Component 3 Smokefree Secondary Care Settings

Review 6

APPENDICES

Draft 4 - 16th July 2013

November 2021: NICE guidelines PH45 (June 2013) and PH48 (November 2013) have been updated and replaced by NG209.
The recommendations labelled [2013] or [2013, amended 2021] in the updated guideline were based on these evidence reviews.
See www.nice.org.uk/guidance/NG209 for all the current recommendations and evidence reviews.

APPENDIX 1: Summary of Included Study Countries' Smokefree Status

Country States/Provinces	**Public places with complete <u>national</u> indoor smokefree legislation for Health-Care Facilities at 31st December 2008**[1]	**Public places with complete <u>subnational</u> indoor smokefree legislation for Health-Care Facilities at 31st December 2008**[11]	**Additional Information (from Review 6 and Review 7's included papers)**
Australia	**No**		
Australian Capital Territory, New South Wales, Northern Territory, Queensland, South Australia, Tasmania, Victoria, Western Australia		Yes (all)	• **New South Wales State**: legislation introduced in 1988 which required a total prohibition of smoking by all staff, patients and visitors in all hospital buildings and vehicles **(Nagle, 1996)**. • **Queensland State**: As of 2005, there was no formal policy regarding smoking in any acute mental health unit in the State **(Campion 2008)**. • **South Australia State**: Smoking banned inside hospitals in the State 'for many years' but smoking has been allowed outdoors either in defined areas or alternatively, areas where smoking is banned are defined **(Jones, 2010)**.
Canada	**No**		
Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Northwest Territories, Nova Scotia, Nunavut, Ontario, Prince Edward Island, Quebec,		Yes (all)	• **Ontario Province**: *Tobacco Control Act 1994* banned smoking in all government buildings. Large psychiatric facilities sought and received special dispensation from the Provincial Ministry of Health and Long Term Care to allow patients and some staff to smoke in specially ventilated rooms **(Parle, 2004)**. The *Smoke-Free Ontario Act* (enacted May 31st 2006) prohibits smoking in all enclosed workplaces and public places in Ontario. All long-term and residential care facilities, including psychiatric facilities, are exempted from this legislation and are permitted to provide controlled designated smoking rooms to allow residents, but not staff, to smoke **(Voci, 2010)**.

[1] **Data Source:** World Health Organization (2009). *WHO Report on the Global Tobacco Epidemic, 2009: Implementing smoke-free environments*. Geneva: World Health Organization. http://whqlibdoc.who.int/publications/2009/9789241563918_eng_full.pdf. [WHO defines "indoor smokefree" as "Smoking is not allowed at any time in any indoor area under any circumstances"]

Saskatchewan, Yukon			• **Calgary City**: Calgary Health Region (CHR) went entirely smokefree on May 31st 2002, banning tobacco use indoors as well as on all CHR-owned property. It was the first health region in Canada to do so **(Patterson, 2008)**.
France	**Yes**		• General smoking ban in public places occurred in France in 2007 **(Vorspan, 2009).**
Israel	**Yes**		• 2001 anti-smoking law completely banned smoking in all hospitals in Israel **(Donchin, 2004)**.
Spain	**Yes**		• After the ratification of the *Framework Convention on Tobacco Control* in January 2005, Spain enacted a comprehensive regulation to prevent and control smoking on January 1st 2006. The regulation restricted the selling, advertising, and using tobacco in public places, workplaces and hospitals. Smoking was banned in any location within hospitals and health care buildings, eliminating smoking rooms, smokers' cafeterias and smokers' areas within cafeterias (**Fernández 2008; Martínez 2008)**.
Switzerland	**No**		
Ticino		Yes	
UK	**Yes**		

England , Northern Ireland, Scotland , Wales		Yes (all)	**England and Wales**: • The *National Service Framework for Coronary Heart Disease* required that by April 2001, all NHS bodies, in collaboration with Local Authorities, must have implemented a smoking policy **(Arack, 2009; Bloor, 2006)**. • The 2004 Department of Health White Paper *Choosing Health: Making Healthier Choices Easier* made a commitment to a smokefree NHS by the end of 2006 **(Arack, 2009; Parks, 2009; Praveen, 2009)**. • The *Health Act 2006* banned smoking in all enclosed or substantially enclosed public places and workplaces, including health care facilities from July 1st 2007 **(Arack, 2009; Cormac, 2010; Garg, 2009; Parks, 2009; Praveen, 2009; Pritchard, 2008; Smith, 2008; Ratschen, 2008)**. Mental health facilities were granted a temporary exemption for one year during which time designated smoking rooms meeting specified requirements were permitted **(Hill, 2007; Praveen, 2009; Pritchard, 2008; Smith, 2008)**. From July 1st 2008 smoking was banned in any enclosed or substantially enclosed part of mental health establishments **(Hill, 2007; Mental Health Foundation, 2009; Pritchard, 2008; Smith, 2008).** **Scotland** • Legislation banning smoking in enclosed public places came into force in 2006. Psychiatric facilities were one of the few settings exempt from the ban **(HUG, 2007; McNeill, 2007)**

USA	**No**		• In December 1988, officials of the United States Department of Veterans Affairs (VA) announced the goal of establishing smoke-free VA acute care facilities by mid-1989. Psychiatric facilities were excluded from this proclamation **(Erwin, 1991)**. • In May 1988 the Surgeon General and the Medicare Administrator sent letters to 7,000 Medicare hospitals asking for action to establish smokefree environments in their facilities **(Baile, 1991)**. • A bill requiring all hospitals participating in Federal Health Programs to adopt no-smoking policies was introduced in Congress in the late 1980s, but the bill was defeated **(Baile, 1991)**. • The Joint Commission on the Accreditation of HealthCare Organizations (JCAHO) declared that all accredited hospitals in the USA must be smokefree as of January 1992 **(Haller, 1996; Ryabik, 1995; Velasco, 1996)**. • Effective December 31st 1993, the JCAHO introduced indoor restrictions on smoking as a quality indicator **(Sheffer, 2009)**. • The JCAHO required all hospitals in the USA to be smokefree from January 1st 1994 **(Stillman, 1995).**
Alaska, Arizona, Arkansas, Colorado, Connecticut, Delaware, District of Columbia, Hawaii, Idaho, Illinois, Iowa, Maryland, Massachusetts, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Utah, Washington, Wisconsin		Yes	

California, Florida, Georgia, Kansas, Louisiana, Maine, Michigan, Mississippi, Missouri, North Carolina, Oklahoma, Vermont, Virginia, West Virginia		No	
Alabama, Indiana, Kentucky, South Carolina, Texas, Wyoming		Not reported by WHO	

APPENDIX 2: Sample database search strategies for Smokefree strategies and interventions in secondary care settings (Reviews 6 &7)

MEDLINE (includes Medline in Process)
Database host: EBSCO Host
Search date: 7/2/2012
Number of records: 4269

#	Query
S29	S25 NOT S28 Limiters - Date of Publication from: 19900101-20121231
S28	S27 NOT S26
S27	(MH "Animals")
S26	(MH "Animals") AND (MH "HUMANS")
S25	S23 or S24
S24	((S18 OR S19) AND S17)
S23	(S22 AND S16)
S22	(S18 or S19 or S20 or S21)
S21	TI ("acute care" OR "acute service#" OR "acute setting#" OR "acute trust#" OR "ambulance#" OR "health centre#" OR "care centre#" OR "health center#" OR "care center#" OR "inhospital" OR "national health service" OR "national health services" OR "secondary care" OR accident OR (acute N2 department#) OR "acute unit#" OR emergency OR "health authorities" OR "health board#" OR "clinical care" OR "clinical unit#" OR "care facilities" OR "care facility" OR "care unit#" OR "care trust" OR "elective care" OR "medical care" OR "health service#" OR "health system#" OR "health trust#" OR "health unit#" OR "healthcare unit#" OR "heath authority" OR hospice# OR hospitalised OR hospitalized OR hospital OR hospitals OR maternity OR prenatal OR perinatal OR antenatal OR obstetric# OR inpatient# OR "prison healthcare" OR "prison health" OR "NHS Trust#" OR outpatient# OR patient# OR psychiatric OR PCTs OR "mental health*" OR (secure W3 unit#) OR surgery OR "residential care" OR "long term care" OR "specialist unit#" OR "specialist care" OR "speciality care" OR "staff residence" OR "staff residency" OR "staff residencies" OR "staff accommodation" OR ward#)
S20	AB ("acute care" OR "acute service#" OR "acute setting#" OR "acute trust#" OR "ambulance#" OR "health centre#" OR "care centre#" OR "health center#" OR "care center#" OR "inhospital" OR "national health service" OR "national health services" OR "secondary care" OR accident OR (acute N2 department#) OR "acute unit#" OR emergency OR "health authorities" OR "health board#" OR "clinical care" OR "clinical unit#" OR "care facilities" OR "care facility" OR "care unit#" OR "care trust" OR "elective care" OR "medical care" OR "health service#" OR "health system#" OR "health trust#" OR "health unit#" OR "healthcare unit#" OR "heath authority" OR hospice# OR hospitalised OR hospitalized OR hospital OR hospitals OR maternity OR prenatal OR perinatal OR antenatal OR obstetric# OR inpatient# OR "prison healthcare" OR "prison health" OR "NHS Trust#" OR outpatient# OR patient# OR psychiatric OR PCTs OR "mental health*" OR (secure W3 unit#) OR surgery OR "residential care" OR "long term care" OR "specialist unit#" OR "specialist care" OR "speciality care" OR "staff residence" OR "staff residency" OR "staff residencies" OR "staff accommodation" OR ward#)
S19	(MH "Administrative Personnel") OR (MH "Adolescent, Hospitalized") OR (MH "Cancer Care Facilities") OR (MH "Cardiac Care Facilities") OR (MH "Child, Hospitalized") OR (MH "Emergency Medical Services") OR (MH "Emergency Service, Hospital+") OR (MH "Home Care Services") OR (MH "Home Care Services, Hospital-Based") OR (MH "Hospices") OR (MH "Hospital Administration") OR (MH "Hospital Administrators") OR (MH "Hospital Communication Systems") OR (MH "Hospital Design and Construction") OR (MH "Hospital Units+") OR (MH "Hospitalization+") OR (MH "Hospitals, Chronic Disease") OR (MH "Hospitals, Community") OR (MH "Hospitals, Convalescent") OR (MH "Hospitals, County") OR (MH "Hospitals, District") OR (MH "Hospitals, Federal") OR (MH "Hospitals, General") OR (MH "Hospitals, Isolation") OR (MH "Hospitals, Maternity") OR (MH "Hospitals, Municipal") OR (MH "Hospitals, Osteopathic") OR (MH "Hospitals, Pediatric") OR (MH "Hospitals, Private") OR (MH "Hospitals, Proprietary") OR (MH "Hospitals, Psychiatric") OR (MH "Hospitals, Public") OR (MH "Hospitals, Religious") OR (MH "Hospitals, Rural") OR (MH "Hospitals, Satellite") OR (MH "Hospitals, Special") OR (MH "Hospitals, State") OR (MH "Hospitals, Teaching") OR (MH "Hospitals, University") OR (MH "Hospitals,

	Urban") OR (MH "Hospitals, Voluntary") OR (MH "Hospitals+") OR (MH "Inpatients") OR (MH "Legislation, Hospital") OR (MH "Maintenance and Engineering, Hospital") OR (MH "Maternal Health Services+") OR (MH "Medical Staff, Hospital") OR (MH "Nurse-Patient Relations") OR (MH "Nursing Staff, Hospital") OR (MH "Obstetrics and Gynecology Department, Hospital") OR (MH "Outpatient Clinics, Hospital+") OR (MH "Outpatients") OR (MH "Patient Acceptance of Health Care") OR (MH "Patient Admission") OR (MH "Patient Advocacy") OR (MH "Patient Compliance") OR (MH "Patients") OR (MH "Personnel, Hospital") OR (MH "Physician-Patient Relations") OR (MH "Psychiatric Department, Hospital") OR (MH "Psychiatric Nursing") OR (MH "Surgicenters") OR (MH "Visitors to Patients")
S18	(MH "Health Facilities+") OR (MH "Health Facility Administration+") OR (MH "Health Facility Environment+")
S17	(MH "Smoking/PC") OR (MH "Tobacco Use Disorder/PC") OR (MH"Tobacco Use Cessation")
S16	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S15
S15	((S13 OR S14) AND S12)
S14	TI (smoking OR tobacco OR cigarette# OR smokers OR smoke OR nonsmoking OR nonsmokers) OR AB (smoking OR tobacco OR cigarette# OR smokers OR smoke OR nonsmoking OR nonsmokers)
S13	(MH "Smoking") OR (MH "Smoking Cessation") OR (MH "Tobacco Use Disorder") OR (MH"Tobacco Use Cessation")
S12	(MH "Social Control Policies") OR (MH "Social Control, Formal") OR (MH "Legislation as Topic") OR (MH "Legislation, Hospital") OR (MH "Organizational Policy") OR (MH "Public Policy") OR (MH "Health Policy")
S11	(MH "Tobacco Smoke Pollution/LJ") OR (MH "Tobacco Smoke Pollution/PC") OR (MH "Smoking/LJ") OR (MH "Smoking Cessation/LJ")
S10	(TI ((bans OR ban OR banning OR restrict* OR prohibit* OR sanction# OR eliminat* OR remov* OR restrict* OR eradicat* OR sanction* OR curbs OR curb OR curbing OR enforce# OR enforcing OR control* OR prevent*)) N3 (("second hand" N1 smok*) OR (secondhand N1 smok*) OR (passive N1 smok*) OR (environmental N2 smoke) OR "involuntary smoking" OR (pollution N2 tobacco) OR (pollution N2 cigarette#))) OR (AB ((bans OR ban OR banning OR restrict* OR prohibit* OR sanction# OR eliminat* OR remov* OR restrict* OR eradicat* OR sanction* OR curbs OR curb OR curbing OR enforce# OR enforcing OR control* OR prevent*)) N3 (("second hand" N1 smok*) OR (secondhand N1 smok*) OR (passive N1 smok*) OR (environmental N2 smoke) OR "involuntary smoking" OR (pollution N2 tobacco) OR (pollution N2 cigarette#)))
S9	AB ((workplace# OR place# OR zone# OR space# OR facility OR facilities OR area# OR location# OR premises OR propert* OR site# OR building# OR campus* OR ground# OR establishment# OR room# OR shelter# OR environment# OR enclos* OR hospital#) N1 ("non smoking" OR nonsmoking)) OR (AB (smoking OR "smoking break#" OR smoke OR smoker#) N1 (place# OR zone# OR space# OR facility OR facilities OR area# OR location# OR premises OR building# OR room# OR shelter# OR site# OR enclos*))
S8	TI ((workplace# OR place# OR zone# OR space# OR facility OR facilities OR area# OR location# OR premises OR propert* OR site# OR building# OR campus* OR ground# OR establishment# OR room# OR shelter# OR environment# OR enclos* OR hospital#) N1 ("non smoking" OR nonsmoking)) OR (TI (smoking OR "smoking break#" OR smoke OR smoker#) N1 (place# OR zone# OR space# OR facility OR facilities OR area# OR location# OR premises OR building# OR room# OR shelter# OR site# OR enclos*))
S7	(TI ("tobacco control#" OR "cigarette# control#" OR "smoking control#" OR ("control tobacco" OR "control cigarette#" OR "control smoking"))) OR (TI ("control* tobacco" OR "control* cigarette#" OR "control* smoking")) OR (TI ("smoking break#" OR smoke) N2 (control* OR prevent OR preventing OR prevents OR prevention)) OR (TI (tobacco OR cigarette# OR smoking) N2 (prevent OR preventing OR prevents OR prevention)) OR (AB ("tobacco control#" OR "cigarette# control#" OR "smoking control#" OR ("control tobacco" OR "control cigarette#" OR "control smoking"))) OR (AB ("control* tobacco" OR "control* cigarette#" OR "control* smoking")) OR (AB ("smoking break#" OR smoke) N2 (control* OR prevent OR preventing OR prevents OR prevention)) OR (AB (tobacco OR cigarette# OR smoking) N2 (prevent OR preventing OR prevents OR prevention))
S6	TI ((smoking OR tobacco OR cigarette# OR smokers OR "smoking break#" OR smoke) N3 (bans OR ban OR banning OR restrict* OR prohibit* OR eliminat* OR remov* OR restrict* OR eradicat* OR sanction* OR curbs OR curb OR curbing OR enforce# OR enforcing)) OR AB ((smoking OR tobacco OR cigarette# OR smokers OR "smoking break#" OR smoke) N3 (bans OR ban OR banning OR restrict* OR prohibit* OR eliminat* OR remov* OR restrict* OR eradicat* OR sanction* OR curbs OR curb OR curbing OR enforce# OR enforcing))
S5	TI ((act or acts or policy OR policies OR rule# OR "hospital guideline#" OR law# OR regulation# OR rules

	OR rule OR ordinance# OR legislat* OR code# OR compliance) N3 (smoking OR tobacco OR cigarette# OR smokers OR nonsmoking OR nonsmokers OR smoke)) OR AB ((act or acts or policy OR policies OR rule# OR law# OR regulation# OR rules OR rule OR "hospital guideline#" OR ordinance# OR legislat* OR code# OR compliance) N3 (smoking OR tobacco OR cigarette# OR smokers OR nonsmoking OR nonsmokers OR smoke))
S4	TI ("no smoking" OR antitobacco OR "anti tobacco" OR "antismoking" OR "anti smoking") OR AB ("no smoking" OR antitobacco OR "anti tobacco" OR "antismoking" OR "anti smoking")
S3	TI ("end smoking") OR TI ("ending smoking") OR AB (("end smoking") OR ("ending smoking"))
S2	TI ((tobacco W2 free) OR (cigarette W2 free)) OR AB ((tobacco W2 free) OR (cigarette W2 free))
S1	TI ("smoke free" OR "smoking free" OR smokefree) OR AB ("smoke free" OR "smoking free" OR smokefree)

Trials Register of Promoting Health Interventions (TRoPHI)

Database host: EPPI-Centre
Database coverage dates: 2005-current
Search date: 14/2/2012
Number of records retrieved: 126

344 Focus of the report: tobacco 823
345 Type(s) of intervention: environmental modification OR legislation OR regulation 387
346 344 AND 345 49
347 Freetext (item record) smokefree 3
351 Freetext (item record) antitobacco 1
352 Freetext (item record) antismoking 16
353 Freetext (item record) "anti smoking" 17
354 Freetext (item record) "anti tobacco" 5
355 Freetext (item record) "smoke free" 23
356 Freetext (item record) "smoking free" 0
357 Freetext (item record) "smokefree" 3
358 Freetext (item record) "tobacco free" 2
359 Freetext (item record) "cigarette free" 0
361 Freetext (item record) "end smoking" 0
362 Freetext (item record) "ending smoking" 0
363 Freetext (item record) "non smoking" 16
364 351 OR 352 OR 353 OR 354 OR 355 OR 356 OR 357 OR 358 OR 359 OR 361 OR 362 OR 363 78
365 Freetext (item record) smoke 134
366 Freetext (item record) smoking 690
367 Freetext (item record) tobacco 270
368 Freetext (item record) "cigarette*" 226
369 Freetext (item record) "environment*" 378
370 365 OR 366 OR 367 OR 368 OR 369 1148
371 Freetext (item record) "ban*" 102
372 Freetext (item record) "prohibit*" 4
373 Freetext (item record) "hospital" 297
374 Freetext (item record) hospitals 46
375 371 OR 372 OR 373 OR 374 420
376 370 AND 375 81
378 364 AND 375 10
379 346 OR 376 OR 378 126

APPENDIX 3: Inclusion decision questions applied at title and abstract screening stage, with guidance notes (Reviews 6 &7)

Criterion	Guidance notes	Decision
1. YEAR: Was the document published during or after 1990?	Include studies published during or after 1990. Exclude studies before 1990.	If yes, proceed to 2. If no, use EX1 – NOT YEAR
2. LANGUAGE: Was the document published in English?	Include English-language documents. Exclude documents in languages other than English.	If yes, proceed to 3. If no, use EX2 – NOT LANGUAGE
3. RESEARCH: Does the document report on a piece of research?	Include documents that are primary research, in that data have been collected during that study through interaction with or observation of study participants, or secondary research, such as systematic reviews of the literature. Examples of non-research documents include opinion pieces, commentaries, or legislation.	If yes, proceed to 4. If no, use EX3 – NOT RESEARCH
4. SMOKEFREE: Does the title or abstract refer to smokefree strategies or interventions?	Include studies of specific activities or strategies designed to support the implementation of smokefree legislation or policies. If the legislation or policy is not explicitly stated, interventions where the removal of second-hand smoke or environmental tobacco smoke is an explicit aim will be included. Examples of interventions include, but are not restricted to: • restrictions to eliminate smoking on hospital and other secondary care properties and estates, both indoors and outdoors, including signage and enforcement • restrict ions on staff smoking breaks	If yes, proceed to 5. If no, use EX4 – NOT SMOKEFREE

Criterion	Guidance notes	Decision
	• revised job descriptions to include policy enforcement by staff • creation of smokefree 'champions' • campaign and information materials to alert staff and service users of proposed and impending policy changes • interventions that help people temporarily abstain from smoking whilst onsite. Activities/interventions that will not be covered • Programmes or interventions exclusively aimed at preventing the uptake of tobacco use. • Programmes or interventions exclusively aimed at supporting tobacco use cessation.	
5. SECONDARY CARE: Was the study conducted in a secondary care setting or with secondary care staff?	Include studies where the smoking policy is conducted in a mental health, acute or maternity secondary care settings. Also include other settings where secondary care staff undertake their work where second-hand smoke may be present. Secondary care is defined as a service provided by medical specialists who generally do not have first contact with patients—usually referred to by a GP—such as psychiatrist, dermatologist, etc. • Included secondary care settings are the buildings and grounds of hospitals (including accident and emergency departments), psychiatric units, mental health units, secure hospitals, maternity units, outpatient clinics and staff residencies. • The buildings and grounds of prison healthcare units and tertiary care services where secondary healthcare staff are employed, or secondary healthcare is provided, are settings that will be included. • Smokefree legislation in the UK covers enclosed vehicles for paid and voluntary work, thus ambulances and hospital vehicles are also included as settings.	If yes, proceed to 6. If no, use EX5 – NOT SECONDARY CARE

