The evidence statements

This document lists the evidence statements that support the recommendations in NICE's guidance on Smoking cessation: acute, maternity and mental health services. For details of which evidence statements are linked to each recommendation, see section 9 of the guidance. Only evidence statements linked to a recommendation are listed in this document.

The evidence statements are short summaries of evidence, in the reviews (see below). Each statement has a short code indicating which document it has come from and the number of the evidence statement in the document.

For example, **evidence statement 1.2.10** indicates that the statement is numbered 2.10 in review 1 and **evidence statement 2.2.3** indicates that the statement is numbered 2.3 in review 2. **Evidence statement CE.2.3** indicates that the linked statement is numbered 2.3 in the cost effectiveness review.

Please note that the wording of some evidence statements has been altered slightly from those in the evidence reviews to make them more consistent with each other and NICE's standard house style.

The evidence reviews are:

- Review 1: 'Review of effects of nicotine in secondary care'
  (see page 3 of this document for the evidence statements)
- Review 2: 'Smoking cessation interventions in acute and maternity services: review of effectiveness'
  (see page 8 of this document for evidence statements)
- Review 3: 'Smoking cessation interventions in acute and maternity services: review of barriers and facilitators'
  (see page 16 of this document for evidence statements)
- Review 4: 'Effectiveness of smoking cessation interventions in mental health services'
  (see page 23 of this document for evidence statements)

- Review 5: 'Barriers to and facilitators for smoking cessation interventions in mental health services'
  (see page 29 of this document for evidence statements)
- Review 6: 'A review of the effectiveness of smokefree strategies and interventions in secondary care settings'
  (see page 53 of this document for evidence statements)
- Review 7: 'A review of the barriers to and facilitators for implementing smokefree strategies and interventions in secondary care settings'
  (see page 86 of this document for evidence statements)
- Cost effectiveness review: 'Smoking cessation in secondary care: cost-effectiveness review '
  (see page 105 of this document for evidence statements).

The reviews are available online.

Review 1: 'Review of effects of nicotine in secondary care'

ES 1.1.1.7 There is moderate evidence that smokers may require higher doses of warfarin to achieve an INR in therapeutic range; 7 studies found this[1-7], but 4 studies found no difference between requirements in smokers vs. non-smokers[8-11].

1 Aquilante [+]

2 Gage [+]

3 Lee [+]

4 Lenzini [+]

5 Millican [+]

6 Mungall [+]

7 Pamboukian [+]

8 Mitchell [+]

9 The University of Illinois at Chicago [+]

10 Weiner [+]

11 Whitley [+]

ES 1.1.1.8 There is moderate evidence that stopping smoking can lead to an increase in the systemic level of warfarin, with an associated increase in INR[1-3].

1 Bachmann [+]

2 Kuykendall [-]

3 Evans [-].

ES 1.1.2.2 There is moderate evidence that the adverse effects on bone healing and post-surgical complications are not due to nicotine[1].

1 W-Dahl [+].

ES 1.1.2.3 There is weak evidence to suggest that nicotine patches should be removed prior to micro vascular reconstructive surgery to limit any possible vasoconstrictive effects of nicotine and surgery using vasopressin injections.

1 Jagadeesan [-]

2 Groundine [-].

ES 1.1.3.7 There is moderate evidence that theophylline levels are sensitive to smoking and abstinence[1,2] and aminophylline levels are influenced even by second hand smoke[3]. One study[4] showed no effect of a 36-hour period of abstinence on serum theophylline levels.

1 Lee [+]

2 Rao [-]

3 Mayo [+]

4 Eldon [+]

ES 1.2.9 There is moderate evidence that mood improves in depressed smokers who manage to stop smoking compared to those who fail in their quit attempt[1,2].

1 Blalock [+]

2 Thorsteinsson [+].

ES 1.2.10 There is strong evidence that clozapine and olanzapine are metabolised much faster by smokers, and stopping smoking can increase their systemic levels[1-18], although two studies found no significant effects of smoking on serum clozapine levels[19,20].

1 Derenne [-]

2 Dettling [+]

3 Diaz [+]

4 Haring [+]

5 Haslemo [+]

5 Meyer [+]

6 Ozdemir [+]

7 Pettitt [-]

8 Rostami-Hodjegan [+]

9 Sandson [-]

10 Seppala [+]

11 van der Weide [+]

12 Wenzel-Seifert [+]

13 Wetzel [+]

14 Callaghan [+]

15 Carrillo [+]

16 Gex-Fabry [+]

17 Skogh [+]

18 Wu [+]

19 Hasegawa [+]

20 Palego [+].

ES 1.2.31 There is mixed evidence regarding the effect of smokefree policy on behaviour and symptoms in inpatients with mental illness. Five studies found some signs of worsening functioning within a few weeks of the ban[1-5]. Three studies found no change after smoking ban[6-8] and four studies found improvements in disruptive behaviours[9-12].

1 Cole [+]

2 Cormac [+]

3 Harris [+]

4 Ryabik [+]

5 Velasco [+]

6 Resnick [+]

7 Shetty [+]

8 Voci [+]

9 Hempel [+]

10 Hollen [+]

11 Smith [+]

12 Quin [+].

ES 1.2.33 There is good evidence showing that total smoking bans lead to increased systemic levels of clozapine and a need to lower its dosing[1-3].

1 Meyer [+]

2 Cormac [+]

3 Shetty [+].

ES 1.3.5 No trial so far has identified any adverse pregnancy outcomes linked to NRT[1-9].

1 Coleman [++]

2 Hegaard [+]

3 Hotham [-]

4 Kapur [-]

5 Oncken [+]

6 Pollack [+]

7 Wisborg [+]

8 Lassen [+]

9 Strandberg-Larsen [+].

Review 2: 'Smoking cessation interventions in acute and maternity services: review of effectiveness'

Evidence statements 2.1.3 to 2.2.9

The studies were categorised into one of 5 levels of intensity:

- Intensity 1: Single contact with or without take-away written and other materials, no follow-up support.
- Intensity 2: One or more contacts with or without take-away written and other materials up to but not beyond the target quit date (TQD)
- Intensity 3: Any contact plus follow-up for up to but not beyond 4 weeks after TQD
- Intensity 4: Any contact plus telephone/correspondence/e-mail etc. based follow-up for >1 month
- Intensity 5: Any contact plus follow-up for >1 month including at least one face-to-face contact.

The statements also consider the effect of interventions with or without pharmacological treatments.

Evidence statement 2.1.3

There is strong evidence from 11 (level 4 intensity) RCTs (five [+][1-5] and six [++][6-11]) and 7 (level 5 intensity) RCTs (two [+][12,13] and five [++][14-18]) using validated self-reported abstinence rates, that interventions accompanied by on-going behavioural support for over 4 weeks in combination with stop smoking medications are effective.

Of the eleven studies examining the efficacy of level 4 intensity interventions with medication - compared to usual care - six showed a significant benefit [1,2,3,6,7,8] and five did not [4,5,9,10,11]. When these studies are pooled there is evidence of a beneficial effect of this level of intervention (OR=1.65; 95%CI: 1.42-1.91).

Of the seven studies examining level 5 intensity interventions with medication, four showed a significantly positive effect[12-15] and three did not[16-18]. When these studies are pooled there is evidence of a beneficial effect of this level of intervention (OR=1.87; 95%CI: 1.48-2.36).

1 Miller et al 1997

2 Quist-Paulsen et al.

3 Taylor et al.

4 Mosca et al.

5 Smith et al.

6 British Thoracic Society B

7 De Busk et al.

8 Feeney et al.

9 Chouinard et al.

10 Rosal et al.

11 Wakefield et al.

12 Borglykke et al.

13 Hennrikus et al.

14 Hilleman et al.

15 Mohiuddin et al.

16 British Thoracic Society A

17Lewis et al.

18 Tonnesen et al.

Evidence statement 2.1.5

There is strong evidence that interventions with stop smoking medications and follow-up of over 4 weeks are effective across non-surgical patient groups.

For patients with **cardiovascular disease**: 8 RCTs (four [+][1-4] and four [++][5-8]) of interventions for intensity 4-5 showed a positive effect. 14 RCTs (seven [-][9-15], five [+][16-20] and two [++][21-22]) of interventions for intensity 4-5 did not show an effect. When these studies are pooled there is evidence of a beneficial effect: Intensity 4 OR=1.54 (95%CI: 1.34-1.76); Intensity 5 OR=1.81 (95%CI: 1.42-2.32).

1 Quist-Paulsen et al.

2 Smith et al.

3 Taylor et al.

4 Hennrikus et al.

5 De Busk et al.

6 Feeney et al.

7 Hilleman et al.

8 Mohiuddin et al.

9 Bolman et al.

10 Carlsson et al.

11 Lacasse et al.

12 Li et al.

13 Pedersen et al.

14 Reid et al.

15 Sivarajan et al.

16 Dornelas et al.

17 Froelicher et al.

18 Miller et al.

19 Mosca et al.

20 Reid et al.

21 Chouinard et al.

22 Rosal

For patients with **respiratory disease**: 2 RCTs (one [+][1] and one [++][2]) of interventions for intensity 4-5 showed a positive effect and 2 RCTs (two [++][3,4]) showed no effect. There was only one study of intensity 4 intervention[2] that showed a benefit (OR=1.78; 95% CI:1.16-2.74). Pooling the intensity 5 intervention studies[1,3,4] also showed a beneficial effect (OR=1.50 95%CI: 1.11-2.02).

1 Borglykke et al.

2 British Thoracic Society B

3 British Thoracic Society A

4 Tonnesen et al.

For **non-surgical hospital patients**: 5 RCTs (two [-][1,2], two [+][3,4] and one [++][5]) of interventions for intensity 4-5 showed a positive effect and 7 (two [-][6,7] and five [+][8-12]) did not. Pooling the intensity 4 intervention studies[6,8,9,11,12] showed a beneficial effect (OR=1.60 95%CI: 1.38-1.84). However, pooling the two Intensity 5 studies[7,10] showed no significant effect (OR=1.43; 95%CI: 0.85-2.42).

1 Haug et al.

2 Metz et al.

3 Miller et al.

4 Taylor et al.

5 Feeney et al.

6 Horn et al.

7 Vial et al.

8 Hasuo et al.

9 Hennrikus et al.

10 Lewis et al.

11 Simon et al.

12 Smith et al.

Evidence statement 2.1.8

There is strong evidence from two RCTs (both [++])[1,2] that for patients undergoing surgery intensive (intensity 5) stop smoking interventions with nicotine replacement therapy are effective. Pooled data gives an odds ratio of 3.99 (95%CI: 1.83-8.70).

1 Lindstrom et al.

2 Moller et al.

Evidence statement 2.1.10

There is strong evidence that nicotine replacement treatment accompanied by extended support is effective in general hospital patients. Of six RCTs (one [+][1] and five [++][2-6]) only one[6] showed a positive effect. However pooling these data showed a benefit of NRT (OR=1.52; 95% CI: 1.07-2.17).

1 Lewis et al.

2 Campbell et al. 1991

3 Campbell et al. 1996

4 Hand et al.

5 Tonnesen et al. 2000

6 Tonnesen et al. 2006

Evidence statement 2.1.13

There is moderate evidence from one RCT ([++][1]) that treatment of hospital staff with bupropion combined with regular face-to-face support is effective.

1 Dalsgaro et al.

Evidence statement 2.2.3

There is strong evidence from 20 RCTs[1-20] - using validated self-reported abstinence rates - that higher intensity (intensity 4-5) smoking cessation interventions in pregnancy (with follow-up for > 1 month after a target quit date, either by telephone, written or electronic correspondence or face-to-face contact) increase abstinence rates in late pregnancy.

Six RCTs (five [+][1-5] and one [++][6]) demonstrated efficacy of such interventions, whilst 14 (one [-][7] and thirteen [+][8-20]) showed no effect. Pooling data from these studies showed a significant effect. Intensity 4 OR=1.72 (95%CI: 1.27-2.33); Intensity 5 OR=1.34 (95%CI: 1.11-1.63).

1 Dornelas et al.

2 Hartman et al.

3 Hegaard et al.

4 Walsh et al.

5 Windsor et al.

6 Ershoff et al.

7 Albrecht et al.

8 Cinciripini et al.

9 Ershoff et al.

10 Gielen et al.

11 Lawrence et al.

12 Loeb et al.

13 Malchodi et al.

14 Panjari et al.

15 Patten et al.

16 Rigotti et al.

17 Solomon et al.

18 Tappin et al. 2000

19 Tappin et al. 2005

20 Thornton et al.

Evidence statement 2.2.9

There is strong evidence from 6 RCTs (two [+][1,2] and four [++][3-6]) - using validated self-reported abstinence rates - that nicotine replacement therapy, when used in standard doses, is ineffective in helping pregnant women quit smoking.

Four studies examined the use of patches[1,3,4,6], one of gum[2] and one of a choice between patch, gum or lozenge[5]. None demonstrated a significant benefit over placebo across levels of support. Pooling interventions of different

intensity provided no effect: Intensity 3 OR=1.27 (95%CI: 0.82-1.96); Intensity 4 OR=8.20 (95%CI: 0.40-16.90); Intensity 5 OR=1.48 (95%CI: 0.96-2.28).

1 Kapur et al

2 Oncken et al

3 Coleman et al

4 Hotham et al

5 Pollak et al

6 Wisborg et al

Review 3: 'Smoking cessation interventions in acute and maternity services: review of barriers and facilitators'

Evidence statements 3.1.0 to 3.2.6

Each study has a short code indicating their relevance to UK practice (1=low relevance; 2=medium relevance; 3=high relevance) and whether they were studies that included original data or consist of descriptions of current practice, discussions of issues, or reviews of or commentaries on other papers (S=original; D=discussions). For example, O'Donovan [S-2] indicates the study included original data and has medium relevance to UK practice.

Evidence statement 3.1.0

There is evidence from five studies[1-5] and one discussion paper[6] that smoking among healthcare staff influences their knowledge and attitudes and represents a barrier to engagement with patients who smoke.

1 Bialous [S-1]

2 O'Donovan [S-2]

3 Slater [S-2]

4 Xiao [S-1],

5 Willaing [S-2]

6 PEM [D-2]

Evidence statement 3.1.1

There is evidence from six studies[1-6] that the main barriers to healthcare professionals engagement with smokers include lack of time, knowledge, skills and the view that assisting smokers is outside of their job role.

1 Bickerstaffe [S-3]

2 May [S-2]

3 McCarty [S-2],

4 Thy [S-2]

5 Warner [S-2]

6 Warner [S-2]

Evidence statement 3.1.2

There is evidence from four studies[1-4] and one discussion paper[5] that a lack of stop-smoking medications on the hospital formulary, absence of chart reminders, and a deficit of staff knowledge represent commonly encountered barriers to prescribing stop-smoking medications within acute care.

1 Hawkshaw [S-2]

2 May [S-2];

3 Rigotti [S-2]

4 Vega [S-3]

5 Goldstein [D-2]

Evidence statement 3.1.3

There is evidence that identification of smokers can be improved by training healthcare professionals[1-6], introduction of prompts and reminders[7-10] and the use of automated computer systems[8,11,12].

1 Hill [S-3]

2 Hodgson [S-3]

3 Liu [S-3]

4 Walsh [S-1]

5 Ward [S-3])

6 Carson [D-3]

7 Chang [S-3]

8 Garrett-Szymanski [S-3]

9 McDaniel [S-3]

10 Nicholson [S-2]

11 Haile [S-2]

12 Wolfenden [S-1].

Evidence statement 3.1.4

There is evidence from twelve studies[1-12] that training has a positive effect on staff practice in addressing patient smoking.

1 Al-Alawy [S-3]

2 Ballbe [S-2]

3 Bryant [S-1]

4 Freund [S-3]

5 Gosselin [S-2]

6 Kloss [S-3]

7 Liu [S-3]

8 Montner [S-1]

9 Naudziunas [S-2]

10 Vega [S-3]

11 Walsh [S-1]

12 Warner [S-1).

Evidence statement 3.1.5

There is evidence from four studies[1-4] that organisational support (including involvement of senior hospital management) is critical when implementing institute-wide provision of stop-smoking support.

