviews. However, when more objective measures of smoking status have been used, considerable discrepancies emerged (Ford et al. 1997). While rates of misclassification appear to be in the order of 5-10% in the general population, misreport is significantly higher amongst pregnant smokers – one international study has reported a 'deception' rate of 38% (Ford et al. 1997).

In the UK context, researchers (Owen and McNeill 2001) have also discussed the problems with using self-report to assess smoking in pregnant women and the findings of their study suggest that smoking in pregnancy may be significantly higher (perhaps more than double the target) than previous government estimates – although there were no significant differences in rates of reporting in pregnancy by occupational class, education or tenure (Graham and Owen 2003). The authors stress that because smoking may be perceived to be particularly undesirable among pregnant women, it is important to validate smoking status within this group using biochemical measures.

Aside from this basic barrier to recruitment, there are also many other challenges that the services face in attracting pregnant smokers. One cessation specialist (Marr 2005) reports that in the Northeast, the largest barriers to recruitment into smoking cessation programmes are poor engagement and the transient nature of the population. Many of the pregnant smokers are teenagers and are unfamiliar with the concept of behaviour change, and boredom seems to be a key factor in continued smoking. Moreover, this population of smokers frequently move or change their phone number which compromises the ability of specialist advisors to recruit them into the programmes.

One qualitative study in Northeast Scotland on the attitudes of primary healthcare professionals' (HCPs) towards smoking cessation provides further information about barriers to recruitment into smoking cessation interventions (Cleland et al. 2006). Pregnant smokers from low SES groups were thought to lack motivation to quit and HCPs did not feel that they had the skills to address these motivational issues – many voicing the concern that they would be seen as 'preaching' to the women. HCPs expressed the fear that attempts to provide smoking cessation advice would jeopardise the professional-patient relationship and that ensuring women attended ante- and post-natal care was more important than providing such advice. Interviewees also indicated a preference for referring pregnant smokers on to special cessation services as opposed to tackling this issue themselves. The concerns HCPs voiced in this study seem borne out by other studies that have been conducted with pregnant smokers themselves.

Another study (Lowry et al. 2004) focusing on Sunderland PCT also identified a number of other barriers that pregnant women face when trying to quit smoking during pregnancy, such as unsatisfactory information, lack of enthusiasm or empathy from healthcare professionals and short-term support, all showing as a reluctance to be recruited. To overcome these barriers they engaged in proactive recruiting, with a dedicated worker undertaking home visits, as well as conducting role plays to enhance the ability of health professionals to empathise with their clients.

Other studies also exist that provide useful information about how smoking cessation interventions might be tailored for pregnant smokers. Therefore, although a discussion of 'best practice' in smoking cessation services for pregnant smokers was not part of the remit of this review, a summary has been provided of approaches that appear to be working successfully (see table 8). Given that these studies did not directly relate to the key research questions, they have not been evaluated. However, the conclusions they draw seem to offer valuable insights into what interventions are most effective.

No. 24

Background Evidence

Background evidence indicates that there are numerous barriers to recruiting pregnant women into smoking cessation programmes. One of the most fundamental barriers to recruitment is the problem of misreport amongst pregnant smokers – which indicates the importance of biochemically validating smoking status. Health care professionals are also often unwilling to address smoking with their pregnant clients in the fear that it will jeopardise their relationship with the clients.

Table 8. Studies taking place within the NHS stop smoking services that point to innovative and potentially effective interventions for pregnant smokers

Reference	Study population	Content of the intervention	Job title/position of the deliverer	Significant features of an effective deliverer	Site or setting of the intervention	Does the intensity of the intervention influence its effectiveness?	Comments
(Lee 2006)	Pregnant women in 3 beacon NHS smoking cessation services	Provide intensive multi-session treatment delivered by a small number of full time staff and offer NRT to almost all pregnant smokers	Less relevant than whether they provide smoking cessation advice as part of routine or dedicated service	Information not provided.	Flexible home visits	Not explicitly stated but it is implied that more intensive interventions are more effective.	This paper provides a discussion of best practice in smoking cessation services for pregnant smokers.
(O'Gorman 2005) powerpoint presentation	Pregnant smokers in North Birmingham PCT	Multi-session, intensive, one-on-one behavioural support (group sessions do not work) with offer of NRT	Specially trained, dedicated midwives	non-judgemental; full, frank information; individualised attention; encouraging; supportive; builds confidence; works as team; provides positive feedback; empowering; empathetic	Home-based; involving partners and family	Information not directly provided; but the importance of sustained support and follow up is emphasised	Result: Set quit date: 61% of referrals Successfully quit at 4 weeks: 39% CO validated quits: 25%
(Tappin et al. 2005)	Pregnant smokers at two antenatal clinics in Glasgow	Home-based motivational interviewing	Specially trained midwives	Information not provided	Home-based	Not assessed	Results: home-based motivational interviewing did not significantly increase smoking cessation amongst pregnant women. Authors

							conclude that NRT may increase effectiveness of this type of intervention**.**
(Marr 2005) powerpoint presentation	Pregnant smokers in Sedgefield Durham Dales and Darlington PCTs	Intensive one-on-one behavioural counselling accompanied by intensive telephone contact and offer of NRT	Midwife employed in a dedicated position as a smoking cessation specialist	1) Non-judgemental attitude 2) Engaging 3) Solution-oriented 4) Works in partnership with pregnant woman	Clinic services close to women's homes and where appropriate, home visits.	Increasing # of phone follow up calls in first week led to significant increase in # of clients staying in their quit programmes & # of 4 week quits.	Paper recommends the benefits of harm reduction as even 'failed' quitters experienced a substantial reduction in CO levels.
(Butler and Bryce 2005)	Pregnant smokers, 25 years and under	Intensive one-on-one behavioural counselling with offer of NRT	Midwife employed specifically in a dedicated position as smoking cessation specialist	1) ability to make clients feel positively about ability to give up 2)supportive, friendly & understanding 3) not pressuring clients to quit 4) offering flexible service	Flexible service at time & location of client's choice but most clients preferred home visits	N/A: intensive intervention took place	Results: 20% quit rate at 3 months 16% quit rate at 12 months
(Lowry et al. 2004)	Health workers delivering Interventions to pregnant women	Role play with actor to increase empathy for pregnant smokers	Health professionals (largely midwives) – although study stresses the importance of training	Support, empathy & enthusiasm rather than a nagging & judgemental attitude	N/A	N/A	Recruitment of pregnant smokers into interventions significantly increased following role play sessions with midwives
(Taylor and Hajek 2001)	All PCTS with smoking cessation services for pregnant women	Maudsley model or the Prochaska and DiClemente Cycle of Change	Intervenors do not have to have a background in midwifery.	Information not provided	Home visits are labour intensive but achieve the best results	More intensive treatments yield better results. Optimum # of contacts between 4-6	Paper presents results of a nation-wide survey of smoking cessation services for pregnant women. Provides useful recommendations re: models of best practice.

4.7 How does the effectiveness of stop smoking interventions vary for routine and manual groups?

At the time of the first review, it was extremely difficult to ascertain how successful the NHS stop services had been in reaching people from routine and manual groups, as occupation was not part of the minimum data set required by the Department of Health. Some local services were independently collecting this data but the collection methods were not standardised across services, rendering the information somewhat unreliable (Johnson and Croghan 2005). The fact that demographic information on occupation was not required by the Department of Health despite the mandate to reduce smoking prevalence amongst routine and manual groups seemed paradoxical. Indeed, Killoran and co-workers argued that NHS smoking cessation interventions are "non-equity-oriented" and that minimal guidance has been made available on how the services should promote themselves and tailor their support to the needs of the disadvantaged communities they served (Killoran et al. 2006). They concluded that, "while the national evaluation [published in 2005] demonstrates important successes of the NHS smoking cessation programme, the opportunities to advance the evidence base, particularly in relation to supporting smokers in the most disadvantaged groups to quit, have not yet been fully realised".

From their inception, NHS stop smoking services were intended to target socially disadvantaged groups (Pound et al, 2005). However, as noted, at the time of the first review, no guidance on how to do this had been provided and subsequently policy developments, such as the introduction of throughput targets, seemed to contradict the need to develop services that would be effective in supporting those smokers from communities where smoking rates are highest. In addition, demonstrating how effective services have been in treating routine and manual groups has been difficult.

Until 2007, the minimum data set did not require any indicators of socio-economic status to be collected and no reporting of client numbers or quit rates by socio-economic group was possible. However, recent changes to the minimum data set should allow future trends to be analysed. Until then, a number of published reports and articles shed some light on the issue of how effective the services have been in reaching and treating routine and manual groups.

4.7.1 How regularly are people from routine and manual groups accessing smoking cessation services?[35]

Five evaluations of the NHS stop smoking services look specifically at how effective the services have been in accessing disadvantaged groups. These evaluations all report that the services are located and available in the areas of deprivation and have been quite successful in reaching members of these groups (Chesterman et al. 2005; NEPHO 2005; Lowey et al. 2002; Baker et al. 2006).

According to one study of health inequalities in 7 Health Authorities (HAs) in the Northwest (Lowey et al. 2002) (rating 2++), smokers who set a quit date were more

[35] At present the 'reach' of the NHS stop smoking services can only be determined by the number of people setting quit dates, as opposed to the number of people accessing smoking services. The vast majority of services record the details of those people who have set quit dates, not those who have accessed the services in total. One of the few available studies that has recorded the numbers of people accessing stop smoking services as well quit dates set (Lowey et al. 2002) discovered that 53.4% of people accessing the regional stop smoking services did not set a quit date Lowey et al. therefore sensibly recommend that, "smoking cessation services should record basic demographic details, i.e. age, sex and postcode of all smokers who access the services, irrespective of whether a quit date was set".

likely to reside in deprived areas compared with the distribution of the Northwest region's population. Their findings indicate that smoking cessation services in the Northwest are achieving their remit to attract smokers from deprived areas.

More recently, the North East Public Health Observatory (NEPHO 2005) (rating 2+) assessed clients setting quit dates by postcode and divided them into deprivation quintiles. They similarly found that a higher percentage of smokers from deprived areas were setting quit dates. The national evaluation of the services (rating 2++) also found evidence of 'positive discrimination' in all 19 Health Authorities analysed in their survey (Chesterman et al. 2005). An evaluation conducted by the West Midlands Public Health Observatory (Baker et al. 2006) (rating 2++) reports considerable variation within regional services. They found that in Birmingham and Black Country SHA, smokers living in the most deprived areas were less likely to access stop smoking services. In West Midlands South SHA there was no clear pattern between deprivation and access to stop smoking services. However, in Shropshire and Staffordshire SHA it appeared that smokers living in deprived areas were more likely to access stop smoking services, especially compared to smokers living in the most affluent areas.

No. 25

Strength and applicability of evidence

Three 2++ studies and one 2 + study provide a body of evidence that the NHS stop smoking services have been effective overall in reaching routine and manual groups. However, one of these studies reports that there is variation within regional services, and some SHAs have been less successful in deprived smokers than other authorities.

As all four studies took place within the English smoking cessation services, they are directly applicable to the target population.

4.7.2 How successful are people from routine and manual groups in quitting once they have accessed services?

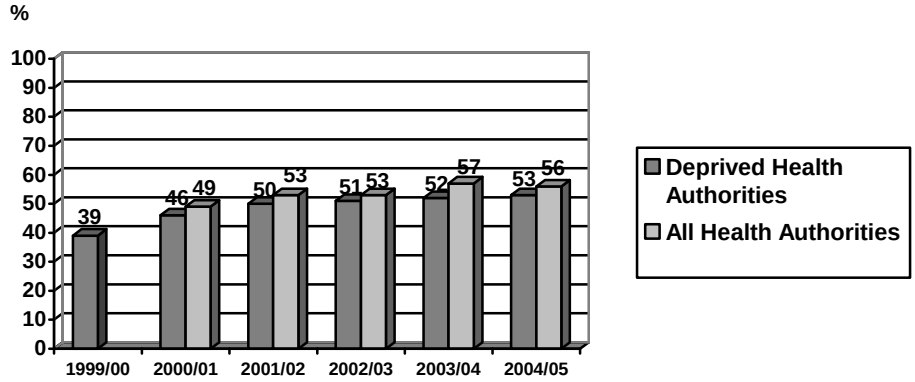
The only available proxy indicator of deprivation available in the DH statistical bulletins is whether or not the clients who successfully quit at 4 weeks did so in spearhead trusts.[36] While not the most sensitive indicator of social class, there is a broad correlation between deprivation and health inequalities which allow some general conclusions to be drawn from these statistics.

Six annual statistical bulletins (DH 2005; DH 2004; DH 2003; DH 2002; DH 2001a; DH 2001b) (rating 3-) have been published by the Department of Health that evaluate the short term (4 week) success of the NHS stop smoking services between 1999 and 2005 broken down by PCT.[37] The findings of these statistical bulletins are graphically represented in Figure 9.

[36] The Spearhead Groups consist of 88 PCTs from various SHAs. Spearhead PCTs by and large represent the same areas of deprivation as the earlier HAZs (Health Action Zones). Spearhead groups are defined on 5 measures, 4 of which are indicators of health (expectancy, cancer and heart disease, stroke and related diseases) and one of which is linked with the Index of Multiple Deprivation (IMD). Considering that health inequalities have been linked to low SES groups, which include manual and routine workers, it is likely that there is a large percentage of manual and routine groups living in Spearhead PCTs.

[37] In 1999/00 the stop smoking services were only delivered in HAZs not England as a whole. Deprived areas were identified as HAZs until 2004 when they became Spearhead PCTs.

Figure 9. Percentage of successful quitters at 4 weeks (self report) from deprived areas vs. all health authorities in England



According to the DH Statistical bulletins, the self-reported quitting success among people from deprived areas at 4 weeks is lower than the overall success for England as a whole (see Figure 9).

Studies using more sensitive indicators of SES have also found that while services based in more deprived areas appear to be reaching smokers from manual groups, they achieve lower cessation rates than less deprived areas. Bauld and co-workers (2003) (rating 2++) found that "services operating in deprived parts of the country achieved lower cessation rates than those in more affluent areas".[38] This finding has been consistently confirmed in the wider literature (Millward et al, 2007) and in other UK studies that have been conducted based on both self-report and CO validation. Thus, the North East Public Health Observatory (NEPHO 2005) (rating 2+) found that people from deprived quintiles were less likely to be CO validated successful quitters at 4 weeks than those living in more affluent quintiles – and that this difference was statistically significant. Lowey and co-workers (2002) (rating 2++) similarly found that although a higher proportion of people from the most deprived areas are setting quit dates than from the least deprived areas, there are not correspondingly higher proportions of people who self-report as successful quitters at 4 weeks. The West Midlands Public Health Observatory (Baker et al. 2006) (rating 2++) also found that at a regional level there was a relationship between quit status and deprivation, with smokers living in the most deprived areas less likely to self-report as quit than smokers living in the most affluent areas (51.5% and 59.2%, respectively). An assessment (Watt et al. 2005) (rating 2-) of the stop smoking services in Cornwall and the Isles of Scilly also reports that manual and routine groups had good access rates but poor quit rates, as does a health equity audit conducted by South Gloucestershire PCT (South Gloucestershire PCT 2005)(rating 2+).

[38] See also Judge and co-workers' (2005) (rating 2++) and Ferguson and co-workers' (2005) (rating 2++) reports from the same evaluation of the NHS smoking cessation services.

No. 26

Strength and applicability of evidence

Six 3- bulletins, one 2- study, two 2+ studies and three 2++ studies provide a consistent body of evidence that people from routine and manual groups are less successful in quitting successfully (based on both self-report and CO validation) at 4 weeks than other smokers.

As all twelve studies took place within the English smoking cessation services, they are directly applicable to the target population.

Given that studies demonstrate that NHS SSSs are effective in reaching disadvantaged smokers but that, once reached, they are less likely to quit, it is worth asking whether the services are helping to reduce smoking rates amongst people from deprived areas compared with more affluent groups. In other words, are they helping to reduce inequalities in health caused by smoking?

A recent study by Bauld and colleagues (2007, quality rating +) addresses this issue. Using the monitoring data sent by stop smoking services to the Department of Heath, the study assesses the extent to which services have made a contribution to reducing inequalities in smoking between 2003 and 2006. This involved comparing the number of smokers treated and 4 week outcomes from services located in Spearhead (deprived) and non Spearhead (more affluent) areas in England. The study found that, although short term cessation rates were lower in disadvantaged areas (52.6%) than elsewhere (57.9%) the proportion of smokers being treated was higher (16.7% compared with 13.4%). The overall result was that a higher proportion of smokers in the more disadvantaged areas reported success (8.8%) than in the more advantaged areas (7.8%). Using evidence-based estimates of relapse rates, the study concluded that the absolute and relative rate gaps in smoking prevalence between Spearhead areas and others fell by small but statistically significant amounts. The authors conclude that NHS stop smoking services are, therefore, making a modest contribution to reducing inequalities in health caused by smoking.

No. 27

Strength and applicability of evidence

One 2+ study found that NHS stop smoking services are making a modest contribution to reducing smoking-related inequalities in health in England.

As the study took place within the English smoking cessation services, they are directly applicable to the target population.

4.7.3 Are there any factors that might inhibit the ability or desire of members of routine and manual groups to access services or quit smoking?

Socio-economic barriers

Smoking among routine and manual groups carries more meaning and is more typical than among higher SES groups. In many areas of deprivation, smoking is perceived as the norm and there is no culture of quitting, which makes quitting harder (Jarvis and Wardle 1999; Killoran et al. 2006; Jackson and Prebble 2002). In their qualitative study of the barriers that people from deprived groups experience in accessing smoking cessation services, one study (Jones et al. 2002) reports that all participants were aware of the risks of smoking and had tried to quit smoking on numerous occasions. However, overall participants had little knowledge about smoking cessation interventions and their level of effectiveness. Reported barriers to accessing the smoking cessation services were factors such as cost, timing, lack of childcare, lack of appropriate information, perceived ineffectiveness and negative publicity.