Criterion	Guidance notes	Decision
	Activities/interventions that will not be covered: • Strategies and interventions for ensuring smokefree compliance in primary care settings (e.g., GP surgeries). • Studies looking at policies that apply to public spaces more generally (e.g., national legislation banning smoking in all closed public places) - even if the public spaces might include secondary health care settings.	
6. COMMUNITY SETTINGS BUT NOT SMOKEFREE: Was the study conducted in a secondary care setting (same as Q5), OR in a community or private residence setting AND explicitly refers to smokefree policies and secondary care workers/services?	Exclude community and private residences settings where it is not EXPLICIT from the study paper's title or abstract that they relate to i) smokefree policies/legislation and ii) the secondary care worker/the type of secondary care delivered. Include any other type of secondary care setting, or any community and private residences settings where it is that the study relates to i) smokefree policies/legislation and ii) the secondary care worker/the type of secondary care delivered.	If yes, proceed to 7. If no, use EX6 - COMMUNITY SETTINGS BUT NOT SMOKEFREE
7. RESEARCH DESIGN: Is the study design a comparison (e.g., controlled trials, before-and-after) and/or views or process evaluation (e.g., interviews, surveys)?	The study must be a comparison design or include views/process data on barriers and facilitators. Eligible comparison designs: reviews of reviews, systematic reviews and guidelines (including NICE guidelines), randomised controlled trials, controlled trials, controlled before and after studies, interrupted time series, and uncontrolled before and after studies. Eligible views/process evaluations: This includes trials (controlled and non-controlled), descriptive studies (including questionnaire surveys, and process evaluations), qualitative studies (including, but not restricted to, ethnographies, phenomenologies, and grounded theory studies), discussion	If yes, proceed to 8. If no, use EX7 – NOT RESEARCH DESIGN

Criterion	Guidance notes	Decision
	papers or reports, and 'views studies' (which are written based on a multiple perspective approach with an emphasis on guidance for health professionals). Any studies without these research designs (e.g., single case studies) should be excluded.	
8. EFFECTIVENESS: Does the study evaluate the effectiveness of an intervention?	Include if the study evaluates the effectiveness of an intervention. The study must evaluate the effectiveness of an intervention (or interventions) either through a comparison with a control group or comparison across time, or through reviews of the evidence. Specifically: reviews of reviews, systematic reviews and guidelines (including NICE guidelines), randomised controlled trials, controlled trials, controlled before and after studies, interrupted time series, and uncontrolled before and after studies.	If yes, use IN1 - EFFECTIVENESS. Then proceed to 9. If no, proceed to 9.
9. BARRIERS/FACILITATORS: Does the title or abstract include barriers or facilitators (including knowledge, attitudes and beliefs) of using or implementing smoking cessation interventions/ services?	Include if the title or abstract includes barriers or facilitators (including knowledge, attitudes and beliefs) of using or implementing an intervention. The study must include qualitative and/or quantitative evidence of views and opinions – questionnaire surveys, process evaluations and qualitative studies; both primary studies and systematic reviews.	If yes, use IN2 - BARRIERS/FACILITATORS. End of criteria.
Marker1	Marker for not high income country. Mark any study that was not conducted in a high income country. High income countries are: Andorra, Aruba, Australia, Austria, Bahamas, The, Bahrain, Barbados, Belgium, Bermuda, Brunei Darussalam, Canada, Cayman Islands, Channel Islands, Croatia, Curaçao, Cyprus, Czech Republic,	

Criterion	Guidance notes	Decision
	Denmark, Equatorial Guinea, Estonia, Faeroe Islands, Finland, France, French Polynesia, Germany, Gibraltar, Greece, Greenland, Guam, Hong Kong SAR, China, Hungary, Iceland, Ireland, Isle of Man, Israel, Italy, Japan, Korea, Rep., Kuwait, Liechtenstein, Luxembourg, Macao SAR, China, Malta, Monaco, Netherlands, New Caledonia, New Zealand, Northern Mariana Islands, Norway, Oman, Poland, Portugal, Puerto Rico, Qatar, San Marino, Saudi Arabia, Singapore, Sint Maarten (Dutch part), Slovak Republic, Slovenia, Spain, St. Martin (French part), Sweden, Switzerland, Trinidad and Tobago, Turks and Caicos Islands, United Arab Emirates, United Kingdom, United States, Virgin Islands (U.S.)	

APPENDIX 4: Websites search summary (Reviews 6 &7)

#	Websites searched	Results
1.	Smoke free http://smokefree.nhs.uk	0
2.	NHS Centre for Smoking Cessation and Training http://www.ncsct.co.uk/	0
3.	Action on Smoking and Health (ASH) http://www.ash.org.uk	0
4.	Treat tobacco.net http://www.treatobacco.net/en/index.php	0
5.	Society for Research on Nicotine and Tobacco http://www.srnt.org	0
6.	International Union against Cancer http://www.uicc.org	0
7.	WHO Tobacco Free Initiative (TIF) http://www.who.int/tobacco/en	0
8.	International Tobacco Control Policy Evaluation Project http://www.itcproject.org	0
9.	Tobacco Harm Reduction http://www.tobaccoharmreduction.org/index.htm	0
10.	Current controlled trials www.controlled-trials.com	0
11.	Association for the treatment of tobacco use and dependence (ATTUD) www.attud.org	0
12.	National Institute on drug abuse- the science of drug abuse and addiction http://www.nida.nih.gov/nidahome.html	0
13.	NICE http://www.nice.org.uk/	0
14.	Public health observatories http://www.apho.org.uk/resource/advanced.aspx	0
15.	Scottish Government http://www.scotland.gov.uk/topics/research	0
16.	Welsh Government http://wales.gov.uk/	0
17.	NHS Evidence https://www.evidence.nhs.uk/	1
18.	Joseph Rowntree Foundation http://www.jrf.org.uk/publications	0
19.	UK Centre for Tobacco Control Studies http://www.ukctcs.org/ukctcs/index.aspx	0
20.	World Conference on Tobacco or Health abstracts from 2006, 2009, 2012 conferences	57
21.	Globalink http://www.globalink.org/	0
22.	CDC tobacco control and prevention http://www.cdc.gov/tobacco/	1
23.	Canadian Council for Tobacco Control http://www.cctc.ca/cctc/EN/tcrc/articles/tcarticle.2010-12-24.4349020582	11
24.	Tobacco Information Scotland http://www.tobaccoinscotland.com/page.cfm?pageid=71	0
Total number of records found		**70**

APPENDIX 5: Inclusion decision questions applied at full text screening stage, with guidance notes (Reviews 6 &7)

Notes:

- Shading: reviews 6 & 7; review 6 only; review 7 only
- Each study should have either **one** EX1-EX5 code or **two** review-specific codes

Criterion	Guidance notes	Decision
1. YEAR: Was the document published during or after 1990?	Include studies published during or after 1990. Exclude studies before 1990.	If yes, proceed to 2. If no, use EX1 on FT – NOT YEAR
2. LANGUAGE: Was the document published in English?	Include English-language documents. Exclude documents in languages other than English.	If yes, proceed to 3. If no, use EX2 on FT – NOT LANGUAGE
3. RESEARCH: Does the document report on a piece of primary research?	Include documents that are primary research, in that data have been collected during that study through interaction with or observation of study participants. Exclude reviews but mark systematic reviews to be checked for relevant included studies for Reviews 6 and 7. Examples of non-research documents include opinion pieces, commentaries, or legislation.	If yes, proceed to 4. If no, use EX3 on FT – NOT PRIMARY RESEARCH & mark if a systematic review
Marker 1: Review	*Review excluded but the included studies are to be checked for relevant studies for our reviews.*	
4. SMOKEFREE: Does the document examine smokefree legislation, smokefree policy(ies) or smokefree intervention(s)?	Include studies that examine smokefree legislation or policies or a smokefree intervention(s). If the legislation or policy is not explicitly stated, examination of interventions where the removal of second-hand smoke or environmental tobacco smoke is an explicit aim will be included. Examples of interventions include, but are not restricted to: • restrictions to eliminate smoking on hospital and other secondary care properties and estates, both indoors and outdoors, including signage and enforcement • restrictions on staff smoking breaks • revised job descriptions to include policy enforcement by staff • creation of smokefree 'champions' • campaign and information materials to alert staff and service users of proposed and impending policy changes • interventions that help people temporarily abstain from smoking whilst onsite. Exclude: activities/interventions that will not be covered • Programmes or interventions exclusively aimed at preventing the uptake of tobacco use.	If yes, proceed to 5. If no, use EX4 on FT – NOT EXAMINING SMOKEFREE

Criterion	Guidance notes	Decision
	• Programmes or interventions exclusively aimed at supporting tobacco use cessation. Exclude studies that do not mention smokefree legislation or policies or a smokefree intervention(s). Also exclude studies conducted in smokefree contexts and settings but which do not examine smokefree implementation process and effect.	
5. SECONDARY CARE: Was the study conducted in a secondary care setting or with secondary care staff, users or visitors?	Include studies where the smoking policy is conducted in a mental health, acute or maternity secondary care settings. Also include other settings where secondary care staff undertake their work where second-hand smoke may be present. Secondary care is defined as a service provided by medical specialists who generally do not have first contact with patients—usually referred to by a GP—such as psychiatrist, dermatologist, etc. • Included secondary care settings are the buildings and grounds of hospitals (including accident and emergency departments), psychiatric units, mental health units, secure hospitals, maternity units, outpatient clinics and staff residencies. • The buildings and grounds of prison healthcare units and tertiary care services where secondary healthcare staff are employed, or secondary healthcare is provided, are settings that will be included. • Smokefree legislation in the UK covers enclosed vehicles for paid and voluntary work, thus ambulances and hospital vehicles are also included as settings. Activities/interventions that will not be covered: • Strategies and interventions for ensuring smokefree compliance in primary care settings (e.g., GP surgeries). • Studies looking at policies that apply to public spaces more generally (e.g., national legislation banning smoking in all closed public places) - even if the public spaces might include secondary health care settings.	If yes, proceed to 6. If no, use EX5 on FT – NOT SECONDARY CARE
6. EVALUATION OF EFFECTIVENESS: Does the study evaluate the effectiveness of strategy/ies or intervention/s to support compliance/implementation of smokefree legislation/policies?	Include evaluations of specific activities or strategies designed to support the compliance with or implementation of smokefree legislation or policies. If the legislation or policy is not explicitly stated, interventions where the removal of second-hand smoke or environmental tobacco smoke is an explicit aim will be included. Examples of interventions include, but are not restricted to: • restrictions to eliminate smoking on hospital and other secondary care properties and estates, both indoors and outdoors, including signage and enforcement • restrictions on staff smoking breaks • revised job descriptions to include policy enforcement by staff • creation of smokefree 'champions' • campaign and information materials to alert staff and service users of proposed and impending policy changes • interventions that help people temporarily abstain from smoking whilst onsite. Activities/interventions that will not be covered	If yes proceed to 7 If no, use Rev 6:EX6 on FT – NOT EVALUATION OF EFFECTIVENESS. Then proceed to 8.

Criterion	Guidance notes	Decision
	• Programmes or interventions exclusively aimed at preventing the uptake of tobacco use. • Programmes or interventions exclusively aimed at supporting tobacco use cessation. Exclude studies that do not evaluate a strategy or intervention to support compliance or implementation with smokefree legislation or policy.	
7. RESEARCH DESIGN: Is the study design a comparison (e.g., controlled trials, before-and-after)?	The study must be a comparison design. Eligible comparison designs: guidelines (including NICE guidelines), randomised controlled trials, controlled trials, controlled before and after studies, interrupted time series, and uncontrolled before and after studies. Any studies without these research designs (e.g., single case studies) should be excluded at this stage. However retrospective comparison studies which include self-report behaviour and/or perceptions of compliance post-implementation could provide a valid measure of effectiveness and should be marked so they can be retrieved for Review 6 later if deemed necessary.	If yes, use Rev 6:IN1 on FT – EFFECTIVENESS REVIEW. Then proceed to 8. If no, use Rev 6:EX7 on FT – NOT RESEARCH DESIGN & mark if retrospective comparison study
Marker 2: Retrospective comparison	*Retrospective comparison study which includes self-report behaviour and/or perceptions of compliance post-implementation provide a less robust yet valid measure of effectiveness.* *These studies should be given a marker so they can be retrieved for Review 6 later if deemed necessary*	
8. COUNTRY: Was the study conducted in a high income country(ies)?	Include any study that was conducted in a high income country(ies). High income countries are: Andorra, Aruba, Australia, Austria, Bahamas, The, Bahrain, Barbados, Belgium, Bermuda, Brunei Darussalam, Canada, Cayman Islands, Channel Islands, Croatia, Curaçao, Cyprus, Czech Republic, Denmark, Equatorial Guinea, Estonia, Faeroe Islands, Finland, France, French Polynesia, Germany, Gibraltar, Greece, Greenland, Guam, Hong Kong SAR, China, Hungary, Iceland, Ireland, Isle of Man, Israel, Italy, Japan, Korea, Rep., Kuwait, Liechtenstein, Luxembourg, Macao SAR, China, Malta, Monaco, Netherlands, New Caledonia, New Zealand, Northern Mariana Islands, Norway, Oman, Poland, Portugal, Puerto Rico, Qatar, San Marino, Saudi Arabia, Singapore, Sint Maarten (Dutch part), Slovak Republic, Slovenia, Spain, St. Martin (French part), Sweden, Switzerland, Trinidad and Tobago, Turks and Caicos Islands, United Arab Emirates, United Kingdom, United States, Virgin Islands (U.S.) If a study was conducted in a mixture of high and non-high income countries, include the study. Exclude studies conducted in countries not in this list.	If yes, proceed to 9 If no, use Rev7:EX8 on FT – NOT HI COUNTRY
9. BARRIERS/FACILITATORS: Does the document include barriers or facilitators (including knowledge, attitudes and beliefs) to implementing	Include if the document includes barriers or facilitators (including knowledge, attitudes and beliefs) to implementing or complying with smokefree policies/legislation or smokefree interventions. The study must include qualitative and/or quantitative evidence of views and opinions – questionnaire surveys, process evaluations and qualitative studies. This includes trials (controlled and non-controlled), descriptive studies (including questionnaire surveys, and process evaluations), qualitative studies	If yes, use Rev 7:IN2 on FT – BARRIERS/FACILITATORS REVIEW. If no, use Rev 7:EX9 on FT – NO BARRIERS/FACILITATORS

Criterion	Guidance notes	Decision
or complying with smokefree policies/legislation or smokefree interventions?	(including, but not restricted to, ethnographies, phenomenologies, and grounded theory studies), discussion papers or reports, and 'views studies' (which are written based on a multiple perspective approach with an emphasis on guidance for health professionals) Relevant data may come from papers from process or implementation issues encountered in trials.	End of criteria.
QUERY on FT	Query for team discussion	
Marker 3	*Smoking cessation interventions in acute & maternity care*	
Marker 4	*Smoking cessation interventions in mental health care*	
Marker 5	*Cost-effectiveness*	
Marker 6	*Useful background information*	

APPENDIX 6: Quality Assessment Details for Review 6 Included Studies

Checklist: quantitative correlation studies

1.1 Is the source population or source area well described?
1.2 Is the eligible population or area representative of the source population or area?
1.3 Do the selected participants or areas represent the eligible population or area?
2.1 Selection of exposure (and comparison) group. How was selection bias minimised?
2.2 Was the selection of explanatory variables based on a sound theoretical basis?
2.3 Was the contamination acceptably low?
2.4 How well were likely confounding factors identified and controlled?
2.5 Is the setting applicable to the UK?
3.1 Were the outcome measures and procedures reliable?
3.2 Were all outcome measurements complete?
3.3 Were all the important outcomes assessed?
3.4 Was there a similar follow-up time in exposure and comparison groups?
3.5 Was follow-up time meaningful?
4.1 Was the study sufficiently powered to detect an intervention effect (if one exists)?
4.2 Were multiple explanatory variables considered in the analyses?
4.3 Were the analytical methods appropriate?
4.4 Was the precision of association given or calculable? Is association meaningful?
5.1 Are the study results internally valid (i.e. unbiased)?
5.2 Are the findings generalisable to the source population (i.e. externally valid)?

++ for that aspect, the study has been designed/conducted in such a way as to minimise the risk of bias
+ the answer is not clear from the way the study is reported, or that the study may not have addressed all potential sources of bias for that aspect
– for those aspects of the study design in which significant sources of bias may persist
NR not reported
NA not applicable

Title	1.1	1.2	1.3	2.1	2.2	2.3	2.4	2.5	3.1	3.2	3.3	3.1	3.5	4.1	4.2	4.3	4.4	5.1	5.2
Cormac (2010)	+	++	+	NA	NA	NA	NR	++	+	++	++	NA	++	NR	NA	++	+	+	+
Daughton (1992)	-	++	-	NA	NA	NA	NR	-	-	+	+	NA	+	NR	NA	++	++	- *Demographic data not collected; no control group*	- *Source population not described; potential selection/respondent bias*
Donchin (2004)	++	+	++	NA	NA	NA	NR	+	+	NR	+	NA	+	NR	NA	++	++	+ *No control group for temporal confounders*	+

Erwin (1991)	++	++	+	NA	NA	NA	NR	-	-	NR	+	NA	+	NR	NA	NR	NR	- *Data analysis unreported*	+
Etter (2008)	++	++	+	NA	NA	NA	NR	+	-	+	+	NA	+	-	NA	+	++	+ *Follow-up measures taken 3-5 months post-total ban, subject selection was consistent with no significant diffs btw group demogs*	+ *Small sample size*
Fernández (2008)	+	NA	NA	NA	NR NA	NA	NR	+	++	NA	NR	NA	NA	++	NR	++	+	+	++
Gadomski (2010)	+	++	++	NA	NR NA	NA	NR NA	+	-	++	+	NA	NA	NA	NR	++	+	+ *No baseline group.*	++
Haller (1996)	+	++	++	+	NA	NA	NR	-	+	NR	+	NA	++	NR	NA	++	++	+ *Risk self-selection bias, unvalidated outcome measures, no control group*	+
Hempel (2002)	+	++	++	NA	NR NA	NR	NR	+	++	++	+	NA	+	NA	NR	++	++	+	+
Hudzinski (1990)	+	++	-	NA	NA	NA	-	+	+	NR	+	NA	+	NR	NA	+	-	+ *Same sample but may have become desensitised to questionnaire; no control group*	+
Joseph (1993)	++	++	++	NR	NR	NA	-	+	-	+	+	NA	+	++	+	++	+	+	+ *Did the patients decline admission in the intervention group because of the restrictive smoking policy - the study did not measure this.*
Kvern (2006)	+	NA	NA	NA	NA	NA	NR	+	+	NR	+	NA	++	NR	NA	-	-	- *Limited detail for decision but broad range of mostly cross-sectional measures in source settings.*	+
Martinez (2008)	-	-	-	NA	+	NA	NR	+	-	NR	NA	NA	++	+	NR	+	++	+	+
Matthews (2005)	+	-	-	NA	NA	NA	NR	-	-	NR	+	NA	++	NR	NA	++	++	- *Paper lacks detail on methods/analysis to answer this*	- *Patient source population possibly; no details to assess this for staff source population*
Patten (1995)	+	++	-	NA	NA	NA	NR	+	+	NR	+	NA	++	NR	NA	++	++	+ *Risk self-selection bias, unvalidated outcome measures, no control group*	+ *Patient chart data possibly, not staff and patient survey results*
Quinn (2000)	-	NR	NR	NA	NR	NA	NR	+	-	-	-	NA	+	+	-	-	-	-	+
Rauter (1997)	+	++	NR	NA	+	NA	NA	+	+	++	NA	NA	+	-	-	-	-	+	+ *Only to this specific population*
Rees (2008)	++	NA	NA	NA	NA	NA	+	+	++	NR	++	NA	+	NR	NA	++	+	+ Patients' logs data, no control or random assignment.	++
Ripley-Moffitt (2010)	-	+	+	NA	-	NA	+	+	-	+	+	NA	++	NA	+	NR	-	+	+ *Fairly low response rate plus the fact that*

																			16% of employees were not invited to take part as did not have an email address. No demographics of those who took part at baseline or of the source population.
Shetty (2010)	++	NA	NA	NA	NA	NA	NR	++	+	NR	++	NA	++	NR	NA	++	+	+ *Used objective measures and same sample for follow-ups, no control group. Some checklist items not reported.*	++
Sterling (1994)	-	-	+	NA	-	NA	-	+	+	+	-	NA	+	+	-	-	+	-	+
Stillman (1990)	+	+	+	NA	+	NA	NR	+	+	++	+	NA	++	++	+	++	+	+	+ *69% initial response rate - findings from one hospital.*
Velasco (1996)	+	++	NA	NA	+	NA	-	+	-	NR	NA	NA	++	+	-	+	-	-	-
Vorspan (2009)	+	+	+	NA	NA	NA	+	+	++	++	+	NA	++	NR	NA	++	++	+ *No control group for temporal trends*	+ *Non-smoker day staff only*
Wheeler (2007)	+	++	+	NA	NA	NA	NR	+	+	NR	+	NA	+	NR	NA	++	-	- *Limited reporting as many measures/parts to the study; self-selection bias; no control group*	+

Checklist: quantitative intervention studies

1.1 Is the source population or source area well described?

1.2 Is the eligible population or area representative of the source population or area?

1.3 Do the selected participants or areas represent the eligible population or area?

2.1 Allocation to intervention (or comparison). How was selection bias minimised?

2.2 Were interventions (and comparisons) well described and appropriate?

2.3 Was the allocation concealed?

2.4 Were participants and/or investigators blind to exposure and comparison?

2.5 Was the exposure to the intervention and comparison adequate?

2.6 Was contamination acceptably low?

2.7 Were other interventions similar in both groups?

2.8 Were all participants accounted for at study conclusion?

2.9 Did the setting reflect usual UK practice?

2.10 Did the intervention or control comparison reflect usual UK practice?

3.1 Were outcome measures reliable?

3.2 Were all outcome measurements complete?

3.3 Were all important outcomes assessed?

3.4 Were outcomes relevant?

3.5 Were there similar follow-up times in exposure and comparison groups?

3.6 Was follow-up time meaningful?

4.1 Were exposure and comparison groups similar at baseline? If not, were these adjusted?

4.2 Was Intention To Treat (ITT) analysis conducted?

4.3 Was the study sufficiently powered to detect an intervention effect (if one exists)?

4.4 Were the estimates of effect size given or calculable?

4.5 Were the analytical methods appropriate?

4.6 Was the precision of intervention effects given or calculable? Were they meaningful?

5.1 Are the study results internally valid (i.e. unbiased)?

5.2 Are the findings generalisable to the source population (i.e. externally valid)?

++ for that aspect, the study has been designed/conducted in such a way as to minimise the risk of bias

+ the answer is not clear from the way the study is reported, or that the study may not have addressed all potential sources of bias for that aspect

– for those aspects of the study design in which significant sources of bias may persist

NR not reported

NA not applicable

Review 6: Appendices

Title	1.1	1.2	1.3	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	3.1	3.2	3.3	3.4	3.5	3.6	4.1	4.2	4.3	4.4	4.5	4.6	5.1	5.2
Kempf (1996)	++	++	++	++	++	+	-	+	++	-	++	+	+	++	++	NR	-	++	++	++	NA	-	-	-	+	+	-
Nagle (1996)	++	++	++	-	++	NA	+	++	NR	+	NA	+	+	++	++	NA	++	++	++	+	NA	NR	NR	+	+	+	+