1 Al-Alawy [S-3]

2 Bickerstaffe [S-3]

3 Williams [S-1]

4 Zhang [S-1].

Evidence statement 3.1.6

There is evidence from two studies[1-2] that presentations and stands on wards and intensive involvement with hospital staff can improve awareness of stop smoking services and increase referral rates.

1 Hodgson [S-3]

2 Hopkinson [S-3].

Evidence statement 3.1.7

Based on one systematic review[1] looking at post-operative complications in continued and recently quit smokers (within 8 weeks of surgery), there is no evidence to support the concern that stopping smoking only a few weeks prior to surgery might worsen clinical outcomes.

1 Myers [S-3].

Evidence statement 3.2.0

There is evidence from four studies[1-4] indicating that UK midwives routinely record smoking status of pregnant women.

1 Bryce [S-3]

2 Lee [S-3]

3 McGowan [S-3]

4 Taylor [S-3].

Evidence statement 3.2.1

There is evidence from eleven studies[1-11] about the barriers to midwives engaging with pregnant women about smoking. Barriers include perceived lack of time and skills, belief that their advice is ineffective, and fear of damaging relationship with the woman.

1 Abatemarco [S-3]

2 Aquilino [S-2]

3 Beenstock [S-1]

4 Bishop [S-2]

5 Cooke [S-3]

6 Cooke [S-3]

7 Cooke [S-2]

8 Hartmann [S-2]

9 Herberts [S-3]

10 Jordan [S-2]

11 Valanis [S-3].

Evidence statement 3.2.2

There is evidence from four studies[1-4] covering midwives view that discussing smoking can be perceived by pregnant smokers as ‘nagging’, though women generally accept that their smoking should be discussed as part of maternity care in both the pre- and post-natal periods.

1 Groner [S-3]

2 Wall [S-3]

3 Winickoff [S-3]

4 Herberts [S-3].

Evidence statement 3.2.3

There is evidence from two studies[1,2] to suggest that monitoring and feedback on performance (for example, through surveys or interviews with staff and using team meetings to discuss progress of services) help to initiate and maintain desirable practice and to allow problem solving among the providers.

1 Hyndman [S-3]

2 Valanis [S-3]

Evidence statement 3.2.4

There is evidence from three studies[1-3] indicating that simple referral systems that involve minimal time and effort from midwives, are conducive to improved rates of advice and referral.

1 Hartmann [S-2]

2 Valanis [S-3]

3 Windsor [S-2].

Evidence statement 3.2.6

There is evidence from four studies[1-4] undertaken in the NHS to suggest that the following act as facilitators of quit attempts when provided by Primary Care Trusts: organisational support; brief, compulsory training of all midwives to motivate smokers to quit and refer them to SSS; specialist advisers offering multisession treatments accompanied by NRT; and provision of home visits where required.

1 Bryce [S-3]

2 Lee [S-3]

3 McGowan [S-3]

4 Taylor [S-3].

Review 4: 'Effectiveness of smoking cessation interventions in mental health services'

Evidence statements 4.1.1 and 4.1.2 - high intensity behavioural therapy (without pharmacotherapies)

4.1.1 There is moderate evidence from two RCTs (both [+])[1,2] to suggest integrated tailored behavioural therapy was more effective for increasing smoking cessation in outpatients for PTSD in the short- (pooled OR 3.04, 95% CI 1.65-5.60) and long-term (OR 1.83, 95% CI 1.26-2.66) than usual standard of care (following a referral to a specialised stop smoking clinic).

4.1.2 There is mixed weak evidence from two RCTs (both [+])[3,4], one quasi-RCT ([+])[5] and one non-randomised controlled trial (NRCT) ([-])[6] regarding the effectiveness of high intensity behavioural therapy in people with psychiatric disorders. The quasi-RCT[5] suggested high intensity behavioural therapy given for 8 weeks was marginally more effective than given for 4 weeks in outpatients; however no formal comparisons could be made to assess statistical significance. Evidence was mixed from two studies: one RCT[3] demonstrated no significant difference in abstinence between motivational interviewing or brief advice in 191 in-patients (long term outcome, OR 1.16, 95% CI 0.59-2.31); the NRCT[6] demonstrated significantly fewer people smoked at short term follow-up in the high intensity behavioural therapy group compared to no intervention in 38 outpatients. However, there was evidence from one RCT[4] of 123 outpatients which suggested high intensity behavioural therapy in addition to a quit-line service was more effective than quit-line service alone for reducing cigarette consumption (OR 3.16, 95% CI 1.04-9.65).

Applicability statement for evidence statements 4.1.1 and 4.1.2

The majority of evidence on high intensity behavioural therapy is directly applicable to the UK setting, as there is no reason to assume that the interventions could not be implemented in UK outpatient and in-patient

settings. Four of the studies were conducted in the USA[1-4], with individual studies being conducted in Australia[6] and Canada[5].

1 McFall 2005

2 McFall 2010

3 Brown

4 Morris

5 Currie

6 Kisely

Evidence statements 4.4.3 and 4.4.4 - bupropion

4.4.3 There is strong evidence from pooled analyses comprising a total of five RCTs (four [++][1-4] and one [+][5]) that bupropion (300mg/day) is effective for increasing smoking cessation in the short term in outpatients with schizophrenia (Pooled OR 3.80, 95% CI 1.58-9.15); but mixed strong evidence from pooled analyses comprising a total of three trials[1,2,3] regarding the effectiveness of bupropion (300mg/day) for smoking cessation in the medium term in outpatients with schizophrenia (continuous abstinence, OR 3.00, 95% CI 1.29-7.00; point prevalence abstinence, pooled OR 2.80, 95% CI 0.51-15.53). Also, there is moderate evidence from one trial[2] that bupropion is not effective for smoking cessation in the long term in outpatients.

4.4.4 There is moderate evidence from pooled analysis of two RCTs (one [++] and one [+])[2,5] that bupropion (300mg/day) is effective for smoking reduction in the short term (Pooled OR 4.81, 95% CI 1.36-17.08) and medium term (pooled OR 5.11, 95% CI 1.28-20.39) in outpatients with schizophrenia; however, there is very weak evidence from one trial ([-])[6] to suggest bupropion (dose not stated) had no significant effect on smoking reduction assessed as number of cigarettes per day smoked in outpatients with schizophrenia.

Applicability statement for evidence statements 4.4.3 and 4.4.4

The evidence from the studies based on bupropion is potentially applicable to the UK setting as the intervention may be feasible to the UK setting; however, this does not reflect current clinical prescribing practice in the UK. The studies were all conducted in the USA[1-6].

1 Evins 2005

2 Evins 2007

3 George

4 Weiner

5 Evins 2001

6 Fatemi

Evidence statements 4.9.1, 4.9.3 and 4.9.4 - NRT

4.9.1 There is moderate evidence from one RCT ([++])[1] to suggest that NRT (8mg given once) is effective for smoking reduction in the very short term (7 hours follow-up) in 14 in-patients and outpatients with psychiatric disorders.

4.9.3 There is mixed weak evidence from one RCT ([-])[2] and one NRCT ([-])[3] regarding the effectiveness of standard dose NRT (22mg/24hr or 14mg/day) for smoking reduction or cessation in people with schizophrenia. A significant decrease in mean expired CO levels was seen on the day following patch application, but no reduction in the number of cigarettes smoked in one trial[3]. In the other trial[2] significant reductions in expired CO levels, self-reported number of cigarettes smoked per day and point prevalence abstinence (bio-verified by CO<10ppm) were seen in the NRT patch compared to placebo.

4.9.4 There is mixed weak evidence from one RCT ([-])[4] and one NRCT ([-])[5] regarding the effectiveness of standard dose NRT (21mg/24hr or 14mg/day) for smoking reduction or cessation in people with major depression. Smoking cessation was significantly more likely in the short term in the RCT[4], but no

significant difference was seen in the number of cigarettes smoked in the short term in the NRCT[5].

Applicability statement for evidence statements 4.9.1, 4.9.3 and 4.9.4

The evidence from the studies on NRT is applicable to the UK setting as the study was predominately based on outpatient populations with mental health disorders, and the intervention reflects current clinical prescribing practice in the UK for smoking cessation, and could be feasible within populations with mental health disorders. Most studies were conducted in the USA[1,3,4,5], with a further study conducted in China[2]

1 Hartman

2 Chou

3 Dalack

4 Thorsteinsson

5 Hill

Evidence statement 4.10.1 - varenicline

There is weak evidence from one RCT ([+])[1] and three uncontrolled before and after (UBA) studies (all [-])[2,3,4] that varenicline (2mg/day), in (predominately) outpatients with schizophrenia or schizoaffective disorders, may reduce smoking consumption. Significant reductions were seen in expired CO levels in three studies[1,3,4]; however, no significant difference was seen in continuous abstinence (bio-verified by expired CO) in one trial as compared to placebo[1].

Applicability statement for evidence statement 4.10.1

The evidence from four studies on varenicline is directly applicable to the UK setting as the intervention reflects current clinical prescribing practice in the UK for smoking cessation, and could be feasible within populations with mental health disorders. All of the studies were conducted in the USA[1,2,3,4].

1 Weiner

2 Dutra

3 Panchas

4 Smith

Evidence statement 4.12.1 - high intensity behavioural therapy with bupropion

4.12.1 There is very weak evidence from one UBA ([-])[1] the combination of high intensity behavioural therapy with bupropion significantly reduced smoking consumption in 9 outpatients with schizophrenia from baseline to short term follow-up (mean expired CO levels reduced from 39.4 to 18.4 ppm).

Applicability statement for evidence statement 4.10.1

The evidence from the individual study may be feasible to the UK setting; however, this does not reflect current clinical prescribing practice in the UK. The study was conducted in the USA[1].

1 Weiner

Evidence statement 4.13.2 and 4.13.3 - high intensity behavioural therapy with NRT

4.13.2 There is weak evidence from one RCT ([+])[1] and one NRCT ([-])[2] that high intensity CBT with motivational interviewing in addition to NRT (21mg/day or up to 42mg/day) reduced self-reported cigarette consumption. In the RCT[1] a 50% or more reduction in cigarette consumption was seen in the short- (OR 3.89, 95% CI 1.9-7.89) and long-term (OR 2.09, 95% CI 1.03-4.27), but not at medium term follow-up (OR 1.88, 95% CI 0.92-3.82). In the NRCT[2] a significant reduction in the number of cigarettes smoked per day was seen from baseline to short term follow-up (mean reduction from 30.8 to 17.2 cigarettes/day).

4.13.3 There is weak evidence from one RCT ([+])[3] of 322 outpatients with a diagnosis of depression to suggest high intensity behavioural support in

addition to NRT (dose not stated) (and an offer of bupropion in those who continued to smoke) resulted in a higher proportion of participants being abstinent at long term follow-up (7 day point prevalence, bio-verified by CO<10ppm, 24.6% versus 19.1%, p value not reported).

Applicability statement for evidence statements 4.13.2 and 4.13.3

The evidence is directly applicable to the UK setting as the intervention type reflects current clinical prescribing practice in the UK for smoking cessation, and could be feasible within populations with mental health disorders. Two of the studies were conducted in Australia[1,2] which has a similar smoking treatment service to the UK; the remaining study was conducted in the USA[3].

1 Baker 2006

2 Baker 2009

3 Barnett

Review 5: 'Barriers to and facilitators for smoking cessation interventions in mental health services'

Evidence statements 5.1.1 to 5.15.4

Each study has a code indicating the design type (CC=case control; MM=mixed method; PE=programme evaluation; Q=qualitative study; S=survey or questionnaire design).

Evidence statements 5.1.1 - 5.1.6 - patients' views, attitudes and perceptions regarding smoking

There is evidence from 8 qualitative studies (6[++][1-6] and 2[+][7,8]), two surveys (both [+][9,10]) and one mixed method study([++][11]) about patients' views, attitudes and perceptions regarding smoking.

5.1.1 There is strong evidence to suggest inpatients and outpatients' perceived the reasons for smoking are: to gain autonomy[2,5]; to relieve boredom[4-9,11], nicotine addiction[5,10,11], pleasure and enjoyment[1-5,11]; and to relax and calm down[4-8,10].

5.1.2 There is strong evidence from Canada[11] and England[4] to suggest inpatients and outpatients perceive the need for alternative meaningful activities to replace smoking.

5.1.3 There is strong evidence to suggest inpatients and outpatients smoke to give them a sense of companionship[2,5] and as a form of social pastime[2,5,7,8,11], particularly in residential care and inpatient settings where smoking was a major component of their interaction with other residents.

5.1.4 There is strong evidence to suggest inpatients and outpatients report smoking as a form of self-medication to cope with symptoms of their mental illness[2,3,8,9,11] and because they fear stopping may result in a deterioration in their illness[2].

5.1.5 There is strong evidence to suggest smoking was a major priority in the lives of inpatients and outpatients with mental illness[2,5,6].

5.1.6 There is strong evidence to suggest inpatients and outpatients perceive staff use cigarettes as a mechanism of control in inpatients settings[2,3], in particular using them as a reward or punishment in order to control the patient's behaviour[2,3].

Applicability statement for evidence statements 5.1.1 - 5.1.6

The evidence has direct applicability to the current UK settings and practices. Three of the studies were conducted in the UK[1,4,9] and a further two were conducted in a country which was deemed to have similar applicability to that of the UK setting[2,6].

1 Edmonds

2 Lawn

3 Lucksted

4 Ratschen

5 Snyder

6 Tsourtos

7 Green

8 Morris

9 Dickens

10 Solty

11 Goldberg

Evidence statements 5.2.1 - 5.1.10 - patients' views, attitudes and perceptions regarding making a quit attempt

There is evidence from 9 qualitative studies (6[++][1-6] and 3[+][7-9]), two surveys (both [+][10,11]), 2 mixed method studies (1[++][13] and 1[-][14]) and 1 case control study ([-])[15] about patients' views, attitudes and perceptions regarding making a quit attempt.

5.2.1 There is strong evidence to suggest inpatients and outpatients perceive nicotine addiction as a major barrier to making a quit attempt[5,7,8,13].

5.2.2 There is strong evidence to suggest inpatients and outpatients consider they are unable to quit smoking, primarily related to a lack of motivation[5,9,13]. There was moderate evidence to suggest inpatients and outpatients perceive stress[6], and the severity of their mental health symptoms[6,14] as barriers to quitting smoking.

5.2.3 There is moderate evidence to suggest several inpatients and outpatients perceived there was little point in quitting smoking as this would have no direct effect on their recovery from their mental illness[2], improve their quality of life[4], or health[5].

5.2.4 There is strong evidence to suggest inpatients' and outpatients' perceive the influence of peer, family, and social pressure as important barriers to quitting, with patients perceiving it difficult to quit smoking when peers, family, and staff members smoke around them[9,10,13].

5.2.5 There is strong evidence to suggest outpatients perceive the negative views and beliefs of staff as important barriers to quitting smoking[2,3,8].

5.2.6 There is moderate evidence from the USA to suggest outpatients perceive they have a lack of knowledge regarding which strategies are effective for smoking cessation[3,9]; with outpatients requesting structured patient education, which detailed relevant information about stop smoking interventions, issues relating to psychotropic medications and methods of minimising withdrawal symptoms[3,9].

5.2.7 There is mixed evidence regarding the impact of the patients' physical health on quitting smoking, with strong evidence to suggest inpatients' and outpatients' with mental illness perceived worrying about their physical health was a facilitator to quitting smoking[4,6,7,11-13]. However, there is moderate evidence to suggest that outpatients would need to experience a negative health effect of smoking before they would consider quitting[7,13].

5.2.8 There is strong evidence to suggest inpatients' and outpatients' perceive the influence of peer, family, and social pressures to quit smoking as important facilitators to quit[5,13,15].

5.2.9 There is strong evidence to suggest inpatients and outpatients perceive the high cost of cigarettes as a major facilitator to quitting smoking[4,7,11,13].

5.2.10 There is moderate evidence to suggest outpatients' perceived they would need to have a positive attitude during a quit attempt to maximise success[1,9].

Applicability statement for evidence statements 5.2.1 - 5.2.10

The evidence has direct applicability to the current UK settings and/or practices. Three of the studies were conducted in the UK[1,4,10]**,** and a further three were conducted in a country which was deemed to have similar applicability to that of the UK setting[2,6,14].