No. 28

Background Evidence

Background evidence shows that smokers from routine and manual groups face numerous social and economic barriers that may inhibit their ability to quit. In many areas of deprivation, smoking is perceived as the norm and there is no culture of quitting. Moreover, those deprived smokers who are willing to quit may have little knowledge about the effectiveness of smoking cessation interventions and may also find it difficult to attend sessions.

Disadvantage & Addiction

Another key barrier to quitting is the high level of nicotine dependence among routine and manual groups. Studies have shown that members of manual/routine groups are often more highly addicted, have been smoking since a young age, and smoke more cigarettes per week compared to professional workers (Lowey et al. 2002; Killoran et al. 2006; Jones et al. 2002). Thus, disadvantaged smokers face this additional hurdle when attempting to quit smoking through the NHS stop smoking services.

In their evaluation of the NHS Stop Smoking Services, Bauld and co-workers (Bauld 2004)[39] found that smokers from higher socio-economic groups tended to have lower levels of addiction than smokers from lower socio-economic groups (see table 9). Indeed, while 62.4% of high SES smokers attending the services exhibited low levels of addiction (levels 1 and 2), 56.4% of low SES smokers exhibited moderate to extremely high levels of addiction (levels 3, 4 and 5).

Table 9. Disadvantage and Dependence

Level of Addiction[40]	***Socio-economic Group[41]*** (Highest to lowest)	**TOTAL**

[39] This is a powerpoint presentation and could not be evaluated.

[40] Level of addiction is a summary measure based on whether smokes within 5 minutes of waking, smokes 31 or more cigarettes per day, has great difficulty going a whole day without smoking, smokes to cope rather than for pleasure, and another regular smoker in household.

	1 %	2 %	5 %	6 %	%
1 (Low)	21.7	22.1	14.7	15.1	18.6
2	40.7	34.6	26.2	28.5	33.1
3	24.9	26.8	29.0	27.2	27.4
4	8.9	13.5	20.4	19.4	15.8
5 (High)	3.7	3.1	9.6	9.8	5.2
TOTAL	100.00	100.00	100.00	100.00	100.00
N=	562	2214	892	397	6616

(Reproduced from Bauld et al. 2004)

Given that high levels of addictedness are negatively associated with quitting success, in both the short and long term (see section 4.4.2), this factor goes a long way towards explaining the lower cessation rates achieved by the NHS stop smoking services in more deprived areas.

No. 29

Background Evidence

Background evidence shows that smokers from routine and manual groups are often more highly addicted, have been smoking since a young age, and smoke more cigarettes per week compared to professional workers, which is a key factor in explaining the lower cessation rates achieved by the NHS stop smoking services in deprived areas.

Alternative approaches to cessation

In light of the barriers that people from deprived groups experience in accessing smoking cessation services, some areas are experimenting with more flexible models of delivery that appear to be yielding promising results. One alternative to the traditional form of intensive group therapy has been documented in Scotland (Schultz and Ritchie 2005 rating 2-; Ritchie et al, 2007, rating 2 -) in research examining the 'Smokey Joe' project. The group work technique employed in the project was called adapted narrative therapy for smoking cessation and the work was conducted in a deprived area in Scotland. "Narrative therapy aims to deconstruct negative dominant 'self' stories through the therapeutic process, so that the 'forgotten and unnoticed elements of lived experiences' can be revealed" (Schultz and Ritchie 2005). Smokers attending 'Smokey Joe' do not have to set a quit date and are offered in-depth guidance on how to approach the decision to quit. This group work technique was well received amongst the lower income groups accessing the service, and participants particularly valued the flexibility of the services to their needs. Moreover, the researchers found that the two lowest deciles of deprivation accounted for more than twice as many attendees than the two highest deciles.

[41] Socio-economic group is a summary measure based on whether education finished by 16, single parent, rented housing, unemployed or permanently sick/disabled, whether eligible for free prescriptions and aged under 60, lowest deprivation decile.

The ‘Smokey Joe’ programme produced a 12 month quit rate of 16% (based on self-report), which compares favourably with long-term quit rates produced by the NHS stop smoking services more generally. This form of group work may provide an example of how services can be adapted, or additional elements added, to offer a flexible and successful approach that may appeal to more heavily addicted, disadvantaged female and male smokers.

It is worth noting that the ‘Smokey Joe’ approach shares some elements of service delivery with the ‘drop in/rolling’ group interventions highlighted earlier in this review. It may be that flexible group provision is particularly well-suited to meeting the needs of more disadvantaged smokers but the existing evidence is not robust and more research is required in this area.

No. 30

Strength and Applicability of Evidence

According to a 2- report and a 2- article, more flexible modes of delivery help to make smoking cessation interventions more accessible for people from deprived groups and produce 12 month self-reported quit rates of 16% - which is comparable with the long-term effectiveness of the NHS stop smoking services more broadly.

As this study took place within the UK smoking cessation services, it is directly applicable to the target population.

4.8 How does the effectiveness of stop smoking interventions vary for institutionalised populations?

Available evidence indicates that there are very high rates of smoking amongst institutionalised populations. Cessation brings with it significant personal and clinical issues that are particularly complicated for institutionalised smokers, and smokers in these settings experience many unique barriers to quitting. Although the NHS stop smoking services have increasingly moved into both of these settings, definitive evidence on the effectiveness of cessation support amongst institutionalised populations is limited (especially in relation to services in mental health settings – which are still in their infancy).

4.8.1 Prison Population

Available evidence indicates that up to 80% of prisoners in UK correctional facilities smoke (MacAskill and Eadie 2003; Department of Health 2003). However, smoking cessation support has become widely available in prisons – especially since the introduction of NRT funding for prisons in 2003. According to a recent report (MacAskill and Eadie 2003), nearly 80% of prison-based respondents surveyed in England and Wales reported smoking cessation support for prisons being undertaken in the previous 12 months.

Nevertheless, it appears that relatively few prisoners overall take up smoking cessation support while in prison. In a recent study (MacAskill 2005) (rating 2++), 1,581 prisoners in 15 prisons in the North West region were recorded as setting a quit date in 2004-2005 and the numbers participating increased over the study period, indicating an intensification of demand as the facilities became more established. The researcher estimates that more than a quarter of the prisoners likely to have attempted to quit during the 2004-05 period were supported in doing so, representing 9% of the prison population of smokers overall.

This study has found that smoking cessation interventions in prisons achieved CO-validated 4 week quit rates of 41% – this rate increases to 50% if those lost to follow-up are excluded (MacAskill 2005). However, the study notes substantial variation in the success rates between different prisons in the region (ranging from 8% to 64%).

The 4 week quit rates recorded in this study are lower than the national quit rate through the English NHS smoking cessation services of 57% (self-report) in the same period. The author suggests that several factors may be responsible for the lower quit rates recorded in the study, although she attributes the discrepancy largely to the characteristics of the prison population: prisoners come predominantly from disadvantaged communities where cessation rates are lower, and prisoners tend to be in younger age groups, where cessation rates are also lower. However, as the author points out, 100% of quitters in the prison population were CO-validated, in contrast to the national figures, where only 35% of self-reported quitters were CO-validated.

No. 31

Strength and Applicability of Evidence

Although up to 80% of prisoners in UK correctional facilities smoke, according to a recent 2++ report, overall a relatively small proportion of smokers (less than 10%) access smoking cessation support whilst in prison. However, prisoners can achieve CO-validated 4 week quit rates of over 40%, although there appear to be substantial differences in the success rates of different prisons.

As this study took looks at the effectiveness of the smoking cessation services in UK prisons, it is directly applicable to the target population.

What barriers to smoking cessation do prison populations face in accessing services and successfully quitting?

Smoking is a central feature of prison life and there is a strong smoking culture among prisoners (MacAskill and Eadie 2003). Smoking provides relief from boredom and the stressful environment as well as fostering a sense of group membership – particularly important in the potentially threatening environment of prison (Department of Health 2003).

Aside from these more positive dimensions, a number of prisoners do recognise the negative aspects of smoking, such as its high proportionate cost (especially in relation to the very low wages earned by prisoners) and its negative health effects (Department of Health 2003). Indeed, available evidence indicates that a significant proportion of prisoners (between 41-50%) want help in quitting smoking (MacAskill and Eadie 2003).

However, prisoners face unique problems when making a quit attempt. The endemic levels of smoking, the limited environment and its lack of opportunities for distraction from cravings, and the general stresses of prison life all serve to undermine attempts to quit smoking (MacAskill and Eadie 2003; Department of Health 2003). Negative attitudes towards smoking cessation amongst staff and fellow prisoners also undermine a quit attempt; and the associated withdrawal symptoms can become more problematic in the context of prison life (Department of Health 2003).

No. 32

Background Evidence

Smoking is a central feature of prison life and provides relief from boredom, the stressful environment as well as facilitating group membership. Therefore, prisoners face unique problems when making a quit attempt because of the endemic levels of smoking, the lack of opportunities for distraction from cravings and negative attitudes to cessation amongst staff and fellow prisoners. Despite these barriers, a number of prisoners recognise the negative aspects of smoking, including its health and financial costs and available evidence indicates that up to 50% of smokers in prison want help in quitting smoking.

4.8.2 Mental Health Institutions

Smoking rates are higher among people with a mental illness than the regular population (ASH 2005b). According to the Department of Health, smoking prevalence among the general population was 27% in the UK in 2000 and up to 39% among women with mixed anxiety/depressive disorder and 67% among men with a phobia. Smoking prevalence is even higher among those with a psychotic disorder such as schizophrenia. The 1996 Office for Population Censuses and Surveys (OPCS) surveyed residents with psychotic disorders in Great Britain and found that 74% of people with a schizophrenic disorder and living in institutions were smokers (McNeill 2001; McNeill 2003; Ziedonis et al. 2003). However, smoking cessation among those with mental illness has been largely overlooked by health professionals. Among patients motivated to quit, there have been reports that they receive little support or advice on how to quit (McNeill 2001; McNeill 2003). Unfortunately, there are as yet no available published studies which provide information on how effective smoking cessation support is in mental health institutions in the UK. However, the provision of cessation support in this setting, often provided by NHS stop smoking services, is growing (McNally, 2006).

No. 33

Background Evidence

Although rates of smoking are particularly high amongst people in mental health institutions in the UK, there are as yet no published UK studies that demonstrate how effective smoking cessation support is in this setting.

What barriers to smoking cessation do people with a mental illness in mental health institutions face in accessing services and successfully quitting?

Smoking cessation among people with a mental illness can be complicated by many things, such as physiological vulnerability to nicotine addiction, the fact that nicotine may reduce the side effects of some medications, the positive effects of nicotine on the brain[42], the negative experience of withdrawal, the use of cigarettes as a behavioural reward in residential care, and lack of access to cessation services and advice (McNeil 2001; Ziedonis 2003).

Withdrawal symptoms can be particularly strong barriers to quitting; the depressive symptoms experienced during the early acute withdrawal phase are often associated with a failed quit attempt and smokers with severe mental illnesses may experience

[42] Nicotine receptors are abundant in the brain and may help to alleviate some symptoms of schizophrenia (George et al. 1999; Ziedonis et al. 2003). Smoking may also reduce the side-effects of some forms of medications (McNeill 2001; McNeill 2003).

an exacerbation of psychiatric symptoms while they are trying to quit or cut down (Dalack 1996). For these reasons health professionals have been wary of implementing smoking cessation programmes for people with mental illnesses[43] (McNeill 2001; McNeill 2003).

No. 34

Strength and applicability of evidence

People with mental illnesses in institutional settings face a variety of barriers in accessing services and quitting smoking. Smoking cessation in this setting can be complicated by factors such as physiological vulnerability to nicotine addiction, the fact that nicotine may reduce the side effects of some medications, the positive effects of nicotine on the brain, and the use of cigarettes as a behavioural reward and lack of access to cessation support.

4.9 What are the facilitators and what are the barriers to implementing effective smoking cessation interventions?

Bauld and Williams (Bauld and Williams 2006) argue that there are three central principles that need to be considered when determining what model of support should ideally be available to clients accessing stop smoking services: choice, need and practicality. These three principles can be thought of as factors facilitating effective smoking cessation interventions. First, smokers should ideally be offered a choice regarding the form of treatment they wish to access (Bauld et al. 2005). One type of smoking cessation intervention will not necessarily 'fit' all smokers. As discussed in section 4.6, group support is inappropriate for most pregnant smokers. Bauld and Williams also point out that for smokers with unusual working hours (who will often be from manual or routine groups) the flexibility provided by pharmacy based services may be attractive. Indeed, it appears that pharmacy-based services may have significant potential to reach large numbers of smokers in deprived areas (see section 4.2.4).

Bauld and Williams also argue that some initial assessment of need will help to determine what form of service is right for the smoker – which will also help to maximise the effectiveness of the intervention. Thus, they argue that more intensive group-based support may be best for more heavily addicted clients. Given that smokers from manual and routine groups tend to be more heavily addicted than other smokers, this may be the best option for some.

Finally, the authors argue that services need to decide what model is most appropriate for their area given pragmatic concerns such as location. For example, while group support is easily developed in urban, built-up areas, it may be impractical in rural locations – whatever the needs of the individual smoker. As the national

[43] McNeill (2001) and Goldsack (2004) warn against cessation for some people with mental illness who are in acute services, as withdrawal could exacerbate symptoms of the mental disorder. Goldsack (2004) also suggests reducing the use of smoking rooms and sending smokers outside to smoke, although she recommends proceeding with caution. Service users may view the institution as their home, thus she suggests that the smoking area should be nearby and protected from the weather. Goldsack (2004) provides ideas around reducing use for residential settings: 1) giving notice that a smoking room will be used only for limited hours; 2) allowing only one person at a time; and 3) eventually closing the 'smoking' room altogether, with service users smoking outside where practicable.

evaluation of the NHS stop smoking services notes, “Treatment needs to be accessible to smokers and local implementation must be both flexible to the needs of urban and rural areas and different client groups” (Bauld et al. 2005: 26).

Given that the NHS stop smoking services appear to be reasonably successful in helping smokers to quit, a key barrier to implementing effective interventions, especially amongst manual groups and ethnic minorities, appears to be the low level of awareness of the services and their overall effectiveness (Jones et al. 2002).

No. 35

Strength and applicability of evidence

Overall, it seems evident that the key barrier to implementing successful interventions is a general lack of awareness of the services and their potential effectiveness in helping smokers to quit. The key facilitators to implementing successful interventions appears to be providing flexibility and choice, assessing the individual need of the smoker, while recognising that local conditions will to some extent determine the most appropriate models of delivery.

5. Overview and Discussion

There is a limited body of available evidence on many of the research questions posed for this rapid review. In many cases the quality of the evidence is low and in other cases there are very few available studies on the issue under examination. There are several general problems with the data that are routinely collected or embedded in intervention studies. These problems affect the comprehensiveness of the data, its generalisability and its utility in indicating intervention improvements and new research questions. There is also a general lack of sex and diversity-disaggregated data collection, reporting, and analysis, making it difficult to comprehensively answer some of the questions. As a result, it is not possible to fully describe and effectively analyse the specific patterns and needs of women and men, or of women and men of diverse ethnic groups and how any differences may have arisen. Nevertheless, while the body of evidence on the effectiveness of intensive smoking cessation treatments delivered through the NHS is not necessarily definitive, it does provide some useful indicative information on how effectively the services are operating.

Overall, there is a body of 3- and 2++ evidence that NHS intensive interventions for smoking cessation can be effective in both the short term (4 weeks) and long term (52 weeks). However, given that long-term follow up has proved both difficult and labour intensive, with extremely high rates of loss to follow up, the use of 4 week quit rates as a proxy indicator of long-term effectiveness seems justified.

There are a variety of internal factors that may influence the effectiveness of intensive interventions for smoking cessation delivered through the NHS stop smoking services. Five factors were highlighted as potentially impacting the effectiveness of interventions: content, delivery, deliverer, setting and intensity. Unfortunately, there are few available studies which disaggregate the cessation rates of intensive interventions and intermediate interventions offered in primary care (e.g. pharmacies and GP practices), although one early 3- bulletin indicates that intermediate interventions delivered by community advisors achieve self-reported cessation rates of 34% at 4 weeks.

There is some evidence specifically on the effectiveness of pharmacy interventions. According to a 1++ structured review, pharmacy-delivered interventions may have a positive effect on smoking cessation rates. This finding is confirmed in a recent 2++ study which reports that pharmacy-delivered interventions in Glasgow produce 4 week CO-validated quit rates of approximately 20%. The study also indicates that pharmacy-delivered interventions have the potential to reach and treat large numbers of smokers – especially those from disadvantaged areas.

Overall, two studies provide a body of 2++ evidence that group interventions may produce higher CO-validated quit rates at 4 weeks than one-on-one interventions. However, one-to-one interventions are also effective and many clients express a clear preference for one-to-one treatment. Moreover, in some contexts (particularly rural areas), group treatment is simply unfeasible. Therefore, one-to-one interventions are a crucial component of the NHS stop smoking services as smokers are given a choice of treatment options. According to a 1++ RCT, ‘buddy’ interventions do not add to the 4 week success rates of group interventions, although another 1++ RCT indicates that they do substantially increase the effectiveness of one-to-one interventions for smoking cessation.

There is no conclusive evidence on whether the effectiveness of interventions depends on the job title or position of the deliverer, although anecdotal evidence

indicates that the position of the deliverer does not generally influence the effectiveness of interventions. However, there is some evidence that setting of interventions may indirectly influence their effectiveness.