APPENDIX 7: Evidence Tables for Review 6 Included Studies

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
Cormac (2010) **Authors** *Cormac et al.* **Year** 2010 **Aim of study** *To evaluate the impact of a total smoking ban in buildings and grounds in a high secure psychiatric hospital.* **Study design** Before-and-after study (with different sample after intervention) *No control group. Pre- and post-ban responses not linked but most sample the same (n=298 patients for study duration)* **Quality score** + **External validity score** +	**Country** England **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients **Source population demographics** Smoking status *72.8% patients resident in the hospital for the full evaluation period were smokers before the ban* **Recruitment** Not applicable **Population selection criteria** Inclusion criteria not applicable Exclusion criteria not applicable % participation not reported **Potential sources of bias** *Selection bias possible for the staff/patient survey - most motivated to complete the survey, however the patient incidents, medication and NRT data should be representative* **Setting** *A high secure, long-stay psychiatric hospital for patients with complex mental health disorders who are a grave and immediate danger to the public or themselves (the majority have committed serious offences).*	**Method of allocation** Not applicable Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place **When assessed** Before implementation – multiple time points *Dec 06, Mar 07* After implementation – multiple time points *Apr 07, Jul 07* **Where** Mental Health **Smokefree coverage** Smokefree building(s) Smokefree grounds **Supporting strategies/ interventions** Cessation support Pharmacotherapies/NRT Staff training Other *Information provision (without further detail)* *Surrender of smoking materials (in-patients)* *On the weekend of policy introduction, all wards were fully staffed and additional activities were provided as a distraction.* **Sample size** Not applicable **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported	**Primary outcomes** Other consequence(s) - objective *Untoward incidents: self-harm (threats or actual), verbal abuse (or aggression or threats), physical aggression (attempted or actual), damage to property. Episodes of seclusion due to: threatening behaviour, attacks on staff, attacks on fellow patients. Data from hospital risk department, validation not reported.* *Changes in psychotropic medication: average daily dose of 4 classes of psychotropic medication: regular antipsychotics, regular benzodiazepines, PRN antipsychotics, PRN benzodiazepines.* *Number of patients receiving NRT* **Follow-up periods** Follow-up period(s) *8 months* **Method of analysis** Method(s) of analysis *Untoward incidents: chi-square test comparing Mar 07 and Apr 07, Dec 06 and Jul 07, for both pre-ban smokers and non-smokers. Changes in psychotropic medicine: t-test comparing Mar 07 with Apr 07 and Dec 06 with Jul 07.*	**Primary outcomes** *Untoward incidents: significantly more violent incidents for pre-ban smokers in Jul 07 (198) than in Dec 06 (158) (p=0.01, d.f.=1), other results were not significant for comparisons between pre-ban smokers or non-smokers or all patients for either time period comparison.* *Episodes of seclusion: no significant results for comparisons of numbers of seclusions between pre-ban smokers or non-smokers or all patients for either time period comparison.* *Changes in psychotropic medication: a significant decline in mean dose of regular antipsychotic medication in smokers from Mar 07 (M=64.1, SD 39.4) to Apr 07 (M=61.2, SD 37.4) (t(165)=2.27, p=0.025) (95% CI 0.37-5.42). Other results were not significant for comparisons of mean dose of medication between pre-ban smokers or non-smokers for either time period comparison.* *Number of patients receiving NRT: 149 patients commenced pre-ban (Dec 06-Mar 07), an additional 18 patients commenced post-ban.* **Attrition details** Not applicable	**Limitations identified by author(s)** Identified by author(s) *The opportunistic nature of the evaluation meant there were limits to the data that were available for evaluation. Data were available only for four time periods. The statistically significant result for the comparison of Dec 06 and Jul 07 incidents may be an artefact of a potentially seasonal drop in incidents in the period before Christmas. Cannot say whether any patients were transferred or discharged during the study period for reasons connected with the smoking ban.* **Limitations identified by review team** **Evidence gaps/future research recommendations** Future research recommendations *A long-term evaluation of the health benefits of smoke-free environments to patients in long-stay NHS facilities.* **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
Daughton (1992) **Authors** *Daughton et al.* **Year** 1992 **Aim of study** *To examine the early and long-term influence of a total indoor smoking ban on institutional smoking cessation rates, as well as on smoker behaviour and comfort in a hospital setting.* **Study design** Before-and-after study (with same sample after intervention) *Post-sample is a sub-sample of the pre-sample* **Quality score** - **External validity score** -	**Country** USA *Nebraska* **Urban/Rural setting** Not reported **Secondary Care Setting** Not Mental Health (Acute and/or Maternity) **Source population** Staff *Hospital employees* **Source population demographics** None reported **Recruitment** Recruitment method *Survey 1: Hospital departments circulated a 1-page questionnaire generally accompanied by a letter of support from a department representative. Isolated employees who indicated they had not received a department questionnaire were provided with one. Survey 2: the first survey, although anonymous, had space for contact details if willing to be re-contacted.* **Population selection criteria** Inclusion criteria *Survey 1 – all employees (those working in departments and isolated employees); Survey 2 – smokers who participated in Survey 1 who had provided contact details.* Exclusion criteria *Survey 1: Pipe and cigar smokers (n=7), individuals in process of quitting (<5 months abstinence). Survey 2: those no longer employed by hospital (n=11)*	**Method of allocation** Investigator did not assign exposure Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *No implementation date reported* **When assessed** After implementation – multiple time points *Post-ban Survey 1 (1 year after policy announced, 5 months after implementation); Post-ban Survey 2 (2 years after policy announced, 17 months after implementation)* **Where** Not Mental Health **Smokefree coverage** Smokefree building(s) *A "total indoor smoking ban"* **Supporting strategies/ interventions** Implementation committee *32-member Smoke-Free Campus Task Force* Staff letters/payslip notes *Employee bulletins and newsletters* Cessation support *Hospital-promoted cessation programs, and offer to subsidise costs of locally available cessation programs.* Other *In-house media campaign* **Sample size** Total sample *Survey 1: n=1070* *Sample characteristics: n=589 non-smokers, n=284 ex-smokers (self-report abstinent for >5 months prior to ban announcement), n=16 ban-year quitters (self-report abstinent for ≥3 months), n=181 smokers (n=55 light smokers <10 cigs/day, n=110 moderate smokers 10-29 cigs/day, n=22*	**Primary outcomes** Other consequence(s) - subjective *Survey 1: Effect on smoking cessation; Effect on cigarette consumption (unclear if asked to recall pre-ban consumption); Reported decreased work productivity; Changed eating locations to smoke (all self-reported)* *Survey 2: Effect on smoking cessation (self-reported)* **Follow-up periods** Follow-up period(s) *1 year* **Method of analysis** Method(s) of analysis *Fisher's exact test was used to analyse categorical data and Student's t test for continuous data. Comparison values are expressed as means ± standard error of the mean.*	**Primary outcomes** Relevant results - other *Effect on smoking cessation: Five months after implementation of a total indoor ban on smoking, 39% of the surveyed staff smokers (n=79) self-reported trying to quit: 22 enrolled in a stop-smoking program and 57 used a non-program approach. Of those enrolled in a smoking program, 32% (n=7) reported abstinence ≥6 months and of those using a non-program approach, 16% (n=9) reported being smokefree ≥3 months. Comparison with pre-implementation annual quit rates: Of the 284 ex-smokers sampled, 7% (n=20) had stopped smoking during the previous pre-ban year, a percentage only slightly lower than the 8% quit rate (16 of 203) achieved during the ban year (NS, two-tailed Fisher's exact test).* *Seventeen months after implementation of a total indoor ban on smoking at the hospital, and 2 years after the policy was announced, 41% staff smokers (n=36) self-reported trying to quit during the second year of the ban. Two years after the policy was announced, 8% staff smokers (n=7) were reportedly smoke-free for ≥3 months (a similar rate to both pre-ban and ban-year institutional quit rates).* *Effect on mean cigarette consumption: Five months after implementation, a total indoor ban on smoking was*	**Limitations identified by author(s)** Identified by author(s) *Results may have been influenced by limitations of study design (e.g. anonymous initial survey hindered long-term follow-up assessment; incomplete/ unreturned questionnaires may have introduced a selection bias; smoking level subgroups may have been over- or under-represented.* **Limitations identified by review team** *Demographic data not collected; no control group* **Evidence gaps/future research recommendations** None reported **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	% participation agreement *"approximately one-third" Survey 1; 47% Survey 2* **Potential sources of bias** *Self-selection response to survey; low participation ("approx. a third"); follow-up relies on first survey respondents providing contact details (preventing anonymity); no demographics for non-responders* **Setting** *"In a hospital setting"*	*heavy smokers ≥30 cigs/day). Occupations (of those who identified themselves) included: physicians, nurses, cafeteria workers, painters, mail room clerks, laboratory technicians, administrators, secretaries, researchers and environmental service workers.* *Survey 2: n=88* **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported		*associated with a significant decrease in mean cigarette consumption during work hours by staff, from 7.3 cigarettes (SD=0.45) to 4.2 cigarettes (SD=0.26), p<0.0001; during workdays, from 15.6 cigarettes (SD=0.83) to 12.7 cigarettes (SD=0.69), p<0.001; and during non-workdays, from 19.6 cigarettes (SD=0.92) to 18.6 cigarettes (SD= 0.89), p<0.01.* *Sub-group differences: The significant decrease in mean cigarette consumption 5 months after the ban implementation mostly occurred amongst staff self-reported as moderate to heavy smokers (≥10 cigs/day) who reduced from 21.1 (SD=0.93) to 14.7 (SD=0.80) cigarettes, p<0.001. Light smokers (<10 cigs/day) day) showed only a slight decrease in mean daily cigarette consumption from 4.8 (SD=0.39) to 4.4 (SD=0.44) cigarettes, p<0.05.* *Reported decreased productivity: Sub group differences: Five months after implementation of a total indoor ban on smoking, more staff heavy smokers (≥30 cigs/day) (46%) than moderate (10-29 cigs/day) (30%) or light smokers (<10 cigs/day) (4%) reported that the smoking ban had a negative effect on their work productivity (p<0.001). The authors note this was "apparently because of their need to leave the work area in order to smoke" [p.674].* *Changed eating locations to smoke:*	

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
				Five months after implementation of a total indoor ban on smoking, 42% smoker staff respondents reported that the smoke-free policy affected where they ate their workday meals (n=75), eating at least one meal a week away from the hospital in order to smoke. Sub-group differences: Staff who self-reported as heavy smokers (≥30 cigs/day) were more likely to report that the smoke-free policy affected where they ate their workday meals: 73% heavy smokers compared with 44% moderate smokers (10-29 cigs/day) and 26% light smokers (<10 cigs/day)(p=0.0008). **Attrition details** Not applicable	
Donchin (2004) **Authors** *Donchin & Baras* **Year** 2004 **Aim of study** *A process and outcome evaluation of policy implementation using two successive random-sample surveys among hospital employees (before the introduction and 6 months after) assessing attitudes toward the policy, short-term impact on smoking in unauthorized areas in the hospital, and changes in employee smoking behaviour.*	**Country** Israel **Urban/Rural setting** Urban *City* **Secondary Care Setting** Not Mental Health (Acute and/or Maternity) **Source population** Staff *Hospital's general employee population on payroll July 2000 (n=3670)* **Source population demographics** Occupation *Doctors and dentists 18.0%, nurses 30.3%, administrators and clerks 16.9%, technicians 22.8%, unskilled workers 12.0%* Age *<35 years 24.5%, 35– 44 years*	**Method of allocation** Investigator did not assign exposure Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *Implemented 1 Nov '00* **When assessed** Before implementation – single time point *3 months pre-policy* After implementation – single time point *6-9 months post-policy* **Where** Not Mental Health **Smokefree coverage** Smokefree building(s) **Supporting strategies/ interventions** Implementation committee Cessation support *Employees* Other *Smoking shelters ("booths") erected outside*	**Primary outcomes** Compliance - subjective *Observed smoking in unauthorized areas (''How often do you see people [employees, patients or visitors] smoking at work in places where smoking is banned?''); Locations of observed unauthorized smoking (post-policy only); Smoking habits at work (staff smokers)* Other consequence(s) - subjective *Mean cigarettes smoked (staff smokers, self-reported) in total and during work hours only)* Other consequence(s) - objective *Readiness to quit (staff smokers, based on Prochaska's stages of change model)* **Follow-up periods** Follow-up period(s) *9-12 months*	**Primary outcomes** Relevant results - compliance *Observed smoking in unauthorized areas: A significant reduction in observed smoking (by employees, patients, or visitors) in unauthorized areas was reported by staff in the hospital building after policy implementation: frequently observe smoking in unauthorized places (63.2% pre- vs. 41.4% post-, p value not given), occasionally observe smoking in unauthorized places (22.6% pre- vs. 16.3% post-, p value not given), never observe smoking in unauthorized places (14.2% pre- vs. 42.3% post-, p<0.001).* *Observed smoking in unauthorized areas, sub-group differences: smokers and non-smokers responded similarly*	**Limitations identified by author(s)** None identified by author(s) **Limitations identified by review team** *no control group for temporal confounders* **Evidence gaps/future research recommendations** Evidence gaps *Collecting specific data as to whom the covert smokers might be (hospital staff, or patients and visitors to the hospital) and how common the practice really is would be helpful to tailor-make further interventions aimed at eliminating smoking in the hospital.* **Source of funding**

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
Study design Before-and-after study (with different sample after intervention) **Quality score** + **External validity score** +	*27.8%, 45– 54 years 29.4%, 55+ years 18.3%* Sex *Males 36.5%* Education *No data available* **Recruitment** Recruitment method *Simple random sampling method was used: pre-policy survey based on a sample of 11% of 3,670 hospital workers; the post-policy survey drew a 12% sample of 3,705 workers employed at that time to allow for the exclusion of workers who already participated in the first survey. Surveys conducted by hospital's occupational health unit and school of public health. Interviewers sought out every worker entering each sample survey, presenting them with the questionnaire that was completed immediately and returned directly to interviewers. Confidentiality was promised though the questionnaires were not anonymous.* **Population selection criteria** Inclusion criteria *All salaried employees on the payroll in July 2000 (pre-policy sample) and April 2001 (post-policy sample) were eligible* Exclusion criteria not reported % participation agreement *90.4% (pre-policy), 92.8% (post-policy)* **Potential sources of bias** *Authors state pre- and post-*	*the hospital building; sale of tobacco products banned on site; Information campaign (2 months pre-policy) and press conference launch; Fines for violations authorised* **Sample size** Total sample *n=368 staff (pre-policy), n=364 (post-policy)* *Sample characteristics (pre- and post-policy):* *Doctors and dentists 17.1% (pre-) 13.5% (post-), nurses 27.4% 31.9%, administrators and clerks 14.9% 17.0%,technicians 28.0% 26.6%, unskilled workers 12.5% 11.0%; <35 years 23.1% (pre-) 22.5% (post-), 35– 44 years 26.9% 28.3%, 45– 54 years 29.3% 27.7%, 55+ years 20.7% 21.4%; Males 36.1% (pre-) 30.2% (post-); 0-12 years of education 23.2% (pre-) 25.4% (post-), 13-15 years of education 23.5% 18.5%, 16+ years of education 53.3% 56.1%. Smoking status: current smokers 19% (pre-) 19.5% (post-), past smokers 12.5% 19.5%.* **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported	**Method of analysis** Method(s) of analysis *36 employees participated in both surveys. Their data were included in the pre-policy survey findings only. Univariate comparisons between pre- and post-policy responses between the two surveys or between 'smoker' and 'non-smoker' responses within each survey were made using Fisher's Exact test for dichotomies and chi-square tests for categorical variables with more than two categories. Wherever a table contained a cell with an expected frequency <5, the P value reported is exact and not asymptotic. Logistic regression was the main tool used for multivariate analysis.*	*in the pre-policy survey. However, smokers were less likely to report observation of smoking in unauthorized places than non-smokers post-policy (p=0.03). Both smoker and non-smoker reporting in the post-policy survey was associated with education (p=0.03 and p=0.0001, respectively), the reporting of frequently observed smoking in unauthorized areas increased with the number of years of education. No significant association was found for gender, age or occupation.* *Locations of observed unauthorized smoking (post-policy only): 31% in public domain areas (corridors, balconies, staircases), 10.5% in several sites, 7.7% in the workstation, and 4.6% in covert areas (closed rooms, toilets).* *Smoking habits at work (staff smokers): A significant increase in staff smokers reporting they always usually leave their workstation to smoke post-policy (62.1%) compared with pre-policy (16.9%) (p<0.0001).* *Smoking habits at work (staff smokers), sub-group differences: post-policy self-reported compliance (leaving workstation to smoke) of smokers with the new regulations was associated with occupation: clerical staff (85.7%), nurses (76.5%) and doctors (66.7%) were most likely to comply while technicians (40.0%) and*	Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	samples are representative of eligible population; comparable demogs in Table 1 (no stats analysis) **Setting** *A 959-bed university hospital in Jerusalem, employing over 3,700 salaried workers and accommodating 42,580 inpatients and 201,185 outpatient visits (2001).*			*unskilled workers (e.g. cleaners, 47.1%)) were least likely to do so (p=0.04). No significant association was found for gender or years of education.* Relevant results - other *Mean cigarettes smoked (staff smokers): No appreciable change in the number of cigarettes smoked (in total or during work hours only) pre- and post-policy implementation. (Mean total cigarettes per day 13.6 (SD=10.4) (pre-), 12.9 (SD=10.4) (post-); mean cigarettes smoked during work hours 5.38 (SD=4.7) (pre-) 4.9 (SD=4.7) (post-).)* *Readiness to quit (based on Prochaska's stages of change model) (staff smokers): The majority of staff smokers, in both surveys, were classified in the pre-contemplation stage (49.2% pre- and 57.4% post-policy); few were classified in the preparatory stage (12.7% pre- and 8.2% post-policy). The distribution by stages of change was not associated with age, gender, education or occupation, or with degree of compliance to the new policy.* **Attrition details** Not applicable	
Erwin (1991) **Authors** *Erwin & Biordi* **Year** 1991 **Aim of study**	**Country** USA *Illinois* **Urban/Rural setting** Urban **Secondary Care Setting** Mental Health	**Method of allocation** Investigator did not assign exposure Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *Implemented 1 Mar '90 (announced 2 months earlier)*	**Primary outcomes** Compliance - subjective *Psychiatric patients' compliance (rate of requests to patients to terminate smoking a lit cigarette, rate of requests to family to desist 'smuggling' cigarettes to patients);*	**Primary outcomes** Relevant results - compliance *Psychiatric patients' compliance: Patient compliance with the smokefree policy, as reported by nursing staff, was higher 1 week after implementation than it was 3 weeks*	**Limitations identified by author(s)** None identified by author(s) Identified by review team *No description of analysis or significance values* **Limitations identified by**

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
This study presents the reactions of nursing staff members on two VA inpatient psychiatric wards who experienced the transition to smoke-free status. **Study design** Before-and-after study (with same sample after intervention) **Quality score** - **External validity score** +	**Source population** Staff *Nursing staff* **Source population demographics** Occupation *Ward A: 12 registered nurses, 2 licensed practical nurses, 2 nurses aides* *Ward B: 7 registered nurses, 3 licensed practical nurses, 3 nurses aides* **Recruitment** Recruitment method *Memos and reminders sent by head nurses to nursing staff to collect questionnaire from a confidential site.* **Population selection criteria** Inclusion criteria *All nursing staff members on the two acute psychiatric wards* Exclusion criteria not reported % participation agreement *100% (Pre-ban ward A), 100% (Pre-ban ward B), 63% (1 week post-ban ward A), 50% (1 week post-ban ward B), 100% (4 weeks post-ban ward A), 77% (4 weeks post-ban ward B)* **Potential sources of bias** *100% before; 50-63% 1wk after; 77-100% 4wk after; self-selection, small convenience sample* **Setting** *A VA (US Dept. of Veterans Affairs) hospital in an urban centre in Illinois. Two 21-bed acute care psychiatric wards for veterans with diagnose including schizophrenia,*	**When assessed** Before implementation – single time point *No date* After implementation – multiple time points *1 week following implementation and 4 weeks following implementation* **Where** Mental Health **Smokefree coverage** Other *Smokefree acute psychiatric wards (presume from the paper's introduction, the rest of hospital is smokefree)* **Supporting strategies/ interventions** Cessation support *Nursing interventions included "Encouraged patients to participate in smoking cessation groups"* Other *Interventions by nursing staff that address patients with the urge to smoke on the psychiatric ward (e.g. encouraging activities that foster energy replenishment/use; promoting physical benefits of not smoking and preventing harm; individualising care (p.r.n. medications, time outs); involving significant others in care).* **Sample size** Total sample *n=29* *Sample characteristics: 66% (n=19) registered nurses, 17% (n=5) licensed practical nurses, 17% (n=5) nurses aides* **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported	*Staff's rating of their own overall individual effectiveness (use of strategies) to help patients comply with smokefree (all self-report measures)* Other consequence(s) - subjective *Nursing staff's involvement in nursing interventions post-implementation that addressed patient's urge to smoke (all self-report measures): offered medications as needed (p.r.n. medications), encouraged room "time outs" to decrease stimulation, intervened verbally or physically to prevent a patient who demanded to smoke from harming self or others, encouraged patients to participate in smoking cessation groups.* **Follow-up periods** Follow-up period(s) *<3 months (date of baseline survey not stated)* **Method of analysis** Not reported	*later: 30% nursing staff on Ward A and 20% on Ward B requested patients to terminate smoking a lit cigarette 1 week post-implementation; these rates rose to 63% and 40% respectively 4 weeks post-implementation. (No p values calculated) After smokefree implementation, there was a decline in nursing staff reporting that they had discouraged family or significant others from "smuggling" cigarettes to patients, from 40% and 75% (Wards A and B) 1 week post-implementation to 20% and 60% 4 weeks post-implementation. (No p values calculated)* *Staff's rating of their own overall individual effectiveness (use of strategies) to help patients comply with smokefree: One week post-implementation, nursing staff ratings of their own overall individual effectiveness (use of strategies, regardless of the number and type) to help patients comply with smokefree on the wards by addressing their urge to smoke were 80% and 70% (Wards A and B) 'mildly' or 'moderately effective'; and 75% and 90% 'mildly' or 'moderately effective' 4 weeks post-implementation. (Data for 'not effective' or 'very effective' not reported). (No p values calculated)* Relevant results - other *After smokefree implementation, there was a decline in nursing staff reporting that they had offered*	**review team** *Data analysis unreported* **Evidence gaps/future research recommendations** Evidence gaps *Few articles document the effects of establishing smokefree psychiatric units (1991)* **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	depression and post-traumatic stress disorder			*medications as needed (p.r.n. medications), from 60% and 75% (Wards A and B) 1 week post-implementation to 40% and 40% 4 weeks post-implementation. (No p values calculated)* *After smokefree implementation, there was little change in nursing staff reporting that they had encouraged room "time outs" to decrease stimulation, from 40% and 88% (Wards A and B) 1 week post-implementation to 60% and 70% 4 weeks post-implementation. (No p values calculated)* *After smokefree implementation, there was a decline in nursing staff reporting that they intervened verbally or physically to prevent a patient who demanded to smoke from harming self or others, from 20% and 37% (Wards A and B) 1 week post-implementation to 20% and 10% 4 weeks post-implementation. (No p values calculated)* *After smokefree implementation, there was a decline in nursing staff reporting that they had encouraged patients to participate in smoking cessation groups from 80% and 100% (Wards A and B) 1 week post-implementation to 60% and 50% 4 weeks post-implementation. (No p values calculated)* **Attrition details** Not applicable	