1 Edmonds

2 Lawn

3 Lucksted

4 Ratschen

5 Snyder

6 Tsourtos

7 Dickerson

8 Green

9 Morris

10 Dickens

11 Solty

12 Tidey

13 Goldberg

14 Mikhailovich

15 Kelly

Evidence statements 5.3.1 - 5.3.10 - patients' views, attitudes and perceptions regarding successfully quitting

There is evidence from 5 qualitative studies (3[++][1-3] and 2[+][4,5]), two surveys (both [+][6,7]), 3 mixed method studies (1[++][8,] 1[++][9]and 1[-][10]) and 1 case control study ([-])[11] about patients' views, attitudes and perceptions regarding successful quitting.

5.3.1 There is moderate evidence from Brazil and England to suggest inpatients' perceive NRT as not effective for smoking cessation[3,9]; however, there is moderate evidence from the UK and Canadian studies to suggest that some inpatients perceived NRT to be the most beneficial intervention to help them quit smoking[3,6,7]. There is moderate evidence from England to suggest some inpatients would prefer not to take further medications than those they are already taking for their mental illness[3].

5.3.2 There is moderate evidence from Australia to suggest outpatients perceived the cost was a barrier to using NRT for smoking cessation[2]; and moderate evidence from England to suggest outpatients were not aware that NRT could be received on prescription and so would have been free for those entitled to free prescriptions[3].

5.3.5 There is moderate evidence to suggest outpatients would have found the option of using behavioural support interventions useful during their quit attempts[1,4]**.**

5.3.6 There is moderate evidence from England and the USA to suggest outpatients who had successfully quit perceived the following as important facilitators to successfully quitting: i) being able to influence how many sessions of behavioural support they received[1], ii) the option to have the support in an informal and non-clinical environment[1], iii) receiving cessation support that is tailored to their needs as patients with mental illness[1], and iv) having the support involve either one or more persons with a history of mental illness who had successfully quit smoking[4,5].

5.3.7 There is moderate evidence from England and the USA to suggest that outpatients perceive having a supportive smoking cessation advisor is an important facilitator to successfully quitting[1,5]. In particular, they described the importance that the smoking cessation advisor should i) take a non-judgmental approach to quitting[1], whilst being able to maintain a positive expectation in the patient's ability to quit smoking[5], ii) act as an advocate during the quit attempt[1], and iii) have a good knowledge of mental health problems, and how smoking and quitting can impact on their mental health[1].

5.3.10 There is weak evidence to suggest inpatients' and outpatients' perceived quitting smoking resulted an improvement in communication with others and in forming new peer groups[1,10].

Applicability statement for evidence statements 5.3.1 - 5.3.10

The evidence has direct applicability to the current UK settings and practices. Three of the studies were conducted in the UK[1,3,6], and a further two studies were conducted in a country which was deemed to have a similar applicability to the UK setting[2,10].

1 Edmonds

2 Lawn

3 Ratschen

4 Dickerson

5 Morris

6 Dickens

7 Solty

8 Goldberg

9 Scherer

10 Mikhailovich

11 Kelly

Evidence statements 5.4.1 - 5.4.3: staff attitudes and beliefs regarding patient's smoking

There is evidence from 4 qualitative studies (2[++][1,2] and 2[+][3,4]), 6 surveys (2[++][5,6] and 4[+][7-10] and 1 mixed method studies ([++][11]) about staff attitudes and beliefs regarding patient's smoking.

5.4.1 There is strong evidence to suggest that clinical and non-clinical staff mental health staff in inpatient and outpatient settings believe tobacco use is a personal choice of the patient[1,2,7,8,10,11]. There is moderate evidence to suggest ward staff in inpatient and outpatient settings perceived that patients experience enjoyment from smoking and use cigarettes as a coping mechanism, and as a means of self-medication to control mental illness symptoms[2,4]. There is moderate evidence to suggest that ward staff and mental health administrators in inpatient and outpatient settings perceive cigarettes to fulfill an especially important function in the lives of patients with mental illness[3,5].

5.4.2 There is strong evidence from Australia and the USA to suggest nursing and mental health ward staff, and mental health administrators perceive

cigarettes are used as a form of currency or means of control to achieve compliance in inpatients with mental health conditions[1-3]; and there is strong evidence to suggest nursing and ward staff and unit administrators perceive cigarettes are used to develop a rapport with inpatients[1,6].

5.4.3 There is strong evidence from Australia and England to suggest nursing and mental health ward staff (from predominately inpatient settings) believe allowing patients to continue to smoke in hospital, as opposed to withdrawing the provision through banning smoking, will reduce the likelihood of aggression and violence, thereby ensuring a smoother running of an inpatient setting[1,2,9].

Applicability statement for evidence statements 5.4.1 - 5.4.3

Most of the evidence has direct applicability to the current UK settings and practices. Four studies were conducted in the UK[4,5,8,9], and a further four studies were conducted in countries which were deemed to have similar applicability to that of the UK setting[1,2,6,7].

1 Lawn a

2 Lawn b

3 Morris

4 Ratschen a

5 Ratschen b

6 Wye

7 Ashton

8 Dickens

9 Stubbs

10 Williams

Evidence statements 5.5.1 - 5.5.5: staff attitudes towards smoking cessation in patients

There is evidence from 4 qualitative studies (2[++][1,2] and 2[+][3,4]), 17 surveys (2[++][5,6], 10[+][7-16] and 5[-][17-21]) and 2 mixed method studies (both[++][22,24]) about staff attitudes towards smoking cessation in patients.

5.5.1 There is strong evidence to suggest that psychiatrists, nursing staff and mental health managers, from inpatient and outpatient settings, have the misconception that patients with mental health conditions are unable to stop smoking[1-3,6,10,12,14,19].

5.5.2 Despite the evidence that staff believe patients with mental health conditions are unable to stop smoking, there is strong evidence to suggest that clinical and non-clinical mental health staff from inpatient and outpatient settings feel patients' smoking should be addressed[7,9,12,13,15,19,21], and moderate evidence that they should have the option to stop smoking if they so wished[7]. There is moderate evidence to suggest that some ward staff, psychiatrists and general practitioners, and mental health administrators from inpatient and outpatient settings actively discourage patients from quitting[3,4,18]**.**

5.5.3 There is strong evidence to suggest that the smoking among nurses, ward staff and non-clinical staff (predominately from inpatient settings) is a barrier to providing and supporting smoking cessation[2,8,11,20,22]. Additionally, there is weak evidence to suggest mental health administrators from outpatient settings perceive the overt use of tobacco by staff members was a barrier to patients' quitting smoking[3]. Furthermore, there was weak evidence to suggest clinical and non-clinical staff perceived that smoking cessation support for staff members to assist them to quit smoking should be provided in inpatient settings[22].

5.5.4 The evidence is mixed regarding the beliefs of whether staff thought providing smoking cessation was part of their role, with strong evidence from four studies to suggest that the majority of psychiatrists and clinical and non-

clinical mental health workers from inpatient and outpatient settings did not feel that providing smoking cessation support was part of their role[5,7,10,22]. However, there is weak evidence from one study of psychiatrists and practice nurses from inpatient and outpatient settings to suggest it should be part of their role[16]. Furthermore, there is weak evidence to suggest community based psychiatrists perceived patients had a preoccupation with other health or medical complaint, and thus smoking cessation would not be a priority for patients[10,19].

5.5.5 There is moderate evidence to suggest that clinical and non-clinical mental health staff from inpatient settings perceive quitting smoking would have a detrimental effect on the mental health symptoms of the patient[2,8,13,14,23].

Applicability statement for evidence statements 5.5.1 - 5.5.5

Most of the evidence has direct applicability to the current UK settings and practices. Five studies were conducted in the UK[1,4,5,8,14], and a further five studies were conducted in countries which were deemed to have similar applicability to that of the UK setting[2,6,7,9,18].

1 Edmonds

2 Lawn

3 Morris

4 Ratschen a

5 Ratschen b

6 Wye

7 Ashton

8 Dickens

9 O'Donovan

10 Price a

11 Prochaska

12 Sharp

13 Sidani

14 Stubbs

15 Tong

16 Williams

17 Landow

18 Lubman

19 Price b

20 Sarna

21 Weinberger

22 Essenmacher

23 Scherer

Evidence statements 5.6.1 - 5.6.3: perceived barriers and facilitators to stopping smoking in patients

There is evidence from 3 qualitative studies (1[++][1] and 2[+][2,3]), 2 surveys (both[+][4,5]) and 1 mixed method study ([+][7]) about perceived barriers and facilitators to stopping smoking in patients.

5.6.1 There is moderate evidence to suggest clinical mental health staff and administrators from inpatient and outpatient settings perceived boredom, increased stress, tobacco dependence, and a lack of motivation as barriers to stopping smoking in patients with mental illness[3-5].

5.6.2 There is moderate evidence to suggest ward staff from an inpatient setting thought a lack of activities was a barrier for patients' quitting smoking[1,2], and there was weak evidence to suggest that clinical and non-clinical staff from an inpatient setting perceived that introducing meaningful activities would act as a facilitator for smoking cessation[6].

5.6.3 There is moderate evidence to suggest mental health staff and administrators from inpatient and outpatient settings thought social isolation was a barrier for patient's quitting smoking[3,4].

Applicability statement for evidence statements 5.6.1 - 5.6.3

The majority of the evidence has direct applicability to the current UK settings and practices. One study was conducted in the UK[2] and a further two studies were conducted in a country which was deemed to be similar to that of the UK setting[1,4].

1 Lawn

2 Ratschen

3 Morris

4 Ashton

5 Sharp

6 Essenmacher

Evidence statements 5.7.1 - 5.7.4: staff skills and abilities

There is evidence from 3 qualitative studies (1[++][1] and 2[+][2,3]), 11 surveys (1[++][4], 8[+][5-12] and 2[-][13,14]) and 1 mixed method study ([++][15]) about staff skills and abilities.

5.7.1 There was strong evidence to suggest that psychiatrists, ward staff, psychiatric nurses and mental health counsellors from inpatient and outpatient settings felt a lack of confidence in providing stop smoking support to patients with mental health conditions[4,6,7,9,10,13], even though some staff felt

knowledgeable regarding the harms of smoking and stop smoking strategies. There was moderate evidence to suggest education in one-to-one services resulted in mental health professionals from a community setting feeling more confident to provide stop smoking support to patients with mental health conditions[1].

5.7.2 There was strong evidence to suggest that a lack of training during their education and whilst in post was directly responsible for the lack of preparedness that clinical and non-clinical staff from inpatient and outpatient settings felt towards implementing stop smoking strategies[5-15].

5.7.3 There was moderate evidence from one large UK survey to suggest clinical mental health professionals from an inpatient setting had a lack of knowledge regarding the prevalence of smoking and tobacco addiction in patients with mental illness, and half of the respondents lacked any formal training in smoking cessation[3].

5.7.4 There was strong evidence to suggest that mental health professionals and administrators from inpatient and outpatient settings described that more training in smoking cessation would be helpful[1,2,5], in particular it was suggested that the training should be located onsite using user-friendly, manualised tools and should contain information regarding how best to approach mental health patients, the harms of smoking versus the potential benefits of symptom control[2], and the impact smoking reduction and cessation can have on some medications[3]. There was moderate evidence to suggest including the treatment of nicotine dependence, with relevant clinical experiences (such as leading smoking cessation groups) in the curriculum of residency programmes would facilitate providing smoking cessation support for patients with mental health conditions[7]. Additionally, there was weak evidence to suggest that mental health administrator staff perceived a positive expectation of success at quitting would be an essential component of a successful smoking cessation training package[2].

Applicability statement for evidence statements 5.7.1 - 5.7.4

The evidence has partial applicability to the current UK settings and practices. Three studies were conducted in the UK[1,3,4], and a further study was conducted in the Republic of Ireland[5].

1 Edmonds

2 Morris

3 Ratschen a

4 Ratschen b

5 O'Donovan

6 Price a

7 Prochaska

8 Secker-Walker

9 Sharp

10 Sidani

11 Tong

12 Williams

13 Price b

14 Zvolensky

15 Essenmacher

Evidence statements 5.8.1 - 5.8.3: staff perceptions of systems and policies

There is evidence from 2 qualitative studies (1[++][1] and 1[+][2]), 9 surveys (1[++][3], 7[+][4-10] and 1[-][11]) and 2 mixed method studies (1[++][12] and 1[-][11]) about staff perceptions of systems and policies.

5.8.1 There is strong evidence to suggest clinical and non-clinical mental health professionals and administrators (predominately from outpatient settings) perceive the lack of prioritising stop smoking support, either in the mental health service or as part of the staff's workload, was a major barrier to offering stop smoking support[1,2,6,7,8,10].

5.8.2 There is weak evidence to suggest that service managers from outpatient settings perceived the lack of setting targets for treating patients with mental health conditions within services in the UK is a barrier to delivering stop smoking support to these patients[13]

5.8.3 There is strong evidence to suggest that clinical and non-clinical mental health professionals from inpatient and outpatient settings perceive that they are not able to dedicate sufficient time to provide smoking cessation support during their role due to conflicting priorities[1,3-6,9-12].

Applicability statement for evidence statements 5.8.1 - 5.8.3

The evidence has partial applicability to the current UK settings and practices. Three studies were conducted in the UK[1,3,13], and a further two studies were conducted in countries which were deemed to have similar applicability to that of the UK setting[4,5].

1 Edmonds

2 Morris

3 Ratschen

4 Ashton

5 O'Donovan

6 Price a

7 Prochaska

8 Sharp

9 Sidani

10 Williams

11 Price b

12 Essenmacher

13 McNally

Evidence statements 5.9.1 - 5.9.6: staff perceptions regarding stop smoking interventions for patients

There is evidence from 1 review ([-])[1], 2 qualitative studies (both[+][2,3]), 9 surveys (2[++][4,5], 5[+][6-10] and 2[-][11,12]) and 2 mixed method studies (both[++][13,14]) about staff perceptions stop smoking interventions for patients.

5.9.1 There is strong evidence from the USA and Brazil to suggest that mental health service staff and psychiatrists from inpatient and outpatient settings perceived NRT was not effective in mental health populations for smoking cessation[2,8,9,14]. There is weak evidence from one USA study to suggest that community based psychiatrists considered the safety of NRT use in adolescents and children with mental health conditions was a major barrier to using NRT for smoking cessation[8]. There was moderate evidence from England to suggest non-medical inpatient staff were more likely to, incorrectly, believe addiction to NRT was common, compared to medical inpatient staff[4]. Finally, there is recent evidence from England to suggest that staff had concerns regarding the 'harmful effect' and expense to the Trust of NRT[13].

5.9.2 There is weak evidence from the USA to suggest community based psychiatrists were not prescribing NRT in their service due to their perception that smokers with mental health conditions would not comply with NRT[8,11], and moderate evidence from England to suggest it is because inpatient mental health staff believed NRT interfered with antipsychotic medications[3].

5.9.3 There is mixed weak evidence regarding whether clinical mental health staff's lack of awareness of smoking cessation services was a barrier to providing smoking cessation support in patients with mental health conditions in inpatient and outpatient settings[1,11,12].

5.9.5 There is moderate evidence to suggest that nurses and mental health professionals (predominately from inpatient settings) perceive that the patients had a lack of information and support relating to stop smoking support[6,7], and addressing this would be a facilitator for smoking cessation and reduction[3,6]. Additionally, there is very weak evidence to suggest that a major barrier to accessing smoking cessation services was a lack of access to a telephone or internet[1].

5.9.6 There is moderate evidence from Australia to suggest that the following factors were the psychiatric unit managers perceptions for whether a patient received treatment for nicotine dependence: i) whether the patient requested assistance to quit, ii) whether the patient was receptive to receiving interventions for smoking cessation, iii) whether an improvement in the patient's health would be seen with quitting , iv) whether the interventions were perceived to be effective, and v) the availability of NRT on the psychiatric unit[5]. There is moderate evidence from England to suggest that inpatient mental health staff perceive NRT products and behavioural support for smoking cessation and reduction were readily available in their inpatients mental health setting[4].