One presently underutilised setting which may yield potentially rich results is hospitals. Although many of the stop smoking services do not conduct intensive smoking cessation interventions with inpatients, two 1++ structured reviews have found that intensive interventions (inpatient contact plus follow-up for at least one month) conducted by physicians in international settings are associated with a significantly higher quit rate compared to controls. One 1++ structured review of nurse delivered intensive interventions in hospitals has also found that these interventions are associated with a modest positive increase in smoking cessation.

Five recent randomised controlled trials (ratings between 1+ and 1++) have produced mixed results, although they do seem to confirm that more intensive interventions focusing on patients with smoking-related illnesses with telephone follow-up for at least two months post-discharge yield the highest results. Four of these studies were conducted outside the UK, although it seems likely that their findings are broadly relevant to the UK population. Although the goal of the UK-based study (Cannings 2002) was to determine whether NRT increased the effectiveness of inpatient interventions, the reported quit rate at one year (14%) is in line with the long term quit rates produced through the NHS stop smoking services and provides direct evidence of the effectiveness of intensive inpatient interventions in a UK setting.

A 2++ study suggests that more intensive one-to-one interventions achieve higher CO-validated success rates at 4 weeks than less intensive interventions. However, a 1++ RCT in a primary care setting suggests that intensity alone does not increase the effectiveness of one-to-one interventions in this setting. The findings of this study suggest that more intensive one-to-one interventions may be more effective if they are accompanied by external motivations or pressures to quit (such as 'buddy' support or smoking-related health problems).

There are a number of external factors which appear to have also influenced the effectiveness of intensive smoking cessation interventions delivered through the NHS. While target setting has helped to ensure that smoking cessation services are prioritised, it has intensified the pressure on the services to meet quotas, leading to substantial differences in clinical practice and reporting processes which have made it difficult to compare the results of services across the network (Willis et al. 2006). Target setting also appears to have undermined the ability of the services to focus service delivery on priority groups, as it leads to a focus on quantity of throughput (Killoran et al. 2006).

Although national guidance has been broadly adequate to date, it appears that service providers require more up-to-date guidance and national guidelines in light of the changed circumstances in which the services are operating. Johnson and Croghan's {Johnson, 2005 143 /id} study of smoking cessation coordinators found that there was a strong desire for more good practice sharing amongst the local services and updated national guidelines. National guidance seems particularly urgent in the intermediate interventions delivered in primary care settings as there is a lack of standardisation in both training and payment models.

Aside from those internal and external factors which may influence the effectiveness of stop smoking interventions, there appear to be important differences within the UK smoking population that affect quitting success. One 2- study and three 2++ studies indicate that age and sex are both correlated with setting a quit date and quitting success. While females set more quit dates than males, they are less likely to

succeed in quitting than males. Older smokers (both male and female) are also more likely to quit successfully than younger smokers.

Evidence from two 2++ studies also shows that quitting success is affected by both level of addiction and previous quit attempts. It is clear that more heavily addicted smokers find it harder to quit; however, the evidence regarding the role played by previous quit attempts is inconclusive. One study indicated that previous attempts are positively correlated with quitting success (Bauld et al. 2006), while the other study found that previous attempts are negatively associated with quitting success (Judge et al. 2005).

Clear evidence surrounding the effect of ethnicity on smoking cessation interventions is presently unavailable, and is hindered by the small numbers of people from BMEG who enrol in the services and the incompleteness of the data collected by the stop smoking services on ethnicity. Five 3- statistical bulletins appear to indicate that the reach of the stop smoking services for ethnic minorities is reasonably good, but indicative evidence from available surveys sheds some doubt on the validity of the statistical bulletins (which are plagued by substantial levels of missing data).

The evidence regarding the intersection between ethnicity, gender and class is also inconclusive. The smoking prevalence amongst females from BMEG is reported to be lower than the smoking prevalence amongst males, although it is likely that females underreport their smoking status given the stigma surrounding female smokers – especially in South Asian communities (Bush et al. 2003). Nevertheless, the DH statistical bulletins indicate that female smokers from BMEG are highly motivated to quit smoking. Overall it does not appear that smoking amongst BMEG is currently associated with social class, except in the South Asian community (Bush et al. 2003).

It is difficult to ascertain how successful members of BMEG are in quitting smoking. One available study (NEPHO 2005) (2+) found that quitting success did not vary based on ethnicity, but the small numbers of BMEG who undertook interventions make it difficult to interpret these findings. All in all, it seems that the NHS services have focused largely on majority populations and provided non-differentiated services, either by gender or ethnicity or, ideally, both. However, there are indications that culturally appropriate interventions can achieve success rates well above the national average as a whole.

The evidence on how effective NHS stop smoking interventions are for pregnant women allows firmer conclusions to be drawn. According to five 3- studies, one 2+ study and one 2++ study, between 23-51% of pregnant women self-report as successful quitters at 4 weeks through the NHS stop smoking services, although the utility of 4 week quit rates as a measure of service effectiveness is questionable given the unique challenges that pregnant smokers face. As pregnant smokers are more likely to be from routine and manual groups, many experience more pressing problems that take precedence over smoking cessation, including housing issues, financial difficulties and relationship problems (Butler and Bryce 2005).

The smoking prevalence amongst routine and manual groups more generally is significantly higher than for the UK population as a whole. However, it is ironic that while reducing smoking amongst manual and routine groups has been a political priority since the publication of *Smoking Kills*, information on occupation is not part of the minimum data set required by the Department of Health. This makes it extremely difficult to routinely ascertain how successfully the services have been reaching people from deprived areas. However, four 2+ and 2++ studies on this topic have

found that the services are located and available in the areas of deprivation and have been quite successful in reaching members of these groups (Chesterman et al. 2005; NEPHO 2005; Lowey et al. 2002; Baker et al. 2006).

While these studies have uniformly found that the services appear to be reaching smokers from manual groups, they achieve lower cessation rates than more affluent groups. Background evidence shows that smokers from routine and manual groups face numerous social and economic barriers that may inhibit their ability to quit. In many areas of deprivation, smoking is perceived as the norm and there is no culture of quitting. Importantly, smokers from routine and manual groups are often more highly addicted, have been smoking since a young age, and smoke more cigarettes per week compared to professional workers; this appears to be a key factor in explaining the lower cessation rates achieved by the NHS stop smoking services in deprived areas.

Despite these lower quit rates, however, the effectiveness of NHS services in reaching smokers living in deprived areas appears to be achieving health gains. One 2+ study compared the number of smokers treated and quit rates between deprived (Spearhead) and more affluent areas in England and concluded that, overall, NHS stop smoking services are making a modest contribution to reducing inequalities in health caused by smoking (Bauld et al, 2007).

Another sub-population with a particularly high rate of smoking is people in institutional settings, such as prisoners and patients with mental illnesses. Although the NHS stop smoking services have increasingly moved into both of these settings, definitive evidence on the effectiveness of cessation support amongst institutionalised populations is limited (especially in relation to services in mental health settings – which are still in their infancy).

Available evidence indicates that up to 80% of prisoners in UK correctional facilities smoke, although according to a 2++ report, a relatively small proportion of smokers (less than 10%) in prison access support through the NHS stop smoking services. However, it seems that prisoners can achieve CO-validated 4 week quit rates of over 40%, despite the significant barriers they face in quitting smoking – such as the centrality of smoking to prison life, the relief from boredom and the stresses of the prison environment, etc.

Far less is known about how effective smoking cessation programmes are in mental health institutions – although it also appears that rates of smoking are particularly high in this setting. Nevertheless, it is clear that people with mental illnesses face a variety of barriers in accessing services and quitting smoking. Smoking cessation in this setting can be complicated by factors such as physiological vulnerability to nicotine addiction, the fact that nicotine may reduce the side effects of some medications, the positive effects of nicotine on the brain, and the use of cigarettes as a behavioural reward.

Ultimately, it appears that one type of smoking cessation intervention will not ‘fit’ all smokers and it is essential that a variety of options be made available (Bauld and Williams 2006). Treatment must be accessible to smokers and flexible to the needs of different client groups (Bauld et al. 2005). However, to determine exactly how to tailor and measure smoking cessation interventions in England, more rigorous, precise and comprehensive data collection is needed.

6. Evidence Table

Evidence table						
First author Year Country Study design Quality	Study population Inclusion/exclusion criteria. Number of participants (randomised to each group or otherwise). Age; Sex; S/E status; Ethnicity; Pregnant; Other, e.g. inpatient, ….	Research question Power calculation Funding	Intervention Comparisons Length of follow-up, follow-up rate	Main results Effect size CI	Applicability to UK populations and settings Relevance to focus of Rapid Review, NHS Stop Smoking Services	Confounders Comments
Aveyard et al, 2007 England RCT 1++	N=925 participants randomly assigned to either the minimal support group (N=469, 50.7%) or the moderate support group (N=456, 49.3%). Minimal group: 52.7% female, 98% white, largest percentage smoked between 11 and 20 cigarettes a day (50.9%) Moderate group: 50.2% female, 97.2% white, largest percentage smoked 10 cigarettes a day (52.5%). Participants were eligible if they were over 18, smoked 10 cigarettes per day or more, and were recruited from 26 general practices.	To assess whether moderate intensity behavioural support increased the quit rates relative to minimal support in primary care. Funded by Cancer Research UK.	All participants were seen prior to quitting, phoned on quit day, seen 3 days after quit day and again 4 weeks after quit day. This comprised the minimal support arm. In the moderate support arm, participants received additional behavioural support given in 2 telephone calls 1 and 3 weeks after quitting and an additional visit about 10 days after quitting to motivate enhanced adherence to NRT and renew quit attempts. 15mg/16 hour nicotine patches were given to all participants. Compared participants in minimal vs moderate groups.	Outcome measure was self reported abstinence: The differences between percentage quit in minimal and moderate were not significant. Abstinence were 21.0%, 22.4%, and 1.3% (-4.1%-6.6%) difference at 4 weeks, 11.8%, 10.1%, and –1.7% (-5.7%-2.4%) difference at 12 weeks, and 6.9%, 5.7%, and –1.1% (-4.3%-2.0%) difference at 26 weeks.	This study is directly applicable to the UK population. Minimal behavioural support is as effective as more intensive support when given by flexible appointments in primary care.	No methodological concerns.

Baker (WMPHO) 2006 England Correlational Analysis 2++	2003/04 43,965 clients used in the main analysis. 35,198 used in the deprivation analysis 2004/05 59,325 used in main analysis - 26618 males and 32707 females accessed the SSS across the West Midlands. 50,807 used in the deprivation analysis Clients were excluded from the analysis if they were found to be duplicate records of their information, age could not be calculated due to the date of birth being missing, age was invalid, gender was not provided, or client was below 18 analysis if the postcode or Super Output Area given did not match those in the West Midlands	To determine if the Region's Stop Smoking Services are equitable in terms of access and outcomes	Stop Smoking Services offer one-to-one and group support for smokers wanting to quit. 9 services within BBC SHA, 6 within SS SHA and 4 within WMS SHA. Compared areas of deprivation to the rest of the region. 33% response rate.	Two measures were access to services and quit rates. Gender: The use: need ratio shows that a higher proportion of females access the Stop Smoking Services, and the highest proportion are from deprived areas (IMD Quintile 2). Age: Although the highest smoking rates are found in the 18-34 age band, the lowest proportion of smokers accessing the services are from the youngest age band (18-34). The highest proportion accessing the services were aged 45-59. Variation in accessing services depending on level of deprivation and region: They found that in Birmingham and Black Country SHA, smokers living in the most deprived areas were less likely to access services. In West Midlands South SHA there was no clear pattern between deprivation and access. However, in Shropshire and Staffordshire SHA smokers living in the most deprived areas were more likely to access services, especially females. Females are more likely to access services across the deprivation quintiles. Smokers in deprived areas were more likely to access stop smoking services. Smokers in the most deprived areas were less likely to quit than smokers living in the most affluent	Survey data from the West Midlands, UK context. Higher proportion of females access the services, services are less likely to attract young smokers. No clear relationship between access and deprivation. Smokers in most deprived areas are slightly less likely to quit and are more difficult to follow up.	Given the estimated smoking rate for males is higher than for females this would suggest a greater number of males need to be encouraged into services. Services need to target younger groups more effectively. Access services need to encourage more smokers who live in deprived areas. The denominator for calculating quit rates contains all records including those clients where the quit status is unknown, therefore it is difficult to know true the quit rates.

				areas (51.5% and 59.2%).		

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
Bauld 2003 England Cross-sectional survey 2++	N=88 questionnaires completed by smoking cessation coordinators from across England. When several coordinators operated from different bases, values for a particular variable were aggregated where possible or set to missing when in disagreement, producing a coordinator database relating to 76 health authorities.	To determine the extent to which UK NHS smoking cessation services in England reach smokers and support them to quit at four weeks, and to identify which services and area characteristics of health authorities contribute to observed outcomes. Power calculation not reported. Funded by the Department of Health.	At least one completed questionnaire was received from 83% of England's health authorities. Evaluated Reach of the services, Absolute Success, Cessation Rates and Loss to follow up of people accessing the services. 76/99 health authorities (76.8% follow up rate)	A range of service and area characteristics was associated with each outcome: group support proved more effective than one to one interventions in helping a greater proportion of smokers to quit at four weeks (a 10% increase in the proportion of service recipients receiving group rather than one-to-one was accompanied by an increase of 2% in the cessation rate). Services based in health action zones were reaching larger numbers of smokers (140% more smokers than those is other parts of the country) but had lower quit rates than those in more prosperous areas (in moving from an area with a deprivation score at the lower quartile to one at the upper quartile, the reduction in cessation rate would be 6%).	Well developed, evidence based NHS smoking cessation services, reflecting good practice, are yielding positive outcomes in England.	Most of the data are based on self reported smoking status at four weeks, longer term follow up needed to assess longer term impact.

Bauld 2006 Scotland Qualitative & correlational analysis 2++	Glasgow tobacco strategy: 13 interviews Intensive Group Services: -26 interviews with professionals involved in the working group that developed the strategy or who held a relevant position to the delivery of smoking services. 18 were transcribed in full. -448 client records analysed. Pharmacy based treatment: Pharmacists participating in the Starting Fresh service. 26 pharmacists were supervisors: 10 from corporate chains, 14 from independent pharmacies and 2 based in health centres	Analysing the effects of recent and past policies and interventions for smoking cessation in three areas: 1. Glasgow Tobacco Strategy: 2.a. Intensive group-based services: analyse the structure, organisation and effectiveness of group support services using qualitative interviews. 2.b. Evaluate intensive group-based services using data from clients accessing the services. Looked at 4 week quit rates, characteristics of smokers (smoking interventions used and demographic details) and 4 week cessation rates (CO validated) 3. Explore pharmacy based treatments Funded by the Glasgow Centre for Population Health, NHS Health Scotland and NHS Greater Glasgow.	involved: 1. A scoping of the Glasgow tobacco strategy and method 2.a & b. Intensive group-based smoking cessation services 3. Pharmacy-based treatment for smokers, the "Starting Fresh" services	Smoking Services professionals discussed views on Strategy Development, Implementation and Future Directions.2.b. Client data: A small number of factors were significantly associated with cessation. Women were less likely to quit than men (OR. 0.56). More affluent smokers were more likely to quit (OR. 2.1). Factors related to smoking history were also associated with successful cessation in the short term. Two indicators of heavier dependence –first cigarette smoked within 5 minutes of waking, and 31 or more cigarettes/day– were associated with lower odds of quitting (OR 0.66 and 0.41 respectively). Smokers who attempted to quit at least once in the past year were more likely to succeed. In contrast, those who had lower levels of motivation, defined as 'not at all determined' or 'quite determined' to quit had lower odds of success. Smokers who defined their own health as poor were less likely to quit (OR 0.56). Four week quit rates did vary depending on which part of the service delivered treatment. Smokers who accessed services in two LHCCs in western Glasgow had a higher chance of success; those treated by an LHCC in the north of the city had lower odds of quitting. 3. Pharmacists are generally positive about their capacity to deliver the service and viewed smoking treatment as an appropriate extension of their professional role.	Glasgow tobacco strategy consisting of intensive group support plus access to appropriate pharmacotherapies can help smokers to quit. Outcomes are influenced by a wide range of factors, in particular the socio-economic status of smokers and their smoking history, as well as some elements of the service they receive. In order to improve cessation rates further it may be necessary to examine differences between LHCC groups in terms of facilitation and the support they are providing. It may also be necessary for service providers to more closely examine the characteristics of smokers accessing their service to identify those who may need more intensive support, particularly during the initial weeks of group intervention. Pharmacy Services: Their positive response, combined with evidence about the high proportion of pharmacies in Glasgow that are now participating	No methodological concerns

				hose treated by an LHCC in the north of the city had lower odds of quitting. 3. Pharmacists are generally positive about their capacity to deliver the service and viewed smoking treatment as an appropriate extension of their professional role.	in the scheme	

Bauld et al 2007 Observational study 2+	1.5 million smokers who set a quit date with NHS stop smoking services in England between April 2003 and March 2006	To assess the extent to which services have made a contribution to reducing inequalities in smoking between 2003/4 and 2005/6 by comparing the number of smokers treated and 4 week outcomes from services between Spearhead (relatively deprived) and non-Spearhead areas in England.	NHS stop smoking services in England. A variety of models of service and combinations of behavioural support and pharmacotherapy, reflecting the general diversity of stop smoking services across England.	NHS stop smoking services are making a modest contribution to reducing smoking-related inequalities in health. Short term cessation rates were lower in disadvantaged areas (52.6%) than elsewhere (57.9%) ($p < .001$), but the proportion of smokers being treated was higher (16.7% compared with 13.4%) ($p < .001$). The net effect was that a higher proportion of smokers in the most disadvantaged areas reported success (8.8%) than in more advantaged areas (7.8%) ($p < .001$). Using the evidence-based assumption that three-quarters of short-term quitters will relapse within one year, the absolute and relative rate gaps in smoking prevalence between Spearhead areas and others are estimated to fall by small but statistically significant amounts from 5.2 and 1.215 (CIs: 1.216, 1.213) to 5.0 and 1.212 (CIs: 1.213, 1.210) between 2003/4 and 2005/6	This study took place in England and is directly applicable to the UK population	The paper relies on routine monitoring data from services. This means the number of people setting a quit date represents a single quit attempt rather than a single smoker – ie smokers could have made more than one quit attempt with services in the study period. However, the amount of double counting is likely to be small and unlikely to vary significantly between Spearhead and non- Spearhead areas.