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
Etter (2008) **Authors** *Etter, Khan & Etter* **Year** 2008 **Aim of study** *To compare the acceptability and efficacy of a partial smoking ban and total ban in an in-patient psychiatric hospital* **Study design** Before-and-after study (with different sample after intervention) *(The staff sample consisted of largely the same people who answered successive surveys, although results not linked)* **Quality score** + **External validity score** +	**Country** Switzerland **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients Staff Specific Ward(s)/Department(s) **Source population demographics** Health status *Patients: had mainly psychotic disorders, depression and personality disorders.* Age *Adults* **Recruitment** Recruitment method *A physician, nurse or psychologist distributed self-report questionnaires to patients and staff after explaining the study and obtaining written informed consent. Patients answered the survey as soon as their condition allowed (about 1 week after admission for most). The distributing staff completed the questionnaires with patients who were unable to answer by themselves.* **Population selection criteria** Inclusion criteria *All patients and staff present at the time of data collection* Exclusion criteria not reported % participation agreement *Patients: 86.0% (2003 no ban), 67.5% (2006 total ban); Staff: 100%*	**Method of allocation** Not applicable **Smokefree implementation stage** Smokefree in place *Implemented in Jan 06* **When assessed** Before implementation – multiple time points *Oct 03 (pre ban), Apr 04 (2 months post-partial ban), Dec 05 (20 months post-partial ban/pre-total ban)* After implementation – single time point *Mar-May 06 (3-5 months post-total ban)* **Where** Mental Health **Smokefree coverage** Smokefree building(s) *Patients (except those in locked rooms) and staff were allowed to leave the unit to smoke outside* **Supporting strategies/ interventions** Posters/signage Cessation support Pharmacotherapies/NRT *NRT free for patients, not for staff.* Closure of smoking rooms Staff training **Sample size** Total sample *2003 (no ban) n=106 (n=49 patients, n=57 staff), 2006 (total ban) n=134 (n=77 patients, n=57 staff)* *Sample characteristics: Patients 2003 (no ban) 91.8% Ever smoked 100+ cigarettes, Daily smokers 73.5%, Occasional (non-daily) smokers 6.1%, Former smokers 12.2%, Never smokers 8.2%; mean age 39.9 years; 59.2% men. Patients 2006 (total ban) 81.6% Ever smoked 100+ cigarettes, Daily smokers*	**Primary outcomes** Compliance - subjective *Perceived exposure to ETS among non-smokers (patients and staff) in unit (bedrooms, dining rooms, corridors); Annoyance from ETS among non-smokers (patients and staff) in unit (bedrooms, dining rooms, corridors)* Other consequence(s) - subjective *Smoking behaviour of patients who smoke (Mean cigarettes per day, now; Mean cigarettes per day, before admission; Smoke more/less/same since admission); Smoking cessation of patients who smoke; Provision of smoking cessation interventions (by staff) (measured in 2005 and 2006 only)* **Follow-up periods** Follow-up period(s) *29-31 months* **Method of analysis** Method(s) of analysis *Chi-square tests and odds ratios to compare proportions, and independent-sample t tests to compare means.*	**Primary outcomes** Relevant results - compliance *Perceived exposure to ETS among non-smokers (patients and staff) in unit (bedrooms, dining rooms, corridors): Between 2003 (no ban) and 2006 (total ban), there was a non-significant increase in the percentage of non-smokers patients reporting that they were 'never' exposed to ETS in their unit in bedrooms (69.2% to 88.5%, p=0.058), in dining rooms (30.8% to 73.1%, p=0.09) and in corridors (23.1% to 65.4%, p=0.029). Between 2003 (no ban) and 2006 (total ban), there was a non-significant increase in the percentage of non-smokers staff reporting that they were 'never' exposed to ETS in their unit in bedrooms (16.7% to 31.0%, p=0.041), in dining rooms (26.2% to 71.4%, p=0.004) and in corridors (9.5% to 38.1%, p=0.006). After the 2006 total ban, 31% of non-smokers (staff and patients) reported that they were 'often' or 'sometimes' exposed to ETS in their unit in bedrooms, 12.0% were 'often' exposed to ETS in corridors (no p values given) and none reported that they were 'often' exposed to ETS in dining rooms and offices. Non-smoker staff reported more exposure to ETS than patients across all surveys.* *Annoyance from ETS among non-smokers (patients and staff) in unit (bedrooms, dining rooms, corridors): Between 2003 (no ban) and 2006*	**Limitations identified by author(s)** Identified by author(s) *Self-reports are subject to social desirability bias. Independent sample t-tests are too conservative and may underestimate the statistical significance (as many of the same staff took part in several surveys). The 2006 survey was conducted 3 months after implementation and may not reflect long-term acceptability and impact. The sample size was relatively small, which increases the risk of type II error. Without a control group, naturally occurring time trends could not be distinguished.* **Limitations identified by review team** *Follow-up measures taken 3-5 months post-total ban, subject selection was consistent with no significant diffs btw group demographics* **Evidence gaps/future research recommendations** Evidence gaps *"The acceptability and impact of total smoking bans in psychiatry hospitals is incompletely documented, in particular in Europe."* **Source of funding** Other

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	(2003 no ban), 91.9% (2006 total ban) **Potential sources of bias** *staff 92-100% participation ('03, '06), patients 86-68%. No data on non-responders. Small sample size.* **Setting** *Two in-patient, adult units of the Psychiatry Department of the Geneva University Hospitals: an admission and short-stay unit (16 beds, mean duration of stays=17 days, median=7 days) and a medium-stay unit (16 beds, mean duration of stays=37 days, median=15 days). Patients had mainly psychotic disorders, depression and personality disorders.*	*65.8%, Occasional (non-daily) smokers 2.6%, Former smokers 15.8%, Never smokers 15.8%; mean age 41.0 years; 60.0% men.* *Staff 2003 (no ban) 64.9% Ever smoked 100+ cigarettes, Daily smokers 26.3%, Occasional (non-daily) smokers 7.0%, Former smokers 22.8%, Never smokers 43.9%; mean age 38.8 years; 35.1% men. Staff 2006 (total ban) 57.9% Ever smoked 100+ cigarettes, Daily smokers 26.3%, Occasional (non-daily) smokers 7.0%, Former smokers 22.8%, Never smokers 43.9%; mean age 40.7 years; 37.5% men.* **Baseline comparison** Not applicable **Study sufficiently powered?** - *Authors note that the sample size was relatively small, which increases the risk of type II error.*		*(total ban), there was a non-significant increase in the percentage of non-smokers patients reporting that they were 'absolutely not' annoyed by ETS in their unit in bedrooms (61.5% to 76.9%, p=0.108), in dining rooms (38.5% to 80.8%, p=0.007) and in corridors (38.5% to 69.2%, p=0.162). Between 2003 (no ban) and 2006 (total ban), there was a significant increase in the percentage of non-smokers staff reporting that they were 'absolutely not' annoyed by ETS in their unit in dining rooms (31.0% to 81.00%, p<0.001) and a non-significant increase in bedrooms (23.8% to 45.2%, p=0.095), and in corridors (23.8% to 52.4%, p=0.023). After the 2006 total ban, 15.8% of non-smokers (staff and patients) reported that they were 'a lot' or 'somewhat' annoyed by ETS in their unit in bedrooms, 13.6% in corridors and 1.8% in dining rooms (no p values given). Non-smoker staff reported more annoyance from ETS than patients across all surveys.* Relevant results - other *Smoking behaviour of patients who smoke: There was no significant change in the cigarette consumption in the clinic of patients who smoked between 2003 (pre-ban) and 2006 (total ban) (24.1 to 23.7 mean cigarettes per day now (p=0.81) and 24.3 to 29.4 mean cigarettes per day before admission (p=0.17)). There was no significant change in smoking prevalence since admission in the clinic*	

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
				of patients who smoked between 2003 (pre-ban) and 2006 (total ban). In 2003, 42.2% patients who smoked reported smoking more in the clinic than before admission and in 2006 39.6% reported smoking more in the clinic than before admission (no p values given). *Smoking cessation of patients who smoke: Between 2003 (no ban) and 2006 (total ban) there was a significant increase in the patients who smoked reporting that during their current stay a physician or nurse provided medication (like a patch, gum or Zyban) to quit smoking (5.1% to 52.2%, p<0.001) and non-significant increase in those reporting staff advised them to quit smoking (15.4% to 42.6%, p=0.006) and staff helped them to quit smoking (2.6% to 19.6%, p=0.015).* *Provision of smoking cessation interventions (by staff): Staff reported that the proportion of patients to whom help was provided to quit smoking increased from 26.9% in 2005 (post-partial ban) to 58.2% in 2006 (full ban) (p=0.007, OR 3.8, 95% CI (1.6-9.3)). Staff reported that the proportion of patients to whom NRT was provided significantly increased from 42.3% in 2005 (post-partial ban) to 74.5% in 2006 (full ban) (p<0.001, OR 4.0, 95% CI (1.6-9.9)).* **Attrition details** Not applicable	

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
Fernández (2008) **Authors** *Fernández et al.* **Year** 2008 **Aim of study** *To assess changes in second-hand smoke exposure by means of airborne nicotine concentrations in public hospitals of Catalonia (Spain) before and after a comprehensive national smoking ban.* **Study design** Other *Before and after measurement of air vapour-phase nicotine* **Quality score** + **External validity score** ++	**Country** Spain **Urban/Rural setting** Not reported **Secondary Care Setting** Not reported **Source population** Everyone on the premises **Source population demographics** None reported **Recruitment** Recruitment method *All hospitals who had actively implemented the smoke-free policy were included* Not applicable **Population selection criteria** Inclusion criteria not applicable Exclusion criteria not applicable % participation not reported **Potential sources of bias** Not applicable **Setting** *44 of 61 public hospitals (directly managed by or serving the national health service), all who have joined the Catalan Network for Smoke-Free hospitals and implemented the Smokefree Hospital Project.*	**Method of allocation** Not applicable Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *January 1st 2006* **When assessed** Before implementation – single time point *September-December 2005* After implementation – single time point *September-December 2006* **Where** Not reported **Smokefree coverage** Smokefree building(s) **Supporting strategies/ interventions** Cessation support *to professionals, patients and visitors* Staff training *tobacco control training* Other *Guaranteeing common follow up and evaluation* **Sample size** Total sample *44 public hospitals* *Sample characteristics: 22 county hospitals of basic health care level, 10 reference hospitals and 12 university hospitals. Median number of beds=250, with 18 hospitals >300 beds. Median number of employees=612, with one third hospitals >800 workers.* **Baseline comparison** Not applicable **Study sufficiently powered?** ++	**Primary outcomes** Compliance - objective *Overall change in median airborne nicotine concentrations across the hospitals before and after smokefree implementation; Change in median airborne nicotine concentrations by location across the hospitals before and after smokefree implementation. Airborne nicotine concentration levels sampled using a plastic cassette (with a windscreen on one side) containing a 37mm diameter filter treated with sodium bisulphate. 7 devices in hospitals with ≥300 beds, 5 devices in hospitals with 100-300 beds and 3 devices in hospitals <100 beds. Devices installed by trained researcher in 7 public and staff locations: cafeterias, surgical area staff dressing rooms, general surgery unit corridors, general medicine hospitalization unit corridors, top floor fire escapes, emergency department waiting rooms, and main entrance halls. Devices installed (free-hanging, away from regular smoking areas, corners, shelves and curtains) for 7 days in the same locations during September–December in 2005 and 2006.* **Secondary outcomes** Not reported **Follow-up periods** Follow-up period(s) *12 months* **Method of analysis** Method(s) of analysis *Medians and interquartile ranges (IQR) to describe the data.*	**Primary outcomes** Relevant results - compliance *Overall change in median airborne nicotine concentrations across the 44 sampled hospitals before and after the implementation of smokefree legislation:* *198 standard locations across 44 hospitals were sampled for vapour-phase nicotine (a proxy measure for ETS) before and after the implementation of smokefree legislation (in Sep-Dec '05 and in Sep-Dec '06 respectively). Airborne nicotine was detected in 96.5% of the locations in 2005 (191/198) and decreased to 66.2% of the locations in 2006 (131/198 sample). The overall median nicotine concentration level significantly declined by 56.5%, from 0.23 mcg/m3 (IQR, 0.13–0.63) in 2005 (pre-implementation) to 0.10 mcg/m3 (IQR, 0.02–0.19) in 2006 (post-implementation) (p<0.01). There were no sub-group differences in median nicotine concentrations before and after smokefree implementation by the type of hospital (county, reference or university) or the size of hospital (number of beds and number of employees).* *Change in median airborne nicotine concentrations by location across the 44 sampled hospitals before and after the implementation of smokefree legislation:* *Median nicotine concentration levels (a proxy measure for ETS levels)*	**Limitations identified by author(s)** Identified by author(s) *Airborne nicotine measured in the 44 hospitals voluntarily affiliated to the Catalan Network of Smoke-free Hospitals, which are thought to perform better in tobacco control than those hospitals (n=17) still not affiliated. The previous Catalan legislation banned smoking in hospitals, although smoking rooms and cafeterias for smokers or with smoking areas were allowed. Before the new law, most of the hospitals not included in this study had smoking rooms, and some of them had developed initiatives for tobacco control on their own.* *A number of lost devices occurred in places where high nicotine concentrations were found, such as fire escapes, cafeterias or emergency department waiting rooms. Although these selective losses could reduce the overall nicotine concentrations, the analyses by location show a consistent pattern of decrease* **Limitations identified by review team** **Evidence gaps/future research recommendations**

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
			Paired differences compared using Wilcoxon signed rank test for bivariate analyses	*declined significantly in all 7 locations measured across the 44 hospitals between 2005 (before smokefree implementation) and 2006 (after smokefree implementation). Before smokefree implementation, median nicotine concentrations were highest in cafeterias (0.62 mcg/m3, IQR 0.23–3.43), followed by top-floor fire escapes (0.31 mcg/m3, IQR 0.14–0.87) dropping by 83.9% (to 0.10 mcg/m3, IQR 0.02–0.18) and by 51.6% (to 0.15 mcg/m3, IQR, 0.02–0.22), respectively (p<0.01). Before smokefree implementation, median nicotine concentrations were lowest in staff dressing rooms (in the surgical area) (0.18 mcg/m3, IQR 0.18–1.17) dropping by 83.3% (to 0.03 mcg/m3, IQR 0.02–0.22, p<0.05). The greatest declines in median nicotine concentration levels after smokefree implementation occurred in general surgery hospitalization unit corridors, dropping by 97.8% (from 0.23 mcg/m3, IQR 0.09–0.42) to concentrations under the limit of quantification (0.01 mcg/m3, IQR 0.01–0.14, p<0.01); and in general medicine hospitalization unit corridors, dropping by 97.2% (from 0.18 mcg/m3, IQR 0.10–0.33) to concentrations also under the limit of quantification (0.01 mcg/m3, IQR 0.01–0.10, p<0.01). Following the implementation of smokefree, airborne nicotine concentrations declined to a lesser extent in the emergency department waiting*	None reported **Source of funding** Government

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
				rooms, by 30.4% (from 0.23 mcg/m3 (IQR 0.15–0.52) to 0.16 mcg/m3 (IQR 0.7–0.24), p<0.01), and at the main hall entrance, by 31.6% (from 0.19 mcg/m3 (IQR 0.13–0.63) to 0.13 mcg/m3 (IQR 0.06–0.22), p<0.01). *Sub-group differences: For the 33 hospitals where airborne nicotine concentrations levels were measured in the cafeterias, before the smokefree legislation was implemented, smoking was still totally permitted in the cafeteria in 3 hospitals, partially permitted in the cafeteria in 6 hospitals and already totally prohibited in the cafeteria in 24 hospitals. The median nicotine concentrations were highest in cafeterias where smoking was partially permitted (3.67 mcg/m3 (IQR, 3.04–6.25)) and totally permitted before the ban (3.61 mcg/m3 (IQR, 0.82–11.48)) dropping by 93.2% (to 0.25 mcg/m3 (IQR, 0.03–0.42), p<0.01) and by 97.0% (to 0.11 mcg/m3 (IQR, 0.05–0.19), p=0.109) after the ban, respectively. The median nicotine concentration level was already low in hospital cafeterias where smoking was already prohibited in 2005 (0.48 mcg/m3 (IQR 0.18–0.68)) and declined by 81.3% after implementation (to 0.09 mcg/m3 (IQR, 0.02–0.17), p<0.01).* **Attrition details** Not applicable	
Gadomski (2010)	**Country** USA	**Method of allocation** Not applicable	**Primary outcomes** Other consequence(s) - objective	**Primary outcomes** Relevant results - other	**Limitations identified by author(s)**

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
Authors *Gadomski et al.* **Year** 2010 **Aim of study** *To addresses the following questions: Does the institution of hospital smoking bans reduce the percentage of inpatients who smoke or increase the percentage who sign out against medical advice? What are the extended effects (beyond 1 year after implementation) of medical campus smoking bans on employee smoking rates?* **Study design** Before-and-after study (with different sample after intervention) *Patients* Before-and-after study (with same sample after intervention) *Staff* **Quality score** + **External validity score** ++	**Urban/Rural setting** Not reported **Secondary Care Setting** Not Mental Health (Acute and/or Maternity) **Source population** Patients Staff **Source population demographics** None reported **Recruitment** Recruitment method *All patients admitted to hospital in study period* **Population selection criteria** Inclusion criteria *Patients: all admitted to hospital* *Staff: those reporting in both 2005 and 2007 with anniversary dates between March and June AND/OR all those employees who reported pre ban smoking status* % participation not reported **Potential sources of bias** *All participants during time frame.* **Setting** *A 180-bed, acute care inpatient teaching facility in a small town in upstate New York*	Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *1st July 2006* **When assessed** Before implementation – single time point *Staff: March-June 05* Before implementation – multiple time points *Patients: each month January 05-June 06* After implementation – single time point *Staff: March-June 06* After implementation – multiple time points *Patients: July 06-Spetember 08* **Where** Not Mental Health **Smokefree coverage** Smokefree building(s) Smokefree doorways/entrances Smokefree grounds *Although doesn't say how comprehensive grounds ban is* **Supporting strategies/ interventions** Cessation support Pharmacotherapies/NRT Other *Campus map detailing new smoke free borders.* *Staff, community and patient education* **Sample size** Total sample *Average of n=959 patients per month pre-ban, n=988 per month post-ban.* *Cohort of n=489 staff reporting in both 05 and 07. n=624 staff with anniversary date Mar-Jun 05; n=661 staff with anniversary date Mar-Jun 06; n=1112 staff with anniversary date Mar-Jun 07 (07 sample includes new hires and management staff).*	*Inpatient volume* *Percentage of patients who smoke* *Patients signing out against medical advice* *NRT prescriptions* *Staff smoking rates* **Follow-up periods** Follow-up period(s) *1 year: March-June pre and post ban* **Method of analysis** Method(s) of analysis *Inpatient Electronic Medical Record was used to monitor inpatient smoking prevalence.* *Nursing records of patients signing out against medical advice* *Computerised inpatient doctors orders to pharmacy for NRT* *No data given on analysis methods for the above.* *Smoking prevalence amongst cohort of staff (n=489) pre and post ban in paired replicates compared using McNemar test.* *Smoking prevalence amongst all employees in database compared using a t test.*	*18 months pre-ban, average or 959 patients admitted/month; 23 months post-ban, average of 988 patients admitted/month* *Monthly average of patients who smoke approximately 21.6% following ban, little variation pre ban to post ban* *% patients signing out AMA with reason of having to smoke 13.8% 6 months pre ban, 13.6% post ban, 0% in 2007* *Smoking amongst all patients signing out AMA 48.3% 6 months pre ban, 59% 6 months post ban, 50.8% 2007* *NRT prescriptions increased from 832 2 years prior to ban (April 1st 2004-March 31st 2006) to 2475 in 2 years post ban (April 1st 2006-March 31st 2008). Chow test highly significant for a break point in June 2006 (p=.008, 1 month prior to ban).* *Employee smoking:* *Among cohort of 489, 12% self-reported smoking rates in 2005, 7.5% 2007 (McNemar significant at P < 0.001).* *Among all employees, self-reported smoking rates of 14.3% March-June 2005, 14.8% march-June 2006, 9.4% March-June 2007 (P < 0.0002).* **Attrition details** Not reported *Not reported for staff smoking*	Identified by author(s) *Cannot evaluate individual components of the University of Michigan Smoke Free Hospitals Implementation Plan as they were all implemented simultaneously.* *Smoking status was self reported* **Limitations identified by review team** *No baseline group.* **Evidence gaps/future research recommendations** None reported **Source of funding** Other