Applicability statement for evidence statements 5.9.1 - 5.9.6

The evidence has partial applicability to the current UK settings and practices. Four studies were conducted in the UK[3,4,7,13], and two studies were conducted

in a country which was deemed to have similar applicability to that of the UK setting[5,6]. However, the evidence relating to the lack of resources and re-imbursement as a barrier for providing stop smoking interventions is likely not to be applicable to the UK setting and practices.

1 Williams

2 Morris

3 Ratschen a

4 Ratschen b

5 Wye

6 Ashton

7 Dickens

8 Price a

9 Sidani

10 Tong

11 Price b

12 Weinberger

13 Parker

14 Scherer

Evidence statements 5.11.2: acceptability of smoking cessation and temporary abstinence interventions

There is moderate evidence from Australia to suggest outpatients with schizophrenia or depression use cigarettes to overcome their fears of mental illness relapse[1]. Outpatients with schizophrenia exhibit overt behaviours to ensure their cigarette supply continues (for example, stealing cigarettes),

whereas outpatients with depression appeared to have better coping strategies to ensure their supply lasted until they have sufficient funds to purchase more. Outpatients with personality disorders have an unconscious need to smoke when they are unwell and were shown to exhibit risky behaviours to ensure their supply continues[1].

Applicability statement for evidence statement 5.11.2.

The evidence has partial applicability to the current UK settings and practices. The one study was conducted in a country which was deemed to have similar applicability to that of the UK setting.

1 Lawn

Evidence statements 5.12.1 - 5.12.2: strategies/approaches that are effective in encouraging mental health care professionals to record smoking status

There is evidence from 11 surveys (1[++][1], 7[+][2-8] and 2[-][9-11]) and 1 mixed method study ([++][12]) about recording smoking status.

5.12.1 There is mixed evidence regarding whether patients are regularly asked about their smoking behaviour, with moderate evidence from the USA to suggest mental health staff from inpatient and outpatient settings regularly ask the smoking status of patients with mental illness[2,4,6,7,9,10], but moderate evidence from Australia to suggest it is at the discretion of the mental health staff member in an inpatient setting whether they ask the smoking behaviour of their patients[1]. Additionally, there is moderate evidence from the USA to suggest a substantial proportion of mental health staff predominately from outpatient settings never document the smoking status of patients with mental illness[2,5,8,9], but moderate evidence to suggest it is at the discretion of the mental health staff member in an inpatient setting whether they document the smoking behaviour of their patients[1]. There is recent evidence from the UK to suggest that whilst measures may be in place for inpatients to record and provide treatment for smoking, this may not be the case for community based patients[12].

5.12.2 There is moderate evidence from the USA to suggest routine systems are used to identify patients who smoked predominately from outpatient settings, including consulting the patients' chart[3,11].

Applicability statement for evidence statements 5.12.1 - 5.12.2.

The evidence has partial applicability to the current UK settings and practices. Only one of the studies was conducted in the UK[12] and one study was conducted in a country which was deemed to be similar to that of the UK setting[1]**.**

1 Wye

2 Price a

3 Secker-Walker

4 Sharp

5 Sidani

6 Tong

7 Williams

8 Zvolensky

9 Price b

10 Sarna

11 Zvolensky

12 Parker

Evidence statements 5.13.1 - 5.13.3: strategies/approaches used by secondary care mental health services for providing patients with stop smoking information, advice and support

There is evidence from 12 surveys (10[+][1-10] and 2[-][11,12]) and 1 mixed method study ([++][13]) about staff providing information.

5.13.1 There is moderate evidence to suggest that psychiatrists and psychiatric nurses based in the US (from inpatient and outpatient settings) regularly provide their patients with smoking cessation advice[3,6,9,10]; however, low rates of providing advice on smoking cessation were seen in a number of studies[1-5,7,8,12,13].

5.13.2 There is weak evidence from the USA to suggest psychiatric nurses, psychiatry residents, and medical health counsellors predominately from inpatient settings infrequently followed up regarding smoking cessation support for their patients[4,7,12].

5.13.3 There is weak evidence from the USA to suggest inpatient and outpatient based psychiatrists regularly discuss pharmacotherapies[9], and community based psychiatrists infrequently prescribe smoking cessation pharmacotherapies[11].

Applicability statement for evidence statements 5.13.1 - 5.13.3.

The evidence has partial applicability to the current UK settings and practices. Only one study wase conducted in the UK[13], and no further studies were conducted in a country which was deemed to be similar to that of the UK setting.

1 Ashton

2 Essenmacher

3 Price a

4 Prochaska

5 Secker-Walker

6 Sharp

7 Sidani

8 Solty

9 Tong

10 Williams

11 Price b

12 Sarna

13 Parker

Evidence statements 5.14.1 - 5.14.3: strategies/approaches used by secondary care mental health services for referring people to stop smoking or hospital based stop smoking services

There is evidence from 3 surveys (3[+][1-3]) and 2 mixed method studies ([++][4,5]) about referring people to stop smoking services.

5.14.1 There is moderate evidence to suggest that in the US approximately half of mental health staff from inpatient and outpatient settings refer their patients to stop smoking services[1-3], and weak evidence from the USA to suggest that inpatient and outpatient based psychiatric nurses are more likely to refer their patients if they are more highly motivated, valued tobacco dependence interventions, and perceived their patients to be more motivated to stop smoking[1].

5.14.2 There is recent evidence from the UK to suggest that virtually no inpatients are referred to a NHS Stop smoking Service[5], and NHS Stop Smoking Services never or rarely receive referrals from inpatients with mental illnesses[4].

5.14.3 There is weak evidence to suggest the mental health status of clients attending stop smoking services in the UK is not known[4].

Applicability statement for evidence statements 5.14.1 - 5.14.3.

The evidence has partial applicability to the current UK settings and practices. Two of the included studies were conducted in the UK[4,5].

1 Sharp

2 Tong

3 Williams

4 McNally

5 Parker

Evidence statements 5.15.1 - 5.15.4: Collaboration between community, primary, and secondary care mental health care providers to integrate stop smoking support within care pathways

There is evidence from 2 qualitative studies (both[+][1,2]) and 1 mixed method study ([+][3]) about collaboration to provide integrated care pathways.

5.15.1 There was weak evidence from one UK study to suggest that ward staff perceived smoking cessation should be integrated into the inpatient based health care plan of the patient, and strong collaborations should be formed between key workers and doctors during the inpatient stay, and between inpatient and community teams[2].

5.15.2 There was weak evidence from one UK study to suggest that ward staff perceived smoking cessation and smoking reduction should be tailored to the needs of the inpatients with mental illness, with support being provided through local stop smoking services[2].

5.15.3 There was weak evidence from the USA to suggest that community based mental health administrator staff perceived a useful facilitator for implementing smoking cessation across practices would be to first adopt

smoking cessation support only in the practices in which there was a strong interest in smoking cessation, so that an early success could be demonstrated; rather than enforcing all practices to have smoking cessation support[1].

5.15.4 There was recent evidence from the UK to suggest that implementing a tailored tobacco dependence service in the UK's largest mental health trust through the development of an integrated smoking care pathway, whilst offering flexible support for smoking cessation and reduction programmes through the use of dedicated staff to provide the service, resulted in a modest service uptake rate overall. In the inpatient setting, where smokers can be easily identified due to smoking status recording being mandatory, almost a quarter of all smokers engaged with the service[3].

Applicability statement for evidence statements 5.15.1 - 5.15.4.

The evidence has partial applicability to the current UK settings and practices. Two studies were conducted in a UK setting[2,3], therefore the evidence from these studies is likely to be directly applicable.

1 Morris

2 Ratschen

3 Parker

Review 6: 'A review of the effectiveness of smokefree strategies and interventions in secondary care settings'

Effectiveness of Supporting Strategies and Interventions for Ensuring Compliance: Mental Healthcare Settings

Evidence statement 6.1.2: There is weak evidence from one interrupted time series in the USA[1] in a mental healthcare setting that staff aiding inpatients' compliance through strategies such as encouraging patients to participate in smoking cessation groups and addressing patients' urge to smoke increases patient compliance a local (US Department of Veterans Affairs') smokefree buildings policy. One week post-implementation, nursing staff ratings of their own overall individual effectiveness using policies listed above to help inpatients comply with smokefree on the wards by addressing their urge to smoke increased four weeks post-implementation (no p values calculated). Supporting strategies were based around nursing interventions, including encouraging patients to participate in smoking cessation groups and addressing patients with the urge to smoke.

UK Applicability: This evidence was conducted outside the UK and the policy covered (indoor smokefree) is already national legislation in the UK. However there is no reason to believe the strategy's effect is not applicable to the UK setting.

1 Erwin -

Staff Compliance with Smokefree: Smoking Behaviour (Acute & Maternity)

Evidence statement 6.1.3: There is moderate evidence from two cohort studies[1,2], one before and after study[3] and one interrupted time series[4] reported that the implementation of local-level policy and national legislation

for smokefree implementation in an acute and maternity setting decreases the number of staff smoking.

UK Applicability: This evidence was conducted outside the UK and the policy or national legislation covered in most (indoor smokefree) is already national legislation in the UK however one recent study's policy covers smokefree grounds (a local policy similar to the UK context); there is no reason to believe the effect is not applicable to the UK setting.

(a) Observed Smoking Behaviour: Two cohort studies in the USA and Canada[1,2] reported that the implementation of local smokefree policies in an acute and maternity setting decreases the number of staff observed smoking. One study in the USA[1], reported a significant decrease in observed staff smoking in hospital cafeterias and lounge areas at 1 and 6 months after the local (hospital board's) smokefree buildings policy was introduced ($p<0.0001$). Supporting strategies included written policies, an implementation committee, cessation support, an internal media and educational campaign and free health checks for employees. One study in Canada[2] reported that the number of contacts security personnel had with staff smokers on hospital grounds decreased over 1, 2 and 3 months post-implementation of a local (regional health authority's) smokefree grounds policy. Supporting strategies included written policies, an implementation committee, signage, staff meetings, notices in staff payslips, cessation support, pharmacotherapies, temporary abstinence support for inpatients, moving of ashtrays and shelters to the site periphery, staff training, media campaigns, bilingual information sheets for patients and the public and information on health organisations' websites.

(b) Self-reported Smoking Behaviour: There is evidence from one before and after study in Israel[3] and one interrupted time series study in Spain[4], that local-level policy and national legislation for smokefree implementation with supporting strategies decreases staff self-reported smoking during working hours in an acute and maternity setting. One study in Israel[3] reported a significant increase in staff smokers reporting they always usually leave their workstation to smoke following the implementation of a local (hospital board's)

smokefree buildings policy, measured 3 months before and 6-9 month after implementation ($p<0.0001$). Supporting strategies included an implementation committee, cessation support, smoking shelters erected outside the hospital building, bans on the sale of tobacco products on site, an information campaign 2 months before the policy was introduced, a press conference launch and fines for violations. One study in Spain[4] reported "few smokers" (no data given) reported to have smoked inside the nursing rooms and, following the implementation of national indoor smokefree legislation in Spain in 2005, no employee respondents reported smoking inside the nursing rooms[2]. In two studies in Israel[3] and Canada[2] no employees reported smoking in the smokefree cafeteria and the employees' rest areas. Supporting strategies included the closure of smoking rooms and tobacco control training for nurses.

1 Stillman +

2 Kvern –

3 Donchin +

4 Martinez +

Visitor Compliance with Smokefree: Smoking Behaviour (Acute & Maternity)

Evidence statement 6.1.4: There is weak evidence from two cohort studies[1,2] in an acute and maternity setting that implementation of local smokefree policies with supporting strategies decreases hospital visitor smoking.

UK Applicability: This evidence was conducted outside the UK, however one of the two studies' policy covers smokefree grounds (a policy implemented in parts of the UK) and there is no reason to believe the effect is not applicable to the UK setting.

One study[1] reported a significant decrease in observed visitor smoking in hospital cafeterias and lounge areas at 1 and 6 months after the local (hospital board's) smokefree buildings policy was introduced ($p<0.0001$). Supporting strategies included written policies, an implementation committee, cessation support, an internal media and educational campaign and free health checks for employees. One study[2] reported that the number of contacts security personnel had with visitor smokers on hospital grounds decreased over 1, 2 and 3 months post-implementation of a local (regional health authority's) smokefree grounds policy. Supporting strategies included: written policies, an implementation committee, signage, staff meetings, notices in staff payslips, cessation support, pharmacotherapies, temporary abstinence support for inpatients, moving of ashtrays and shelters to the site periphery, staff training, media campaigns, bilingual information sheets for patients and the public and information on health organisations' websites.

1 Stillman +

2 Kvern -

Patient Compliance with Smokefree: Smoking Behaviour (Acute & Maternity)

Evidence statement 6.1.5: There is weak evidence from one before and after study[1] in about the impact of local smokefree policies with supporting strategies on inpatient smoking behaviour in an acute and maternity setting.

UK Applicability: This evidence was conducted outside the UK, however the policy covers smokefree grounds (a policy implemented in parts of the UK) and there is no reason to believe the effect is not applicable to the UK setting.

There is weak evidence from one cohort study[1] in Canada that the number of inpatients challenged about smoking on hospital grounds by security personnel decreased over 1, 2 and 3 months post-implementation of a local (regional health authority's) smokefree grounds policy with supporting strategies. Supporting strategies included written policies, an implementation

committee, signage, staff meetings, notices in staff payslips, cessation support, pharmacotherapies, temporary abstinence support for inpatients, moving of ashtrays and shelters to the site periphery, staff training, media campaigns, bilingual information sheets for patients and the public and information on health organisations' websites.

1 Kvern –

All Hospital Users' Compliance with Smokefree: Smoking Behaviour (Acute & Maternity)

Evidence statement 6.1.6: There is weak evidence from two before and after studies[1,2] in Canada and Israel in an acute and maternity setting that local smokefree policy implementation with supporting strategies decreases observed smoking amongst all hospital users as a whole (patients, staff and visitors).

UK Applicability: This evidence was conducted outside the UK, however one of the two studies' policy covers smokefree grounds (a policy implemented in parts of the UK) and there is no reason to believe the effect is not applicable to the UK setting.

One study in Israel[2] reported a significant reduction in observed smoking ($p<0.001$), frequently observed smoking (p value not reported) and occasionally observed smoking (p value not reported) by employees of other employees, patients, or visitors in unauthorized areas in the hospital following the implementation of a local (hospital board's) smokefree buildings policy, measured 3 months before and 6-9 month after implementation. Supporting strategies included an implementation committee, posters/signage, staff letters/payslip notes, incorporating the policy launch with World No Tobacco Day, notices on staff bulletin boards and notification by supervisors. One study in Canada[1] reported that the number of people observed smoking on facility grounds had reduced between 1 month pre-implementation of a local (regional health authority's) smokefree grounds policy and 1 month post-implementation. Supporting strategies included written policies, an

implementation committee, signage, staff meetings, notices in staff payslips, cessation support, pharmacotherapies, temporary abstinence support for inpatients, moving of ashtrays and shelters to the site periphery, staff training, media campaigns, bilingual information sheets for patients and the public and information on health organisations' websites.

1 Kvern -

2 Donchin +

Evidence statement 6.1.9: There is weak evidence from one cohort study in the USA[1] in an acute and maternity setting that implementation of the local (hospital board's) smokefree buildings policy with supporting strategies decreases fire incidents due to negligent smoking between the total 4 years before implementation to the total 1 year after implementation. Supporting strategies included written policies, an implementation committee, cessation support, an internal media and educational campaign and free health checks for employees.

UK Applicability: This evidence was conducted outside the UK and the policy covered (indoor smokefree) is already national legislation in the UK. However there is no reason to believe the effect is not applicable to the UK setting.

1 Stillman 1990 [+]

Inpatient Compliance with Smokefree: Requests to Terminate Smoking (Mental Healthcare)

Evidence statement 6.1.10: There is weak evidence from one interrupted time series[1] in the USA and one before and after study in the USA[2] that implementation of local smokefree policies, one indoors only[1] and one indoors and outdoors[2] both in the USA, with supporting strategies may increase inpatient smoking violations in a mental healthcare setting.

UK Applicability: This evidence was conducted outside the UK and the policy covered in one (indoor smokefree) is already national legislation in the UK

however the other study's policy covers smokefree grounds and buildings (a policy implemented in parts of the UK); there is no reason to believe the effect is not applicable to the UK setting.