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
Bryce et al 2007 Unpublished Observational study 2+	152 pregnant women under the age of 25 referred during a 16 month period between November 2002 and February 2004 to the Community Action on Tobacco for Children's Health (CATCH) programme, part of NHS stop smoking services for pregnant women in a deprived area (Paisley) in the west of Scotland.	How effective is a supportive midwifery intervention in helping young, deprived pregnant smokers to quit?	A home-based smoking cessation intervention for disadvantaged pregnant women under the age of 25. The service aimed to provide tailored, non-judgemental support to address smoking in the context of these women's lives. Structured behavioural support using motivational interviewing techniques plus NRT prescribed through a PGD.	Of 152 eligible clients referred during the 16 month study period, 52% (79) joined the programme. 20.3% (16 women) were CO validated as quitters at 12 weeks rising to 22.8% (18) when self-reported quitters were included. 12.7% (10 women) were CO validated quitters at 12 months, rising to 16.5% including self-report quitters. The study highlighted the benefits of a smoking cessation service delivered by a midwife and the satisfaction of clients with the support provided. It also identified a number of limitations to the service including its reliance on one specialist midwife with no alternative trained advisers available to the women when this professional was absent.	This study took place in Scotland and is directly applicable to the UK population	The monitoring of client numbers and outcomes was conducted by an external evaluation team and appears robust. However, the descriptive nature of the study makes it impossible to compare the approach taken with any other service delivered to young pregnant women.
Chesterman 2005 England Correlational 2++	Recipient of smoking treatment services who set a quit date, 2001 38778 records from 19 separate smoking cessation services	To determine the effectiveness of smoking cessation services in enabling smokers living in disadvantaged areas to access treatment services, and to assess the extent of variations between	NHS smoking cessation services. Elements of this intervention are not discussed in detail. 4 weeks follow up. Follow up rate not reported.	In general, treatment services were seeing smokers from the most disadvantaged areas where smoking prevalence rates were highest; 32.3% of all smokers in receipt of treatment services lived in the most disadvantaged quintile of areas compared with 9.6% resident in the most advantaged quintile. An indicator of 'positive discrimination' was	National Health Service (NHS) smoking cessation services have been successful in reaching smokers from disadvantaged communities. If improved access to support for smokers living in the poorest communities can	If the Health Survey of England underestimates smoking prevalence rates among people living in the most disadvantaged areas, then

		areas. Power calculation not reported. Department of Health's Policy Research Programme.		calculated for each health authority area to quantify the extent to which the proportion of disadvantaged smokers being treated was greater than the proportion in the local population. This figure ranged from just under 0% to 18%.	be extended, sustained and translated into long-term quitting then smoking cessation services have the potential to make a useful contribution to addressing inequalities in health.	indicators of positive discrimination will be exaggerated.

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
Chouinard, M-C 2005 Canada RCT 1++	18 years, hospitalized for CVD, smoker, communicate in French, local resident, telephone at home, plan of hospital discharge at home, no mental or physical disabilities that would impede participation Convenience sample of 168/267 patients identified as smokers 45 women vs. 123 men, 60 employed vs. 43 unemployed vs. 65 retired, mean age=55.9	To evaluate a nurse-delivered inpatient smoking cessation programme based on the Transtheoretical Model with telephone follow-up tailored to levels of readiness to quit smoking on smoking abstinence and progress to ulterior stages of change. Critical alpha value set at 5% (type I error), and a power (1 - [beta]) of 80% (type II error), the sample size was established at 52 participants per group. Funding not reported	Anurse-delivered inpatient smoking cessation programme was delivered to the experimental group which consisted of: (a) tailored intervention, (b) significant family member involvement, (c) explanation of the stages of change model, (d) information on how family members can support the patient, (e) importance of remaining a nonsmoker - 75% of the 56 participants in the inpatient cessation programme with telephone follow-up received all six telephone calls. -Compared smoking abstinence at 2 months (100% follow up rate) and 6 months (98% follow up rate) groups receiving inpatient counseling with telephone follow-up and the one receiving usual care.	The 6-month smoking abstinence rate was 41.5% in the inpatient counseling with telephone follow-up group, compared with 30.2% and 20% in the inpatient counseling and usual care groups, respectively (p = .05). Progress to ulterior stages of change was 43.3%, 32.1%, and 18.2%, respectively (p = .02). Stage of change at baseline and intervention predicted smoking status at 6 months.	This is not a UK sample It appears that tailored smoking cessation programme delivered at hospitals with telephone follow-up significantly increased smoking cessation at 6 months, and progression to ulterior stages of change or individuals with CVD.	A proportion of patients in the intervention condition did not receive the brief bedside smoking cessation counseling from the CNS Possible Hawthorne effect: research components acted as an assessment and monitoring intervention and that the addition of the brief nurse intervention did not increase the cessation rates about this level.

DH 2001a England Case Report 3-	All smokers accessing (defined by setting a quit date) NHS services, both specialist smoking cessation services/clinics and Intermediate services, i.e. GP practices, nurse interventions, pharmacists 14,598 people set a quit date in specialist and intermediate services. 38% of those setting quit dates were seen through specialist services, and 62% were through intermediate services. Nearly two thirds (63%) of those setting quit dates were women. The majority (78%) of those setting quit dates were aged 18-59 years: 1% were under 18, 22% were aged 18-34, 26% were aged 35-44, 30% were aged 45-59, and 21% were aged 60 or over. 88% of those setting a quit date were White, and only 2% were from BMEG groups. 276 pregnant women set quit dates through the smoking cessation services.	To provide analysis of monitoring returns (quit dates set and 4 week success rates) between April 1999 and March 2000, based on quarterly reports. Power calculations	Self reported 4 week quit rates at special services and intermediate services. Compared quit rates between specialist services and intermediate services Length of follow-up: 4 weeks. 27% lost to follow up; fewer were lost to follow-up at specialist services (24%) than intermediate services (30%). Length of follow-up: 52 weeks. 18% of all clients were lost to follow-up after 52 weeks	Results pertain to HAZs only: At the 4 week follow-up 39% (5,761/14,598) of all those setting a quit date had successfully quit (based on self-report). The success rate was 49% for specialist services and 34% for intermediate services. At 52 weeks follow up 13% (out of 14,598) were still quit In general, success at 4 weeks increased with age, from 28% for the under 18s to 47% for those aged 60 and over. The 4 week success rates were similar for men and women (41% and 38% respectively). The 4-week quit rate for pregnant women was 35%.	NHS stop smoking services monitoring data – directly applicable to UK setting.	Services appear to be using different baselines to measure success. A successful quitter at 4 weeks is actually defined as someone who had not smoked at all since 2 weeks after quit date Missing data: some clients were not asked to undertake CO validation. 5% of people setting a quit date at all services from all health authorities reported ethnicity as “Not Known”. The quality of this data is therefore significantly compromised.

DH 2001b England Case Report 3-	All smokers accessing (defined by setting a quit date) NHS services. 132,500 people set a quit date through the services 48,582 (37%) people set quit dates through the specialist services. 83,962 (63%) set quit dates through the intermediate services; around 1900 pregnant women separately identified as setting quit dates through smoking cessation services	To provide analysis of monitoring returns (quit dates set and 4 week success rates) between April 2000 and March 2001, based on quarterly reports Power calculations	Percent of successful quits. Successful quits are self reported and CO validated in specialist services. Successful quits are self reported only in intermediate services. Compared quit rates between specialist services and intermediate services Compared quit rates between HAs and HAZs 4 weeks follow up, 22% lost to follow up: 20% at specialist services and 22% at intermediate services.	Success rate at 4 weeks follow up was 64,600/132,500 (49%) At 4 weeks follow-up the success rate was 55% for specialist services, 45% for intermediate services 43% of those setting a quit date through Specialist services (out of 48,582) had their non-smoking status confirmed by CO validation. The number of clients setting a quit date in the Health Action Zones increased from 14,600 in 1999/00 to 80,500 in 2000/01. The success rate at 4 week follow-up (self-report) was higher in 2000/01 (46%) than in 1999/00 (39%) and the percentage lost to follow-up lower (22% and 27% (respectively). In general, success at 4 weeks increased with age, from 34% for the under 18s to 53% for those aged 60 and over. The 4 week success rates were similar for men and women (50% and 47% respectively). The 4 week quit rate for pregnant women was 41%	NHS stop smoking services monitoring data – directly applicable to UK setting.	Services appear to be using different baselines to measure success. A successful quitter at 4 weeks is actually defined as someone who had not smoked at all since 2 weeks after quit date Missing data: some clients were not asked to undertake CO validation. 5% of people setting a quit date at all services from all health authorities reported ethnicity as “Not Known”. The quality of this data is therefore significantly compromised.

DH 2002 England Case Report 3-	No longer monitoring results for different models of services (i.e. specialized versus intermediate) and 52 week follow-up were dropped. This third bulletin covers smoking cessation services in all HAs and HAZ between April 2001 and March 2002. During the year 2001/02, a total of around 227,300 people set a quit date through smoking cessation services. Nearly three fifths (57%) of those setting quit dates were women, although the prevalence of smoking is similar for men (29%) and women (25%). The majority (81%) of those setting quit dates were aged 18-59 years: 1% were under 18, 25% were aged 18-34, 25% were aged 35-44, 31% were aged 45-59, and 18% were aged 60 or over. 94% of those setting a quit date were white, only 1% were from mixed, Asian or black groups respectively. Around 4,000 of those setting a quit date were pregnant women.	To provide analysis of monitoring returns (quit dates set and 4 week success rates) between April 2001and March 2002, based on quarterly reports Power calculations	Percent of successful quits. Successful quits are self reported and CO validated. Length of follow-up: 4 weeks, a fifth (22%) of all those setting a quit date were lost to follow-up	At the 4 week follow-up around 119,800 (53%) of all those setting a quit date had successfully quit (based on self-report). CO validation was attempted on around 89,900 (40%) of clients setting a quit date. Around 79,800 (35%) of those setting a quit date had their non-smoking status confirmed by CO validation. CO validation was attempted on about 1,100/4000 (28%) of all pregnant women and around 980 (24%) of those setting a quit date had their non-smoking status confirmed by CO validation. The number of people who successfully quit at the 4 week follow-up (self-report) has increased from around 64,500 in 2000/01 to 119,800 in 2001/02, an increase of 86%. The number of people who reported having successfully quit at the 4 week follow-up in HAZs increased by 42% (from around 37,400 in 2000/01 to 53,200 in 2001/02) and by 145% in the other Has (from 27,200 in 2000/01 to 66,600 in 2001/02).	NHS stop smoking services monitoring data – directly applicable to UK setting.	Services appear to be using different baselines to measure success. A successful quitter at 4 weeks is actually defined as someone who had not smoked at all since 2 weeks after quit date Missing data: some clients were not asked to undertake CO validation. 5% of people setting a quit date at all services from all health authorities reported ethnicity as “Not Known”. The quality of this data is therefore significantly compromised.

DH 2003 England Case Report 3-	Smoking cessation services in England for 2002-2003: successful quitters at the 4 week follow-up. During the year 2002/03, a total of around 234,900 people set a quit date through smoking cessation services. Nearly three fifths (57%) of those setting quit dates were women, although the prevalence of smoking is similar for men (28%) and women (25%). The majority (82%) of those setting quit dates were aged 18-59 years: 1% were under 18, 28% were aged 18-34, 24% were aged 35-44, 29% were aged 45-59, and 18% were aged 60 or over. 94% of those setting a quit date were white, only 1% were from mixed, Asian, black and other groups respectively. Around 6,800 of those setting a quit date were pregnant women.	To provide analysis of monitoring returns (quit dates set and 4 week success rates) between April 2002 and March 2003, based on quarterly reports Power calculations	Percent of successful quits. Successful quits are self reported and CO validated. Success rates in HAZs of 2002/03 compared to 2001-02. 4 weeks follow up, around 54,700 (23%) were lost to follow-up at 4 weeks.	At the 4 week follow-up around 124,100 (53%) of all those setting a quit date had successfully quit (based on self-report). CO validation was attempted on around 92,700 of the 124,100 clients who had successfully quit (self-report). 83,200 had their non-smoking status CO validated: 35% of those setting a quit date were CO validated as quit; 67% of those having self reported as quitting were CO validated as quit The number of pregnant women who reported having successfully quit at the 4 week follow-up was around 3,000 (44%). CO validation was attempted on about 1,900 (28%) of all pregnant women and around 1,700 (25%) of those setting a quit date had their non-smoking status confirmed by CO validation. The number of people who successfully quit at the 4 week follow-up (based on self-report) increased by 92%, from around 64,600 in 2000/01 to 124,100 in 2002/03. The number of people that reported having successfully quit at the 4 week follow-up (based on self-report) in HAZ has risen by 38%, from around 37,400 in 2000/01 to 51,400 in 2002/03.	NHS stop smoking services monitoring data – directly applicable to UK setting.	Services appear to be using different baselines to measure success. A successful quitter at 4 weeks is actually defined as someone who had not smoked at all since 2 weeks after quit date Missing data: some clients were not asked to undertake CO validation. 5% of people setting a quit date at all services from all health authorities reported ethnicity as “Not Known”. The quality of this data is therefore significantly compromised.

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
DH 2004 England Case Report 3-	Smoking cessation service in England for 2003-2004 Around 361,200 people set a quit date through the stop smoking services. 91% of those setting a quit date were white, 2% were Asian and only 1% each were from mixed, black and other groups respectively. Nearly three fifths (57%) of those setting quit dates were women, although the prevalence of smoking is similar for men (27%) and women (25%). The majority (80%) of those setting quit dates were aged 18-59 years: 2% were under 18, 28% were aged 18-34, 24% were aged 35-44, 28% were aged 45-59, and 18% were aged 60 or over. Around 11,300 of those setting a quit date were pregnant women.	To provide analysis of monitoring returns (quit dates set and 4 week success rates) between April 2003 and March 2004, based on quarterly reports. Power calculations	Percent of successful quits. Successful quits are self reported and CO validated. Success rates in HAZ of 2003/04 compared to 1999/2000. Length of follow-up: 4 weeks, 74,000 (20%) of all those setting a quit date were lost to follow-up at 4 weeks.	At the 4 week follow-up, around 204,900 (57%) of those setting a quit date had successfully quit (based on self-report). CO validation was attempted on 143,500 (70%) of the 204,900 clients who had successfully quit (based on self-report). Around 127,500 had their non-smoking status confirmed by CO validation (35% of those setting a quit date, 62% of those who self reported as having successfully quit after 4 weeks). Success at the four week follow up increased with age, from 38% of those aged under 18, to 67% of those aged 60 and over. The number of pregnant women who reported having successfully quit at the 4 week follow-up was around 5,800 (51%). CO validation was attempted on about 3,800 (33%) of all pregnant women and around 3,200 (28%) had their non-smoking status confirmed by CO validation.	NHS stop smoking services monitoring data – directly applicable to UK setting.	Services appear to be using different baselines to measure success. A successful quitter at 4 weeks is actually defined as someone who had not smoked at all since 2 weeks after quit date Missing data: some clients were not asked to undertake CO validation. 5% of people setting a quit date at all services from all health authorities reported ethnicity as “Not Known”.
Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
DH	Smoking cessation services in	To provide analysis of	Percent of successful	At the 4 week follow-up around	NHS stop smoking	Services appear

2005 England Case Report 3-	England for 2003-2004: successful quitters at the 4 week follow-up. Around 529,520 people set a quit date through NHS Stop Smoking Services.	monitoring returns (quit dates set and 4 week success rates) between April 2004 and March 2005, based on quarterly reports Power calculations	quits. Successful quits are self reported and CO validated. Length of follow up 4 weeks.	297,828 had successfully quit (based on self-report), 56% of those setting a quit date Of those setting a quit date, success at the four week follow up increased with age, from 39% of those aged under 18, to 66% of those aged 60 and over. CO validation was attempted on 216,409 (73%) of the 297,828 clients who had successfully quit (based on self-report). Around 191,025 had their non-smoking status confirmed by CO validation (36% of those setting a quit date, 64% of those who self reported as having successfully quit after 4 weeks).	services monitoring data – directly applicable to UK setting.	to be using different baselines to measure success. A successful quitter at 4 weeks is actually defined as someone who had not smoked at all since 2 weeks after quit date Missing data: some clients were not asked to undertake CO validation. 5% of people setting a quit date at all services from all health authorities reported ethnicity as “Not Known”.