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
		Sample characteristics: *not reported* **Baseline comparison** Not reported **Study sufficiently powered?** Not applicable		*prevalence calculations* Not applicable	
Haller (1996) **Authors** *Haller, McNiel & Binder* **Year** 1996 **Aim of study** *To study the effects of a complete smoking ban on a locked psychiatric unit, specifically: what are the staff and patient attitudes toward initiating a total smoking ban on a locked unit with no smoking area or "smoking passes"? How do these attitudes change after a ban had been in effect? What is the ban's impact on the unit milieu?* **Study design** Before-and-after study (with different sample after intervention) **Quality score** + **External validity score** +	**Country** USA *California* **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients **Source population demographics** Health status *PATIENTS Diagnosis: Schizophrenia 19% (pre-ban) 32% (post-ban), Mood disorder 48% (pre-ban) 28% (post-ban), Other (pre-ban) 33% (post-ban) 40%* Speciality care *PATIENTS 83% of the patients discharged over the 5 months of the study were civilly committed* Smoking status *PATIENTS Current smoker: Yes 41% (pre-ban) 53% (post-ban), No 59% (pre-ban) 47% (post-ban)* Age *PATIENTS Mean age 44 years (pre-ban) 42 years (post-ban)* Sex *PATIENTS Male 41% (pre-ban) 57% (post-ban)* Ethnicity *PATIENTS White 63% (pre-ban) 71% (post-ban), Non-white 37% (pre-*	**Method of allocation** Investigator did not assign exposure Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *Yes (implementation date not reported, early 1990s)* **When assessed** Before implementation – single time point *chart data 1 month pre-ban* After implementation – multiple time points *chart data 1, 2, 3 and 4 months post-ban* **Where** Mental Health *Locked inpatient unit* **Smokefree coverage** Smokefree building(s) Smokefree grounds **Supporting strategies/ interventions** Pharmacotherapies/NRT *Prescriptions for patients* Other *Staff education to recognize and treat nicotine withdrawal symptoms/cigarette cravings; written information for patients (use of nicotine gum and how to manage cravings)* **Sample size** Total sample *Rev 6: n=27 (pre-ban), n=26 (1 month post-ban), n=30 (2 months post-ban), n=36 (3 months post-ban), n=43 (4 months post-ban) (n=135 total post-ban)* *Sample characteristics = Source population*	**Primary outcomes** Other consequence(s) - objective *Indicators of patient disruption/ward functioning: received p.r.n. medication, secluded, restrained, discharged against medical advice, eloped (chart data retrospectively abstracted). Proportion of 8 hours shifts with and without aggressive behaviour: physical aggression against other people, against objects or against self, verbal aggression (using the Overt Aggression Scale (Yudofsky et al '86), a behavioural checklist routinely completed at end of every 8 hour shift).* **Follow-up periods** Follow-up period(s) *3-5 months* **Method of analysis** Method(s) of analysis *Pre-post comparisons were analysed with t-test (two-tailed). Evaluation of the impact of the ban on objective indices of ward functioning was conducted using chi-square analyses, in which the 1 month pre-ban (pre-test) and each of the first 4 months post-ban were compared (post-tests).*	**Primary outcomes** Relevant results - other *Indicators of patient disruption/ward functioning: A review of chart data for patients discharged from the unit compared data from 1 month before the ban with data from 1, 2, 3 and 4 months after the ban.* *A review of patient chart data showed no significant differences across the five time periods in the proportion of patients who were secluded: 26% (of n=27) patients 1 month prior, 23% (of n=26) patients 1 month post, 20% (of n=30) patients 2 months post, 25% (of n=36) patients 3 months post and 14% (of n=43) patients 4 months post implementation (p<0.05). Nor significant differences in the proportion of patients who were restrained: 19% (of n=27) patients 1 month prior, 15% (of n=26) patients 1 month post, 7% (of n=30) patients 2 months post, 6% (of n=36) patients 3 months post and 7% (of n=43) patients 4 months post implementation (p<0.05).* *There were no significant differences in the proportion of patients who received PRN medications across the five assessment periods: 74% (of n=27) patients 1 month prior, 62% (of n=26)*	**Limitations identified by author(s)** Identified by author(s) *The study was completed in an area with a reputation for "health consciousness" (San Francisco), and only half the patients were current smokers. Smoking rates may differ across the country.* **Limitations identified by review team** *Risk self-selection bias, unvalidated outcome measures, no control group* **Evidence gaps/future research recommendations** Evidence gaps *Studies of smoking bans in psychiatric facilities which do not permit smoking in specified areas or smoking passes* **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	ban) 29% (post-ban) **Recruitment** Recruitment method Not applicable **Population selection criteria** Inclusion criteria *Chart data for all hospitalised patients discharged 1 month before and 1, 2, 3, and 4 months after ban implementation* Exclusion criteria not reported % participation agreement *not applicable* **Potential sources of bias** *patients 78% (pre-ban) 85% (post-ban), staff 81% (pre-ban) 64% (post-ban) participation; chart data for 100% patients* **Setting** *A 16-bed locked inpatient unit in San Francisco, CA, with a 2 week mean length of stay.*	*characteristics. No statistically significant differences in demographic and clinical features between the pre-ban sample and the total post-ban sample.* **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported		*patients 1 month post, 70% (of n=30) patients 2 months post, 61% (of n=36) patients 3 months post and 51% (of n=43) patients 4 months post implementation (p<0.05).* *There were no significant differences across the five time periods in the proportion of patients who were discharged against medical advice: 4% (of n=27) patients 1 month prior, zero (of n=26) patients 1 month post, 20% (of n=30) patients 2 months post, 8% (of n=36) patients 3 months post and 7% (of n=43) patients 4 months post implementation (p<0.05). Nor significant differences in the proportion of patients who eloped: zero (of n=27) patients 1 month prior, zero (of n=26) patients 1 month post, 7% (of n=30) patients 2 months post, 3% (of n=36) patients 3 months post and zero (of n=43) patients 4 months post implementations (p<0.05).* *Proportion of 8 hours shifts with and without aggressive behaviour: There was no significant change in the proportion of 8 hour shifts in which physical aggression against other people or physical aggression against objects occurred over the 1 month preceding the ban and the 4 months following the ban. The proportion of 8 hour shifts in which physical aggression against self occurred increased during the second month (from 1.2% to 17.9%), and returned to baseline 3 months (1.2%) and 4*	

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				months (14.3%) following the ban (Chi-square=33.77, df=4, p<0.01). The proportion of 8 hour shifts in which verbal aggression occurred decreased 1 month following the ban (from 35.7% to 21.4%), increased during the second month (60.7%), and returned to baseline at 3 (23.8%) and 4 months (35.7%) following the ban (Chi-square=20.45, df=4, p<0.01). [Direction of effect favours smokefree] **Attrition details** Not applicable	
Hempel (2002) **Authors** *Hempel et al* **Year** 2002 **Aim of study** *To determine the effects of a total smoking ban on the health and behaviour of forensic patients in a maximum security psychiatric hospital* **Study design** Before-and-after study (with same sample after intervention) **Quality score** + **External validity score** +	**Country** USA **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients **Source population demographics** Health status *Patients are under one of the following designations: incompetent to stand trial, not guilty by reason of insanity (NGRI), or the civilly committed who are found to be manifestly dangerous* **Recruitment** Recruitment method *Retrospective chart review performed on 140 patients who had been resident on the units for four weeks prior to and four weeks post implementation* **Population selection criteria** Inclusion criteria *To be included, a patient must have*	**Method of allocation** Not applicable Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *December 1st 1998* **When assessed** Before implementation – single time point *Four weeks prior to implementation* After implementation – single time point *Four weeks post implementation* **Where** Mental Health **Smokefree coverage** Smokefree building(s) Other *States 'on hospital property'* **Supporting strategies/ interventions** Pharmacotherapies/NRT Other *Education about potential symptoms of withdrawal* *Any tobacco product found on patients would be considered contraband, seized and appropriate actions taken against the individual*	**Primary outcomes** Other consequence(s) - subjective *DISRUPTIVE BEHAVIOURS* *Verbal aggression: Verbal behaviour viewed by staff or physician as hostile or threatening and directed towards a person or object without the application of physical force. This was to be recorded in the patient's chart by staff or physician.* *Physical aggression: Behaviour viewed by staff or physician as hostile or threatening toward a person or object with the application of physical force. This was to be documented in the patient's chart.* *Loss of privileges: Behaviours observed by staff or physician, whether physical or verbal, resulting in physician orders mandating a loss of privilege.* Other consequence(s) - objective *DISRUPTIVE BEHAVIOURS*	**Primary outcomes** Relevant results - other *SICK CALLS* *There were non-significant post-ban declines in the non-smokers, Z = -0.62, and in the light smokers Z = -0.36. There was a significant 54% decline in the moderate smokers, Z = -2.07, p=0.038. There was a significant 61% decline in the heavy smokers, Z = -2.67, p=0.008.* *DISRUPTIVE BEHAVIOURS* *There was a non-significant post-ban decline in disruptive behaviours among the non-smokers, Z = -0.26. There was a non-significant increase among the light smokers, Z = -0.41. There was a significant 49% decline in disruptive behaviours among the moderate smokers, Z = -2.24 p=0.025 and heavy smokers, Z = -2.71, p=0.007* *The only significant change in individual components of the 'disruptive behaviours' was a post ban*	**Limitations identified by author(s)** Identified by author(s) *The design of this study provided little detail about the first few days of smoking cessation when withdrawal signs and symptoms generally reach their peak* *Data still would have been more complete if nicotine replacement therapy had been systematically recorded.* *As a result of its archival nature, the study focused on observable incidents, recorded in the medical records.* *Due to some cigarette smuggling, the researchers could not be certain of the exact degree and timing of tobacco abstinence.* **Limitations identified by**

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	resided on the unit at least four weeks prior to and four weeks after the start of the study Exclusion criteria not reported **Potential sources of bias** **Setting** *A maximum security forensic campus (Vernon Campus) of the North Texas State Hospital*	**Sample size** Total sample *140 patients.* *Sample characteristics: 86% male, 14% female; 50% Black, 31% White, 16% Hispanic, 2% Asian. Aged 19- 75 years (mean 39 years). Almost all suffered from a disorder that resulted in psychosis at some time prior to or during their hospitalization: most common diagnosis was schizophrenia, paranoid type; remaining diagnosed with another form of schizophrenia, schizoaffective disorder, bipolar disorder, delusion disorders or major depression.* *Four groups: (i) non-smoker (n=30), (ii) light (n=30), 1-9 cigs/day, (iii) moderate (n=34), 10-18 cigs/day, (iv) heavy (n=46), ≥19 cigs/day. Smokers consumed mean 14 cigs/day, usually filtered.* **Baseline comparison** Not applicable **Study sufficiently powered?** Not applicable	*PRN for agitation: Instances of a medication specifically prescribed on the physician order sheet for ''agitation.'' Agitation was commonly noted as irritability or restlessness as observed by the staff or verbalized by the patient to staff.* *PRN for aggression: Instances of a medication specifically prescribed on the physician's order sheet for what was characterized as ''verbal'' or ''physical'' aggression.* *Restraint and seclusion: Due to their similarity and low numbers of occurrence, these were combined into one category. Seclusion was operationally defined as mandatory restriction of a patient either to a quiet room or other designated area of the hospital ward under observation by designated staff. Restraint was defined as mandatory restriction of a patient in a restraint room with the application of leather restraints and/or chemical sedation. Both restraint and seclusion were ordered by a physician and documented in physician orders.* *NON-DISRUPTIVE BEHAVIOURS* *Sick call: As documented in the physician's orders, a visit of the patient to the medical doctor for a physical complaint. Common complaints were upper and lower*	*decline in verbal aggression in heavy smokers, Z = -2.12, p=0.034. The post ban decline in verbal aggression in non smokers closely approached significance, Z = -1.91, p=0.56. The only suggestion of adverse changes were non-significant increases in seclusion/restraint in light smokers and in PRN medications for aggression in light and heavy smokers* **Attrition details** Not applicable	**review team** **Evidence gaps/future research recommendations** Future research recommendations *Future studies of a smoking ban affecting this sort of population might provide additional insight through recording the subjective responses of the patients before and during the withdrawal period.* *As the smoking ban affected hospital staff at least as much as the patients, systematically recording staff expectations and responses would add to the total picture of a psychiatric hospital smoking ban and its consequences.* *There remains a need for prospective studies of psychiatric hospital smoking bans, including effects on both staff and patients, as well as physical data on nicotine consumption.* **Source of funding** Not reported

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			respiratory tract difficulties, gastrointestinal difficulties, and pain. *Weight: Weights were recorded weekly for all patients. A mean weight was obtained for the ten-week pre-test period as well as a mean weight for the ten week post-test period.* **Follow-up periods** Follow-up period(s) *Four weeks, with the exception of weight which was 10 weeks post ban* **Method of analysis** Method(s) of analysis *Sick calls and disruptive behaviours pre and post ban were compared using the Wilcoxon signed ranks test*		
Hudzinski (1990) **Authors** *Hudzinski & Frohlich* **Year** 1990 **Aim of study** *To research how tobacco smoke affects employees or patients while at the institution, the acceptance of a no-smoking policy before and after its implementation, and the consequences of the policy on the smoker (particularly confined to responses of employees).* **Study design** Before-and-after study (with same sample after intervention)	**Country** USA *Louisiana* **Urban/Rural setting** Not reported **Secondary Care Setting** Both **Source population** Staff *Employees and staff physicians* **Source population demographics** None reported **Recruitment** Recruitment method *Questionnaire (including statement of purpose and completion instructions) mailed to all employees and to +2000 randomly selected patients. The same individuals were re-contacted and invited to respond to a similar questionnaire 6 and 12 months later.*	**Method of allocation** Investigator did not assign exposure Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *Implemented 1986* **When assessed** Before implementation – single time point *6 months pre-ban* After implementation – multiple time points *6 months post-ban and 12 months post-ban* **Where** Not Mental Health **Smokefree coverage** Smokefree building(s) Ban exclusions *Patient smoking permitted on the acute psychiatry inpatient unit by physician approval* Other *A "comprehensive campus-wide smokefree environment"*	**Primary outcomes** Other consequence(s) - subjective *Staff smoking behaviours (smoking status, cigarettes per day, smoking during/after work hours); Staff cessation intention and behaviour (all self-reported using Likert-scales)* **Follow-up periods** Follow-up period(s) *12 months and 18 months* **Method of analysis** Method(s) of analysis *Responses (nominal and ordinal data) were coded and the "data were analyzed using survey statistical methods (Rosenberg 1986)". All physician data were collapsed into the employee response category.*	**Primary outcomes** Relevant results - other *Smoking status (staff): Six months before and* *after the policy was implemented, 22% and 20% respectively, of hospital staff self-reported that they smoked, and 12 months after the policy was implemented this was reduced to 14% of hospital staff (Chi-square=11.53, p<0.003).* *Cigarettes per day (staff): 12 months after the policy was implemented, fewer cigarettes were smoked in comparison to the previous year's data; after 12 months, 81% of smokers reported using <8 cigarettes per day (no other data reported).* *Smoking cigarettes during and after work hours (staff): "Approximately*	**Limitations identified by author(s)** Identified by author(s) *Uncontrolled factors may have influenced the results; repetitive questionnaires may have sensitized employees and patients in their responses; smoking cessation programs may have influenced employees' attitudes rather than the policy itself or the national trend in stopping smoking.* **Limitations identified by review team** *Same sample but may have become desensitised to questionnaire; no control group* **Evidence gaps/future research recommendations** None reported

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Quality score + **External validity score** +	**Population selection criteria** Inclusion criteria *All employees (including medical and scientific staff)* Exclusion criteria not reported % participation agreement *Employees: 46% (pre-ban), 38% (6m post-ban), 16% (12m post-ban)* **Potential sources of bias** *low staff response rate (same sample): 46% (pre-ban), 38% (6m post-ban), 16% (12m post-ban); no patient response rate reported; exclusion criteria not reported for patients; no data for non-responders* **Setting** *A health care institution (clinic and medical foundation) with inpatient units employing staff physicians and psychologists*	**Supporting strategies/ interventions** Implementation committee *Smoke-Free Task Force (included clinicians, psychologists, and administrative personnel from public affairs and employee relations departments)* **Sample size** Total sample *Employees: n=1946 (pre-ban), n=1608 (6m post-ban), n=684 (12m post-ban)* *Sample characteristics: At 12 months follow-up: 18% physicians 82% other employee; 4% <35years, 29% 35-44 years, 27% ≥45 years; 29% male.* **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported		*one-fourth" of staff smokers self-reported that they no longer smoked cigarettes during work 6 months after policy implementation and 12 months after policy implementation (no data given). "Approximately 40%" of staff smokers self-reported that their cigarette consumption after work hours remained unchanged at both 6 months after policy implementation and 12 months after policy implementation (no data given).* *Cessation intentions/behaviours (staff): At 6 months pre-ban, 28% staff smokers reported that they intended to stop smoking if the institution implemented a policy; 12 months post-ban "most who expressed that interest had attempted to do so" (no data given). 25% staff smokers reported that they physically tried to stop smoking at 6 months post-implementation and 21% at 12 months post-implementation.* **Attrition details** Not applicable	**Source of funding** Not reported
Joseph (1993) **Authors** *Joseph, Nichol & Anderson* **Year** 1993 **Aim of study** *To address the potential impact of a policy banning smoking and smoking interventions on the results of treatment for alcohol and*	**Country** USA **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients **Source population demographics** None reported **Recruitment** Recruitment method	**Method of allocation** Investigator did not assign exposure *Based on date of admission* Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place **When assessed** Before implementation – single time point *January 1st 1988-May 19th 1988* After implementation – single time point *July 19th 1988-December 31st 1988* **Where**	**Primary outcomes** Other consequence(s) - objective *Smoking habits at admission and follow up* **Follow-up periods** Follow-up period(s) *Time to interview for intervention participants averaged 10.8 months, 16.2 months for control* **Method of analysis** Method(s) of analysis *Chi-square tests for comparison of*	**Primary outcomes** Relevant results - other *65% of smokers described their smoking habits at the time of interview as "the same" as on hospital admission. Twenty-two percent reported "less" smoking, and 9% reported "more" smoking than on admission (differences between intervention and control groups not significant).*	**Limitations identified by author(s)** Identified by author(s) *Fairly high non-response rate* *Use of a historic control is limited by several forms of bias and does not establish causality* *The validity of self-reported smoking status in post-*

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drug use **Study design** Before-and-after study (with different sample after intervention) **Quality score** + **External validity score** +	*All eligible patients charts screened* **Population selection criteria** Inclusion criteria *Male patients aged 18-65 hospitalised during the control or intervention period* Exclusion criteria *Patients admitted between May 20, 1988 and July 18, 1988 were not considered because the program site moved during this period and patients were subjected to two different smoking policies.* *Female patients constituted less than 5% of admissions and were therefore not included.* *Patients without a telephone number at the time of hospitalization were excluded.* *Patients with a length of stay less than 1 week were excluded because of insufficient exposure to the smoking-cessation intervention.* *If patients' charts could not be located they were excluded.* % participation agreement *154/176 intervention (87.5%)* *160/168 control (95.2%)* **Potential sources of bias** *Well described and the majority of participants took part.* **Setting** *The Minnesota Veterans Affairs Medical Centre Drug Dependency Treatment Programme*	Mental Health **Smokefree coverage** Smokefree building(s) **Supporting strategies/ interventions** Other *Patients informed of policy and cessation programme prior to admission. They were required to agree in writing to nicotine abstinence during treatment and asked to abstain from smoking even when off site.* **Sample size** Total sample *All patients n=314, Respondents n=197* Control/Comparison sample *n=160* Intervention sample *n=154* Sample characteristics (respondents): *all male patients; 18-65 years, mean 39.9 years; mean length of stay 22.4 days; 79% smoker on admission; 81% high school graduate; 45% divorced/separated; 61% unemployed on admission; 49% no medical conditions, 12% cardiovascular disease, 7% lung disease, 11% liver disease, 20% psychiatric disease.* **Baseline comparison** No differences btw groups **Study sufficiently powered?** ++ *P<0.05*	*proportions, Student's t-tests for continuous variables.*	*Among respondents who smoked at the time of admission (n = 152), 10 said they were not current smokers at the time of follow-up interview: 7 in the intervention group and 3 in the control group. Eighteen patients quit smoking for at least 1 week after discharge from the hospital: 6% (5 of 83) in the control group and 19% (13 of 69) in the intervention group (p = .02). Of 13 patients who quit smoking in the intervention group, 10 did so during the hospitalization.* *If non-respondents are assumed to be continuing smokers, the differences in rates of "quitting smoking for >1 week" and "not currently smoking" are not statistically significant.* **Attrition details** Number lost to follow-up *62 intervention group, 55 control group* Attrition group differences *Not significant*	*cessation clinic populations is controversial and patients may have over-estimated quit rates.* *Patients may have declined admission because of the restrictive smoking policies* **Limitations identified by review team** **Evidence gaps/future research recommendations** Future research recommendations *More careful studies of drug and alcohol treatment outcomes under different smoking interventions is needed* **Source of funding** Other

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Kempf (1996) **Authors** *Kempf & Stanley* **Year** 1996 **Aim of study** *To assess the effect of smoke free policy on patient intake and retention in residential treatment setting* **Study design** Randomised controlled trial **Quality score** + **External validity score** -	**Country** USA **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients Staff Specific Ward(s)/Department(s) *Only one treatment group experienced a full site ban* **Recruitment** Recruitment method *All adolescents entering the treatment programme* **Population selection criteria** Inclusion criteria *Adolescents who entered the programme during a one year period February 1994-February 1995* Exclusion criteria not reported % participation agreement *210 applied for admission to the programme* *4 not admitted due to inappropriateness and referral to other treatment* *48 not admitted due to failure to show for intake appointment, decision not to seek admission during initial phone contact or refusal of assigned treatment programme (n=7)* *158 adolescents admitted, smoking data available for 155* **Potential sources of bias**	**Method of allocation** Investigator did not assign exposure *Randomly assigned to programme on entering the campus* Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *(implementation date not reported)* **Where** Mental Health **Smokefree coverage** ***Intervention campus*** Smokefree building(s) Smokefree doorways/entrances Smokefree grounds ***Control campus:*** Smokefree building(s) *Designated outdoor areas for smoking* **Supporting strategies/ interventions** Cessation support *Medical support for nicotine addiction available to all residents if nicotine abstinence is part of the addiction treatment plan* **Sample size** Total sample *n=155 adolescents (figure cannot be broken down by random allocation to intervention or control)* Sample characteristics: *Age range 13-17 years, average 15.7 years; 82% male; 40% African-American, 32% Hispanic; 28% Caucasian; average highest school grade completed 8th; 41% have health insurance; 80% have an arrest record (other than traffic offences); 85% (n=132) smoke cigarettes, of these 25% smoke 1-5 cigs/day, 36% smoke a half pack (6-15 cigs)/day; 39% smoke a pack or more (16-35 cigs)/day;*	**Primary outcomes** Other consequence(s) - objective *Recruitment into treatment programme* *Retention rates at 2 days and 2 weeks* **Follow-up periods** Not applicable **Method of analysis** Not reported **Was Intention To Treat (ITT) analysis conducted? (intervention QA)** Not applicable	**Primary outcomes** Relevant results - other *2% (n=2) of 105 adolescents assigned to the tobacco-free programme declined admission compared to 5% (n=5) of those assigned to the other programme.* *Pre allocation, 17% of 105 adolescents assigned to the tobacco-free programme declined admission compared to 22% of those assigned to the other programme, this difference was non-significant (p=0.38)* *Retention at 2 days is slightly higher in the programme without a smoke free policy (95% vs 91%), although this difference is non-significant (p=0.43)* *Retention at 2 weeks is slightly higher in the programme with a smoke free policy (80% vs 74%), although this difference is non-significant (p=0.37)* *Heavy smokers were much 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)*	**Limitations identified by author(s)** None identified by author(s) **Limitations identified by review team** **Evidence gaps/future research recommendations** Future research recommendations *Replication of the study in an adult residential treatment setting* **Source of funding** Government