One interrupted time series in the USA[1] reported an increase in nursing staff requesting inpatients cease smoking a lit cigarette, between 1 week post-implementation and 4 weeks post-implementation of a local (US Department of Veterans Affairs) smokefree buildings policy (no p values calculated). Supporting strategies were based around nursing interventions, including encouraging patients to participate in smoking cessation groups and addressing patients with the urge to smoke. One before and after study in the USA[2] found that the frequency of smoking in the hospital room according to chart reports increased significantly between 3 months pre- and 3 months post-implementation of a local (hospital board's) smokefree buildings and smokefree grounds policy ($p<0.05$). Supporting strategies included an implementation committee, weekly patient cessation support groups, pharmacotherapies, written information for patients and staff education sessions on the treatment of nicotine dependence.

One indoors[1] and outdoors[2] both in the USA, with supporting strategies may increase inpatient smoking violations in a mental healthcare setting.

1 Erwin -

2 Patten +

Other Impacts on Patients: Hospital Utilization and Inpatient Retention (Acute & Maternity)

Evidence statement 6.2.1: There is weak evidence from two uncontrolled before and after studies in the USA[1,2] about the impact of local policy implementation for smokefree buildings and grounds with supporting strategies on hospital inpatient admissions in an acute and maternity setting.

UK Applicability: This evidence was conducted outside the UK, however the policies include smokefree grounds and buildings (a policy implemented in

parts of the UK), the papers were published in the last 5 years, and there is no reason to believe the effect on patients is not applicable to the UK setting.

(a) There is weak evidence from two uncontrolled before and after studies in the USA[1,2] in an acute and maternity setting that local smokefree buildings and grounds policy implementation with supporting strategies does not adversely change the number or characteristics of inpatients admitted to hospital. One study in the USA[1] observed no adverse effects on inpatient volume in the 18 months before implementation of the local (hospital's) smokefree buildings and smokefree grounds policy, and in the 23 months post-implementation and there was little variation in the proportion of inpatients who smoked before and after implementation. Supporting strategies included pharmacotherapies, cessation support, a campus map detailing smokefree borders, and staff, community and patient education. One study in the USA[2] reported that the 12-month mean licensed bed occupancy and the 12-month mean staffed bed occupancy increased slightly from pre-to post-implementation of a local (university hospital board's) policy for smokefree indoors and outdoors with supporting strategies. Supporting strategies included written policies, an implementation committee, posters, staff meetings, letters in staff payslips, patient appointments letters, cessation support, pharmacotherapies and announcements in local media.

(b) There is weak evidence from one uncontrolled before and after study in the USA[1] in an acute and maternity setting that implementation of a local (hospital's) smokefree buildings and smokefree grounds policy with supporting strategies does not change the number of inpatients signing out against medical advice (AMA) due to 'having to smoke' in the 6 months before and 6 months after implementation (no p values given). Smoking amongst all inpatients signing out AMA increased between 6 months pre-smokefree and 6 months post-smokefree but returned to the pre-smokefree baseline 1 year later (no statistical analysis presented). Supporting strategies included pharmacotherapies, cessation support, a campus map detailing smokefree borders, and staff, community and patient education.

1 Gadomski +

2 Wheeler -

Other Impacts on Patients: Inpatient NRT Prescriptions and NRT Use (Acute & Maternity)

Evidence statement 6.2.2: There is weak evidence from two uncontrolled before and after studies[1,2] with different samples, one in the USA[1] and one in Canada[2] that local smokefree policy implementation with the supporting strategies of cessation support and pharmacotherapies/NRT provision increases the use of NRT by inpatients who smoke in an acute or maternity care setting.

UK Applicability: This evidence was conducted outside the UK, however the policies include smokefree grounds (a policy implemented in parts of the UK), and there is no reason to believe the effect on patients is not applicable to the UK setting.

One study in the USA[2] reported that NRT prescriptions for inpatients increased in the 18 months before and 23 months after implementation of a local (hospital's) smokefree buildings and smokefree grounds policy, with a significant increase in prescriptions 1 month prior to implementation (p=0.008). Other supporting strategies included cessation support, a campus map detailing smokefree borders, and staff, community and patient education. One study in Canada[2] reported that NRT usage for inpatient support increased between before implementation of a local (regional health authority's) smokefree grounds policy and 3 months post-implementation. Other supporting strategies included written policies, an implementation committee, signage, staff meetings, notices in staff payslips, cessation support, temporary abstinence support for inpatients, moving of ashtrays and shelters to the site periphery, staff training, media campaigns, bilingual information sheets for patients and the public and information on health organisations' websites.

1 Gadomski +

2 Kvern -

Other Impacts on Staff: Staff Smoking (Acute & Maternity)

Evidence statement 6.2.3: There is evidence from five before and after studies, four in the USA[1-4] and one in Israel[5],one cohort study in the USA[6] and one interrupted time series in Spain[7] about the impact of local-level policy and national legislation for smokefree implementation on staff smoking in an acute and maternity setting.

UK Applicability: This evidence was conducted outside the UK, however nearly half the studies test smokefree grounds and buildings (a policy implemented in parts of the UK); the others test indoor smokefree already national legislation in the UK. There is no reason to believe the effect on staff is not applicable to the UK setting.

(a) Staff Smoking Rates: There is moderate evidence from three before and after studies in the USA[1-3], one cohort study in the USA[6] and one interrupted time series in Spain[7] to suggest that local-level policy and national legislation for smokefree implementation with supporting strategies decreases smoking rates amongst staff in an acute and maternity setting.

One study in the USA[1] reported that the proportion of hospital staff who self-reported that they smoked significantly decreased from 6 months pre- to 6 months post-implementation of a local (medical foundation's) smokefree (campus) buildings and grounds policy (Chi-square=11.53, p<0.003). Supporting strategies included a Smoke-Free Task Force (with clinicians, psychologists, and administrative personnel from public affairs and employee relations departments). One study in the USA[2] reported a decrease in employee smoking prevalence from 1 year pre- to 1 year post-implementation of a local (hospital's) smokefree buildings and smokefree grounds policy (p<0.001). Supporting strategies included pharmacotherapies, cessation support, a campus map detailing smokefree borders, and staff, community

and patient education. One study in the USA[3] reported significantly fewer employees reporting that they were a current smoker 10 months after the implementation of a local (university hospital board's) policy for smokefree indoors and outdoors than 3 months before implementation ($p<0.0001$). Supporting strategies included written policies, an implementation committee, posters, staff meetings, letters in staff payslips, patient appointments letters, cessation support, pharmacotherapies and announcements in local media. One study in the USA6 reported a significant decline in staff smoking prevalence from 8 months pre- to 6 months post-implementation of a local (hospital board's) smokefree buildings policy ($p=0.0001$). Supporting strategies included written policies, an implementation committee, cessation support, an internal media and educational campaign and free health checks for employees. Following implementation of national indoor smokefree legislation in Spain in 2005, one study in Spain[7] found a non-significant decrease in employee smoking prevalence from 4 years before the smokefree legislation (95% CI: 27.7-41.2) to 1 year after the legislation (95% CI: 24.7-36.4). Supporting strategies included the closure of smoking rooms and staff training.

(b) Staff Smoking by Number of Cigarettes: There is moderate evidence from three before and after studies, two in the USA[1,2], and one in Israel[5] and one interrupted time series in Spain[7] to suggest that local-level policy and national legislation for smokefree implementation with supporting strategies decreases the number of cigarettes smoked by staff both during working hours and overall in an acute and maternity setting. One study in the USA[1] reported a decrease in the number of cigarettes staff reported smoking from 6 months pre- to 6 months post-implementation of a local (medical foundation's) smokefree (campus) buildings and grounds policy (data not reported). Supporting strategies included a Smoke-Free Task Force (with clinicians, psychologists, and administrative personnel from public affairs and employee relations departments). One study in Israel[5] reported no change in the mean number of cigarettes smoked, either in during work hours or in total following the implementation of a local (hospital board's) smokefree buildings policy,

measured 3 months before and 6-9 months after implementation. Supporting strategies included an implementation committee, cessation support, smoking shelters erected outside the hospital building, bans on the sale of tobacco products on site, an information campaign 2 months before the policy was introduced, a press conference launch and fines for violations. Following implementation of a local (hospital's) smokefree buildings policy, one study in the USA[4] reported a significant decrease in mean cigarette consumption during work hours ($p<0.0001$), during workdays ($p<0.001$) and during non-workdays ($p<0.01$) by staff between 5 months and 17 months post-implementation. The significant decrease in mean cigarette consumption mostly occurred amongst staff self-reported as moderate to heavy smokers (≥10 cigs/day) ($p<0.001$); Light smokers (<10 cigs/day) day) showed only a slight decrease in mean daily cigarette consumption ($p<0.05$). Supporting strategies included an implementation committee, employee bulletins and newsletters, cessation support and an in-house media campaign. After the implementation of national indoor smokefree legislation in Spain in 2005, one study in Spain[7] reported a non-significant increase in the number of employees self-reporting they smoked <10 cigs/day after the implementation 1 year after the legislation (95% CI: 35.3-60.7) compared with 4 years before (95% CI: 24.8-51.19). There was a non-significant decrease in the number of employees who smoked 10-20 cigs/day and a non-significant increase in those who smoked >20 cigs/day 1 year after the legislation (95% CI: 24.6-49.3 and 95% CI: 5.1-22.8 respectively) compared with 4 years before (95% CI: 47.7-74.3 and 95% CI: 0.7-13.2 respectively). Supporting strategies included the closure of smoking rooms and staff training.

1 Hudzinski +

2 Gadomski +

3 Wheeler -

4 Daughton +

5 Donchin +

6 Stillman +

7 Martinez +

Other Impacts on Staff: Staff Readiness to Quit (Acute & Maternity)

Evidence statement 6.2.5: There is inconsistent evidence from one before and after study in Israel[1] and one interrupted time series in Spain[2] that smokefree implementation with supporting strategies may increase the number of staff smokers' readiness to quit in an acute or maternity care setting.

UK Applicability: This evidence was conducted outside the UK and the policy covered (indoor smokefree) is already national legislation in the UK. However there is no reason to believe the strategy's effect is not applicable to the UK setting.

On study in Spain[2] found a significant increase in hospital employee smokers expressing readiness to quit after the implementation of national indoor smokefree legislation in Spain in 2005 compared with before ($p<0.05$). Supporting strategies included the closure of smoking rooms and staff training. Whereas one study in Israel[1] reported an increase in staff smokers classified in the pre-contemplation stage, and a smaller decrease in those classified in the preparatory stage, following the implementation of a local (hospital board's) smokefree buildings policy, measured 3 months before and 6-9 months after implementation, indicating less readiness to quit. Supporting strategies included an implementation committee, cessation support, smoking shelters erected outside the hospital building, bans on the sale of tobacco products on site, an information campaign 2 months before the policy was introduced, a press conference launch and fines for violations. The evidence from Israel[1] could be due to those who were most motivated to quit doing so as a result of smokefree, leaving the least motivated group; alternatively smokefree had an effect that made staff smokers less likely to want to quit.

1 Donchin +

2 Martinez 2008 +

Other Impacts on Patients: Inpatient Violent Incidents/Aggression (Mental Healthcare)

Evidence statement 6.3.1: There is moderate evidence from four before and after studies, three in the USA[1-3] and one in the UK[4] that smokefree implementation with supporting strategies may decrease or have no effect on inpatient verbal aggression in a mental healthcare setting. One cohort study in the USA[5] showed an immediate significant increase in verbal aggression, but this was not maintained in the long term.

UK Applicability: Evidence comes from one recent UK study but mostly from outside the UK. However nearly half the studies test smokefree grounds and buildings (a policy implemented in parts of the UK), the others test indoor smokefree already national legislation in the UK. There is no reason to believe the effect is not applicable to the UK setting.

One study in the USA[1] reported a significant decline in verbal aggression in heavy smokers (≥19 cigs/day) ($Z = -2.12$, $p=0.034$) 4 weeks after implementation a local (hospital board's) smokefree (campus) buildings and smokefree grounds policy compared with 4 weeks prior to implementation. There were no significant changes for non-smokers, light smokers (1-9 cigs/day) and moderate smokers (10-18 cigs/day). Supporting strategies included education for staff about potential withdrawal symptoms, and any tobacco products found on patients were seized.

One study in the USA[2], reported a significant decrease in verbal acts of aggression 1 month post-implementation of a local (hospital's) smokefree (campus) buildings and smokefree grounds policy compared to the month prior to implementation ($p<0.01$). Supporting strategies included written policies, pharmacotherapy and patient education about smoking and tobacco addiction recovery.

One study in the USA[3], reported a significant decrease in verbal aggression 1 month following a local (hospital's) smokefree buildings and smokefree grounds policy, an increase during the second month, and a return to pre-policy levels at 3 and 4 months following the policy's implementation ($p<0.01$). Supporting strategies were pharmacotherapies, staff education to recognise and treat nicotine withdrawal and written information for patients.

One study in the UK[4], reported a non-significant reduction in the number of recorded verbal aggression incidents by male patients from 3 months before implementing the national indoor smokefree legislation and a local (NHS Trust's) smokefree grounds policy, to 3 months after ($P=0.9$). Two male patients were involved in verbal outbursts attributed to nicotine withdrawal during the first month after implementation, however 12 months after implementation, there was no recorded verbal aggression directly related to nicotine withdrawal. Supporting strategies were posters, group and individual cessation support, pharmacotherapies, closure of smoking rooms and staff training.

One study in the USA[5], reported that the mean number of verbal assaults during the 6-week period immediately after implementation of local (hospital's) smokefree buildings policy in 1991 was significantly higher than in the 6-week period before implementation ($p<0.001$). The supporting strategy was that patients were notified of the indoor smoking ban prior to admission.

1 Hempel +

2 Quinn -

3 Haller +

4 Shetty +

5 Velasco -

Evidence statement 6.3.2: There is inconsistent evidence from six before and after studies (in the USA[1-4] and the UK[5,6]) two cohort studies in the USA[7,8] and one interrupted time series in the USA[9] that smokefree implementation with supporting strategies may affect inpatient physical aggression in a mental healthcare setting.

UK Applicability: Evidence comes from two recent UK studies but mostly from outside the UK. However over half the studies test smokefree grounds and buildings (a policy implemented in parts of the UK), the others test indoor smokefree already national legislation in the UK. There is no reason to believe the effect is not applicable to the UK setting.

One before and after study in the UK[6] showed a significant increase in inpatient violent incidents for pre-implementation smokers 4 months after implementation of the national indoor smokefree legislation in England and a local (NHS Trust's) smokefree grounds policy compared with 4 months before implementation (p=0.01). There was no significant difference between pre-ban smokers assessed 1 month pre- and 1 month post-implementation. Supporting strategies were pharmacotherapy, cessation support, staff training and patient surrender of smoking materials.

Five studies that reported significance values found that smokefree implementation with supporting strategies either significantly decreases inpatient physical aggression[2], or has no significant effect on inpatient physical aggression[1,3,4,8]. Three further studies reported a non-significant decline in inpatient physical aggression[5,7] or a decline in inpatient physical aggression (without providing the p values)[9] in a mental healthcare setting.

One interrupted time series in the USA[9] reported a decline in the proportion of nursing staff reporting that they intervened verbally or physically to prevent a patient who demanded to smoke from harming self or others, between 1 week post-implementation and 4 weeks post-implementation of a local (US Department of Veterans Affairs) smokefree buildings policy (no p values calculated). Supporting strategies were based around nursing interventions,

including encouraging patients to participate in smoking cessation groups and addressing patients with the urge to smoke.

In the USA, one study[1] reported no significant changes in physical aggression in non-smokers or smokers 4 weeks after implementation a local (hospital board's) smokefree (campus) buildings and smokefree grounds policy compared with 4 weeks prior to implementation. Supporting strategies included education for staff about potential withdrawal symptoms, and any tobacco products found on patients were seized.

In the USA, one study[2] reported a significant decrease in physical acts of aggression 1 month post-implementation of a local (hospital's) smokefree (campus) buildings and smokefree grounds policy compared to the month prior to implementation ($p<0.01$). Supporting strategies included written policies, pharmacotherapy and patient education about smoking and tobacco addiction recovery.