Ferguson 2005 England Cohort study 2++	Recipient of smoking treatment services who set a quit date between May and November 2002. 2069 participants. 6.3% were relatively disadvantaged (SES group 6) 43.6% were male, 56.4% were female. Participants' ages were similarly distributed between 30 and over 61.	To examine the relationship between service-related characteristics and socio-demographic and behavioural factors with cessation outcomes (CO-validated quit rates at 52 weeks). To compare characteristics of service users lost to follow-up with CO-validated quitters. Power calculation not reported. Department of Health's Policy Research Programme.	Clients were seen by trained advisers and set a quit date. Most received treatment on a weekly basis for typically 8 weeks, either one-to-one or group-based, combined with NRT or bupropion. 52 weeks; 37.5% lost to follow up.	One user in seven (14.6%) reported prolonged abstinence. This rose to 17.7% when self-report cases were included. Relapse rates between 4 and 52 weeks were almost identical between the two study areas—75%. Relapse was most likely to occur in the first 6 months following treatment. Users who self-reported quitting at 4 weeks were less likely (13.7%) than those with biochemical verification of smoking status at 4 weeks (25.2%) to be CO-validated quitters at 52 weeks (P = 0.004). Older users (OR 1.023; CI 1.014–1.032), people who smoke mainly for pleasure rather than to cope (OR 1.38; CI 1.02–1.87), and those who were extremely determined (OR 1.58; CI 1.21–2.05) were more likely to be quitters at 52-week follow-up, whereas those with lower socio-economic status (OR 0.86; CI 0.78–0.96), who smoked their first cigarette of the day within 5 minutes of waking (OR 0.73; CI 0.55–0.96) or had another smoker in their household (OR 0.65; CI 0.49–0.86) were less likely. In contrast, users lost to follow-up tended to be younger and experienced different referral pathways than CO-validated quitters. Gender nor any key characteristics of intervention, such as group or one-to-one counseling, were statistically associated with quitting.	These results obtained from routine services are consistent with those obtained from clinical trials in relation to abstinence at one year. Given that a high proportion of smokers relapsed between 4 weeks and 1 year it is important that future assessments of longer-term outcomes are conducted. However, following-up service users many months after an intervention is expensive, and reasonable estimates of quit rates can be estimated from short-term outcomes, provided that they have been CO-validated. Future studies should monitor outcomes from a selection of services treating different groups of smokers, particularly if more is to be learned about the role of smoking treatment services in reducing inequalities in health.	A very comprehensive analysis which provides the most complete biochemically validated information available on the long-term success of the services.

Froelicher et al. 2004 California, USA RCT 1++	Inclusion: Admitted to hospital with CVD or peripheral vascular disease, had smoked cigarettes in the month before admission, were willing to make a serious attempt to quit smoking after discharge. Exclusion: medical instability, alcohol or substance abuse, dementia, and schizophrenia. 277 women, over 18 years Mean age was 6.	Is a nurse managed, cognitive behavioural, smoking cessation and relapse prevention programme effective for women admitted to hospital with cardiovascular disease (CVD)? Power calculation not reported National Heart, Lung, and Blood Institute; nicotine patches donated by Hoechst, Marion and Rousseau and SmithKline Beecham.	Smoking cessation and relapse prevention intervention (brief physician counseling and usual care plus nurse managed, cognitive behavioural, relapse prevention intervention given before discharge, ≤ 5 structured telephone contacts 2–90 days after discharge, and relapse management counseling as needed) (n = 142) or usual care (brief physician counseling, a self help pamphlet, and a list of community resources) (n = 135). 30 months for 89% follow up rate.	The intervention and usual care groups did not differ for rates of 7 day point prevalence for non-smoking (based on self report of not having smoked in the past 7 days, which was verified by cotinine tests, family, or friends)	In women admitted to hospital with cardiovascular disease, a nurse managed, cognitive behavioural, smoking cessation and relapse prevention programme did not reduce smoking rates at 12 months beyond levels achieved by usual care.	A good quality RCT. However, it should be noted that rather than offering NRT as an aid to smoking cessation from the beginning of the intervention, NRT was offered by WINS nurses only to women who relapsed to smoking, NRT was therefore a predictor of relapse rather than a predictor of smoking cessation.

Hand et al 2002 Wales RCT 1+	Patients referred by their hospital doctor to the smoking cessation counselor and who agreed to participate in the study 245 patients were randomized: 109 to advise or support only (AS) and 136 to AS plus NRT	To investigate if the success of NRT among healthy patients could be replicated in hospital patients using another combination of 2 forms of NRT (patch and inhaler) An author's endowment fund	Comparison of patients in two groups: NRT and inhaler plus advice and support; advice and support only. Follow up at 1 week, 3 months, 6 months and 1 year by CO testing Follow up rate not reported	At 1 year 35 (14%) had sustained cessation confirmed by a CO breath test, 20/136 (15%) AS+NRT and 15/109 (14%) AS, p=0.857. One hundred and ten patients gave up smoking for at least 1 week, 54% AS+NRT and 33% AS (p<0.001). By 6 months there was no significant difference between the two groups (22/136 (16%) AS+NRT and 15/109 (14%) AS).	In hospital patients NRT, given as regular daily patches plus an inhalator to be used as needed, did not add to the smoking cessation rate achieved at 1 year by regular advice and support, despite significantly increasing the cessation rate at 1 week.	The issue of randomization into treatment was not adequately addressed in the study and the comparability of the treatment and control groups at baseline was not discussed. Therefore, although this seems to be a reasonable quality study it was not possible to fully evaluate whether the effect was due to the treatment.

Jones 2004 England Cohort study 2+	Analysis of Stop Smoking Database: 2633 clients went through the programme Postal survey of clients: 155 returned questionnaires Analysis of existing client evaluations of group sessions: 418 clients attended the groups	To evaluate the existing workload, the effectiveness and the efficiency of the Kingston and Richmond Stop Smoking Service. To follow up clients through a survey in order to measure the number of quitters at 52 weeks and their perception of the Stop Smoking Service. To identify areas for improvement through surveys of advisors and clients and through analysis of existing client group session evaluations.	Two types of programmes: a group programme (run by members of the Stop Smoking Service team) and one-to-one programmes. Staff who provide the one-to-one stop smoking programme include pharmacists and general practice staff. These staff are termed 'Advisors'. Postal survey of clients: one year follow up for 68/155 (44%). Analysis of existing client evaluations of group sessions: no follow up, completion rate of 23%.	Analysis of Stop Smoking Database: 1316/2633 smokers quit at 4 weeks, overall success rate is 50% 80/227 (35%) people followed up at 52 weeks were still not smoking <u>Clients at 52 weeks who quit at 4 weeks:</u> The audit shows that the long-term effectiveness of the programme for 4-week quitters is 52%. There are no significant differences in the number of 4-week quitters that stayed quit at 52 weeks between the two PCTs (47% in KPCT vs. 58% in RTPCT), nor significant differences in service type. <u>4 week quitters who resumed at 52 weeks:</u> The data appears to indicate that most of the quitters relapse after three months; this is also when the nicotine replacement therapy ceases to be available. Clients indicated stress as the main reason for resuming smoking. <u>Main Results</u> <u>1 yr follow up of clients who DID NOT quit at 4 weeks:</u> Nearly half of those who did not quit at 4 weeks thought that the programme was too short. Clients who did not quit felt there was insufficient information on how to prevent relapse, whilst at the same time it was perceived to be very important.	Directly relevant to UK population.	Although a reasonable study given the difficulties associated with long term follow up, 52 quit rates need to be taken with caution given the different ways clients were approached (telephone vs. letter).
Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
Judge	Recipient of smoking	To examine the	Typically, smokers were	More than one-half of clients (53%)	These results obtained	Judge

2005 England Correlational analysis 2++	treatment services who set a quit date between October 2001 and March 2003 6959 participants 6% were relatively disadvantaged (SES group 6) 41.7% were male, 58.3% were female. Ages 31 to 40 were most represented among the participants (24.9%), 3.2% reported not being white British or white Irish	impact of socio-demographic factors, smoking-related behaviour and service characteristics on CO-validated quit rates at 4-week follow-up in English smoking treatment services, and to compare the results with those for self-reported quitters. Power calculation not reported. Department of Health's Policy Research Programme.	seen by smoking cessation advisers 1 week (maximum 2 weeks) before quitting and at weekly intervals for 4 weeks after quitting, although contacts were sometimes more or less frequent than this. NRT treatment started typically on the quit date, and bupropion treatment 10 days beforehand. Both continued at weekly intervals for typically 8 weeks. 4 weeks; 20.6% lost to follow-up.	were CO-validated as quitters at 4 weeks, rising to 60.7% when self-reported cases were included. Age (OR 1.026; CI 1.022–1.029) and being extremely determined to quit (OR 1.46; CI 1.26–1.71) were associated positively with CO-validated cessation, whereas women (OR 0.85; CI 0.77–0.94), users with lower socio-economic status (OR 0.92; CI 0.88–0.95), those smoking 31 or more cigarettes daily (OR 0.75; CI 0.64–0.88) and those with relatively poor health status (OR 0.72; CI 0.63–0.82) were less likely to quit. Although the vast majority of users received one-to-one support, those who had group counseling were more likely to be successful in their quit attempt (OR 1.38; CI 1.09–1.76). Self-report and CO-validated quitters were similar in terms of their characteristics.	from routine services support those obtained from clinical trials and confirm the effectiveness of counseling combined with pharmacotherapies to assist smokers to quit in the short term. However, the relative effectiveness of group interventions raises questions about why one-to-one counseling is used much more commonly. The importance of sociodemographic and nicotine-related dependency factors also suggests that local service targets for smoking cessation need to take account of the social distribution of these characteristics.	2005 England Correlational analysis 2++

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
Lowey 2002 England Correlational Analysis 2++	Patients accessing the services over the age of 18, residents within the NW region of England, setting a quit date between January 2000 and September 2001 43020 smokers' records	Aimed to establish whether NHS smoking cessation services across the North West region make a significant contribution to promoting equity of access to health care and to reducing inequalities in health. Power calculation not reported.	NHS SSS: determine if the proportion of people who set a quit date differed by sex, age, deprivation of those who set quit dates. Compared the proportion of people who set a quit date to the NW's population; 26.2% were lost to follow up.	Younger smokers were less likely to set a quit date. Higher proportion of estimated smokers in the NW who set a quit date were female. 50% of all smokers setting a quit date lived in the most deprived areas, while only 25% of people in the NW are living in deprived areas. An estimated 3.3% (43,020/1.3 million) of smokers in the NW set a quit date, 48.5% of them successfully quit (at 4 weeks). Smokers living in deprived areas do not achieve greater success rates compared to those in more advantaged areas (p=0.16)	*Directly relevant SSS across the NW are attracting those living in deprived areas but are not achieving comparable successful quit rates compared to more prosperous areas. The services are not attracting and maintaining contact with younger smokers. SSS need to re-address this issue by identifying how the services could better meet the needs of the most disadvantaged and younger people.	A very comprehensive study that provides important information on whether the stop smoking services are reducing health inequalities in the NW. No methodological concerns.

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
MacAskill 2005 England Qualitative & correlational analysis 2++	16 prisons in the North West of England representing a range of prison categories and PCTs. 1,581 prisoners were recorded as setting a quit date in 2004-05. Prisoners were those local/remand prisons, category B, C and D prisoners, young offenders and female prisoners.	To explore the impact of DH funded provision of NRT in HM prisons. No power calculation Funded by the Department of Health and Prison Health	Delivery models: 1) Group support with enhanced one-to-one support in parallel for some individuals 2) Group support only 3) One-to-one only 4) Combination of group and one-to-one in programme 4 weeks follow up 80% followed up.	642 prisoners were reported as remaining quit at four weeks (based on CO validation); this was 41% of those who set a quit date. 324 prisoners were lost to four week follow-up (20% of those participating). The highest overall four week quit rate in one prison for the year was 64%. Quarterly quit levels in individual prisons tended to improve over the year, especially where services were well established.	As the study took place within the UK prison population it is directly relevant to the UK setting. It provides important evidence that smoking cessation support in prisons can be effective.	A comprehensive study. No methodological concerns – the results seem reliable as they were CO validated. However, the author does not disaggregate the quit rates by sex – it would have been useful to know if there were gender differences in quit rates or the numbers of people attending smoking cessation programmes.

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
May et al 2006 England RCT 1++	564 participants. 238 in the intervention "buddy condition"; 326 in control group (same treatment without the buddy component). There were 350 (62%) women, 395 (70%) participants were married or living with a partner; 475 (84%) were in paid employment; the mean age was 43.6 years (S.D.=12.4). Mean daily cigarette consumption was 23 (S.D.=8.6) and mean expired carbon monoxide (CO) concentration on their quit date was 28.8ppm (S.D.=12.5); the mean Fagerstrom Test for Nicotine Dependence (FTND) score was 5.6 (S.D.=2.3). The average number of previous serious quit attempts was 3.4 (S.D.=5.3).	To assess the effectiveness of including a social support intervention ('buddy system') in a group treatment programme to aid smoking cessation. The study was powered to detect a difference in the effect of the buddy system after 4 weeks of continuous abstinence. Assuming 40% abstinence in the controls and 50% in the buddy condition the power to detect this size of difference was 80% Funding not reported.	At weekly stop smoking support groups methods to avoiding and combating urges to smoke were shared and discussed. In addition, participants chose a buddy and called each other alternating between them every day for the first week. No particular training or advice was given to smokers about the content of these calls they were simply described as a way of buddies offering mutual support between visits. Abstinence between participants in the buddy condition and the control condition at 1 week, 4 weeks and 26 weeks after the quit date follow up (100% follow up rate).	78 participants (14%) reported continuous abstinence at 26 weeks: 15% (*n*=48) of those in the solo condition and 13% (*n*=30) of those in the buddy condition. This difference was not significant. 35% of the sample (*n*=194) were continuously abstinent to the 4-week follow-up: a higher proportion of those in the buddy condition than the solo condition (39%, *n*=92 versus 31%, *n*=102). Two hundred and seventy-five (49%) participants were abstinent for the first week of treatment: 56% (*n*=133) of buddy participants and 44% (*n*=142) of solo participants. These differences were not significant.	Directly relevant to UK setting. The buddy system did not represent a significant addition to group smoking cessation treatment; although these results cannot be generalised to include smokers in other situations such as individual treatment or self-help programmes. Despite the lack of effect on abstinence rates the buddy intervention was effective in increasing the individual's perception of social support, with members of the buddy group reporting a greater sense of having someone to turn to on their quit dates. However, it is not known if this effect was sustained	A good quality RCT. No methodological concerns.

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
McEwen et al 2006 England Correlational Analysis 2++	Registrants with stop smoking services in 4 outer London boroughs who set a quit date. 1501 participants: 822 were treated in groups by clinic staff and 679 received one-to-one treatment from Community Advisers (CA). CA attracted significantly more clients from black and minority ethnic groups, those with a lower education and those entitled to free prescriptions than the clinic. Clients attending for one-to-one treatment also had stopped smoking for a longer time in previous quit attempts and were more likely to smoke hand-rolled cigarettes than those in group treatment.	Explores the most effective form of psychological treatment to aid smoking cessation: group treatment provided by specialists or one-to-one treatment provided in the community by primary care nurses or pharmacists. Self-funded.	The stop smoking services are comprised of clinics (group) and community (one-to-one) treatments. Two outcomes were used: CO-validated continuous 4-week abstinence and CO-validated abstinence on weeks 3 and 4 after the quit date. Correlational analysis: therefore, no direct comparisons were made.	30% (*n*=244) of group clients were CO-validated abstinent at 4 weeks after their quit date compared with 19% (*n*=126) of one-to-one clients (Fisher's exact<.001). 42% (*n*=348) of clinic clients treated in groups were abstinent for weeks 3 and 4 compared with 32% (*n*=214) of the clients treated one-to-one in the community (Fisher's exact<.001). If CO-validated abstinence at weeks 3 and 4 is redefined as self-report at week 3 plus CO-verified at week 4 (as permitted by the Department of Health in its definition of abstinence), then the abstinence rate increases to 39% (*n*=589), 43% for groups and 35% for one-to-one (Fisher's exact=.001). 9% (*n*=44) of the clients who were smoking at weeks 1 and 2 post quit were abstinent at weeks 3 and 4 (CO-validated): there was no significant difference in the abstinence rates of these clients whether they were treated one-to-one or in groups (Fisher's exact=.876).	Directly relevant to UK setting. Study suggests that treatment type predicts end of treatment abstinence. The findings indicates that receiving behavioural support for smoking as part of a group significantly increases smokers' chances of success as opposed to receiving individual one-to-one treatment.	Although it is possible that there are some differences between the treatment provided by community advisors and clinic staff, the study does provide a strong justification for demonstrating equivalence between these two types of treatment deliverers. No methodological concerns.
Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments

Nagle, A. 2005 Australia RCT 1++	Consecutive patients admitted to the hospital over 12 months in 1997, who reported being smokers in the preceding 12 months. 1422 inpatients, 711 in control group, 711 in interventions group. There were more males in the intervention group (281 vs. 236), more aged over 70 years (134 vs. 103), and more employed (274 vs. 237).	Does the provision of nurse-led intervention lead to smoking cessation in hospitals? Sample size of 700 was required to detect an absolute difference in smoking of 5% between control and intervention groups with a power of 80% and alpha of 95%. National Health and Medical Research Council.	Nurse-delivered intervention that incorporated tailored information, assessment of withdrawal, offer of nicotine replacement therapy, booklets, and a discharge letter. The control group received the usual care for smokers (no smoking assessment, minimal contact about smoking, no pharmacotherapy, no discharge plan, smoking not considered part of the drug and alcohol counselor's role). Compared smoking cessation rates between intervention group and control group 3 and 12 months post discharge.	At 3 months there was no difference between intervention and control groups on self-reported point prevalence (27.3% vs. 27.5%) nor for continuous abstinence (18.5% vs. 20.6%). Findings were CO validated. At 12 months there was no difference between intervention and control groups on self-reported point prevalence of abstinence (19.5% vs. 21.9%) nor for continuous abstinence (11.7% vs. 13.9%) Findings were CO validated.	While this is not a UK based study they compare their results to a UK-based study. It is likely that this type of intervention would be ineffective with UK patients as well.	A good quality RCT. No methodological concerns.