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	Setting *The New Jersey Substance Abuse Treatment Campus, a 350 bed residential substance abuse treatment facility which incorporates a central intake unit and around the clock medical services.*	*Drug of preference: 63% marijuana/hashish, 17% heroin/cocaine, 13% alcohol, 7% other.* **Baseline comparison** Yes differences btw groups *The only statistical difference between groups was the proportion of African-Americans (more in the programme without a smoking policy, p=0.009)* **Study sufficiently powered? (intervention QA)** -			
Kvern (2006) **Authors** *Kvern* **Year** Unpublished *Report (2005) and WCToH poster presentation (2006)* **Aim of study** *To evaluate the processes used to implement smokefree grounds policy* **Study design** Before-and-after study (with different sample after intervention) *Policy compliance - observation* **Quality score** - **External validity score** +	**Country** Canada *Winnipeg* **Urban/Rural setting** Not reported **Secondary Care Setting** Not Mental Health (Acute and/or Maternity) **Source population** Staff **Source population demographics** None reported **Recruitment** Not applicable **Population selection criteria** Inclusion criteria not applicable *Most data from observation or health authority records* Exclusion criteria not applicable *As above* **Potential sources of bias** Not applicable **Setting** *A number of Winnipeg Regional Health Authority operations including Deer Lodge Centre (a long-term care facility), Health Sciences Centre (a tertiary care facility),*	**Method of allocation** Investigator did not assign exposure Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *Smokefree grounds implemented 5 Jul 04* **When assessed** Before implementation – single time point *Policy compliance observation (31 May – 09 Jun '04)* After implementation – single time point *Policy compliance observation (26 Jul – 9 Aug '04); Support for inpatients (NRT use) (Jul-Sep '04)* After implementation – multiple time points *Policy compliance security contacts (Jul '04, Aug '04, Sep '04)* **Where** Not Mental Health *Smokefree grounds policy excludes mental health services and home-based services* **Smokefree coverage** Smokefree building(s) Smokefree doorways/entrances Smokefree grounds **Supporting strategies/ interventions** Written policy(ies) *Smokefree Policy; a Comprehensive*	**Primary outcomes** Compliance - objective *Observation schedule to count number of individuals smoking on the property (1 individual, made all observations at both time points); Number of contacts security personnel have with people smoking on facility grounds; Number of complaints received about policy (data records).* Other consequence(s) - objective *NRT support for in-patients (volume of patches and gum used); Information sheet for patients and general public distribution (print requests); Support for staff (volume of smoking cessation medication costs reimbursements, from data records)* **Follow-up periods** Follow-up period(s) *2 months (Policy compliance – observation)*	**Primary outcomes** Relevant results - compliance *Number of individuals smoking on the property: Over 6 days of observation covering 5 locations and 4 standard break-times, one month pre-policy n=314 people (tertiary care centre) and n=115 people (long-term care facility) were observed smoking on facility grounds. Post-policy, at the same times and locations one month later, the number of people observed smoking on facility grounds had reduced to n=32 people (tertiary care centre) and n=6 people (long-term care facility).* *Number of contacts security personnel have with people smoking on facility grounds: During the first month of smokefree grounds implementation, the mean number of contacts per day security personnel had with smokers on the tertiary care facility grounds was 11.95, this reduced to 5.40 contacts/day the following month, and further reduced to 4.89 contacts/day during the third month post-*	**Limitations identified by author(s)** None identified by author(s) *NB: not written as an academic journal article where limitations would be expected* **Limitations identified by review team** *Limited detail for decision but broad range of mostly cross-sectional measures in source settings.* **Evidence gaps/future research recommendations** None reported *See study limitations above, recommendations are for policy implementation, not research* **Source of funding** Government

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	community sites, Saint Boniface General Hospital and other long-term care facilities.	*Communications plan* Implementation committee *Smokefree Policy Working Group* Posters/signage *Signage; no-smoking symbols painted on pavements + driveways* Staff meetings Staff letters/payslip notes *Posted notices, pay stub inserts, facility newsletters* Cessation support *Staff: Information resources, on-site cessation groups* Pharmacotherapies/NRT *Staff: reimbursement for smoking cessation medication* *In-patients: prescribing aids to assist appropriate NRT* Temporary abstinence support *In-patients* Moved ashtrays/shelters *To the site periphery* Staff training *Admissions training for new staff (inform policy, identify NRT needs); Security staff trained to address non-compliance with a 'graded approach' – used info sheet as an aid, ask to extinguish cigarette or move off-site.* Other *Media (paid and earned) to inform public and patient groups; health organisations' websites; bilingual information sheet for inpatients and general public* **Sample size** Total sample *Data reported from a range of hospitals and care facilities.* **Baseline comparison**		*implementation.* *Sub-group differences: The number of contacts security personnel had with staff smokers reduced over the first 3 months of smokefree grounds implementation from 22 to 8 to 2. Contacts with in-patient smokers changed from 65 to 14 to 16; contact with visitor smokers reduced from 173 to 86 to 26; and contacts with contractor smokers reduced from 3 to 0 during the first 3 months of smokefree grounds.* *Number of complaints received about policy: Three months after smokefree grounds policy implementation, the long-term care facility reported 1 complaint about non-compliance, the tertiary care facility reported 3 complaints and quality managers and patient representatives reported having had "few, if any" complaints.* Relevant results - other *NRT support for in-patients: From a pre-implementation utilisation level of nil for NRT support for in-patients, during the first 3 months of smokefree grounds, one hospital reported using just under 150 NRT patches and a tertiary care facility reported using approximately 550 NRT patches and 650 pieces of NRT gum.* *Bilingual information sheet for patients and general public, print requests: Post-policy implementation, acute care facilities made 3 orders for a total 1500 copies of the bilingual*	

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
		Not applicable **Study sufficiently powered?** Not reported		*information sheet for patients and general public; community area offices made 5 orders for 625 copies and long-term care facilities made 2 orders for 100 copies.* *Smoking cessation medication costs reimbursement for staff smokers: After smokefree grounds policy implementation, the tertiary care facility reported 50 requests for reimbursement of staff's smoking cessation medication costs (total staff n=5600), the long-term care facility reported 7 requests for reimbursement of staff's smoking cessation medication costs (total staff n=970), and Community care reported 9 reimbursement requests.* **Attrition details** Not applicable	
Martínez (2008) **Authors** *Martínez et al.* **Year** 2008 **Aim of study** *To identify the extent of smoking and compliance with tobacco restrictions among employees where a smoke-free policy was progressively introduced* **Study design** Interrupted time series *4 surveys between 2001-2006* **Quality score**	**Country** Spain **Urban/Rural setting** Not reported **Secondary Care Setting** Not Mental Health (Acute and/or Maternity) **Source population** Staff **Source population demographics** Smoking status *"The sample sizes were estimated taking into account the smoking prevalence among healthcare professionals in Catalonia in 1998 (35%) and assuming a 95% confidence level and an error ±4." [p.89]*	**Method of allocation** Not applicable **Smokefree implementation stage** Smokefree in place *A smoke free policy was introduced progressively from '97: in '03, smoking was only allowed in 1 smoking area, exclusively for employees. In Jul '05, the Hospital became entirely smoke-free.* **When assessed** After implementation – multiple time points *2001, 2002 and 2004 (all pre-full ban implementation) 2006 (post-full ban implementation)* **Where** Not Mental Health **Smokefree coverage** Other	**Primary outcomes** Compliance - subjective *Number of hours exposed to environmental tobacco smoke during their hospital duty; whether employees smoked in 12 selected areas (e.g. nursing rest areas, cafeteria, offices, and lifts) (both self-report)* Other consequence(s) - subjective *Smoking prevalence; Smokers: number of cigarettes smoked per day, previous attempts to quit and readiness to quit smoking (all self-report)* **Follow-up periods** Not applicable **Method of analysis** Method(s) of analysis	**Primary outcomes** Relevant results - compliance *Number of hours exposed to environmental tobacco smoke during their hospital duty:* *A smokefree policy was introduced progressively from 1997: in 2003, smoking was only permitted in one smoking area exclusively for employees, and in July 2005 the Hospital became entirely smoke-free. In a series of annual cross-sectional surveys from 2001-2006, hospital staff were asked to estimate the number of hours they are exposed to environmental tobacco smoke during their shift. The proportion of*	**Limitations identified by author(s)** Identified by author(s) *Repeated cross-sectional and comparable surveys, therefore some selection bias due to selective participation is probable.* *The use of self-reported smoking status can cause errors in classification in intervention studies of smoking cessation, but it is an adequate form of classifying smokers in observational*

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
+ **External validity score** +	**Recruitment** Recruitment method *Not fully reported. (An interviewer administered questionnaire to pre-selected employees.)* **Population selection criteria** Inclusion criteria not reported *Data were obtained from a 'representative sample' of employees of the Catalan Institute of Oncology* Exclusion criteria not reported % participation not reported **Potential sources of bias** *Not described - only a power calculation.* **Setting** *The Catalan Institute of Oncology, a Comprehensive Cancer Centre in Barcelona*	*the Hospital became "entirely smoke-free" in 2005* **Supporting strategies/ interventions** Closure of smoking rooms Staff training *For nurses: tobacco control educational and training courses* **Sample size** Total sample *n=188 in 2001, n=186 in 2002, n=206 in 2004, n=237 in 2006* *Sample characteristics: Occupation 2001 20% doctors 34% nurses 56% administrative employees 35.3% other; 2002 24.3% doctors 32.3% nurses 46.7% administrative employees 30.7% other; 2004 17.2% doctors 30% nurses 31.3% administrative employees 47.8% other; 2006 15.2% doctors 32.6% nurses 37% administrative employees 35.7% other.* *Smoking status: 2001 34.5% smokers 38.3% never smokers 27.1% former smokers; 2002 32.8% smokers 44.6% never smokers 22.6% former smokers; 2004 34% smokers 37.9% never smokers 28.2% former smokers; 2006 30.6% smokers 39.4% never smokers 30.1% former smokers.* **Baseline comparison** Not applicable **Study sufficiently powered?** +	*Computed the proportion of participants according to their response using the Statistical Package for Social Sciences 11.0*	*employees who reported working in a smokefree environment (i.e. reported exposure to ETS for zero hours during their shifts) increased from 33.0% (95% CI: 26.2-39.7) in 2001 (pre-implementation) to 91.4% (95% CI: 87.3-94.6) in 2006 (1 year post-implementation). One year after smoke-free implementation, some hospital employees still reported being exposed to ETS during their shifts: 5.3% (95% CI: 2.4-8.1) were exposed for <1 hour in 2006 (a decrease from 46.3% in 2001 (95% CI: 39.1-53.4)); and 1% (95% CI: 0-2.2) were exposed for 1-4 hours in 2006 (a decrease from 18.1% in 2001 (95% CI: 12.6-23.6)).* *2001: None 33% (95% CI: 26.3-39.7) <1h 46.3% (95% CI: 39.1-53.4) 1-4h 18.1% (95% CI: 12.6-23.6) >4h 2.1% (95% CI: 0.5-4.14)* *2002: None 31.2% (95% CI: 24.5-37.8) <1h 47.3% (95% CI: 40.1-54.5) 1-4h 17.2% (95% CI: 1.86-22.7) >4h 4.3% (95% CI: 1.38-7.21)* *2004: None 55.3% (95% CI: 48.4-62.2) <1h 38.6% (95% CI: 31.8-45.4) 1-4h 5.5% (95% CI: 2.3-8.8) >4h 0.5% (95% CI: 0.5-1.4)* *2006: None 91.4% (95% CI: 87.3-94.6) <1h 5.3% (95% CI: 2.4-8.1) 1-4h 1% (95% CI: 0-2.2) >4h 0%* *Whether employees smoked in selected smokefree areas: In 2001 "few smokers" (no data given) reported to have smoked inside the nursing rooms and in 2006 no*	*studies. Furthermore, the questionnaire was interviewer administered, and this methodology has shown higher estimates of sensitivity and specificity than self-administered questionnaires.* **Limitations identified by review team** **Evidence gaps/future research recommendations** None reported **Source of funding** Other

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
				employee respondents reported smoking inside the nursing rooms. In 2004 and 2006, no employees reported smoking in the smoke-free cafeteria and the employees' rest areas. Relevant results - other *Smoking prevalence: Employee smoking prevalence had slightly decreased from 34.5% (95% CI: 27.7-41.2) in 2001 (before the complete ban) to 30.6% (95% CI: 24.7-36.4) in 2006 (after the complete ban). Sub-group differences: Smoking prevalence among doctors decreased from 20.0% in 2001 (95% CI: 6.7-33.2) before the complete ban implementation to 15.2% in 2006 (95% CI: 2.9-27.4), after the complete ban implementation; decreased among nurses, from 34.0% in 2001 (95% CI: 24.4-43.5) to 32.6% in 2006 (95% CI: 22.8-42.3); decreased among administrative employees, from 56.0% in 2001 (95% CI: 36.5-75.4) to 37.0% in 2006 (95% CI: 18.7-55.2); and remained the same among Other employees at 35.3% in 2001 (95% CI: 19.1-51.2) and 35.7% in 2006 (95% CI: 21.2-50.2).* *Smokers: Number of cigarettes smoked per day: One year after the complete ban was implemented, in 2006 48.8% employees smoked <10 cigs/day (95% CI: 35.3-60.7), an increase from 30.8% in 2001 (95% CI: 24.8-51.19). In 2001, 61.5% of employee smokers smoked 10-20 cigs/day (95% CI: 47.7-74.3),*	

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
				decreasing to 37.2% in 2006 (95% CI: 24.6-49.3), a year after complete ban implementation. Hospital employees smoking >20 cigs/day increased between 2001 (pre-implementation of the complete ban) and 2006 (post-implementation) from 7.7% (95% CI: 0.7-13.2) to 14.0% (95% CI: 5.1-22.8). *Smokers: Previous attempts to quit: Hospital employee smokers reporting having attempted to quit smoking at least once decreased from 64.6% in 2001 (95% CI: 52.0-76.0), before the implementation of a complete ban to 42.4% in 2006 (95% CI: 29.8-55.0), 1 year after the implementation of a complete ban.* *Smokers: Readiness to quit: Hospital employee smokers expressing readiness to quit increased slightly from 40.3% in 2001 (95% CI: 28.4-52.2), before the implementation of a complete ban to 58.6% in 2006 (95% CI: 55.4-61.8), 1 year after the implementation of a complete ban.* **Attrition details** Not applicable	
Matthews (2005) **Authors** *Matthews et al.* **Year** 2005 **Aim of study** *To evaluate implementation of a smoking ban on an acute crisis stabilization*	**Country** USA *North Carolina* **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients Staff	**Method of allocation** Investigator did not assign exposure Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *Implemented 21 Oct '02* **When assessed** Before implementation – single time point *Clinical data 3 months pre-ban; other data not reported*	**Primary outcomes** Compliance - subjective *Staff: anticipating/reporting an increase in patients' smoking-related contraband* Compliance - objective *Clinical data patients: number of instances of smuggling smoking-related contraband* Other consequence(s) - objective	**Primary outcomes** Relevant results - compliance *Data staff: instances of contraband* *Pre-implementation, 2 of the 14 nursing staff respondents anticipated an increase in patients' smoking-related contraband, there was an increase to 7 of 13 respondents reporting an increase in contraband post-implementation (p=0.05).*	**Limitations identified by author(s)** Identified by author(s) *Diagnostic differences in the patient populations before and after implementation of the smoking ban; as patients only remain on unit for up to 3 days, cannot comment longer period benefits. In addition, the*

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
(psychiatric) unit for men **Study design** Before-and-after study (with different sample after intervention) **Quality score** - **External validity score** -	*Nursing staff* Specific Ward(s)/Department(s) *Male acute crisis stabilization unit* **Source population demographics** Health status *Approx. 95% are admitted to the unit involuntarily* Sex *100% male* None reported *Staff* **Recruitment** Not applicable **Population selection criteria** Inclusion criteria not reported *(staff survey)* Inclusion criteria not applicable *(clinical data)* Exclusion criteria not reported % participation agreement *(staff survey) - Staff 58% (pre-ban) 54% (post-ban)* % participation not reported *(clinical data) not relevant* **Potential sources of bias** *Not applicable for patient data (no recruitment, data taken from records); No inclusion/exclusion for staff, low participation rate: 58% (pre-ban) 54% (post-ban)* **Setting** *An 18-bed acute crisis stabilization unit where all male patients are first admitted, for up to 3 days, by which time patients are either discharged or referred to the male acute treatment unit. The unit is within Dorothea Dix State Psychiatric Hospital, which provides care to*	After implementation – single time point *Clinical data 3 months post-ban; other data not reported* **Where** Mental Health **Smokefree coverage** Not reported *Described as "smoking ban"* **Supporting strategies/ interventions** Cessation support *Patients - education about nicotine addiction and withdrawal* Pharmacotherapies/NRT *Patients - given nicotine gum (up to 12 mg per day was typically prescribed) or patches (offered in 7 mg, 14 mg, or 21 mg strengths (depending on the number of cigarettes the patients had reported smoking prior to admission)) to ease withdrawal symptoms.* **Sample size** Total sample *Patients n=420 admissions (pre-ban) n=428 admissions (post-ban)* *Sample characteristics: 100% males. There were no statistically significant differences between the pre- and post-ban patient groups related to the number of admissions, average daily census, or average patient age pre- and post-implementation. A statistically significant difference was found in the diagnostic composition of the patient groups before and after implementation (Chi-square=45.6, df=2, p<0.001). The authors reanalysed the data, combining two categories to assess whether a shift in diagnostic practices had occurred. A statistically significant difference remained (Chi-square=7.76, df=1, p<0.01).*	*Clinical data patients: number of patients who required seclusion or restraint; the number of episodes of seclusion or restraint; number of patients who committed at least one episode of assault or self-harm; number of episodes of assault or self-harm.* *Data staff: absenteeism (the number of callouts (i.e., scheduled staff not coming in for their shift))* **Follow-up periods** Follow-up period(s) *6 months* **Method of analysis** Method(s) of analysis *Categorical data by Chi Square except in cases of a low frequency in one of the cells, when Fischer's exact (two-tailed) test was substituted.* *Continuous data were assessed using a Student's t test.*	*[Direction of effect does not support smokefree]* *Clinical data patients: No significant differences were found between the 3 months before and 3 months after the ban was implemented related to the total number of instances of contraband.* Relevant results - other *Clinical data patients: No significant differences were found between the 3 months before and 3 months after the ban was implemented related to the total number of patients who required seclusion or restraint; to the total number of patients who committed at least one episode of assault or self-harm; or to the total number of episodes of assault or self-harm. A significant difference was found in the number of episodes of seclusion or restraint between the 3 months before and 3 months after the ban was implemented (Chi-square = 7.11, df=1, p<0.01), however one non-smoker patient was responsible for nine episodes of restraint during the post-ban period; when that patient was excluded from the analysis, no significant difference existed (Chi-square =1.74, df=1, not significant). (No further data reported.) Results in favour of smokefree.* *Data staff: absenteeism* *No significant difference was found in the number of callouts (i.e., scheduled staff not coming in for their shift) in*	*patient sample consisted solely of men, 95% of whom were involuntarily committed. Finally, staff perceptions of increased contraband, not supported by the data, may suggest problems with data collection.* **Limitations identified by review team** *Paper lacks detail on methods/analysis to answer this* **Evidence gaps/future research recommendations** Future research recommendations *To determine whether there are any post-discharge benefits or possible risks from abrupt smoking cessation in acute psychiatric patients.* **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	people in the south central region of North Carolina. Approx. 3,000 patients (1,800 men, 1,200 women) are admitted to adult psychiatry service per year (approx. 95% involuntarily).	*Nursing staff n=14 (pre-ban) n=13 (post-ban)* **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported		*the 3 months before the ban was implemented (36/252 shifts reported at least 1 callout) and the 3 months after the ban was implemented (38/252 shifts reported at least 1 callout). No further statistical information is available. Results in favour of smokefree.* **Attrition details** Not applicable	
Nagle (1996) **Authors** *Nagle, Schofield & Redman* **Year** 1996 **Aim of study** *To describe the type and location of smokers on the grounds of smoke-free public hospitals and to observe the impact of introducing smoke-free signs in outdoor areas of the hospital grounds.* **Study design** Before-and-after study (with different sample after intervention) Non-participant observation **Quality score** + **External validity score** +	**Country** Australia *New South Wales* **Urban/Rural setting** Urban *Intervention hospital* Rural *Control hospital* **Secondary Care Setting** Not Mental Health (Acute and/or Maternity) **Source population** Patients Staff Visitors **Source population demographics** None reported **Recruitment** Not applicable **Population selection criteria** Inclusion criteria not applicable *No recruitment, observation* Exclusion criteria *Children <12 years excluded from counts; observations made during rainy weather excluded from analysis.* % participation agreement	**Method of allocation** Investigator did not assign exposure **Smokefree implementation stage** Smokefree in place *Indoor - state legislation since 1988; partial outdoor – hospital/local policy (in 1991 in H1, already in place in H2)* **When assessed** Before implementation – single time point *2 weeks pre-implementation at H1 (both H1 and H2) in 1991* After implementation – single time point *1 month post-implementation at H1 (both H1 and H2) in 1991* **Where** Not Mental Health **Smokefree coverage** Smokefree building(s) Smokefree grounds *Both H1 and H2 retained "smoking areas" within the grounds* **Supporting strategies/ interventions** Implementation committee *H1: Formed by occupational health and safety team with reps from NSW Cancer Council, National Heart Foundation, hospital management, unions, and study's lead author*	**Primary outcomes** Compliance - objective *Number of smokers (anyone who was either lighting, stubbing out, or smoking a cigarette, pipe or cigar) and non-smokers observed in a particular outdoor site; locations of outdoor smokers observed (mapped sites divided into those <10m from hospital entrances and those >10m and <50m from hospital entrances); number of 'staff' (anyone wearing a uniform, or a hospital identification badge, or carrying a stethoscope), 'patient'' (wearing night wear, or a hospital gown, or a patient wrist band), or 'visitor' (those not classified as staff or patient) outdoor smokers or non-smokers. (Reliability: a pilot observation circuit made by both observers simultaneously and independently at H1 was conducted before the study with 98.5% inter-rater agreement.)* **Secondary outcomes** Not applicable **Follow-up periods** Follow-up period(s)	**Primary outcomes** Relevant results – compliance ***A discrepancy is noted in Table 3 of Nagle et al 1996 (p.202) between the raw data and percentages given: the "n/total n" figures do not correspond to the (%) figures for Hospital 1 at Time 1 (32% and 68%, also quoted in the text on p.202 and the abstract). From our calculations, the Chi-square test results do correspond to the "n/total n" figures as printed and we believe the percentages may be incorrect (by our calculations, 18% and 82% for Hospital 1 at Time 1). As the two percentages are the only discrepant figures in the data in Table 3, we have made the assumption that the frequencies data is correct.*** *Number of smokers observed: In the intervention hospital 2 weeks before the implementation of smokefree areas in the grounds (T1), 18% of all outdoor smokers (105/593) used the outdoors sites selected to become smokefree. There was a significant increase to 28% of all outdoor smokers (83/301) observed in those sites 1*	**Limitations identified by author(s)** Identified by author(s) *Observations are only from two hospitals, findings may not be generalizable and the impact of the introduction of smokefree outdoor zones observed in one only. Rainy weather reduced the observation periods at time 2 and a greater proportion of observations was lost from the intervention hospital due to rain. The control and intervention hospital varied at baseline by urban/rural location and size.* **Limitations identified by review team** *See note in the column to the left. The authors report a decrease from 32% to 28% in violations, whereas the raw data suggests a different direction of effect, an increase in violations from 18% to 28%.* **Evidence gaps/future research recommendations**