One study in the UK[6], reported a non-significant reduction in the number of recorded physical aggression incidents by male patients from 3 months before implementing the national indoor smokefree legislation and a local (NHS Trust's) smokefree grounds policy, to 3 months after ($P=0.6$). Supporting strategies were posters, group and individual cessation support, pharmacotherapies, closure of smoking rooms and staff training.

One study in the USA[3] reported no significant change in physical aggression against other people or physical aggression against objects occurred over the 1 month preceding the local (hospital's) smokefree buildings and smokefree grounds policy or the 4 months following its implementation. There was a significant increase in physical aggression against self during the second month post-policy and a decrease to pre-policy levels at 3 and 4 months following the policy's implementation ($p<0.01$). Supporting strategies were pharmacotherapies, staff education to recognise and treat nicotine withdrawal and written information for patients.

In the USA[4] reported no significant differences between the number of episodes or total number of patients who committed at least 1 episode of assault or self-harm in the 3 months before and 3 months after the local (hospital's) smokefree buildings policy was implemented. Supporting strategies included patient education about nicotine addiction and withdrawal and pharmacotherapies.

One study in the USA[7] reported a decrease in the average monthly assault rate for the first three months of the implementation of a local (hospital's) smokefree buildings policy when compared to the same time 1 year previously. Supporting strategies included smoking reduction workshops and patients wishing to participate were urged to do so.

One study in the USA[8] reported no significant change in the mean number of physical assaults between any of the three time periods: 6 weeks immediately before implementation of the local (hospital's) smokefree buildings policy, 6 weeks immediately after the 1991 ban, and the 1993 follow up. The supporting strategy was that patients were notified of the indoor smoking ban prior to admission.

1 Hempel +

2 Quinn -

3 Haller +

4 Matthews -

5 Shetty +

6 Cormac +

7 Rauter +

8 Velasco -

9 Erwin -

Other Impacts on Patients: Inpatient Seclusion and Restraint (Mental Healthcare)

Evidence statement 6.3.3: There is moderate evidence from five before and after studies, one in the UK[1] and four in the USA[2-5] and one interrupted time series in the USA6 that the introduction of smokefree in mental healthcare settings decreases or has no significant effect on incidents of inpatient seclusion and restraint. One poor quality cohort study in the USA[7] showed a significant increase for soft restraints but no difference for leather restraints.

UK Applicability: Evidence comes from one recent UK study but mostly from outside the UK. However over half the studies test smokefree grounds and buildings (a policy implemented in parts of the UK), the others test indoor smokefree already national legislation in the UK. The use of mechanical or physical restraints is not a first-line response in the UK and so this is of limited applicability in the UK.

One study in the UK[1] found no significant results for comparisons of the numbers of seclusions between pre-ban smokers or non-smokers or all patients for between 1 month before and 1 month after implementation of the national indoor smokefree legislation in England and a local (NHS Trust's) smokefree grounds policy, nor between 4 months before and 4 months after implementation. Supporting strategies were pharmacotherapy, cessation support, staff training and patient surrender of smoking materials.

One study in the USA[2] reported no significant changes in the proportion of patients who were secluded or the proportion of patients who were restrained over the 1 month preceding the local (hospital's) smokefree buildings and smokefree grounds policy or the 4 months following its implementation. Supporting strategies were pharmacotherapies, staff education to recognise and treat nicotine withdrawal and written information for patients.

One study in the USA[3] reported no significant changes in mean instances per week of seclusion or restraint in non-smokers or smokers 4 weeks after implementation a local (hospital board's) smokefree (campus) buildings and

smokefree grounds policy compared with 4 weeks prior to implementation. Supporting strategies included education for staff about potential withdrawal symptoms, and any tobacco products found on patients were seized.

One study in the USA[4] reported no significant differences between the total number of patients who required seclusion or restraint in the 3 months before and 3 months after the local (hospital's) smokefree buildings policy was implemented. Supporting strategies included patient education about nicotine addiction and withdrawal and pharmacotherapies.

One before and after study in the USA[5] found no significant change in the use of restraints between 3 months pre- and 3 months post-implementation of a local (hospital board's) smokefree buildings and smokefree grounds policy ($p=0.175$). Seclusion rates, however, were significantly lower post-implementation ($p<0.05$). Supporting strategies included an implementation committee, weekly patient cessation support groups, pharmacotherapies, written information for patients and staff education sessions on the treatment of nicotine dependence.

One interrupted time series in the USA[6] reported little change in nursing staff reporting that they had encouraged room "time outs" to decrease stimulation, between 1 week post-implementation and 4 weeks post-implementation of a local (US Department of Veterans Affairs) smokefree buildings policy (no p values calculated). Supporting strategies were based around nursing interventions, including encouraging patients to participate in smoking cessation groups and addressing patients with the urge to smoke.

One study in the USA[7] reported that the number of applications of soft restraints was significantly higher during the 1993 follow up period than during the period before implementation of the local (hospital's) smokefree buildings policy ($p<0.001$). The mean number of leather wrist or ankle bindings did not change significantly between any of the three time periods; 6 weeks immediately before and after implementation of the policy and the 1993 follow

up. The supporting strategy was that patients were notified of the indoor smoking ban prior to admission.

1 Cormac +

2 Haller +

3 Hempel +

4 Matthews -

5 Patten +

6 Erwin -

7 Velasco -

Other Impacts on Patients: Inpatient Medication Changes (Mental Healthcare)

Evidence statement 6.3.5: There is inconsistent evidence from five before and after studies, two in the UK[1,2] and three in the USA[3-5],interrupted time series in the USA[6] and one cohort study in the USA[7] that the introduction of smokefree legislation may change the required doses of inpatient PRN medication.

Five before and after studies, two in the UK[1,2] and three in the USA[3-5] and one interrupted time series in the USA[6] suggest that required doses of inpatient PRN medications do not change or may decrease, whereas one cohort study in the USA[7] suggests that required doses of inpatient PRN medications for agitation and aggression may increase with the introduction of smokefree in mental healthcare settings.

UK Applicability: Evidence comes from two recent UK studies but mostly from outside the UK. However over half the studies test smokefree grounds and buildings (a policy implemented in parts of the UK), the others test indoor

smokefree already national legislation in the UK. There is no reason to believe the effect is not applicable to the UK setting.

One study in the UK[1] found a significant decline in mean dose of regular antipsychotic medication for smokers from 1 month before to 1 month after (95% CI 0.37-5.42; p=0.025) implementation of the national indoor smokefree legislation in England and a local (NHS Trust's) smokefree grounds policy. Other results were not significant for comparisons of mean dose of regular or PRN antipsychotics or benzodiazepines between pre-ban smokers or non-smokers for the 1 month pre-post or the 4 month pre-post comparisons. Supporting strategies were pharmacotherapy, cessation support, staff training and patient surrender of smoking materials.

One interrupted time series in the USA[6] reported a reduction in the number of patients offered PRN medications, between 1 week post-implementation and 4 weeks post-implementation of a local (US Department of Veterans Affairs) smokefree buildings policy (no p values calculated). Supporting strategies were based around nursing interventions, including encouraging patients to participate in smoking cessation groups and addressing patients with the urge to smoke.

In the USA[3] reported no significant changes in the proportion of patients who received PRN medications over the 1 month preceding the local (hospital's) smokefree buildings and smokefree grounds policy or the 4 months following its implementation. Supporting strategies were pharmacotherapies, staff education to recognise and treat nicotine withdrawal and written information for patients.

In the USA[4] reported no significant changes in mean instances per week of PRN for agitation and aggression in non-smokers or smokers 4 weeks after implementation a local (hospital board's) smokefree (campus) buildings and smokefree grounds policy compared with 4 weeks prior to implementation. Supporting strategies included education for staff about potential withdrawal symptoms, and any tobacco products found on patients were seized.

In the UK[2] reported a non-statistically significant change in rates of PRN tranquilisers for male patients from 3 months before implementing the national indoor smokefree legislation and a local (NHS Trust's) smokefree grounds policy, to 3 months after (p=0.6 for lorazepam and p=0.4 for haloperidol). Supporting strategies were posters, group and individual cessation support, pharmacotherapies, closure of smoking rooms and staff training.

One before and after study in the USA[5] reported no significant differences in total PRN medication use (p=0.249) or in the percentage of patient days with PRN medication (p=0.166) between 3 months pre- and 3 months post-implementation of a local (hospital board's) smokefree buildings and smokefree grounds policy. Supporting strategies included an implementation committee, weekly patient cessation support groups, pharmacotherapies, written information for patients and staff education sessions on the treatment of nicotine dependence.

One study in the USA[7] reported that the use of PRN medication for anxiety was significantly higher during the 6-week period immediately after implementation of local (hospital's) smokefree buildings policy in 1991 was significantly higher than in the 6-week period before implementation (p<0.06). The supporting strategy was that patients were notified of the indoor smoking ban prior to admission.

1 Cormac +

2 Shetty +

3 Haller +

4 Hempel +

5 Patten +

6 Erwin -

7 Velasco -

Evidence statement 6.3.6: There is evidence from two before and after studies in the UK[1,2] about the impact of smokefree legislation on inpatient antipsychotic medication in a mental healthcare setting.

UK Applicability: The evidence comes from two recent UK studies thus is highly applicable.

There is weak evidence from one before and after study in the UK[1] that required doses of antipsychotic medication significantly decreases with the introduction of a national indoor smokefree legislation and local (NHS Trust's) smokefree grounds policy (95% CI 0.37-5.42; p=0.025).

In the UK[1] found a significant decline in mean dose of regular antipsychotic medication for smokers from 1 month before to 1 month after (95% CI 0.37-5.42; p=0.025) implementation of the national indoor smokefree legislation in England and a local (NHS Trust's) smokefree grounds policy. Other results were not significant for comparisons of mean dose of regular or PRN antipsychotics between pre-ban smokers or non-smokers for the 1 month pre-post or the 4 month pre-post comparisons. Supporting strategies were pharmacotherapy, cessation support, staff training and patient surrender of smoking materials.

There is weak evidence from one before and after study in the UK[2] that serum levels of clozapine in male patients significantly increases with the introduction of smokefree the national indoor smokefree legislation and a local (NHS Trust's) smokefree grounds policy (p=0.006).

One study in the UK[2] reported a statistically significant increase in serum clozapine levels (p=0.006) for male patients from 3 months before implementing the national indoor smokefree legislation and a local (NHS Trust's) smokefree grounds policy, to 3 months after. Supporting strategies were posters, group and individual cessation support, pharmacotherapies, closure of smoking rooms and staff training.

1 Cormac +

2 Shetty +

Other Impacts on Patients: Patient Admittance and Length of Stay or Attendance (Mental Healthcare)

Evidence statement 6.3.8: Impact of smokefree legislation on patient admission and inpatient length of stay/outpatient length of attendance in a mental healthcare setting

There is evidence from three before and after studies in the USA[1-3] one randomised controlled trial in the USA[4] and two cohort studies in the USA[5,6] about the impact of smokefree legislation on patient admission and inpatient length of stay/outpatient length of attendance in a mental healthcare setting.

UK Applicability: This evidence was conducted outside the UK. Some of the studies test smokefree grounds and buildings (a policy implemented in parts of the UK), the others test indoor smokefree already national legislation in the UK. The age of the studies and the specific settings may not very applicable to the UK setting.

There is moderate evidence from one before and after study with inpatients in the USA[3], one randomised controlled trial with inpatients in the USA[4], and one cohort study with outpatients in the USA[5], that the introduction of smokefree does not significantly impact on admission or retention to substance misuse treatment programmes.

One study in the USA[3], reported no significant changes in the number of admissions and patient demographics between the 12 months before and 12 months after implementation of a local (university hospital's) smokefree buildings policy in its inpatient medical detoxification unit. The supporting strategy was that patients were informed of the indoor smoking ban as part of their admission screening process.

One study in the USA[4], reported that 2% of 105 adolescents randomly assigned to the tobacco-free residential programme based at the intervention campus, with a local (facility's) smokefree buildings and grounds (campus) policy, declined admission compared to 5% of 105 adolescents randomly assigned to the residential programme based at the control campus, with a smokefree buildings and designated outdoor areas policy. Pre-allocation, there was no significant difference between adolescents randomly assigned to either programme who declined admission (p=0.38). There was no significant difference between the two programmes for retention at 2 days (p=0.43) or retention at 2 weeks (p=0.37) Heavy smokers were significantly more likely to drop out in the first 2 days of treatment (p=0.005), although were equally likely to drop out of either programme (p=1.0). No supporting strategies were reported.

One study in the USA[5] reported no significant change in neither the average number of daily new admissions per week, nor average number of outpatients attending groups per week between 1 and 3 months before and 1 and 3 months after the implementation of a local (facility's) smokefree buildings policy (p>0.05). Supporting strategies were that outpatients were informed of the ban by a therapist and posters were displayed.

There is weak evidence from one before and after study in the USA[3] that reported a significant decrease in the length of patient stay between the 12 months before and 12 months after implementation of a local (university hospital's) smokefree buildings policy in its inpatient medical detoxification unit (p<0.05). The decrease was similar for patients who used tobacco and those who did not (p>0.10). The supporting strategy was that patients were informed of the indoor smoking ban as part of their admission screening process.

There is strong evidence from three before and after studies with inpatients in the USA[1-3] and two cohort studies in the USA, one with outpatients[5] and one with inpatients[6], that the introduction of smokefree in mental health care

settings does not significantly impact on the number of discharges against medical advice or patient attendance.

One study in the USA[1], reported no significant changes in the proportion of patients who were discharged against medical advice or in the proportion of patients who eloped over the 1 month preceding the local (hospital's) smokefree buildings and smokefree grounds policy or the 4 months following its implementation. Supporting strategies were pharmacotherapies, staff education to recognise and treat nicotine withdrawal and written information for patients.

One before and after study in the USA[2] reported a non-significant increase in the number of patients who left against medical advice (p=0.500) between 3 months pre- and 3 months post-implementation of a local (hospital board's) smokefree buildings and smokefree grounds policy. Supporting strategies included an implementation committee, weekly patient cessation support groups, pharmacotherapies, written information for patients and staff education sessions on the treatment of nicotine dependence.

One study in the USA[3] reported no significant changes in the rates of patients leaving the unit against medical advice, or transfers to other inpatient facilities among tobacco users (p>0.10) between the 12 months before and 12 months after implementation of a local (university hospital's) smokefree buildings policy in its inpatient medical detoxification unit. The supporting strategy was that patients were informed of the indoor smoking ban as part of their admission screening process.

One study in the USA[5] reported no significant change in the proportion of outpatient premature terminators ('drop-outs') between 1 and 3 months before and 1 and 3 months after the implementation of a local (facility's) smokefree buildings policy (p>0.05). Supporting strategies were that outpatients were informed of the ban by a therapist and posters were displayed.

One study in the USA[6] reported no significant change in the mean number of discharges against medical advice between any of the three time periods: 6

weeks immediately before implementation of the local (hospital's) smokefree buildings policy, 6 weeks immediately after the 1991 ban, and the 1993 follow up. The supporting strategy was that patients were notified of the indoor smoking ban prior to admission.

1 Haller +

2 Patten +

3 Rees +

4 Kempf +

5 Sterling -

6 Velasco -

Other Impacts on Patients: Long Term Smoking Cessation (Mental Healthcare)

Evidence statement 6.3.11: There is moderate evidence from one before and after study in the USA[1] and one cohort study in the USA[2] that the introduction of smokefree with appropriate supporting strategies in mental health care settings minimal impact on long term smoking cessation.

UK Applicability: This evidence was conducted outside the UK and the policy covered in one study (indoor smokefree) is already national legislation in the UK, however the other study's policy is for smokefree grounds and buildings (a policy implemented in parts of the UK). There is no reason to believe the effect is not applicable to the UK setting.

One study in the USA[1] reported that amongst a sub-sample of patients who were current smokers at admission during the first 3 months of a local (hospital board's) smokefree buildings and smokefree grounds policy, then followed up 16-18 months post-discharge, all reported resuming smoking immediately after hospital discharge although 2 patients reported not smoking at 6 months and 12 months after discharge. Supporting strategies included an

implementation committee, weekly patient cessation support groups, pharmacotherapies, written information for patients and staff education sessions on the treatment of nicotine dependence.