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
NEPHO 2005 England Correlational analysis 2+	Data on clients accessing stop smoking services were extracted from individual services. 28473 records accessed. Records were excluded if age, sex or postcode were missing or incomplete.	The NE services have been effective in producing consistently higher than the national average annual smoking cessation rates at 4 weeks. This paper aims to find out if the services are effective in reducing health inequalities as define by: Age, Sex Ethnicity, and SES Power calculation not reported Smoke Free North East Office	Compared access to services to smoking prevalence in a number of groups. Follow up not applicable.	Six percent of North East smokers set quit dates each year. A higher proportion of smokers are quitting through these services in the more deprived areas than affluent ones. These services are therefore appropriately targeted to reduce socioeconomic inequalities. A higher proportion of female smokers are quitting, but this is not statistically significant at 52 weeks; and so services may be contributing to reducing the gender inequality in smoking. Services are not attracting younger smokers very well and so are not affecting age inequalities. Smokers from Black and Minority Ethnic groups appear less likely to access services but the small numbers make interpretation more difficult than for other inequalities.	Directly relevant to UK setting. SSS across the NE are attracting those living in deprived areas but are not achieving comparable successful quit rates compared to more prosperous areas. The services are not attracting and maintaining contact with younger smokers. SSS need to re-address this issue by identifying how the services could better meet the needs of the most disadvantaged and younger people.	Missing data was not accounted for in the analysis, which may have affected the findings of the study.
Owens and Springett 2006 Observational study 2-	Clients accessing the Roy Castle Fag Ends Stop Smoking Service (RCFE) in Liverpool between 2001 and 2005.	To describe the methodology behind the RCFE, describe how the service works and report 4 and 52 week cessation outcomes between 2001 and 2005.	A community-based stop smoking service accessed by self referral (helpline and walk in) and referral from a GP/primary care/hospital. Clients can attend group or one to one sessions	CO validated quit rates at four weeks ranged from 34% - 45% between 2001-2005, rising to 57% overall when self-report cases were included. Self-report 52 week quit rates (only 4% were CO validate) ranged from 16-22% between 2001-2004.	This study is directly applicable to the UK population.	A very basic descriptive study that reports general outcomes with no examination of the relationship

			with a trained adviser for as long as they want and are able to return to the service immediately following relapse, if they choose to do so. This differs from the 'traditional' model of service delivered by NHS SSSs.	The authors argue that these results are better than most NHS SSSs and higher than the existing published evidence, although the limits of the study design, particularly in relation to 52 week outcomes, make these conclusions preliminary in nature. The proportion of 'walk in' clients has grown as the service developed, from 19% in 2001 to 41% in 2004. There has been a corresponding rise in the number of clients who set a quit date through the service. Ease of access may result in more quit attempts. The open, flexible model of service may also explain the positive cessation outcomes reported.		between client characteristics, type of intervention received and outcomes. 52 week cessation outcomes are reported but little detail is provided about how these were obtained and what proportion of clients were lost to follow up at 52 weeks. Only 4% of 52 week outcomes were validated.

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
Quist-Paulsen 2003 Norway RCT 1++	240 smokers aged under 76 years, daily smokers, admitted for myocardial infarction, unstable angina, or cardiac bypass surgery. 118 were randomly assigned to the intervention and 122 to usual care (control group). Education and working status differed slightly between the two groups at baseline (table 1). Overall, 87% (n = 101) of patients in the intervention group and 93% (n = 114) in the control group had smoked in the 24 hours before admission. Mean age 57; 76% in interventions group were men. 75% in control group were men.	To determine whether a nurse led smoking cessation intervention affects smoking cessation rates in patients admitted for coronary heart disease (CHD). Aimed to detect a 20% difference between the two groups. With a power of 80% (Beta = 0.2) and an alpha of less than 0.05, 98 patients were needed in each group (_2, two tailed test, Sample Power version 1, SPSS, Chicago). Outcome measure: 12 month smoking cessation rates determined by self report & biochemical verification.	Intervention was based on a booklet and focused on fear arousal and prevention of relapses. The intervention was delivered by cardiac nurses without special training. 5 month follow up: 22/240 (9%) were lost to follow up.	12 months after admission to hospital, 57% (n = 57/100) of patients in the intervention group and 37% (n = 44/118) in the control group had quit smoking (absolute risk reduction 20%, 95% confidence interval 6% to 33%). The number needed to treat to get one additional person who would quit was 5 (95% confidence interval, 3 to 16). Assuming all dropouts relapsed at 12 months, smoking cessation rates were 50% in the intervention group and 37% in the control group (absolute risk reduction 13%, 0% to 26%).	Not a UK population. However, the results are likely to be broadly applicable to the UK setting.	A good quality RCT. No methodological concerns.

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
Rice & Stead 2004 International Cochrane review 1++	Participants were adult smokers, 18 years and older, of either gender recruited in any type of healthcare setting. The only exception was studies that only recruited pregnant women.	To determine the effectiveness of smoking cessation interventions delivered by nurses on smoking behaviour in adults.	Included cessation studies that compared usual care with an intervention, brief advice with a more intensive smoking cessation intervention or different types of intervention. Advice was defined as verbal instructions from the nurse to 'stop smoking' whether or not information was provided about the harmful effects of smoking. Interventions were grouped into low intensity(trials where advice was provided during a single consultation lasting 10 minutes or less with up to one follow-up visit) and high intensity (trials where the initial contact lasted more than 10 minutes, there were additional materials and/or strategies other than simple leaflets, and usually more than one follow-up contact) for comparison.	Twenty studies comparing a nursing intervention to a control or to usual care found the intervention to significantly increase the odds of quitting (Peto Odds Ratio 1.47, 95% CI 1.29 to 1.68). There was heterogeneity among the study results, but pooling using a random effects model did not alter the estimate of a statistically significant effect. There was limited evidence that interventions were more effective for hospitalised patients with cardiovascular disease than for inpatients with other conditions. Interventions in non-hospitalised patients also showed evidence of benefit. Five studies comparing different nurse-delivered interventions failed to detect significant benefit from using additional components. Five studies of nurse counselling on smoking cessation during a screening health check, or as part of a multifactorial secondary prevention in general practice (Not included in the main meta-analysis) found the nursing intervention to have less effect under these conditions.	The results from this study that discuss nursing delivered interventions seem broadly applicable to the UK population and speak to the value of conducting intensive inpatient smoking cessation interventions in secondary care.	No methodological conerns.
Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
Rigotti et al	Participants were patients	To determine the	Any intervention to	Intensive intervention (inpatient	The results from a	No

2002 International Cochrane review 1++	who were hospitalised, or about to be hospitalised and who were currently smoking or had recently quit. The studies took place in a range of countries from the USA, the UK, Spain, and Canada.	effectiveness of smoking cessation interventions for hospitalised patients	increase motivation, to assist a quit attempt or help recent quitters avoid relapse. Intervention could be delivered by physicians, nursing staff, psychologists, smoking cessation counsellors or other staff. Intervention could include advice or more intensive behavioural therapy with or without the use of pharmacotherapy or post-discharge follow-up. Interventions during the hospital stay were categorised according to whether they included follow-up after discharge. 4 categories of intervention intensity: 1) 1 contact in hospital setting lasting <=15 minutes, no follow-up support, 2) 1 or more contacts in hospital lasting in total >15 mins, no follow-up support, 3) Any hospital contact plus follow-up <=1 month, 4) Any hospital contact plus follow-up > 1 month.	contact plus follow-up for at least one month) was associated with a significantly higher quit rate compared to control (Peto Odds Ratio 1.82, 95% CI 1.49-2.22, six trials). Interventions with less than a month of follow-up did not show evidence of significant benefit (Peto Odds Ratio 1.09, 95% CI 0.91-1.41, seven trials). There was no evidence to judge the effect of very brief (<20 minutes) interventions delivered only during the hospital stay. Longer interventions delivered only during the hospital stay were not significantly associated with a higher quit rate (Peto Odds Ratio 1.07, 95% CI 0.79-1.44, three trials). Although the interventions increased quit rates irrespective of whether NRT was used, the results for NRT were compatible with other data indicating that it increases quit rates. There was no strong evidence that clinical diagnosis affected the likelihood of quitting.	number of international settings seem broadly applicable to the UK population and speak to the value of conducting intensive inpatient smoking cessation interventions in secondary care.	methodological concerns.
Ritchie et al 2007 Qualitative 2 -	12 smoking cessation groups in a low income community observed for 6 weeks from Oct-Dec 2003. 5 debriefing sessions with group facilitator. 11 interviewees selected on the basis that they had used	To make explicit the assumptions shaping the practice of open smoking cessation groups that use narrative therapy and to assess smoker's	'Smokey Joe', a group-based smoking cessation intervention run by the NHS in a low income area of Scotland. The group was 'open' to people at any stage of	Hypotheses generated suggest that flexible services that offer support to a range of smokers at different stages in their quit attempt are beneficial and valued. Programmes that are tailored to the individual's personal situation are valued by participants.	This study is directly applicable to the UK population.	Limited information provided on methods. 11 interviewees purposively

	the service at least three times in six consecutive months.	perceptions of the value of these groups	the quitting process and used narrative therapy (where people are encouraged to tell their own 'self-story') to support people to quit.	An understanding of the local culture and community smoking norms should shape local cessation interventions. Parallel outcome evaluation found 52 week quit rates of 16%, similar to 'mainstream' NHS SSS, but this evaluation was not robust.		sampled out of group of 67. As they had used the service at least three times, may have been biased towards a positive outcome.
Schulz 2005 Scotland Qualitative & correlational analysis 2-	114 respondents from the NHS Argyll and Clyde 12 smoking cessation groups, total of 67 attendees: 49 were female and 18 were male, most attendees were between 30 and 69. 5 interviews with group facilitators. 10 in-depth interviews with potential clients. 11 in-depth interviews with clients who attended at least 3 group sessions between June and December 2003.	To evaluate the effectiveness of Narrative Therapy called "Smokey Joe" in smoking cessation in Barrhead in 3 stages: 1. process evaluation of Smokey Joe and impact evaluation based on participants and facilitators perceptions, 2. develop and implement a pilot training programme on Narrative Therapy, 3. evaluate implementation of the program Power calculations not applicable	A group based therapy that uses narratives of smoking and quitting of the group members as a resource for giving up smoking. 15 months for 45/114 (39% follow up rate).	Analysis of 45 respondents, there was quit rate of 16%, this rate compared favourably with rates from other services. Clients appreciate that the Barrhead service gives them freedom to choose Smokey Joe or traditional service. Qualitative data shows that clients rate the flexibility and open-ended nature of Smokey Joe very highly. Among clients who attended the group at least three times there was an overall reduction in smoking in 2 clients, quit attempts sustained in 9 clients	Indicates some early success in relation to quit rates, as well as accommodating those clients who would normally be rejected by services. Offers in-depth guidance on how to approach the decision to quit. Clients are responsive and value the new method and quit rates are equivalent to other services. Caters for clients who would be rejected (they have not made a definite decision to quit) by services who use "stages of change." Allows for the groups "agenda" to be tailored to meet the clients' current needs.	Small scale study. Qualitative elements are thorough but the outcomes and client profile element are weak.

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
Sinclair 2004 UK Cochrane Review 1++	Community pharmacy clients who are smokers and who wish to stop RCTs were included for review	This review assesses the effectiveness of interventions by community pharmacy personnel to assist clients to stop smoking.	Any intervention by community pharmacy personnel to promote smoking cessation amongst their clients. The intervention may have been delivered by one or more pharmacists and/or members of pharmacy staff. They may have included advice or more intensive behavioural therapy, with or without the use of any form of NRT or other pharmacotherapy. The control intervention may have been usual pharmacy support or any less intensive programme. Pharmaceutical trials which compared only NRT with a control in the community pharmacy setting did not fall within the scope of the review.	Two trials met the selection criteria. They included a total of 976 smokers. Both trials were set in the UK and involved a training intervention which included the Stages of Change Model; they then compared a support programme involving counseling and record keeping against a control receiving usual pharmacy support. In both studies a high proportion of intervention and control participants began using NRT. Both studies reported smoking cessation outcomes at three time points. However, follow-up points were not identical (three, six and 12 months in one, and one, four and nine months in the other), and the trend in abstinence over time was not linear in either study, so the data could not be combined. One study showed a significant difference in self-reported cessation rates at 12 months: 14.3% versus 2.7% ($p < 0.001$); the other study showed a positive trend at each follow-up with 12.0% versus 7.4% ($p=0.09$) at nine months.	The findings of this study that trained community pharmacists may have a positive effect on smoking cessation rates, is directly relevant to the UK population.	No methodological concerns.

Smith 2006 England Retrospective health equity audit – postal questionnaire Cohort study 2+	Clients accessing the Blackpool, Fylde and Wyre NHS Stop Smoking Service 500 clients sampled. Response rate: 41%	How fairly are smoking cessation services distributed in relation to the health needs of different groups and areas? No funding source identified.	NHS stop smoking intervention Comparison between success rates of people from deprived and non-deprived areas 52 week follow up.	Quit rate at 52 weeks was 41.7%; however, this reduced to 16.8% assuming that all non-responders had resumed smoking.	Directly applicable to UK setting. Indicates that at 52 week follow up the abstention rate falls to 16.8%.	Audit only correlates quitting status with level of deprivation and does not consider confounding factors such as gender or age.
South Gloucestershire PCT 2005 England Retrospective health equity audit – Correlational analysis of client database 2+	Clients accessing the South Gloucestershire Smoking Cessation Service Of 1,894 records 87% (1,657) were analysed	How fairly are smoking cessation services distributed in relation to the health needs of different groups and areas? No funding source identified	NHS stop smoking intervention Comparison between success rates of people from deprived and non-deprived areas	Percentage of successful quitters from 1st quintile (least deprived): 55% 2nd quintile: 52% 3rd quintile: 54% 4th quintile: 49% 5th quintile (most deprived): 48%	Directly relevant to UK setting. Demonstrates that quitters from more deprived groups are less successful than quitters from less deprived groups	Audit only correlates quitting status with level of deprivation and does not consider confounding factors such as gender or age.
Springett et al 2007 Interviews and focus groups 2-	Staff and service users of the Fag Ends service in Liverpool. Interviews with service staff and focus groups with clients (numbers unclear).	To ascertain the main characteristics of the Fag Ends smoking cessation service and how they contribute to its effectiveness from a user and service provider perspective	Group-based smoking cessation intervention staffed by lay advisers. Groups open to all on a drop in basis. One to one support also available, initially on a drop in basis and afterwards by appointment. Local helpline refers clients to group and one to one interventions and	A service that employs lay advisers, rather than health professionals can be successful in helping smokers to quit. A service which provides access to group and one to one support on a drop in basis in a wide range of venues is accessible and valued by clients. No one single model of cessation	This study is directly applicable to the UK population	Limited information on methods. Unclear how many clients were interviewed. No cessation outcome data reported.

			provides additional telephone support.	support will meet the needs of all – services need to be flexible.		

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
West, R 1998 England RCT 1++	N=172 smokers recruited through their general practice in SE London. 58 men and 114 women. Equiprobable assignment of pairs of smokers to "buddy" or "solo" conditions. 35 pairs entered into buddy and 51 entered into solo. There was no significant difference between the two groups.	To assess the abstinence rates of pairing up smokers attending a general practice smokers clinic to provide mutual support between clinic sessions. Funding not mentioned.	All patients were advised to take some form of NRT. They all attended private sessions with a clinic nurse 1 week prior to their quit date, on the quit date, 1 week later and 3 weeks after that to discuss setting quit dates, the importance of quitting and to provide general support, they were seen in pairs and individually depending on their group assignment. Compared CO validated quit status between buddy and solo groups at 4 weeks.	Smokers abstinent at the end of the treatment was significantly higher in the buddy condition than the solo condition (27% vs. 12%).	This study is directly applicable to the UK population. A buddy system can provide an effective element of a smoking cessation intervention at minimal cost.	No methodological concerns.

Citation	Study population	Research question	Intervention	Main results	Applicability to UK	Confounders Comments
Watt, A 2005 England Cohort study 2-	Users of Cornwall SSS 3818 clients in phase 3	To monitor people in Cornwall and the Isles of Scilly who have used the SSS and to assess how successful the services have been in helping them stop smoking To evaluate reasons why people may have started smoking again after using the SSS, how clients became aware of the SSS, the frequency of contact with the SSS during the quit attempt Power calculation not applicable Cornwall Health Research Unit	NHS stop smoking services Comparing client quit rates between 3 phases, 1999-2000, 2000-2002 and 2003 and 2004. 52 week follow up for 551 questionnaires completed/3818 clients contacted	23.4% were successful in quitting after 52 weeks Between phase 1 and phase 3 there was a 5.1% increase in successful quitters Most frequent reason given for restarting smoking after attempting to quit were stress at home, lack of willpower and enjoyment The majority of clients became aware of the SSS through personal contacts (GPs or friends etc.) (69.5%). The majority of clients first contacts with the SSS took place at the GP surgery (84.9%)	The Cornwall Stop Smoking Services continues to provide an effective service recording a 23% success rate of those using the services The most useful aid for successful clients is NRT The majority of clients (over 90%) found all aspects of the SSS helpful. Only a few clients used group therapy. Only 23/551 clients answered the question about group therapy.	The researchers used quota sampling, and kept ringing up people until they got enough from each of the groups they were trying to reach. This is a slightly questionable approach bound to include those easiest to reach and possibly exclude more disadvantaged groups who may still be smoking. This may be one explanation for their high success rate.