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	Not applicable **Potential sources of bias** **Setting** *Hospital 1 (intervention): A large urban teaching hospital of 530 beds. Hospital 2 (control): A smaller rural hospital of 156 beds with similar case mix to H1.*	Posters/signage *H1: all signs displayed either the words "No Smoking" or the symbol and all were attached to the outer walls of the building in 22 sites (16%); H2: signs displayed the words "You are now entering a smoke-free environment, please extinguish your cigarette" and were positioned at the entrance of the site accompanied by an ashtray in 11 sites (16%).* Staff letters/payslip notes *H1: Newsletters notified staff* Other *H1: Policy launch incorporated into World No Tobacco Day Activities. Staff notified by bulletin boards and their supervisors.* **Sample size** Control/Comparison sample *Hospital 2: T1 n=2414 observations; T2 n=1943 observations. 67 sites mapped and observed at different time points over 7 days: 3 courtyards, 5 main entrances, 22 secondary entrances, 2 covered exit passageways, 16 verandas, 1 internal and 3 external firestairs, 7 pathways >10m and <50m from any entrance, and 8 lawns/car parks >10m and <50m from entrances.* Intervention sample *Hospital 1: T1 n=4252 observations; T2 n=2787 observations. 135 sites mapped and observed at different time points over 7 days: 8 courtyards, 5 main entrances, 8 secondary entrances, 9 covered exit passageways, 88 verandas, 5 internal and 3 external firestairs, 9 pathways >10m and <50m from any entrance, and 4 lawns/car parks >10m and <50m from entrances* **Baseline comparison** Yes differences btw groups	*6 weeks* **Method of analysis** Method(s) of analysis *Outdoor smoking rate, description of outdoor smokers and location of smokers were calculated as proportions of the total people (or smokers) observed on the grounds. Effectiveness of smokefree signs was calculated as the percentage of all outdoor smokers who were observed smoking in these targeted sites, in both hospitals, before and after the introduction of the signs in H1. Any changes from pre-test to post-test in the intervention hospital (H1) were compared with changes from pre-test to post-test in the control hospital (H2).* **Was Intention To Treat (ITT) analysis conducted? (intervention QA)** Not applicable	*month following the implementation of smokefree outdoor areas signage (T2) (Chi-square=11.71, df=1, p<0.001). In the control hospital, there was no significant change in the proportion of all outdoor smokers who smoked in outdoor sites with smokefree signage at T1 (48%, 62/130) and at T2 (46%, 68/148) (Chi-square=0.09, df=1, p=0.771).* *Locations of outdoor smokers observed: There is limited detail about which outdoor sites at the control hospital (H2) were smoke-free and which were smoking areas, but the authors note that, in the main entrance site "clear geographical boundaries existed and the smoke-free signs were positioned at all entries to the area with the wording 'You are now entering a smoke-free environment, please extinguish your cigarette'. Only 7% of all out-door smokers were observed in the main entrance location" in violation of the signs at T1 and T2. Sites within 10m of entrances and exits of the control and intervention hospitals were more popular with outdoor smokers at both time points (82% (T1), 82% (T2) and 90% (T1), 93% (T2) respectively) than sites more than 10m and less than 50m from entrances in exits of the control and intervention hospitals. These two zones are not further sub-divided in the report, however, into those with smokefree sites and those with smoking areas.*	None reported **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
		Intervention (H1) and Control hospitals (H2) varied in size and urban/rural location but there was no significant difference in the proportions of observed outdoor smokers classified as staff, patients or visitors at baseline (Chi-square=4.72, df=2, p<0.095). **Study sufficiently powered? (intervention QA)** Not reported		*Number of staff, patient and visitor outdoor smokers: At both the control and intervention hospitals overall, patients (those observed wearing night wear, or a hospital gown, or a patient wrist band) made up 5-16% of all outdoor smokers observed, visitors (those not classified as staff or patients) made up 33-40% of all those observed as smokers outdoors, and staff (anyone observed wearing a uniform, or a hospital identification badge, or carrying a stethoscope) comprised 47-61% of all outdoor smokers observed. There was a significant difference in the proportions of observed outdoor smokers classified as staff at the control hospital (61%) compared with staff at the intervention hospital (47%) (Chi-square=11.81, df=2, p<0.003). These three groups are not further sub-divided, however, into those complying by smoking in the outdoor smoking areas and those violating the policy by smoking in the outdoor sites with smokefree signage.* **Attrition details** Not applicable	
Patten (1995) **Authors** *Patten et al.* **Year** 1995 **Aim of study** *To evaluate the effects of the smokefree policy on the*	**Country** USA *Minnesota* **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients	**Method of allocation** Investigator did not assign exposure Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *Implemented 1 Jan '91* **When assessed** Before implementation – single time point *Records data 3 months pre-implementation*	**Primary outcomes** Compliance - objective *Patient behavioural indicators of acting out (frequency of smoking in the hospital room, frequency of additional nursing assistance) (data from patient charts)* Other consequence(s) - subjective *Staff perceptions of whether policy*	**Primary outcomes** Relevant results - compliance *Compliance - objective* *Patient behavioural indicators of acting out: The frequency of smoking in the hospital room increased significantly pre- and post-implementation (from 0 to 18, Chi-square=17.719, df=1, p<0.05) and the*	**Limitations identified by author(s)** Identified by author(s) *Low response rate at follow-up limits the extent to which findings can be generalised. No biochemical validation of psychiatric patients' smoking status.*

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
behavioural functioning of patients and on staff attitudes. Also to examine long term smoking status of patients who were admitted to hospital after implementation of the smokefree policy **Study design** Before-and-after study (with different sample after intervention) *records data (all), staff survey (some outcome measures))* Cross-sectional study *patient post-ban survey, staff survey (some post-ban outcome measures)* **Quality score** + **External validity score** +	Staff **Source population demographics** Health status *PATIENTS Diagnosis: Mood disorders 32% (pre-ban) 35% (post-ban); Adjustment disorders 19% (pre-ban) 19% (post-ban); Psychotic disorders not elsewhere classified 11% (pre-ban) 16% (post-ban); Schizophrenia 11% (pre-ban) 6% (post-ban); Psychoactive substance use disorders 7% (pre-ban) 8% (post-ban); Axis II disorders 4% (pre-ban) 4% (post-ban); Organic mental disorders 4% (pre-ban) 3% (post-ban); Anxiety disorders 4% (pre-ban) 2% (post-ban); Psychoactive substance induced organic mental disorders 2% (pre-ban) 2% (post-ban); Axis III disorders 1% (pre-ban) 1% (post-ban); Organic mental disorders (axis III) 0% (pre-ban) 1% (post-ban); Somatoform disorders 2% (pre-ban) 2% (post-ban); Others 2% (pre-ban) 2% (post-ban)* Speciality care *PATIENTS Treatment duration 12.5 (SD=10.8) days (pre-ban) 11.6 (SD=11.7) days (post-ban): Range 1-53 days (pre-ban) 1-70 days (post-ban)* Smoking status *PATIENTS Smoker 43.3% (pre-ban) 33.3% (post-ban); Mean years of smoking (smokers only) 16.2 (SD=11.0) (pre-ban) 16.9 (SD=12.6) (post-ban) Range 1-55 years (pre-ban) 1-64 years (post-ban); Cigarettes per day (smokers only)*	After implementation – single time point *Records data 3 months post-implementation; Patient survey 16-18 months post-discharge; Staff survey 6 months post-implementation* **Where** Mental Health *Locked inpatient psychiatric unit* **Smokefree coverage** Smokefree building(s) Smokefree grounds Ban exclusions *Patients with off-unit privileges, at an appropriate level, were granted brief passes to leave the building unaccompanied to smoke ("very few patients")* **Supporting strategies/ interventions** Implementation committee Cessation support *Patients' weekly support group led by Nicotine Dependence Center* Pharmacotherapies/NRT *Nicotine gum (patients)* Other *Staff education sessions on the treatment of nicotine dependence; written information for patients* **Sample size** Total sample *PATIENTS (chart data sample) n=184 (pre-ban), n=178 (post-ban)* *Sample characteristics = Source population characteristics. No statistically significant differences in age, sex, treatment duration, psychiatric diagnosis, smoking status, cigarettes smoked per day, or number of years smoking between the pre-ban and post-ban samples.* *PATIENTS (survey sample) n=19 (post-ban)*	*had affected the occurrence of rule infractions (self-reported); Patients' long-term smoking status; Patient use of cessation support during hospitalisation; Patient use of cessation following hospital discharge (all self-reported)* Other consequence(s) - objective *Patient medication use and patient behavioural indicators of acting out (left against medical advice, use of restraints, seclusion, television monitors use) (data from patient charts); number of patient consultations to the Nicotine Dependence Center (records); Recorded patient complaint investigations related to smoking.* **Follow-up periods** Follow-up period(s) *6 months (clinical records data)* Not applicable *staff survey, patient survey* **Method of analysis** Method(s) of analysis *To asses the effects of the policy on patients' behaviours and medication use, data from pre-ban period and post-ban period were compared using Fisher's exact t-test. t-tests and Chi-square tests used, and two-tailed p values of <0.05 were considered evidence of statistical significance.*	*need for additional nursing assistance increased significantly pre- and post-implementation (from 2 to 18, Chi-square=12.543, df=1, p<0.05). The authors note that 17 of the 18 instances of additional nursing assistance "involved the same patient, who was reportedly distressed because she was not able to smoke. The patient was a female smoker who was also responsible for the only recorded patient complaint related to a smoking issue" [p376].* Relevant results - other *Other consequence(s) - objective* *Patient medication use: No significant differences were found in total p.r.n. medication use (Chi-square=1.337, df=1, p=0.249) or in the percentage of patient days with p.r.n. medication (Chi-square=1.937, df=1, p=0.166) before and after the implementation of the policy. [In favour of smokefree]* *Patient behavioural indicators of acting out: Two patients left against medical advice post-implementation and none left pre-implementation however the difference in rates was not significant (Chi-square=1.961, df=1, p=0.500); nor was the rates in use of restraints before and after the implementation of the policy. (Chi-square=2.088, df=1, p=0.175).* *Seclusion rates were significantly lower post-implementation (Chi-square=6.944, df=1, p<0.05) and the rates of television monitors use was significantly lower post implementation (Chi-square=19.113,*	**Limitations identified by review team** *risk self-selection bias, unvalidated outcome measures, no control group* **Evidence gaps/future research recommendations** Evidence gaps *Little known about the long term smoking status of psychiatric patients after hospital admission in a smokefree unit* Future research recommendations *Research to determine which smoking cessation procedures are most effective and acceptable to psychiatric patients.* **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	mean 27.1 (SD=17.8) (pre-ban) 28.7 (SD=28.7) (post-ban) Range 5-100 (pre-ban) 5-170 (post-ban) Age *PATIENTS Mean age 39.3 (SD=16.2) years (pre-ban) 39.3 (SD=18.6) years (post-ban) Range 11-82 years (pre-ban) 14-83 years (post-ban)* Sex *PATIENTS Male 40.8% (pre-ban) 48.3% (post-ban)* **Recruitment** Recruitment method *Patient survey – patients mailed a form asking for permission to call them for a telephone interview. Those returned signed informed consent were telephoned 16-18 months after discharge from hospital. Staff survey – distributed to staff in the units (no further details).* Not applicable *chart data* **Population selection criteria** Inclusion criteria *Chart data for all patients admitted from Oct '90 to Mar '91; Patient survey – all smoker patients admitted to the hospital post-ban (Jan-Mar '91); Staff survey – all staff in the 3 adult psychiatric units at Saint Marys Hospital (1 locked, 2 open units)* Exclusion criteria not reported % participation agreement *Patient survey 38% (post-ban); staff survey 67% (pre-ban) 56% (post-ban)*	*Sample characteristics: 18/19 smokers (95%)* *STAFF (survey sample) n=137 (pre-ban) n=126 (post-ban)* *Sample characteristics - Smoking status: Current smokers 9.5% (pre-) 7% (post-), former smokers 36.5% (pre-) 26% (post-), never smokers 52.0% (pre-) 63% (post-), no response 2.0% (pre-) 4% (post-). Occupation: Responses from staff psychiatrists and psychologists, resident physicians, nurses, nurse clinicians, psychiatric social workers, activity therapists and unit assistants from all 3 units (pre-). 90% (post-) work involved direct contact with patients in the psychiatric units.* *Rev 7: STAFF (survey sample) n=137 (pre-ban) n=126 (post-ban)* *Sample characteristics - Smoking status: Current smokers 9.5% (pre-) 7% (post-), former smokers 36.5% (pre-) 26% (post-), never smokers 52.0% (pre-) 63% (post-), no response 2.0% (pre-) 4% (post-). Occupation: Responses from staff psychiatrists and psychologists, resident physicians, nurses, nurse clinicians, psychiatric social workers, activity therapists and unit assistants from all 3 units (pre-). 90% (post-) work involved direct contact with patients in the psychiatric units.* **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported		*df=1, p<0.05). [In favour of smokefree]* *Patient cessation support: There was no change in the number of consultations to the Nicotine Dependence Center from the pre-implementation to the post-implementation period. N=13 patients attended the Center's weekly support group.* *Recorded patient complaint investigations related to smoking: "The patient was a female smoker who was also responsible for the only recorded patient complaint related to a smoking issue" [p376]* *Other consequence(s) - subjective Occurrence of rule infractions: Post-implementation, staff rated whether the smokefree policy in the adult psychiatric (locked and unlocked) units had affected the 'occurrence of rule infractions'. 58% all staff perceived an increase in rule infractions, 20% perceived no effect, 10% perceived a decrease in rule infractions, and 12% did not respond. (The rules were not specified.)* *Patients' long-term smoking status: At follow-up survey 16-18 months after hospital discharge, 95% (n=18) patients reported that they were current smokers. All patients reported resuming smoking immediately after hospital discharge; n=2 patients reported not smoking at 6 months and at 12 months after discharge.* *Patient use of cessation support*	

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	Potential sources of bias *Not applicable for patient data (no recruitment, data taken from records); unlikely for the staff and follow-up patient surveys - self-selecting and no detail of non-responders. Although reports responses from a range of staff occupations across the wards.* **Setting** *A 28-bed locked adult inpatient psychiatric unit in Saint Marys Hospital, Rochester, Minnesota*			*during hospitalisation: At follow-up survey 16-18 months after hospital discharge, 26% (n=5) patients reported that they used nicotine gum during their period of hospitalisation.* *Patient use of cessation following hospital discharge: At follow-up survey 16-18 months after hospital discharge, 21% (n=4) patients participated in any formal smoking cessation intervention 16% (n=3) had used nicotine gum, and none had used nicotine patches.* **Attrition details** Not applicable	
Quinn (2000) **Authors** *Quinn, Inman & Fadow* **Year** 2000 **Aim of study** *Study patient aggression both verbally and physically and compare the number of incidents before and after the implementation of the policy.* **Study design** Before-and-after study (with same sample after intervention) **Quality score** - **External validity score** +	**Country** USA **Urban/Rural setting** Not reported *Guessing Rural.* **Secondary Care Setting** Mental Health **Source population** Patients *average daily census 190 patients in November 1998 and 188 in January 1999. Admissions, 68 during November 1998 and 73 during January 1999. Adults aged 18 to 65 years, representing both acute, newly admitted psychiatrically ill patients, and those who had been hospitalised for longer term illnesses.* **Source population demographics** Health status *representing both acute, newly admitted psychiatrically ill patients, and those who had been hospitalised for longer term*	**Method of allocation** Not applicable **Smokefree implementation stage** Smokefree in place *Implemented 1st Dec 98* **When assessed** Before implementation – single time point *Nov 98* After implementation – single time point *Jan 99* **Where** Mental Health **Smokefree coverage** Other *"Tobacco could not be used on any part of the hospital campus" (applied to patients, staff and visitors)* **Supporting strategies/ interventions** Written policy(ies) Cessation support *Patient education about smoking and tobacco addiction recovery.* Pharmacotherapies/NRT **Sample size** Total sample	**Primary outcomes** Other consequence(s) - subjective *Rate of verbal acts of aggression per month; rate of physical acts of aggression per month* **Follow-up periods** Follow-up period(s) *One time point January 1999, 1 month after smoke free policy implemented* **Method of analysis** Method(s) of analysis *The results were analysed with t -tests (two tailed) to determine significance.*	**Primary outcomes** Relevant results - other *There were 1,184 verbal acts of aggression during the month of November 1998. There were 656 verbal acts of aggression during January 1999, which corresponded to a 45% decrease. This result was significant (t=3.752, df=376, p<.01).* *There were 266 physical acts of aggression during November 1998. There were 133 physical acts of aggression during January1999, which corresponded to a 50% decrease. This result was significant (t=4.217, df=376, p<.01).* **Attrition details** Not reported	**Limitations identified by author(s)** Identified by review team *Does not take into account demographics of the patients - type of illness. Could education and extra time spend with patients be a reason for less aggression - presuming the staff gave the cessation education (it does not say in the article).* **Limitations identified by review team** **Evidence gaps/future research recommendations** None reported **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	illnesses. Speciality care *98% admitted on involuntary basis - psychiatric illness* Place of residence *Wichita Falls state hospital* **Recruitment** Not applicable *All those in the hospital who smoked recruited - no figures given on this.* **Population selection criteria** Inclusion criteria *Adults aged 18 to 65 years, representing both acute, newly admitted psychiatrically ill patients, and those who had been hospitalised for longer term illnesses.* % participation agreement *Hospital went smoke free so no agreement.* **Potential sources of bias** Not reported *No info on sample* **Setting** *Wichita Falls State Hospital/ state hospital/98% of patients admitted on an involuntary basis.*	*Nov 98: average daily census n=190; admissions n=68* *Jan 99: average daily census n=188; admissions n=73* Sample characteristics: *Smoking status not reported; aged 18- 65 years; both acute and newly admitted psychiatrically ill patients; 98% patients admitted on an involuntary basis.* **Baseline comparison** Not applicable **Study sufficiently powered?** + *Simply a t-test. Confounders not adjusted for.*			
Rauter (1997) **Authors** *Rauter, de Nesnera & Grandfield* **Year** 1997 **Aim of study** *Describe the efforts of a building wide smoking ban in a major public psychiatric*	**Country** USA *New Hampshire* **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients Staff **Source population demographics**	**Method of allocation** Not reported Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *All units smokefree January 1st 1991* **When assessed** Before implementation – multiple time points *Two baseline measures: Oct '89-Mar '90 (for 6m, starting 15m pre-) and Oct '90-Dec '90*	**Primary outcomes** Compliance - objective *Possession of unauthorised cigarettes or matches (hospital incident reports)* Other consequence(s) - objective *Overall and smoking-related patient assault rates* *Use of incident reports routinely submitted to the Department of standards and Quality Management formed the basis for evaluating*	**Primary outcomes** Relevant results - compliance *Contraband* *Data from hospital incident reports showed 25 reports of possession of unauthorised cigarettes matches in the 3 months before smokefree was initiated in the psychiatric hospital's buildings (20 of these in the final month). This figure rose to 36 reports of possession in the first 3 months of*	**Limitations identified by author(s)** None identified by author(s) **Limitations identified by review team** **Evidence gaps/future research recommendations** None reported **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
hospital, focusing on assault rates and other indicators prior to and after the implementation of the smoking ban. **Study design** Cohort study **Quality score** + **External validity score** +	None reported **Recruitment** Recruitment method *Incident reports* *Use of incident reports routinely submitted to the Department of standards and Quality Management formed the basis for evaluating assault rates. The reports, completed daily by a unit nurse, mental health worker, or clinician, document any accident or behavioural incident occurring on the unit involving a patient.* *Patient acuity levels* *Daily assessed by nurses. Level 1 requires more intensive nursing contact down to level 5. Assumed that smoking ban would affect these levels.* Not applicable *Data assessed included all current inpatients.* **Population selection criteria** % participation agreement *Reports reviewed so no consent required.* % participation not reported *Reports reviewed so no consent required.* **Potential sources of bias** Not reported *data derived from incident reports, patient acuity level, complaints and population density. All inpatients included, none selected.* **Setting**	*(for 3m pre-imp)* After implementation – multiple time points *2 post-implementation measures: Jan '91-Mar '91 (3m post-) and Jan '92-Jun '92 (for 6m, starting 12m post-). (Acuity measures: Jan '91-Jun '91 (6m post-) only).* **Where** Mental Health **Smokefree coverage** Smokefree building(s) Other: *Designated open-air smoking areas established outside the buildings* **Supporting strategies/ interventions** Cessation support *Sessions from the New Hampshire Lung Association and workshops using hypnosis to quit smoking were offered to employees. 10 % signed up.* *Patients wishing to participate in smoking reduction workshops were urged to do so.* **Sample size** Total sample *Pre-ban period 1: average daily census n=126; average admissions n=67; pre-ban period 2: average daily census n=129; average admissions n=56; post-ban period 1: average daily census n=129; average admissions n=55.* *Sample characteristics: Patients typically admitted on an involuntary basis with an age range from 18-65 years. A small percentage remains hospitalised for ≥6 months.* **Baseline comparison** Not applicable **Study sufficiently powered?** - *No info given on power/analysis*	*assault rates. The reports, completed daily by a unit nurse, mental health worker, or clinician, document any accident or behavioural incident occurring on the unit involving a patient.* *Patient acuity level.* *Daily assessed by nurses. Level 1 requires more intensive nursing contact down to level 5. Assumed that smoking ban would affect these levels.* *Recorded patient complaint investigations related to smoking & perceived rights violations* **Follow-up periods** Follow-up period(s) *Two baseline assessments - baseline 1 9 months prior, baseline 2 3 months prior. Then after smoke free policy implemented - 3 months after ban.* **Method of analysis** Not reported	*smokefree. For the same period 1 year later, 12 incidents of contraband possession were recorded.* Relevant results - other *Overall and smoking-related patient assault rates* *The highest frequency of assaults was during the 6 months of baseline period 1 (15 months prior to the ban), with an average of 49 incidents per month. The first 3 months of the ban showed a decrease in the average monthly assault rate (46.30 incidents) when compared to the same time one year previously (58.67 incidents). One year after ban implementation, an average of 28.5 monthly assault rates occurred in the first 6 months of the year.* *A sub-set of recorded patient assaults were related to smoking. Three smoking-related assaults occurred in the final month of baseline period 2 (3 months prior to the ban) and four smoking-related assaults occurred in the first 3 months of the ban. One year after smokefree implementation, four smoking-related assaults occurred in the first 6 months of the year.* *Patient acuity level* *The average monthly acuity level (from 1, most acute, to 5, ready for discharge) for the pre ban period was significantly lower than the average level for the first nine months of the ban (2.62 and 2.74 respectively, t=2.57, p=0.03).* *Complaint investigations (Recorded*	