One study in the USA[2] reported that among the n=152 patients who smoked at admission (from retrospective viewing of chart data), ten self-reported they were not current smokers at the follow-up interview (8-21 months after discharge); n=3 from the control (pre-implementation of the local (facility's) smokefree buildings policy) group and n=7 from the intervention (post-policy implementation) group. Supporting strategies were that patients were informed of the policy and cessation programme prior to admission, and were required to agree in writing to nicotine abstinence during the treatment.

1 Patten +

2 Joseph +

Other Impacts on Patients: Inpatient Prescriptions For or Use of NRT (Mental Healthcare)

Evidence statement 6.3.12: Impact of smokefree legislation on patient use of smoking cessation support in a mental healthcare setting

There is evidence from three before and after studies, one in the UK[1] one in Switzerland[2] and one in the USA[3] one interrupted time series in the USA[4] and one cohort study in the USA[5] about the impact of smokefree legislation on inpatient use of smoking cessation support in a mental healthcare setting.

UK Applicability: Evidence comes from one recent UK study but mostly from outside the UK. However the policy covered in most of the other studies (indoor smokefree) is already national legislation in the UK, however the one study's policy is for smokefree grounds and buildings (a policy implemented in parts of the UK). There is no reason to believe the effect is not applicable to the UK setting.

There is moderate evidence from two before and after studies, one in the UK[1] and one in Switzerland[2] and one cohort study in the USA[5] that the introduction of smokefree, particularly when including cessation support and pharmacotherapy as supporting strategies, increases the amount of NRT dispensed or received by inpatients. There is inconsistent evidence from two before and after studies, one in Switzerland[2] and one in the USA[3], and one interrupted time series in the USA[4] on the impact of smokefree on inpatient use of cessation support during hospitalisation.

One before and after study in the UK[1] reported an increase in inpatients who commenced NRT after implementation of the national indoor smokefree legislation in England and a local (NHS Trust's) smokefree grounds policy (no further details are reported). Supporting strategies were pharmacotherapy, cessation support, staff training and patient surrender of smoking materials.

From 2 years pre- to 1 year post-implementation of a local (hospital administration's) smokefree buildings policy, one study in Switzerland[2] reported a significant increase in the inpatients who smoked reporting that during their current stay a physician or nurse provided medication (like a patch, gum or Zyban) to quit smoking ($p<0.001$), no significant change in those reporting that staff advised them to quit smoking ($p=0.006$) or helped them to quit smoking ($p=0.015$). Staff reported that the proportion of inpatients to whom NRT was provided significantly increased 2 years pre- to 1 year post implementation ($p<0.001$, OR 4.0, 95% CI 1.6-9.9) and the proportion of inpatients to whom help was provided to quit smoking significantly increased from 1 year pre- to 1 year post- implementation ($p=0.007$, OR 3.8, 95% CI 1.6-9.3). Supporting strategies included signage, cessation support, pharmacotherapies, closure of smoking rooms and staff training.

One interrupted time series in the USA[4] reported a decline in nursing staff reporting that they had encouraged inpatients to participate in smoking cessation groups, between 1 week post-implementation and 4 weeks post-implementation of a local (US Department of Veterans Affairs) smokefree buildings policy (no p values calculated). Supporting strategies were based

around nursing interventions, including encouraging patients to participate in smoking cessation groups and addressing patients with the urge to smoke.

One study in the USA[3] reported no change in the number of inpatient consultations to the Nicotine Dependence Centre between 3 months pre- and 3 months post-implementation of a local (hospital board's) smokefree buildings and smokefree grounds policy. Supporting strategies included an implementation committee, weekly patient cessation support groups, pharmacotherapies, written information for patients and staff education sessions on the treatment of nicotine dependence.

One study in the USA[5] reported that the number of inpatients who received NRT during the 6-week period immediately after implementation of local (hospital's) smokefree buildings policy in 1991 and during the 1993 follow up was significantly higher than in the 6-week period before implementation ($p<0.001$). The supporting strategy was that patients were notified of the indoor smoking ban prior to admission.

1 Cormac +

2 Etter +

3 Patten +

4 Erwin -

5 Velasco -

Other Health Impacts on Patients (Mental Healthcare)

Evidence statement 6.3.13: There is weak evidence from one before and after study in the USA1 that implementation of a local smokefree buildings and smokefree grounds policy with supporting strategies results in a decline in the number of inpatient sick calls (for a physical complaint) for moderate and heavy smokers immediately following implementation in a mental healthcare setting.

UK Applicability: This evidence was conducted outside the UK, however the policy covers smokefree grounds (a policy implemented in parts of the UK) and there is no reason to believe the effect is not applicable to the UK setting.

In the USA[1] reported a significant post-implementation decline in inpatient sick calls for moderate smokers (10-18 cigs/day) (p=0.038) and for heavy smokers ((≥19 cigs/day) (p=0.008) 4 weeks after policy implementation compared with 4 weeks prior to implementation. There were no significant changes for non-smokers and light smokers (1-9 cigs/day). Supporting strategies included education for staff about potential withdrawal symptoms, and any tobacco products found on patients were seized.

1 Hempel +

Evidence statement 6.3.14: There is weak evidence from one cohort study in the USA1 that implementation of a local (hospital's) smokefree buildings policy with supporting strategies significantly decreases mean inpatient acuity levels, as recorded daily by nurses, between the pre-implementation period and 9 months post-implementation in a mental healthcare setting (p=0.03). Supporting strategies included smoking reduction workshops and patients wishing to participate were urged to do so.

UK Applicability: This evidence was conducted outside the UK and the policy covered (indoor smokefree) is already national legislation in the UK. However there is no reason to believe the effect is not applicable to the UK setting.

1 Rauter +

Evidence statement 6.3.15: There is weak evidence from one before and after study in the USA[1] that a local (university hospital's) smokefree buildings policy in its inpatient medical detoxification unit with supporting strategies does not significantly change inpatient seizure rates in a mental healthcare setting, when seizure rates were measured during the 12 months before and 12 months after implementation. The supporting strategy was that patients

were informed of the indoor smoking ban as part of their admission screening process.

UK Applicability: This evidence was conducted outside the UK and the policy covered (indoor smokefree) is already national legislation in the UK. However there is no reason to believe the effect is not applicable to the UK setting.

1 Rees +

Other Impacts on Staff: Staff Absenteeism

Evidence statement 6.3.16: There is weak evidence from one before and after study in the USA[1] that implementation of a local (hospital's) smokefree buildings policy with supporting strategies has no significant effect on staff absenteeism in a mental healthcare setting.

In the USA[1] reported no significant differences in staff absenteeism between the 3 months before and 3 months after the local (hospital's) smokefree buildings policy was implemented. Supporting strategies included patient education about nicotine addiction and withdrawal and pharmacotherapies.

UK Applicability: This evidence was conducted outside the UK and the policy covered (indoor smokefree) is already national legislation in the UK. It is unlikely to be applicable.

1 Matthews -

Review 7: 'A review of the barriers to and facilitators for implementing smokefree strategies and interventions in secondary care settings'

7.1.1 Exposure to the policy brings about a positive shift in levels of staff support: Eight studies (1 UK[1], 8[2-9] non-UK), five relating to mental health and three to broader secondary care settings found that staff support for smokefree policy increased post-implementation. One study[9] conducted in a US mental health setting found that staff support declined post-implementation

1 Cormac +

2 Erwin -

3 Haller +

4 Matthews -

5 Sheffer +

6 Voci ++

7 Wheeler -

8 Hudzinski +

9 Steiner +

7.1.2 Differences in level of support by smoking status and occupational group: Nine studies (3 UK[1-3], 6 non-UK[4-9]), four conducted in mental health settings[1,2,5,6] and five in broader secondary care settings[3,4,7,9] found that staff who smoked were less likely than staff who were non-smokers to support smokefree policy. Five studies (3 UK[10-12], 2 non-UK[13,14]), two conducted in mental health settings and three in broader secondary care settings found that

nurses were less likely to support smokefree policy than other healthcare workers.

1 Bloor+

2 Garg +

3 Parks +

4 Daughton -

5 Steiner +

6 Voci ++

7 Donchin +

8 Kannegaard ++

9 Vardavas -

10 Garg +

11 Lewis +

12 Ratschen +

13 Vardavas -

14 Voci ++

7.1.5 Greater support for smoking bans where designated smoking areas are provided: One Australian study[1] found a strong preference amongst staff for a partial outdoor ban incorporating designated smoking areas on hospital grounds while two studies (1 UK[2], 1 non-UK[3]), one conducted with staff and the other with patients found a strong preference for a smokefree indoor policy incorporating designated indoor smoking areas to a total ban on smoking indoors. One UK study[4] conducted in a broad secondary care setting found a marginal preference amongst staff for a total

ban on hospital grounds to a partial outdoor ban. Of the three studies (2 UK, 1 non-UK) supporting the provision of designated smoking areas, one was conducted in a mental health setting[3] and two were conducted in broader secondary care settings[1,4].

1 Jones+

2 Vardavas -

3 Smith+

4 Lewis +

7.1.6 Differences in level of support for a total ban on smoking by smoking status and occupational group: One UK[1] study conducted in a mental health setting found staff who were smokers to be less likely to support a total ban on smoking than staff who were non-smokers, and healthcare and clinical staff to be less likely to support a total ban than managers**.**

1 Praveen +

7.2.1 Negative association between perceptions of smoking as a right and readiness to support smokefree policy by staff and patients: Eight studies (6 UK[1-6], 2 non-UK[7,8]), seven of which were conducted in mental health settings and one in a broader secondary care setting, and six of which were conducted with staff and two with patients, found a negative association between readiness to support smokefree policy and perceptions of smoking as a right

1 Arack -

2 McNeill +

3 HUG -

4 Mental Health Foundation +

5 Pritchard ++

6 Ratschen ++

7 Johnson ++

8 Kotz -

7.2.2 Differences in belief by smoking status that smokers' have a right to smoke: Two UK[1,2] studies, both conducted in mental health settings, found that staff who smoke are more likely to believe in the 'right to smoke' and are less likely to support the right of non-smokers to be protected from second-hand smoke compared to non-smokers.

1 Bloor +

2 Ratschen++

7.2.3 Negative association between staff perceptions of smoking as a right and providing cessation support: Two non-UK[1,2] studies both conducted in mental health settings, found a negative association between perceptions of smoking as a right and staff readiness to provide cessation support to patients.

1 Drach -

2 Johnson++

7.2.4 Positive association between staff recognition of smoking as an addiction and readiness to provide cessation support: Four studies (3 UK[1-3], 1 non-UK[4]), three conducted in mental health settings and one in a broader secondary care setting, reported a belief that staff are more likely to support the provision of cessation treatments when smoking is framed as an addiction or is acknowledged as having an impact on patient physical health worthy of treatment.

1 McNeill +

2 Wareing +

3 Ratschen++

4 Schultz++

7.2.5 Timing implementation to take advantage of prevailing weather conditions: Two UK studies[1,2], both conducted in mental health settings, reported that giving consideration to seasonal weather conditions at the time of implementation may have an impact on smokers willingness to smoke outdoors

1 McNeill +

2 HUG 2007 -

7.2.7 Settings where smoking has not previously been contested: Three studies (1 UK[1], 2 non-UK [2,3]), all conducted in mental health settings, attribute difficulties in implementing and acceptance of smokefree policy to policies of this kind being new and smoking not having previously been contested.

1 Seymour -

2 Karan -

3 Jessup++.

7.2.8 Context where smokefree norms are already widely established: Five studies (two UK[1,2], three non-UK[3-5]), two conducted in mental health settings and three in broader health care settings, suggest that acceptance of smokefree policy is greater where smokefree norms are already established in adjacent communities and where implementation forms part of a broader initiative.

1 Ratschen +

2 McNeill +

3 Fitzpatrick +

4 Sheffer +

5 Drach -

7.2.9 Strong leadership: Five studies (3 UK[1-3], 2 non-UK[4,5]), four conducted in mental health settings and one in a broader secondary care setting, made specific reference to the importance of strong leadership in supporting implementation of smokefree policy, and this was found to be particularly important to securing resources, preparing the service for change and persuading sceptics and detractors.

1 McNeill +

2 Wareing +

3 Seymour -

4 Jessup ++

5 Karan -

7.2.10 Planning process: Four studies (3 UK[1-3], one non-UK[4]), all conducted in mental health settings, highlight the importance of having a clear planning process and sufficient time for policy development, stakeholder consultation, consensus building and preparing the service for change. Three studies (2 UK[5,6], 1 non-UK[7]), two conducted in a mental health settings and one in a broader secondary care setting, suggest that having in place comprehensive mechanisms for consulting with staff and patients, and informing them of rule changes are also important.

1 McNeill +

2 Mental Health Foundation +

3 Pritchard ++

4 Jessup ++

5 Mental Health Foundation +

6 Ratschen +

7 Parle -

7. 2.11 Lack of staff consultation: One UK[1] study conducted in a broad secondary care setting illustrates how lack of staff consultation and a failure to listen to staff can hamper implementation.

1 Seymour -

7.2.13 Poor management commitment: Two UK[1,2] studies conducted in mental health settings illustrate how a lack of management commitment to actively addressing problems with implementation can act as an organisational barrier

1 McNeill +

2 Wareing 2012 +

7.2.15 Willingness to accept responsibility for enforcement: Four studies (3 UK[1-3], 1 non-UK[4]), three conducted in mental health settings and one in a broader secondary care setting, found a reluctance amongst healthcare staff to assume responsibility for escorting patients and enforcing smokefree policy

1 McNeill +

2 Shipley +

3 Mental Health Foundation +

4 Kotz -

7.2.16 perceived ability to enforce smokefree policy: Four studies (3 UK[1-3], 1 non-UK[4]), one conducted in a mental health setting and the three in broader secondary care settings, reported that staff felt they lacked

confidence in their ability to enforce the policy and in particular to deal with patients who challenged their authority.

1 Arack -

2 Ratschen +

3 McNeill +

4 Schultz ++

7.2.17 Inadequate guidance and training on dealing with violations: Six studies (4 UK[1-4], 2 non-UK[5,6]), five conducted in mental health settings and one in a broader secondary care setting, reported instances where staff expressed a need for better guidance and training on how to deal with violations and to de-escalate smoking-related situations.

1 McNeill +

2 Mental Health Foundation +

3 Ratschen ++

4 Ratschen +

5 Parle -

6 Campion 2008 +

7. 2.18 Lack of clarity and inconsistency in application of rules: Eight studies (5 UK[1-5], 3 non-UK[6-8]), seven conducted in mental health settings and one in a broader secondary care setting, found that lack of clarity on policy and inconsistencies in the way in which smokefree rules are applied can adversely affect compliance and the wider therapeutic environment.

1 Mental Health Foundation +

2 Wareing +

3 Pritchard ++

4 Ratschen +

5 McNeill +

6 Parle -

7 Campion +

8 Karan -

7.2.19 Belief that designated smoking areas are necessary to support compliance: Four studies (2 UK[1,2], 2 non-UK[3,4]), one conducted in a mental health setting and three in broader secondary care settings, suggest staff support for smokefree policy is predicated on a belief that designated areas are necessary to support compliance. Two UK studies[5,6], both conducted in mental health settings, reported unofficial smoking areas becoming established on hospital grounds in the absence of designated smoking areas.

1 Ratschen +

2 McNeill +

3 Schultz ++

4 Wheeler -

5 Ratschen ++

6 Ratschen ++

7.2.26 Take-up of cessation support can be influenced by the way in which advice is framed: Three studies (2UK[1,2], one non-UK[3]), all conducted in metal health settings, suggest that patients are more likely to engage with cessation services when advice is delivered in a non-coercive manner and is motived by a desire to improve patient health, and not merely to support the smokefree policy

1 HUG -

2 Mental Health Foundation +

3 Jessup ++

7.2.28 Poor continuity with cessation support in the community: Four studies (three UK[1-3], one non-UK[4]), three conducted in mental health settings[1-3] and one in a broader secondary care setting[4], found that poor communication and continuity of support with cessation services in the community made providing cessation support for inpatients as part of a smokefree policy harder to plan and implement.