7. APPENDIX A – Excluded studies

Excluded Papers	***Reason for exclusion***
1. Benz, CJ (2003) A smoking cessation intervention in a pediatric clinic setting reduced smoking in low income women. *Evidence-based Medicine*, 8: 180.	Not a UK study
2. Fonteyn,M.E. (2004) A nurse led smoking cessation intervention increased cessation rates after hospital admission for coronary heart disease. *Evidence-based Nursing*, 7(2): 46.	Overview of Quist-Paulsen et al.(2005) – original article obtained
3. Jonsdottir, H; Geirsdottir, T; Sveinsdottir, K.S.; Sigurdardottir, T (2004) Multicomponent individualized smoking cessation intervention for patients with lung disease, *Issues and Innovations in Nursing Practice*, 48(6): 594-604.	Cohort study of poor quality
4. Macintosh, H & Coleman, T (2006) Characteristics and prevalence of hardcore smokers attending UK general practitioners. *BMC Family Practice*, 7: 24.	No relevant outcomes
5. Maguire,T.A.; McElnay,J.C.; Drummond, A. (2001) A randomized controlled trial of a smoking cessation intervention based in community pharmacies. *Addiction*, 96(2): 325-331.	No directly relevant outcomes
6. McLeod, D; Benn, C; Pullon, S; Viccars, A; White, S; Cookson, T; Dowell, A (2003) The midwife's role in facilitating smoking behaviour change during pregnancy. *Midwifery*, 19: 285-97.	Not a UK study
7. Milne, E. (2005) NHS smoking cessation services and smoking prevalence: observational study. *British Medical Journal,* 330, 760.	Observational study based on estimations rather than hard data
8. Moore, L (2002) Self help smoking cessation in pregnancy: cluster randomised controlled trial. *British Medical Journal*, 325(7377): 1383.	No relevant outcomes
9. Pringle, M (2003) Current targets: where are we today? *Heart*, 89: 10-12.	No relevant outcomes
10. Riemsma, RP; Pattenden, J; Bridle, C; Sowden, AJ; Mather, L; Watt, IS; Walker, A (2003) Systematic review of the effectiveness of stage based interventions to promote smoking cessation. *British Medical Journal*, 326: 7400.	No relevant outcomes
11. Severson, Herbert,H. (2003) What have we learned from 20 years of research on smokeless tobacco cessation? *The American Journal of the Medical Sciences*, 326(4): 206-11.	Not a UK study
12. Wilson, A; Hippisley-Cox, J; Coupland, C; Coleman, T; Britton, J & Barrett, S (2005) Smoking cessation treatment in primary care: a prospective cohort study, *Tobacco Control*, 14: 242-246.	No relevant outcomes
13. Wood, BR. (2002) Outcome of a smoking cessation programme run in a routine hospital setting. *Internal medicine journal*, 32(1): 24-28.	Covered by Cochrane review
Excluded NRR Studies	***Reason for exclusion***
Agomo, M.C., A survey to investigate current smoking cessation services by community pharmacists in an inner city area. Complete.	not directly relevant to review
Amos, A. Developing effective and sustainable health promotion practice in primary care: LHCC's and new smoking cessation services. Complete.	not directly relevant to review
Ashwin, C. An exploration of women's views regarding the use of Nicotine Replacement Therapy during pregnancy. Complete.	not directly relevant to review
Batten, D.L., Low income, smoking and pregnancy.	too early to be of

Complete.	relevance
Beer, M.H., Survey to assess the satisfaction of clients who have received support from the Gloucestershire Smoking Advice Service during their quit attempt. Complete.	not directly relevant to review
Bell, M.N., Baseline Survey: Smoking Cessation in a Maternity Care Setting. Complete.	not directly relevant to review
Bond, D.C.M., An assessment of the value of intensive pharmaceutical intervention in assisting people to stop smoking. Complete.	too early to be of relevance
Cook, M.T., Survey to assess the satisfaction of clients who have received support the Gloucestershire Smoking Advice Service during their quit attempt. Complete.	not directly relevant to review
Copeland, M.L., How effective are nicotine replacement patches in a socially and economically deprived population? Complete.	not directly relevant to review
Courtney, M.D., Evaluation of stop smoking support service within the Hull and East Riding Community Health Trust. Complete.	too early to be of relevance
Davies, M.E., An evaluation of patient satisfaction with an LHCC wide smoking cessation programme. Complete.	not directly relevant to review
Davies, M.L., An assessment of midwives' ability to influence smoking behaviour of pregnant women following smoking cessation training in the stages of change model. Complete.	too early to be of relevance
Davies, M.L., An investigation into the patterns of smoking behaviour of pregnant smokers and the impact of smoking cessation training for midwives at Llandough Hospital. Complete.	too early to be of relevance
Gilbert, D.H., An exploratory study assessing the current state of smoking cessation advice in pharmacies in Camden, Islington, Haringey and Barnet, and to test the feasibility of offering a computer based personalised feedback system in selected pharmacies. Complete.	not directly relevant to review
Grant, M.E., Intensive Community-Based Smoking Cessation Service Complete.	not directly relevant to review
Gray, D.J., Smoking Cessation in Wandsworth PCT. Complete.	too local to be of use
Hapugoda, D.L., Evaluating local enhanced service (LES) for smoking cessation service in primary care within St Albans and Harpenden PCT. Complete.	too local to be of use
Hart, J., Evaluation of access by deprived adults to smoking cessation services in S Cheshire 2000-01. Complete.	too early to be of relevance
Marteau, P.T., General Practitioners' and Practice Nurses' Beliefs about NHS Smoking Cessation Interventions. Complete.	not directly relevant to review

McKeown, M.S., Smoking and the unemployed: a qualitative study. Complete.	too early to be of relevance
Michie, D.S., Pilot Evaluation of a Community Pharmacy-based Smoking Cessation Service. Complete.	not directly relevant to review
Murphy, M.J., A Qualitative Study Evaluating Clients Interactions & Experiences of an intensive Community Based Smoking Cessation Service at End of Year Contact. Complete.	not directly relevant to review
Shahab, M.L., Investigating Attitudes towards Smoking Cessation and Smoking Cessation Services: a qualitative study of current and former smokers. Complete.	not directly relevant to review
Turner, M.K., Are women aware of current resources available to enable them to quit tobacco smoking within the Camden & Islington Community Health Services NHS Trust. Complete.	too early to be of relevance
Vogt, M.F., Smokers' beliefs about NHS smoking cessation interventions. Complete.	not directly relevant to review
Walton, M.J., Factors affecting the delivery and uptake of smoking cessation support in general practice: a study of primary care delivered services in Bradford. Complete.	not directly relevant to review
Williams, M.J., The qualitative experience of women quitting smoking through a national smoking cessation programme. Complete.	not directly relevant to review

8. APPENDIX B – Relevant NRR studies: Reports unobtainable

1. Alexis-Garsee, M.C.S., Psychosocial predictors of intervention effects of the NHS Stop Smoking Services. Ongoing study.
The main aim of the study is to understand why interventions at the NHS Smoking Cessation Services work for some people and not for others. In other words, we will identify factors, both in the short term (4 weeks) and long-term (6 months) that influence abstinence and relapse.
Prospective cohort study using questionnaires.
The study aims to recruit approximately 850 participants.
Predictors of intervention effects are the primary outcome.
N0632177580
Avon Primary Care Research Collaborative
South West Regional Office
1/8/2005
1/8/2006
School of Psychology, University of the West of England, Frenchay Campus, Coldharbour Lane, Bristol, BS16 1QY, United Kingdom
0117 328 2264
0117 328 2904
University of the West of England

2. Brown, M.L., Evaluation of the effectiveness of Group Support and Nicotine Replacement Therapy for dependent motivated smokers. Complete.
What is the effectiveness of a programme of Group Support and supervised use of Nicotine Replacement therapy in reducing the prevalence of cigarette consumption in a group of dependent motivated smokers?
Non-randomised controlled trial. Participants receive an initial individual assessment, followed by 5 X Group Sessions with Nicotine Replacement therapy as appropriate and monthly follow-ups. A buddy system of peer support accompanies the course.
Volunteer smokers known to the CHD and respiratory nursing services who are dependent and motivated to quit smoking and unable to quit with brief intervention alone.
Carbon monoxide levels, prevalence of smoking during and after the intervention, drop-out rates
N0043067426
Barking and Dagenham Primary Care Trust and Havering Primary Care Trust
London Regional Office
15/1/2000
30/9/2000
Respiratory nurse, St George's Hospital, Sutton's Lane, Hornchurch, Essex, RM12 6RS, UK
01708 465346

3. Campbell, D.I., Evaluation of smoking cessation service to hospital inpatients + outpatients. Complete.
How many patients give up smoking when seen by the counsellor (Advice + Support)?
M0047025748
South Bro Taf R&D Consortium
Wales
1/1/1996
31/3/1996

Department of Respiratory Medicine, Llandough Hospital, Penlan Road, Penarth, CF64 2XX, wales
029 20715417
029 20350056

4. Campbell, M.J., An action research project to identify factors associated with low uptake of Smoking Cessation Services among low income groups and to increase the subsequent uptake of services. Complete.
Why is there a low uptake of smoking cessation services among low income groups?
Action research
People who smoke aged 16 years and above.
Factors associated with attitudes and access of service provision among deprived communities in relation to smoking cessation
N0311130856
Bolton Primary Care Trust
North West Regional Office
1/8/2003
31/12/2003
Bolton Primary Care Trust, 3rd Floor, Lever Chambers for Health, Ashburner street, Bolton, BL1` 1SQ, United Kingdom
01204 360052
01204 360055

5. Gilbert, D.H., An Assessment of Smoking Cessation Activity by Community Pharmacy Personnel in North London. Ongoing.
Little is known about the current state of activity of pharmacists in the area of smoking cessation. The aim of this proposal is to assess the current level of service offered to clients for smoking cessation in community pharmacies in Camden, Islington, Haringey, Barnet and Enfield, to provide a complete picture of cessation activity in community pharmacy in the area.
Questionnaires.
Approximately 300 pharmacists will be invited to complete a questionnaire. Information gathered by questionnaire will include: practice site description and pharmacy environment; record keeping and internal organisational issues; level and extent of training; smoking cessation knowledge, attitudes; smoking cessation activities and content of advice; motivation of pharmacist to promote a smoking cessation service; and barriers to performing activities of the service.
N0530177339
North Central London Research Consortium
London Regional Office
1/12/2005
31/5/2006
Royal Free and University College Medical School, Royal Free Campus, Rowland Hill Street, London, NW3 2PF, United Kingdom
020 7794 0500 ext 8819
020 7794 1224

6. Jacobsen, D.J., Economic deprivation and smoking cessation: Are we reaching those in need? Complete.
Cambridgeshire Smoking Cessation Services Evaluation.
Participants of the Cambridgeshire Smoking Cessation Services will be asked to fill out a survey, which gathers background information, employment history, former and current smoking habits and background health history. Subjects will also be contacted by telephone after one month and one year, and asked about their progress towards smoking cessation. If participants have been able to abstain from

smoking, they will be asked if they would be willing to have a CO test done on a scheduled day at one of two smoking cessation clinics. After completing the survey, participants names and phone numbers will be added to a master list which will be used for telephone and CO level follow-up. This list will be kept by the level 2 or 3 advisor in a secure location. The survey will be placed in an envelope and forwarded to the Cambridge Drug and Alcohol Service on Mill Road, where they will be held in a locked office. Participants will be assigned a number and information from the surveys will be entered into the computer according to the patient number. Follow-up data will also be forwarded to the Cambridge Drug and Alcohol Service and coded in a similar fashion.
500 (proj 11/10/2000)
N0544093556
Cambridge Consortium - Addenbrookes
Eastern Regional Office
4/12/2000
4/12/2003
Box No Community Bag, Mill House, Brookfields Hospital, CB1 3DF
01223-210194

6. Lewis, D.K., Comparing an integrated smoking cessation service to standard support. Complete.
Is an integrated service, combining a hospital-based smoking cessation programmewith follow-up community support, better than community self-referral?
Prospective, randomised interventional, case-controlled study
450 adult smokers randomised to 3 groups (see methodology)
Number of (biochemically validated) sustained quitters at 12 months
N0654168355
Carmarthenshire NHS Trust
Wales
1/4/2005
1/4/2006
Prince Philip Hospital, Llanelli, SA15 8QW, UK
01554 783133

7. Lewis, D.S., Cluster randomised, controlled trial of pro-actively identifying smokers and offering evidence-based support to stop smoking. Ongoing.
We hypothesise that systematically identifying smokers who want to quit smoking using general practice registers and questionnaires, and pro-actively referring them to use a range of evidence-based smoking cessation interventions, will be effective and cost-effective in encouraging widespread smoking cessation. The primary objective of the study is to compare the effectiveness of this cessation intervention in terms of point abstinence (for >= 7 days) from smoking at 6 months between smokers in intervention and control (usual care) practices.
We have designed this intervention following a series of focus groups with smokers who want to quit from deprived areas of Nottingham aimed at determining the barriers which prevent smokers from economically disadvantaged groups from accessing smoking cessation services, and how these might be overcome. Smokers' awareness of the available smoking cessation services was very low, and smokers believed they would be more likely to attend services after a personal invitation accompanied by information about the interventions and support that services could provide.
1000 smokers per practice so 1000 x 16 = 16,000 smokers. 8,000 of these will be in control practices.
The primary outcome will be self-reported smoking cessation for at least 7 days before follow-up at 6 months, validated by salivary cotinine measurement.

N0171153201
Nottingham Primary Care Research Partnership
Trent Regional Office
1/1/2005
31/12/2007
Division Of Respiratory Medicine, Clinical Sciences Building, Nottingham City Hospital NHS Trust, Hucknall Road, Nottingham, NG5 1PB
0115 840 4772
0115 8404771
British Heart Foundation

8. Oborne, D.A., Smoking cessation pharmacy services: development of continuous care between secondary and primary care. Ongoing.
Does addition smoking cessation support in the community increase smoking cessation rates above that achieved by hospital advice and 4 week follow-up (i.e. usual care)?
Patients referred to the GSTT smoking cessation pharmacist for smoking cessation advice and 4 weeks follow-up will be randomised to additional follow-up or no additional follow-up. Patients accepting additional follow-up will be given contact details of community healthcare professionals near their home and a referral letter including their smoking history, quit date and nicotine replacement therapy used. Patients will self-refer to the community healthcare professional of their choice and will be followed for an additional 4 weeks in the community. Smoking cessation rates between the two groups will be compared at eight weeks.
Approx. 300 patients referred to the smoking cessation pharmacist.
Smoking cessation rates at eight weeks after quit date (the date agreed for stopping smoking).
N0013137369
Guy's and St. Thomas' NHS Foundation Trust
London Regional Office
1/12/2003
31/10/2006
Department Location Nurse Case Managers, 6th Floor, East Wing, St. Thomas' Hospital, Lambeth Palace Road, London, SE1 7EH, UK
020 7188 7520
Guild of Hospital Pharmacists

9. Rickard, D.W., Focus groups on smoking cessation services in Southwark. Complete.
To investigate the reasons why current smoking cessation services are not taken up by potential users in order to inform the equity audit and to make a proposal to improve access.
A qualitative study using a focus group method to explore the views, experiences and consensus opinions of smokers and ex-smokers from 'hard to reach' target groups who have chosen not to use smoking cessation services or who have dropped out from these services.
Smokers and ex-smokers (pregnant women, parents, and carers of children under 5 years old; young people aged 11-15; Male manual workers, unemployed people and minority ethnic groups)
Better understanding of why some groups do not use smoking cessation services
N0534160398
Lambeth, Southwark and Lewisham Primary Care Trusts
London Regional Office
1/2/2005
31/5/2005

Institute of Primary Care and Public Health, London South Bank University, Erlang House, 103 Borough Road, London, SE1 0AA
Southwark neighbourhood renewal fund

10. Salami-Adeti, M.T., A qualitative study exploring Black adult's perceptions of health in relation to smoking behaviour. Ongoing.
The study aims to promote user participation and involvement, provide recommendations for service improvements and configuration, provide insight into what hinders or promotes cessation in black adults and link to the LSL equity audit. Focus groups of up to 10 people will provide an appropriate platform to elicit the accounts and experiences of black service users in Lambeth. Black adults who accessed the the stop smoking service between 2004-5 will be sent invitation letters and Participant information Sheets by the Stop Smoking service and will contact the researcher by phone if they would like to take part. The Stop smoking service will follow the letter with a phone call after 10 days. The first 30 responses will be included in the study.
30 Black smokers who have accessed the Lambeth Stop Smoking Service between 2004 and 2005.
To investigate the lived experiences of black smokers and non smokers.
N0534169494
Lambeth, Southwark and Lewisham Primary Care Trusts
London Regional Office
1/9/2005
31/7/2006
Lambeth PCT, Public Health Manager - Tobacco Control, 1 Lower Marsh, London, SE1 7NT
Lambeth PCT

11. Vivancos, D.R., Smoking cessation in pregnancy: Context, perceptions and implications for formal programmes in Norwich. Complete.
What is the likely upper limit of the contribution of a formal programme to aid smoking cessation?
Case note review. Questionnaire/surveys. Controlled trial without randomisation.
Young mothers who either smoked during pregnancy or gave up and relapsed after it. Also partners of women who smoked during pregnancy
From the descriptive study in the project we aim to obtain a smoking prevalence figure, self initiated cessation prevalence and rates of uptake and self reported cessation. The study will investigate the motivation and attitudes on smoking and smoking cessation intervention of pregnant women.
N0547111164
East Norfolk and Waveney Research Consortium (Norfolk & Norwich UH/ Norwich PCT/James Paget/NWMHP)
Eastern Regional Office
1/5/2002
1/11/2002
171 College Road, Norwich, NR2 3JD
01603 307286 work

9. APPENDIX C – Search Strategy

A) NHS Smoking Review: First Searches for Reviews

The following databases were searched for systematic reviews:

- Cochrane Database of Systematic Reviews
- Database of Abstracts of Reviews of Effects
- Health Technology Assessment Database
- National Research Register (including CRD ongoing reviews database)
- SIGN Guidelines
- National Guideline Clearinghouse
- HSTAT
- TRIP

807 references were retrieved and sent to Kirsten Bell on 08 may 2006.

Cochrane Database of Systematic Reviews: Internet (http://www3.interscience.wiley.com/cgi-bin/mrwhome/106568753/HOME?CRETRY=1&SRETRY=0)

Searched 05.05.2006, identified 73 reviews [saved as file *cdsr-nhssmoking.txt*].

Note: Cochrane reviews are likely to be international and not focused on solely UK initiatives. Therefore the strategy was run without the England terms and the NHS terms.

ID	Search	Hits
#1	smoking in Record Title or smoking in Abstract in all products	6507
#2	MeSH descriptor Smoking, this term only in MeSH products	3183
#3	MeSH descriptor Tobacco Use Cessation, this term only in MeSH products	21
#4	MeSH descriptor Smoking Cessation, this term only in MeSH products	1312
#5	smoker OR smokers in Record Title or smoker OR smokers in Abstract in all products	3163
#6	tobacco in Record Title or tobacco in Abstract in all products	1099
#7	MeSH descriptor Tobacco explode all trees in MeSH products	130
#8	MeSH descriptor Tobacco Use Disorder, this term only in MeSH products	269
#9	nicotine in Record Title or nicotine in Abstract in all products	1626
#10	MeSH descriptor Nicotine, this term only in MeSH products	891
#11	cigar* in Record Title or cigar* in Abstract in all products	2112
#12	bidi* OR kretek OR paan OR gutkha OR snuff OR snus OR betel OR hand-roll* OR (hand NEXT roll*) OR (betel NEXT nut*) in Record Title or bidi* OR kretek OR paan OR gutkha OR snuff OR snus OR betel OR hand-roll* OR (hand NEXT roll*) OR (betel NEXT nut*) in Abstract in all products	217
#13	(#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12)	8992
#14	policy or policies or program* or service* or initiative* or intervention* or campaign* in Record Title or policy or policies or program* or service* or initiative* or intervention* or campaign* in Abstract in all products	52365
#15	helpline* or help-line* or (help next line*) or hotline* or hot-line* or (hot next line*) or quitline* or quit-line* or (quit next line*) in Record Title or helpline* or help-line* or (help next line*) or hotline* or hot-line* or (hot next line*) or quitline* or quit-line* or (quit next line*) in Abstract in all products	62
#16	MeSH descriptor Hotlines, this term only in MeSH products	45
#17	support or advice or information or (patient next leaflet*) or (patient next flyer*) or training or guidance or counselling or counseling or (patient next education) in Record Title or support or advice or information or (patient next leaflet*) or (patient next flyer*) or training or guidance or counselling or counseling or (patient next education) in Abstract in all products	44911
#18	MeSH descriptor Counseling, this term only in MeSH products	1246
#19	MeSH descriptor Patient Education, this term only in MeSH products	3031
#20	bupropion or zyban or NTR or (nicotine next replacement) or (nicotine next patch*) or nicorette or (nicotine near/2 gum) in Record Title or bupropion or zyban or NTR or (nicotine next replacement) or (nicotine next patch*) or nicorette or (nicotine near/2 gum) in Abstract in all	1152

	products	
#21	MeSH descriptor Bupropion, this term only in MeSH products	212
#22	(#14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21)	83656
#23	(#13 AND #22)	4197

DARE: Internal CRD Database

Searched 05.05.2006, identified 284 records [saved as file *dare-nhssmoking.txt*].

Note: It was not possible to limit the search to find UK initiatives; the strategy was run without the England terms and the NHS terms.

S smoking or smoker or smokers or tobacco or nicotine or cigar$ or bidi$ or kretek or paan or gutkha or snuff or snus or betel or hand(w)roll$ or betel(w)nut$ (290)

S policy or policies or programmeor programmes or programme or programmes or service or services or initiative$ or intervention$ or campaign$ (4757)

S helpline$ or help(w)line$ or hotline$ or hot(w)line$ quitline$ or quit(w)line$ (4)

S support or advice or information or patient(w)leaflet$ or patient(w)flyer$ or training or guidance or counseling or counselling or patient(w)education (9126)

S bupropion or zyban or NRT or nicotine(w)replacement or nicotine(w)patch$ or Nicorette or nicotine(2w)gum (60)

S s2 or s3 or s4 or s5 (9355)

S s1 and s6 (284)

Health Technology Assessment Database: Internal CRD Database

Searched 05.05.06, identified 75 records [saved as file *hta-nhssmoking.txt*].

Note: It was not possible to limit the search to find UK initiatives; the strategy was run without the England terms and the NHS terms.

S smoking or smoker or smokers or tobacco or nicotine or cigar$ or bidi$ or kretek or paan or gutkha or snuff or snus or betel or hand(w)roll$ or betel(w)nut$ (75)

S policy or policies or programmeor programmes or programme or programmes or service or services or initiative$ or intervention$ or campaign$ (2184)

S helpline$ or help(w)line$ or hotline$ or hot(w)line$ quitline$ or quit(w)line$ (1)

S support or advice or information or patient(w)leaflet$ or patient(w)flyer$ or training or guidance or counseling or counselling or patient(w)education (5726)

S bupropion or zyban or NRT or nicotine(w)replacement or nicotine(w)patch$ or Nicorette or nicotine(2w)gum (8)

S s2 or s3 or s4 or s5 (5745)

S s1 and s6 (75)

National Research Register: Internet (http://www.update-software.com/national)

Searched 05.05.06, identified 398 projects *[saved as files: NRR_CRDOngoingProjects(1).txt; NRR_MRCProjects(5).txt; NRR_MultiCentreComplete(6).txt; NRR_MultiCentreOngoing(3).txt; NRR_ParticipCentreComplete(42).txt; NRR_ParticipCentreOngoing(23).txt; NRR_RegAndNatComplete(96).txt; NRR_RegAndNatOngoing(7).txt; NRR_SingleCentreComplete(159).txt; NRR_SingleCentreOngoing(30).txt].*

Note: Implicit in searching the NRR is that the projects are UK based. Again, the search was left broad to identify projects on smoking cessation programmes as it was not possible to limit the search to England or NHS initiatives.

Search strategy: NHS smoking review FINAL

#1. smoking:ti or smoking:mr 742
#2. SMOKING single term (MeSH) 375
#3. TOBACCO USE CESSATION single term (MeSH) 1
#4. SMOKING CESSATION single term (MeSH) 199
#5. (smoker:ti or smoker:mr or smokers:ti or smokers:mr) 304
#6. tobacco:ti or tobacco:mr 123
#7. TOBACCO explode tree 1 (MeSH) 6
#8. TOBACCO USE DISORDER single term (MeSH) 20
#9. nicotine:ti or nicotine:mr 117
#10. NICOTINE single term (MeSH) 59
#11. cigar*:ti or cigar*:mr 86
#12. (bidi*:ti or kretek:ti or paan:ti or gutkha:ti or snuff:ti or snus:ti or betel:ti or (hand next roll*:ti) or (betel next nut*:ti) or bidi*:mr or kretek:mr or paan:mr or gutkha:mr or snuff:mr or snus:mr or betel:mr or (hand next roll*:mr) or (betel next nut*:mr)) 12
#13. (#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12) 1078
#14. (policy:ti or policies:ti or program*:ti or service*:ti or initiative*:ti or intervention*:ti or campaign*:ti or policy:mr or policies:mr or program*:mr or service*:mr or initiative*:mr or intervention*:mr or campaign*:mr) 17993
#15. (helpline*:ti or (help next line*:ti) or hotline*:ti or (hot next line*:ti) or quitline*:ti or (quit next line*:ti) or helpline*:mr or (help next line*:mr) or hotline*:mr or (hot next line*:mr) or quitline*:mr or (quit next line*:mr)) 28
#16. HOTLINES single term (MeSH) 55
#17. (support:ti or advice:ti or information:ti or (patient next leaflet*:ti) or (patient next flyer*:ti) or training:ti or guidance:ti or counselling:ti or counselling:ti or (patient next education:ti) or support:mr or advice:mr or information:mr or (patient next leaflet*:mr) or (patient next flyer*:mr) or training:mr or guidance:mr or counselling:mr or counselling:mr or (patient next education:mr)) 10904
#18. COUNSELING single term (MeSH) 348
#19. PATIENT EDUCATION single term (MeSH) 1013
#20. (bupropion:ti or zyban:ti or ntr:ti or (nicotine next replacement:ti) or (nicotine next patch*:ti) or nicorette:ti or (nicotine next gum:ti) or (nicotine next chewing:ti) or bupropion:mr or zyban:mr or ntr:mr or (nicotine next replacement:mr) or (nicotine next patch*:mr) or nicorette:mr or (nicotine next gum:mr) or (nicotine next chewing:mr)) 62
#21. BUPROPION single term (MeSH) 8
#22. (#14 or #15 or #16 or #17 or #18 or #19 or #20 or #21) 25463
#23. (#13 and #22) 398

SIGN Guidelines: Internet (http://www.sign.ac.uk/guidelines/published/numlist.html)

The Scottish Intercollegiate Guidelines Network website's list of guidelines was scanned for relevant items on 05 May 2006. No relevant guidelines were identified.

National Guideline Clearinghouse: Internet (http://www.guidelines.gov)

The National Guidelines Clearinghouse was searched on 05 May 2006. The results were scanned for relevance and 16 potentially relevant guidelines were identified.

The search interface allows only simple searching. The following terms were entered line-by-line:

- smoking or tobacco or smoker* or nicotine or cigar*
- bidi* or kretek or paan or gutkha or snuff or snus or betel or "hand roll*" or "hand-roll*" or "betel nut*"

Health Services Technology/Assessment Texts (HSTAT) : Internet (http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=hstat)

HSTAT was searched on 05 May 2006 for potentially relevant information. 7 items were identified.

TRIP: Internet (http://www.tripdatabase.com)
TRIP was searched via the web on 08 May 2006. The results were scanned for relevance and 22 potentially relevant items were identified.

At the time of searching the facility to combine search sets was not working. Therefore only simple searching could be undertaken. The following terms were entered line-by-line:

- "smoking cessation"
- "smoking polic*"
- "smoking program*"
- "smoking service*"
- "smoking initiative*"
- "smoking intervention*"
- "smoking campaign*"

B) Search for relevant studies in MEDLINE (1990 onwards)

Search on MEDLINE (MEZZ 1950 to date) 24-05-2006

No.	Database	Search term	Info added since	Results
1	MEDLINE - 1950 to date	SMOKING.TI,AB.	unrestricted	82368
2	MEDLINE - 1950 to date	SMOKING.W..DE.	unrestricted	79848
3	MEDLINE - 1950 to date	TOBACCO-USE-CESSATION.DE.	unrestricted	271
4	MEDLINE - 1950 to date	SMOKING-CESSATION.DE.	unrestricted	9289
5	MEDLINE - 1950 to date	(SMOKER OR SMOKERS).TI,AB.	unrestricted	32514
6	MEDLINE - 1950 to date	TOBACCO.TI,AB.	unrestricted	38228

7	MEDLINE - 1950 to date	TOBACCO.W..DE. OR TOBACCO-SMOKELESS.DE.	unrestricted	17139
8	MEDLINE - 1950 to date	TOBACCO-USE-DISORDER.DE.	unrestricted	3530
9	MEDLINE - 1950 to date	NICOTINE.TI,AB.	unrestricted	17269
10	MEDLINE - 1950 to date	NICOTINE.W..DE.	unrestricted	14951
11	MEDLINE - 1950 to date	CIGAR$.TI,AB.	unrestricted	31691
12	MEDLINE - 1950 to date	(BIDI$ OR KRETEK OR PAAN OR GUTKHA OR SNUFF OR SNUS OR BETEL OR HAND ADJ ROLL$ OR BETEL ADJ NUT$).TI,AB.	unrestricted	10708
13	MEDLINE - 1950 to date	1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12	unrestricted	171695
14	MEDLINE - 1950 to date	(POLICY OR POLICIES OR PROGRAMMEOR PROGRAMMES OR PROGRAMME OR PROGRAMMES OR SERVICE$ OR INITIATIVE$ OR INTERVENTION$ OR CAMPAIGN$).TI,AB.	unrestricted	725236
15	MEDLINE - 1950 to date	(HELPLINE$ OR HELP ADJ LINE$ OR HOTLINE$ OR HOT ADJ LINE$ ADJ QUITLINE$ OR QUIT ADJ LINE$).TI,AB.	unrestricted	778
16	MEDLINE - 1950 to date	HOTLINES.W..DE.	unrestricted	1412
17	MEDLINE - 1950 to date	(SUPPORT OR ADVICE OR INFORMATION OR PATIENT ADJ LEAFLET$ OR PATIENT ADJ FLYER$ OR TRAINING OR GUIDANCE OR COUNSELING OR COUNSELLING OR PATIENT ADJ EDUCATION).TI,AB.	unrestricted	875271
18	MEDLINE - 1950 to date	COUNSELING.W..DE.	unrestricted	19819
19	MEDLINE - 1950 to date	PATIENT-EDUCATION.DE.	unrestricted	44835
20	MEDLINE - 1950 to date	(BUPROPION OR ZYBAN OR NRT OR NICOTINE ADJ REPLACEMENT OR NICOTINE ADJ PATCH$ OR NICORETTE OR NICOTINE ADJ GUM OR NICOTINE ADJ CHEWING).TI,AB.	unrestricted	3332
21	MEDLINE - 1950 to date	BUPROPION.W..DE.	unrestricted	1247
22	MEDLINE - 1950 to date	14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20 OR 21	unrestricted	1470020
23	MEDLINE - 1950 to date	(NHS OR NATIONAL ADJ HEALTH ADJ SERVICE$).TI,AB.	unrestricted	12631
24	MEDLINE - 1950 to date	(NURS$ OR DOCTOR$ OR PRACTITIONER$ OR DENTIST$ OR GENERAL ADJ PRACTITIONER$ OR GP OR GPS OR PHYSICIAN$ OR PHARMACIST$ OR HEALTH ADJ PROFESSIONAL$ OR HEALTH ADJ VISITOR$).TI,AB.	unrestricted	379985
25	MEDLINE - 1950 to date	NURSES#.W..DE.	unrestricted	51624
26	MEDLINE - 1950 to date	PHYSICIANS#.W..DE.	unrestricted	58109
27	MEDLINE - 1950 to date	DENTISTS#.W..DE.	unrestricted	12096
28	MEDLINE - 1950 to date	PHARMACISTS.W..DE.	unrestricted	6163
29	MEDLINE - 1950 to date	COMMUNITY-HEALTH-NURSING.DE.	unrestricted	15262
30	MEDLINE - 1950 to date	23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29	unrestricted	467172

31	MEDLINE - 1950 to date	13 AND 22 AND 30	unrestricted	4749
32	MEDLINE - 1950 to date	(NHS ADJ STOP ADJ SMOKING ADJ SERVICE$).TI,AB.	unrestricted	1
33	MEDLINE - 1950 to date	31 OR 32	unrestricted	4749
34	MEDLINE - 1950 to date	REVIEW.TI,AB.	unrestricted	425884
35	MEDLINE - 1950 to date	PT=REVIEW	unrestricted	1226630
36	MEDLINE - 1950 to date	(META ADJ ANALYSIS OR METAANALYSIS).TI,AB.	unrestricted	13677
37	MEDLINE - 1950 to date	PT=META-ANALYSIS	unrestricted	13118
38	MEDLINE - 1950 to date	34 OR 35 OR 36 OR 37	unrestricted	1436940
39	MEDLINE - 1950 to date	PT=LETTER OR PT=EDITORIAL OR PT=COMMENT	unrestricted	815557
40	MEDLINE - 1950 to date	38 NOT 39	unrestricted	1411495
41	MEDLINE - 1950 to date	33 AND 40	unrestricted	889
42	MEDLINE - 1950 to date	limit set 41 YEAR > 1994	unrestricted	677
43	MEDLINE - 1950 to date	33 NOT 40	unrestricted	3860
44	MEDLINE - 1950 to date	limit set 43 YEAR > 1989	unrestricted	3307

C) Websites searched

National Institute of Health & Clinical Excellence
http://www.nice.org.uk

Department of Health
http://www.dh.gov.uk/

Action on Smoking and Health
http://www.ash.org.uk

National Statistics
http://www.statistics.gov.uk/

Association of Public Health Observatories
http://www.apho.org.uk

UK National Smoking Cessation Conference
http://www.uknscc.org/index.html

QUIT
http://www.quit.org.uk

National Health Service
http://www.nhs.uk

UK Smoking Cessation Conference
http://www.uknscc.org/index.html

SmokeFree London
http://www.smokefreelondon.org

Where facilities were available the following keywords were searched:

- "smoking BMEG"
- "smoking ethnic minorities"
- "smoking pregnancy"
- "smoking pregnant women"
- "smoking 'hard to reach' groups"
- "smoking manual groups"
- "smoking SES"
- "smoking disadvantage"

- “smoking health inequalities”
- “smoking vulnerable populations”
- “smoking ‘priority groups’”

On websites where a search tool was not available, publications lists were scanned for relevant reports.

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