1 Mental Health Foundation +

2 McNeill +

3 Wareing +

4 Schultz ++

7.2.29 Provision of cessation support for staff: Two studies (1 UK[1], 1 non-UK[2]), both conducted in mental health settings, suggest that providing cessation support to staff as well as patients is important to successful implementation of smokefree policy. Two other studies (1 UK[3], 1 non-UK[4]), both conducted in broader secondary care settings, found that take-up of such services by staff to be low.

1 McNeill +

2 Jessup ++

3 Ratschen +

4 Tillgren -

7. 2.30 Gaps in provision of cessation resources: Seven studies (6 UK[1-6], 1 non-UK[7]), five conducted in mental health settings[1-5] and two in broader

secondary care settings[6,7], reported gaps and inequities in the provision of important cessation resources and support as part of a smokefree policy relating to four mains areas; information materials, pharmacotherapies, trained staff and diversionary activities.

1 McNeill +

2 Mental Health Foundation +

3 Pritchard ++

4 Ratschen ++

5 Wareing +

6 Ratschen +

7 Schultz ++

7. 2.31 Belief that some mental health patients require special consideration and support: Eleven studies (7 UK[1-7], 4 non-UK[8-11]) identified specific types of mental health patient as requiring special consideration and potential exemption status from smokefree policy: long-stay psychiatric patients receiving continuing care who may regard the mental health facility as their home; cognitively impaired and acutely ill psychiatric patients who have limited capacity to understand and to retain the information surrounding the policy and who can be disruptive and present an increase risk to staff[1,8,3-4,6,9]; and patients being treated for other addictive disorders who may find stopping smoking whilst simultaneously giving up other substances interferes with their treatment and recovery[7,9,10,11]

1 McNeill +

2 HUG -

3 Mental Health Foundation +

4 Pritchard ++

5 Ratschen ++

6 Ratschen +

7 Hill ++

8 Campion +

9 Karan -

10 Jessup ++

11 Kotz -

7.3.1 Belief that smokefree policy would adversely affect psychiatric patients' mental health: Two studies (1 UK[1], 1 non-UK[2]) found that staff expected smokefree policy to have a negative impact on patient mental health, while two other Canadian studies[3,4] found that withdrawal of tobacco was believed to risk exacerbating the symptoms of mental illness. Four studies (1 UK[5] , 3 non-UK[6-8]) found that beliefs about these adverse effects had diminished following implementation of the policy or that the effects were not believed to be as significant as had been anticipated

1 Praveen +

2 Wye ++

3 Johnson ++

4 Parle -

5 Cormac +

6 Haller +

7 Voci ++

8 Steiner +

7.3.3 Belief that enforcement of smokefree policy would result in abuse and aggression: Seven studies (5 UK[1-5], 2 non-UK[6,7]), four conducted in mental health settings and three in broader secondary care settings, reported concerns that enforcing smokefree policy is a potential source of conflict, and could result in abuse and increased risk of assault. Two UK studies[8,9], one conducted in a mental health setting and the other in a broader secondary care setting, reported cases where staff specifically reported not enforcing the policy for fear of conflict.

1 Aack -

2 Ratschen +

3 McNeill +

4 Shipley +

5 HUG -

6 Campion +

7 Wye ++

8 Ratschen ++

9 Shipley +

7.3.4 Cases of abuse and aggression can be a feature of implementation but often not at the frequency or severity anticipated: Five qualitative studies (2 UK[1,2], 3 non-UK [3-5]), four conducted in a mental health setting and one in a broader secondary care setting, reported that fear of abuse and aggression were not realised following the introduction of a smokefree policy. Three UK studies[6-8] conducted in mental health settings reported an increase in incidents related to the introduction of the smokefree policy. However, one of these studies[8] indicated that these changes were restricted to lower level effects such as verbal abuse. Similarly, of the two quantitative studies that assessed changes over time for this issue, both of which were conducted in

mental health settings, one UK study[9] reported significantly lower numbers of staff expressing concerns after implementation compared to before implementation of the policy. The other quantitative study[10] (non-UK) found that while there was agreement that verbal assaults and aggression had increased after implementation there was general disagreement that other more serious incidents such as physical assaults had increased

1 Ratschen +

2 McNeill +

3 Wheeler -

4 Cooke -

5 Parle -

6 Mental Health Foundation +

7 Ratschen ++

8 Pritchard ++.

9 Cormac +

10 Voci ++

7.3.5 Belief that smokefree policies were damaging to the patient-carer relationship and the therapeutic environment: Eight studies (5 UK[1-5], 3 non-UK[6-8]), seven of which were conducted in mental health settings and one in a broader secondary care setting, reported a belief amongst healthcare staff that policing and enforcing smokefree policy was detrimental to establishing therapeutic relationships with patients. One UK study[9] conducted in a mental health setting found that staff who smoked were more likely to believe that there were therapeutic benefits to staff smoking with patients than staff who were non-smokers. Three studies (2 UK[10,11], one non-UK[12]), all

conducted in mental health settings, found that smokefree policies could be detrimental to establishing a positive therapeutic environment.

1 McNeill +

2 Mental Health Foundation +

3 Pritchard ++

4 Ratschen ++

5 Ratschen +

6 Campion +

7 Karan -

8 Kotz -

9 Praveen +

10 Ratschen ++

11 Wareing +

12 Kotz -

7.3.6 Belief that smokefree policies can make positive contributions to the patient-carer relationships and therapeutic environment: One UK mental health study[1] reported that escorting patients to outside areas to smoke can provide new opportunities to interact with patients, while another UK study[2] conducted in broader secondary care settings reported that new recreational spaces created from former smoking rooms can have a positive impact on patient behaviour and sense of well-being.

1 Pritchard ++

2 Ratschen +

7. 3.8 Belief that changing break patterns places extra demands on staff resources and disrupts healthcare delivery: Two studies (1 UK[1], 1 non-UK[2]), one conducted in a mental health setting and the other in a broader secondary care setting, report that the need to supervise patients smoking, places extra demands on staff time and resources and disrupts patient attendance for treatment and participation in therapeutic activity

1 Wareing +

2 Schultz ++

7.3.9 Lack of understanding about the interaction between stopping smoking and antipsychotic medication: Three UK studies[1-3], two conducted in mental health settings and one in broader secondary care settings, reported a lack of understanding by staff about the interaction between stopping smoking and dose requirements for antipsychotic medications.

1McNeill +

2Ratschen ++

3 Ratschen +

7.3.10 Belief that smokefree policy has an adverse impact on the amount of medication required by patients: Two studies[1,2] (1 UK[1], 1 non-UK[2]), both conducted in mental health settings, reported that implementation of smokefree policy would result in an increase in the amount of medication required by mental health patients, while another study[3] (non-UK), also conducted in a mental health setting, reported general disagreement that smokefree policy would reduce medication use However, of the two studies[1-2] that conducted post-implementation follow-up surveys, both found that increases in medication use were believed to be significantly less than had been anticipated. One further study[4] (non-UK) conducted in a mental health setting found a marginal level of agreement that use of medication had increased following implementation of smokefree policy (while another

qualitative study[5] (non-UK) conducted in a mental health setting reported that use of medication had not increased post-implementation

1 Cormac +

2 Haller +

3 Wye ++

4 Voci ++

5 Cooke -

7.3.11 Belief that smokefree policy impacts on attendence for outpatient appointments: Two studies[1,2] (1 UK[1], one non-UK) conducted in mental health settings reported concerns by mental health staff and patients that implementing smokefree policy would discourage patients who smoke from attending for outpatient appointments However, patient experiences reported by one of these studies[1] indicates that any fall-off in attendance to be short-term.

1 HUG -

2 Campion +

7.3.12 Belief that smokefree policy impacts on admission and discharge: Eight studies (3 UK[1-3], 5 non-UK[4-8]), seven of which were conducted in mental health settings and one in a broader secondary care setting, reported staff and patient concerns that the implementation of smokefree policy would result in patients refusing admission and treatment, and discharging against medical advice

However, in three cases[4-6] (all non-UK), all relating to mental health settings, examination of patient records failed to indicate any negative impact. In three of these cases (1 UK[3], 2 non-UK[5,6]), again all relating to mental health settings, staff observations post-implementation were consistent with prior concerns that smokefree policy would have a negative impact on patient

retention while in two other cases (both non-UK), one conducted in a mental health setting[8] and the other a broader secondary care setting[7], concerns about negative impact on patient retention were significantly reduced or no longer existed One other mental health study[9] (non-UK) found a marginal level of disagreement with statements that elopements' and discharges against medical advice had increased as a result of the smokefree policy

1 HUG -

2 McNeill +

3 Hill ++

4 Parle -

5 Karan -

6 Kotz -

7 Wheeler -

8 Haller +

9 Voci ++

7. 3.14 Belief that smokefree policy creates additional challenges for patient safety and security: Eight studies (3 UK[1-3], 5 non-UK[4-8]), four conducted in mental health settings and four in broader secondary care settings, reported staff concerns for patient security and safety relating to patients leaving premises to smoke unsupervised. Two of these studies (one UK[4], one non-UK[5]), both conducted in broader secondary care settings, reported cases of patients expressing security and safety concerns. None of the studies provided evidence of any of these concerns being realised.

1 Fitzpatrick +

2 Pritchard ++

3 McNeill +

4 Ratschen +

5 Schultz ++

6 Wheeler -

7 Campion +

8 Wye ++

Cost effectiveness review: 'Smoking cessation in secondary care: cost-effectiveness review'

Evidence statement CE 1.1.0: Cost-effectiveness of smoking cessation interventions for general in-patients and out-patients

ES CE1.1.0 Moderate evidence from three cost-effectiveness analyses[1-3] found that smoking cessation counselling and follow-up calls significantly increased quit rates in in-patients and out-patients attending a hospital in Wales, or any smoking patient admitted to hospitals in the US or Denmark. The UK study found that the cost per additional smoker who quit was £851, and the cost per life-year saved by the intervention compared with physician advice alone ranged from £340 to £426[1]. Sensitivity analysis showed that, if the total cost of the programme was doubled to include patients' costs and the proportion of patients who are assumed to stop smoking as a result of physician's advice alone increased to 10%, then the cost per success would be £3,540, and the cost per life year saved would range between £1,416 and £1,770. The US study found the incremental cost per incremental quitting patient was $3,697 and the incremental cost per life-year saved was estimated to be $3,680 at a discount rate of 5%[2]. The Danish study found that the mean incremental cost-effectiveness ratio (ICER) with the intervention was €1,058 (95% confidence interval €1,036 to €1,081)[3].

Applicability statement for CE 1.1.0

Only one of the three studies was carried out in the UK[1], and that was based on data from 1992-94, which limits the applicability of the cost effectiveness analysis to current UK practice.

1 Prathiba [+]

2 Meenan [+]

3 Olsen [+].

Evidence statements CE 1.2.0 - 1.2.3: Cost-effectiveness of smoking cessation interventions patients with acute cardiovascular disease

ES CE1.2.0 Strong evidence from two cost-effectiveness or cost-utility analyses from the US found that smoking cessation counselling and information significantly reduced smoking rates in patients admitted with acute myocardial infarction. One study calculated a cost per smoker who quits to be $380, with a discounted 1.7 life-years gained, and incremental cost-effectiveness ratio of $220[1]. The second study found the incremental cost-effectiveness ratio of $5,050 per quality-adjusted life year (QALY) gained based on 2008 US$ costs, and $4,350 per life-year gained[2].

ES CE1.2.1 Weak evidence from one moderate quality cost-effectiveness and cost-utility analysis in Sweden suggested that smoking cessation counselling with cognitive behavioural methods for 8 weeks in patients diagnosed with abdominal aortic aneurysms could reduce the risk of needing repair or emergency treatment for rupture, with an ICER per life-year gained of €674, and €924 per QALY gained[3].

ES CE1.2.2 Weak evidence from one moderate quality cost-effectiveness analysis suggests that smoking cessation advice and information delivered by non-specialist nurses for patients admitted to hospital in Norway for coronary artery bypass surgery would have an incremental cost-effectiveness ratio of €280 to €230 per life-year gained, using a 3.5% discount rate in low-risk patients with stable coronary heart disease. In high-risk patients with acute myocardial infarction, the incremental cost-effectiveness ratio of the programme per life-year gained was calculated to be €1,200 at 5 years and €110 over a 25-year lifetime, using a 5% discount rate[4].

ES CE1.2.3 Moderate evidence from one high quality cost-utility analysis suggests that adding nicotine replacement therapy to counselling and information would increase quit rates but would also increase the cost per QALY because of higher costs of on-going care for a greater number of survivors[5].

Applicability statement for CE 1.2.0 - 1.2.3

None of the studies were carried out in the UK, which limits the applicability of these cost effectiveness findings to the UK context. However, the patient groups and interventions followed in these studies are applicable to UK practice.

1 Krumholz [++]

2 Ladapo [++]

3 Mani [+]

4 Quist-Paulsen [+]

5 Ladapo [++]

Evidence statement CE1.3.0: Cost- effectiveness of smoking cessation interventions in patients awaiting surgery for lung cancer

ES CE1.3.0 Weak evidence from one moderate quality cost-effectiveness analysis suggests that counselling plus nicotine replacement therapy for patients scheduled to have surgery for early lung cancer in the US might have an incremental cost-effectiveness ratio of $16,415 per QALY and $45,629 per life-year gained after 1 year, falling to $2,609 per QALY and $2,703 per life-year gained after 5 years, using a 3% discount rate[1].

Applicability statement for CE 1.3.0

The study was carried out in the US which limits the applicability of the cost effectiveness analysis in the UK context, but the patient subgroup and management approach are applicable to current UK practice.

1 Slatore [+].

Evidence statements CE 1.4.0 - 1.4.1: Cost-effectiveness of smoking cessation interventions in any pregnant women attending antenatal services

ES CE1.4.0 Moderate evidence from one cost-benefit and cost-effectiveness analysis in the US found that counselling and educational materials given to pregnant women attending antenatal clinics would cost $2,943 per life-year gained, discounted at 4%. The reduced need for neonatal intensive care (NICU) in babies of quitters would lead to savings of $3.31 for every $1 spent, and the decreased costs of care for disability in surviving babies were calculated to be a further $3.26 per $1 spent[1].

ES CE1.4.1 Weak evidence from a subsequent moderate quality cost-effectiveness analysis of this study suggested that the smoking cessation intervention would reduce the risk of sudden infant death syndrome in the babies of quitters, but that costs per death averted would be: $210,500 overall (95% confidence interval $119,200 to $224,400). Costs per death averted would be $235,400 for light smokers (95% CI $219,300 to $256,400); $177,300 for moderate smokers (95% CI $166,800 to $191,100); and $151,000 for heavy smokers (95% CI $137,200 to $174,500)[2].

Applicability statement for CE 1.4.0 - 1.4.1

All the studies were carried out in the US, which limits their applicability of the cost effectiveness analysis to the UK.

1 Marks [++]

2 Pollack [+].

Evidence statement CE 1.6.0: Cost-effectiveness of smoking cessation interventions for patients attending mental health services

ES CE1.6.0 Moderate evidence from one high quality cost-effectiveness analysis found that psychological counselling plus nicotine replacement therapy offered to out-patients with depression had an incremental cost-effectiveness ratio of $6,204 per successful quit. Combining the costs of the

intervention and the additional service costs meant the ICER was $11,496 per successful quit[1].

Applicability statement for CE 1.6.0

The study was carried out in the US so may be less applicable to the UK context.

1 Barnett [++].

Evidence statement CE 1.7.0: Cost-effectiveness of interventions for smoking cessation for patients admitted to acute secondary care services

ES CE1.7.0 Moderate evidence from one high quality cost-benefit analysis suggests that pre-operative smoking cessation interviews plus nicotine replacement therapy in people scheduled for elective hip or knee replacement surgery in France would have a positive net monetary benefit of €117 for patients receiving the intervention compared with controls. The cost reduction was largely driven by a reduction in the number of postoperative days of intensive care required in smokers who quit before surgery compared with those who continued to smoke[1].

Applicability statement for CE 1.6.0

The study was carried out in France which limits the applicability of the cost effectiveness analysis to the UK, but the patient group and management approaches are applicable to UK clinical practice.

1 Hejblum [++].