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	New Hampshire Hospital. Public inpatient psychiatric hospital, state of New Hampshire consisting of an acute psychiatric service (APS) with a 145 bed capacity, an adolescent program, and a psychiatric nursing home. APS has approx. 850 admissions annually.			*patient complaint investigations related to smoking & perceived rights violations)* *First 6 months of the smoking ban, 15 formal patients complaints about smoking were submitted, majority from recently admitted patients. For the same period the year later, four complaints.* **Attrition details** Not applicable	
Rees (2008) **Authors** *Rees et al* **Year** 2008 **Aim of study** *To examine whether a smoking ban in an inpatient medical detoxification unit would deter patients.* **Study design** Before-and-after study (with different sample after intervention) *Analysis of patient records for patients admitted in the 12 months before the ban, and for patients admitted in the 12 months after the ban.* Document/Content analysis **Quality score** + **External validity score** ++	**Country** USA **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients **Source population demographics** Smoking status *smokers and non-smokers* **Recruitment** Not applicable **Population selection criteria** Inclusion criteria not applicable Exclusion criteria not applicable % participation agreement *Not applicable.* **Potential sources of bias (association QA)** ++ **Setting** *The 13-bed First-Step Unit at Louisiana State University Medical centre is a publically funded inpatient substance abuse detoxification unit.*	**Method of allocation** Not applicable **Smokefree implementation stage** Smokefree in place *April 2001* **When assessed** Before implementation – single time point *12 months pre-ban* After implementation – single time point *12 months post-ban* **Where** Mental Health **Smokefree coverage** Other *Ban on tobacco and discontinuation of patient smoke breaks.* **Supporting strategies/ interventions** Other *Patients informed of smoking ban policy as part of their admission screening process* **Sample size** Total sample *n=516 patients (pre-ban), n=561 patients (post-ban)* Sample characteristics: *Mean age 36.7 years (SEM=0.41) (pre-ban) 35.7 years (SEM=0.41) (post-ban); 69.6% males (pre-) 73.6% males (post-); 72.7% European*	**Primary outcomes** Other consequence(s) - objective *Comparison of number of admissions before and after the ban.* *Comparison of patient demographics before and after the ban.* *Comparison of length of patient stay before and after the ban.* *Comparison of seizure rates among patients before and after the ban.* *Rates of patients leaving the unit against medical advice; transfers to other inpatient facilities.* **Follow-up periods** Not applicable **Method of analysis** Method(s) of analysis *When a patient had multiple admissions in the 24 months examined, one admission was randomly selected for inclusion in the analyses. For continuous variables, means and standard errors of the means were obtained. The averages for the pre-ban period were compared to averages from the post-ban period using T-tests. Analysis of variance was used to compare the effect of the ban*	**Primary outcomes** Relevant results - other *The number of admissions before and after the ban appeared to remain stable, with 516 in the 12 months before, and 561 in the 12 months after the ban.* *Patient demographics also remained similar before and after.* *Mean age: pre-ban 36.7 years; post-ban 35.7 years (difference not significant).* *Gender: pre-ban 69.6% male; post-ban 73.6% male (difference not significant).* *Pre-ban 72.7% European Americans; Post-ban 76.5% European Americans (difference not significant).* *Tobacco users: pre-ban 80.2%; post-ban 84.0% (difference not significant).* *Average length of stay significantly decreased after the ban: pre-ban average stay 5.15 days; post-ban average stay 4.79 days (p<0.05). The decrease was similar for patients who used tobacco and those who, did not (p>0.10).*	**Limitations identified by author(s)** Identified by author(s) *The study was conducted in a detoxification unit, so results may only apply to similar detoxification units rather than long-term substance abuse treatment centres.* *Prior to the smoking ban, there was no assessment of cigarettes smoked per day; anecdotally, however scheduled smoke breaks were well attended.* *There is concern that the lack of publically funded detoxification units may have limited patients' options thus undermining the study's ability to detect the impact of the smoking ban. However, patients did have access to two other publically funded medical detoxification centres, as well as to other hospitals. Consequently patients had some choice in the matter.*

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
		Americans (pre-) 76.5% European Americans (post-). **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported	*on tobacco-users and non-users. For nominal data, proportions were obtained. Proportions from the pre-ban and post-ban periods were compared using Fischer's Exact Tests.*	*There was no evidence of increased rates of patients leaving the unit against medical advice, or transfers to other inpatient facilities among tobacco users (p>0.10).* *Although not statistically significant, seizure rates decreased from 0.58% per year to 0.18% per year.* **Attrition details** Not applicable	*There were no control units to contrast the results with and no random assignment and contrast these results with* **Limitations identified by review team** **Evidence gaps/future research recommendations** None reported **Source of funding** Not reported
Ripley-Moffitt (2010) **Authors** *Ripley-Moffitt et al.* **Year** 2010 **Aim of study** *To examine the influence of a tobacco-free hospital campus (TFHC) policy on employee smoking behaviour.* **Study design** Interrupted time series **Quality score** + **External validity score** +	**Country** USA *North Carolina* **Urban/Rural setting** Not reported **Secondary Care Setting** Not Mental Health (Acute and/or Maternity) **Source population** Staff **Source population demographics** None reported **Recruitment** Recruitment method *Contacted 5534 full-time employees with e-mail addresses from the UNC hospital payroll database. One month before the TFHC policy took effect, these employees received an invitation to participate in an initial two-question survey assessing attitudes toward the new TFHC policy and current smoking prevalence. Non-respondents received follow-up invitations 3 days and 1 week later. Employees who indicated current smoking or*	**Method of allocation** Not applicable **Smokefree implementation stage** Smokefree in place *Implemented 4th Jul 07* **When assessed** Before implementation – single time point *1 month prior to the smoke free* After implementation – multiple time points *6 months and 1 year after smokefree* **Where** Not Mental Health **Smokefree coverage** Smokefree buildings Smokefree grounds *'100% tobacco-free hospital campus* **Supporting strategies/ interventions** Posters/signage Staff meetings Staff letters/payslip notes *Employee newsletters* Cessation support *Employees offered free smoking cessation services through occupational health* **Sample size** Total sample *Of 5534 employees invited to participate,*	**Primary outcomes** Other consequence(s) - objective *Quit attempts, and influence of policy on behaviour* **Follow-up periods** Follow-up period(s) *6 months and 12 months after policy* **Method of analysis** Method(s) of analysis *Data were imported into SPSS 16.0 and analyzed using descriptive statistics.*	**Primary outcomes** Relevant results - other *At baseline, 31 participants (15%) reported that they had quit smoking in the previous 6 months. Of the 179 participants reporting that they were currently smoking, 45% reported a quit attempt within the previous 6 months. Six months after the policy took effect, 33 participants (15.7%) reported not smoking. These non-smokers included 16 who reported quitting more than 6 months previously, plus 17 who reported quitting during the intervening 6 months. Among the 133 participants who reported currently smoking, 53% reported quit attempts in the intervening 6 months.* *Among the 117 who reported current smoking at the 12-month survey, 48% reported attempts to quit smoking in the preceding 6 months. At each survey, approximately 60% of employees who currently smoked reported plans to quit smoking in the*	**Limitations identified by author(s)** Identified by author(s) *Other factors may have played a role in the employee reports of quit attempts and reports of not smoking. Advertising of the North Carolina tobacco use Quitline (1-800-QUITNOW) ran statewide during this time period.* *Other threats to internal validity could include concern over dropouts from cohort members. However, response rates at each follow-up were around 75%, with 85% of the cohort responding to at least one follow-up survey. Response bias should have been limited by offering incentives to participants, regardless of smoking status.* *A more significant limitation to this research is the lack of a control group. In addition, 16% of full-time employees did not*

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	quitting smoking within the previous 6 months were immediately invited to participate in a study about how the TFHC policy might influence their smoking behaviour. Those accepting the invitation received a link to the baseline questionnaire, and links to follow-up questionnaires 6 months and 1 year later. **Population selection criteria** Inclusion criteria *Full-time employees, excluding physicians, at a hospital system affiliated with a public university medical school.* Exclusion criteria *Excluded physicians* % participation agreement *Of 5534 employees invited to participate, 2024 (37%) responded to the initial two-question survey (67% to first e-mail and 31% to first reminder). The 247 employees (12%) currently smoking and the 60 (3%) who reported that they had quit smoking in the past 6 months were invited to enroll in the follow-up surveys, with 210 (68%) choosing to participate.* **Potential sources of bias** *None selected - all invited and sent the questionnaire however 16% of those employed full time is not have an email address, again no demographics given on these.* **Setting** *University-affiliated hospital system in North Carolina*	*2024 (37%) responded to the initial two-question survey (67% to first e-mail and 31% to first reminder). The 247 employees (12%) currently smoking and the 60 (3%) who reported that they had quit smoking in the past 6 months were invited to enrol in the follow-up surveys, with 210 (68%) choosing to participate.* *Sample characteristics (of smoking cohort): average age 42 years (SD=10); 82% female 73% White (higher percentages than in the full-time employee population as a whole). 90% post-high school education; 97% private insurance (most with the state employee health plan)* *health plan.* **Baseline comparison** Not applicable **Study sufficiently powered?** Not applicable		*next 30 days or the next 6 months.* *The majority of employees reporting either not smoking or making quit attempts reported that the TFHC policy had some influence on their behavior (Figure 2). Over a third (39%) of those not smoking reported a strong influence of the policy at baseline, and 36% indicated a strong influence at 6- and 12-month follow ups. Those who smoked also reported a strong influence of the policy on their quit attempts (20% at baseline, and 24% and 20% at follow-up surveys).* **Attrition details** Number lost to follow-up *Of 5534 employees invited to participate, 2024 (37%) responded to the initial two-question survey (67% to first e-mail and 31% to first reminder). The 247 employees (12%) currently smoking and the 60 (3%) who reported that they had quit smoking in the past 6 months were invited to enroll in the follow-up surveys, with 210 (68%) choosing to participate.*	*have e-mail addresses and were excluded from the study. Among the 2024 employees responding to the initial survey, only 12% indicated current smoking, about 10% lower than the state population prevalence at that time, possibly reflecting selection bias, as other studies have found prevalence of smoking among employees in hospital settings to be closer to population prevalence.2,6 Finally, reports of cessation and quit attempts were not validated, possibly overstating success.* **Limitations identified by review team** **Evidence gaps/future research recommendations** Future research recommendations *More rigorous studies are needed to assess the impact of expanded outdoor smoke-free boundaries on smoking behavior, particularly looking at issues of compliance over time. Additional studies might also look at the relationship between cessation and the provision of tobacco treatment services, determining optimal levels of services needed to assist employees in tobacco cessation.* **Source of funding** Other

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
Shetty (2010) **Authors** *Shetty, Alex & Bloye* **Year** 2010 **Aim of study** *This evaluation retrospectively reviewed the outcome in a medium secure hospital of a Trust-wide smoke-free policy by focusing on recorded changes in behaviour, incidents and prescribing* **Study design** Before-and-after study (with same sample after intervention) **Quality score** + **External validity score** ++	**Country** England **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients **Source population demographics** Health status *All primary diagnoses of mental illness* Smoking status *89% patients smoked; mean 21 (range 5-50) cigarettes/patient; average daily cigarette consumption in Ward 1 (assessment) n=19 cigs/day, in Ward 2 (continuing care) n=23 cigs/day, in Ward 3 (rehabilitation) n=22 cigs/day.* Age *All adults* Sex *All males* **Recruitment** Not applicable *Reviewed multidisciplinary clinical records, primary healthcare records and incident forms.* **Population selection criteria** Inclusion criteria *All in-patients resident at the time* Exclusion criteria not applicable % participation agreement *Not applicable (chart data)* **Potential sources of bias** Not applicable *records data (no recruitment)* **Setting**	**Method of allocation** Investigator did not assign exposure Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *Implemented Mar '07* **When assessed** Before implementation – single time point *3 months pre-ban* After implementation – multiple time points *3 months post-ban, 12 months post-ban* **Where** Mental Health *Medium secure male unit* **Smokefree coverage** Smokefree building(s) Smokefree grounds Ban exclusions *If the clinical team agreed there was a clinical reason not to enforce abstinence (in practice, none) or for the small number of patients who had unescorted community leave* Other *All in-patients in medium secure units were required to abstain from tobacco (unenforceable for small number with unescorted community leave)* **Supporting strategies/ interventions** Posters/signage Cessation support *In-patients groups and individual sessions* Pharmacotherapies/NRT Closure of smoking rooms Staff training Other *Engagement with patients: individual & group discussions, patient advocates. A physical and procedural security*	**Primary outcomes** Compliance - objective *Illicit use or possession of tobacco (from chart data and hospital records)* Other consequence(s) - objective *Cessation behaviour, use of NRT, incidents of smoking-related verbal and physical aggression, p.r.n. tranquillising medication and clozapine serum levels (all from chart data and hospital records).* **Follow-up periods** Follow-up period(s) *6 months and 15 months* **Method of analysis** Method(s) of analysis *Mann-Whitney U-test for statistical differences between data before and after implementation, and P<0.05 was considered significant. Results were analysed using SPSS v.16.*	**Primary outcomes** Relevant results - compliance *From a review of clinical records and incident forms, n=7 patients had contravened the smokefree policy by way of illicit use or possession of tobacco during the 12 months post-implementation of smokefree. No comparative data were reported for before implementation.* Relevant results - other *Cessation behaviours: 3 months pre-implementation, n=10 patients (20%) attended a smoking cessation course, n=7 (14%) were already contemplating abstinence and n=2 patients gave up smoking.* *Use of NRT: 3 months post-implementation, n=27 (54%) patients used NRT, some requiring treatment for longer than the 3-month period recommended in local guidelines.* *12 months post-implementation, n=10 (20%) patients were receiving NRT, of whom n=4 had received intermittent nicotine replacement for over 12 months.* *Physical aggression: There was a reduction in the number of recorded physical aggression incidents from 3 months before the ban to 3 months after than ban (20 incidents versus 11 incidents); the change in rates of physical aggression was not statistically significant (P = 0.6). 12 months post-implementation, there was no recorded physical aggression*	**Limitations identified by author(s)** None identified by author(s) **Limitations identified by review team** *Used objective measures, same sample for follow-ups, no control group* **Evidence gaps/future research recommendations** Future research recommendations *Evaluation of the long-term impact of a smoke-free policy* **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	NHS 60-bed medium secure unit that admits adult men with primary diagnoses of mental illness. In-patients are distributed between 3 wards (assessment, continuing care and rehabilitation) according to levels of risk.	*infrastructure already adapted to the prevention of illicit substance use.* **Sample size** Total sample *N=56* *Sample characteristics = Source population characteristics* **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported		*directly related to nicotine withdrawal 1 year after implementation.* *Verbal aggression: 3 months pre-implementation, n=3 patients threatened violence to staff or other patients if forced to abstain, however none of the patients who threatened violence were involved in any aggressive incident during the follow-up period.* *There was a reduction in the number of recorded verbal aggression incidents from 3 months before the ban to 3 months after than ban (29 incidents versus 16 incidents); the change in rates of verbal aggression was not statistically significant (P=0.9).* *3 months post-implementation, n=2 patients were involved in verbal outbursts attributed to nicotine withdrawal during the first month after policy implementation. 12 months post-implementation, there was no recorded verbal aggression directly related to nicotine withdrawal 1 year after implementation.* *Use of p.r.n. tranquilliser medication: Comparing the rates of use of tranquillisers for patients 3 months pre-implementation with rates 3 months post-implementation, there was no statistically significant change in rates (P=0.6 for lorazepam and P=0.4 for haloperidol).* *Clozapine serum levels: Twenty-three*	

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
				(41%) patients received clozapine (at 3-months post-implementation? (not reported when)), all of whom were smokers; the increase in clozapine levels was significant (P=0.006). It was necessary to reduce the dose in four (17%) patients (again, not reported when). **Attrition details** Not applicable	
Sterling (1994) **Authors** *Sterling et al.* **Year** 1994 **Aim of study** *Was to examine the impact of admissions and attendance of adopting a smoke free policy at a cocaine treatment program offering outpatient group therapy sessions 3 half days a week.* **Study design** Cohort study **Quality score** - **External validity score** +	**Country** USA **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health *Outpatient cocaine treatment program.* **Source population** Patients **Source population demographics** None reported **Recruitment** Recruitment method *They studied the 204 first admission cases.* **Population selection criteria** Inclusion criteria *Those who enrolled in the university sponsored, community based outpatient cocaine treatment program in the three months prior and three months following the September ban. They studied the 204 first admission cases.* **Potential sources of bias** **Setting** *Outpatient cocaine treatment program.*	**Method of allocation** Not applicable **Smokefree implementation stage** Smokefree in place *Implemented Sep YYYY (year not stated, early 1990s?)* **When assessed** Before implementation – multiple time points *3 months pre-ban (Jun-Aug) breakdown; sub-sample 1 month pre-ban (Aug)* After implementation – multiple time points *3 months post-ban (Sep-Nov) breakdown; sub-sample 1 month post-ban (Sep)* **Where** Mental Health **Smokefree coverage** Smokefree building(s) **Supporting strategies/ interventions** Posters/signage Closure of smoking rooms *Prior to the ban, smoking was restricted to one large room* Other *Informed by therapist* **Sample size** Total sample *n=204* *Sample characteristics: 93.1% African*	**Primary outcomes** Other consequence(s) - subjective *Program attendance: average number of patients attending groups; Patient enrolment: average number of daily new admissions per week in the 3 months prior to and following the ban; proportion of premature terminators from program* **Follow-up periods** Follow-up period(s) *The main analysis breaks it down into a three month before and three month after ban, however other results give a break down of one month before and one month after ban.* **Method of analysis** Method(s) of analysis *Not stated. However T values and levels of significance reported. T-tests?*	**Primary outcomes** Relevant results - other *Outpatient enrolment* *The average number of daily new admissions per week did not decrease significantly following the policy change (t (24)=1.40, p>0.05) and 1.43 (S.D = 0.59) for the 3 months prior to, and the 3 months following the ban, respectively.* *Outpatient Attendance.* *no significant increase in the proportion of premature terminators was observed following the smoking ban (x2 = 2.54, 5d.f, p>0.05).* *Results indicated that the average number of outpatients attending groups per week did not decrease significantly following the ban, with a mean of 21.75 (S.D = 2.18) group attendees before, and 19.75 (S.D = 2.99) following, (t(24) = 1.96, p> 0.05).*	**Limitations identified by author(s)** Identified by author(s) *Made no direct attempt to assess patient or staff distress as a consequence of banning smoking.* **Limitations identified by review team** **Evidence gaps/future research recommendations** None reported **Source of funding** Other

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
		American; 60.3% female; average age at admission 31.6 years (SD=6.4). **Baseline comparison** Not applicable **Study sufficiently powered?** +			
Stillman (1990) **Authors** *Stillman et al.* **Year** 1990 **Aim of study** *Evaluation of a policy ending smoking in a large urban medical centre.* **Study design** Cohort study *Prospective descriptive study* **Quality score** + **External validity score** +	**Country** USA **Urban/Rural setting** Urban **Secondary Care Setting** Not Mental Health (Acute and/or Maternity) **Source population** Staff *Full and part time employees at the hospital and school of medicine.* **Source population demographics** None reported **Recruitment** Recruitment method *All full and part time staff identified and sent via their paycheck an initial survey 2 months before policy announcement. Respondents from this initial survey were then sent the follow up surveys at 6m and 1 y after implementation.* **Population selection criteria** Inclusion criteria *Full and part time permanent employees of the hospital and the school of medicine* **Potential sources of bias** *Self selection bias* *6050/8742 (69.2%) completed initial questionnaire, of these 5190 were usable under the study criteria.* **Setting**	**Method of allocation** Not applicable Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *Announced 1st Jan 88, implemented 1st Jul 88.* **When assessed** Before implementation – single time point *Survey Nov 87 (2 months pre-announcement); Ashtray butt counts monthly for 6 months pre-ban; Smoking observations monthly for 8 months pre-ban* Before implementation – multiple time points *Nicotine vapour monitoring 8 months and 1 month pre-ban* After implementation – single time point *Survey Nov-Dec 88 (1 year follow-up, 6 months post-ban); Nicotine vapour monitoring 8 months post-ban; Ashtray butt counts monthly for 6 months post-ban; Smoking observations monthly for 8 months post-ban* **Where** Not Mental Health **Smokefree coverage** Smokefree building(s) **Supporting strategies/ interventions** Written policy(ies) Implementation committee *Steering committee of representatives of all major departments was formed to*	**Primary outcomes** Compliance - subjective *Counts of cigarette remnants (in ashtrays, morning and afternoon, at Elevator lobbies, Waiting lounges, Hospital entrances at the parking garages);* *Observations of employee smoking indoors (% staff observed actively smoking (in cafeteria, in lounge); Observations of visitor smoking indoors (% visitors observed actively smoking (in cafeteria, in lounge))* Compliance - objective *Measures of atmospheric nicotine vapour as a proxy for environmental tobacco smoke (ETS); Counts of negligent smoking fires (hospital incident reports)* Other consequence(s) - subjective *Self-report employee current smoking behaviour; self-report employee quit rates* **Follow-up periods** Follow-up period(s) *1 year after the initial survey and 6 months after policy implementation.* **Method of analysis** Method(s) of analysis *Continuous variables were compared from baseline to follow up with Students paired t test for variables*	**Primary outcomes** Relevant results - compliance *The percentage of people observed actively smoking indoors declined dramatically, indicating widespread compliance with the smokefree environment.* *Observations of employee smoking indoors:* *In the 8 months before the smokefree policy was introduced, 2% staff (of 422 staff observed) were recorded actively smoking in two of the hospital cafeterias with a significant decrease to 0% staff (of 330 observed) recorded at 1 and 6 months after the policy was introduced (p<0.0001). A similar observation in four lounge areas of the hospital found a significant decrease in observed staff smoking from 39% (of 23 staff observed) to 0% (of 17 staff observed) before and after the smokefree policy was introduced (p<0.0001).* *Observations of visitor smoking indoors:* *In the 8 months before the smokefree policy was introduced, 13% visitors (of 424 visitors observed) were recorded actively smoking in two of the hospital cafeterias with a significant decrease*	**Limitations identified by author(s)** None identified by author(s) **Limitations identified by review team** **Evidence gaps/future research recommendations** None reported **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
	The Johns Hopkins Hospital. Maryland, USA. A large urban medical centre encompassing 24 buildings in a 12-square-block area.	*implement the smokefree environment* Cessation support *Free to all employees: multi component 8-week smoking cessation groups, 1-hour quitting clinics, individualised counselling, and self-help manuals* Staff training *Targeted at all hospital managers, supervisors and security personnel to ensure proper policy enforcement* Other strategies: *Internal media and educational campaign; Free employee screening for cholesterol, blood pressure, CO, cardiovascular risk assessment counselling 6 months before implementation and continued to the present.* **Sample size** Total sample *n=5190 staff pre-implementation (59%); of those still employed post-implementation, n=2877 (64%).* *n=1260 minutes of observations of employee and visitor smoking in the cafeterias and n=1440 minutes in the lounges.* **Baseline comparison** No differences btw groups **Study sufficiently powered?** ++	*demonstrated to be normally distributed by the Wilk-shapiro test for normality. Categorical variables were compared by means of cross tabulation tables and x2 statistics. Nicotine vapour concentrations of 0.24mg/m3 were below the analytical limit of detection. The median point of 0.12mg/m3 was used to calculate medians for areas with levels <0.24mg/m3. Wilcoxon Rank-Sum Test for calculating significance of changes in nicotine vapour concentrations.*	*to 0.3% visitors (equivalent to 1 visitor of 329 observed) recorded at 1 and 6 months after the policy was introduced (p<0.0001). A similar observation in four lounge areas of the hospital found a significant decrease in observed visitors smoking from 41% (of 64 visitors observed) to 0% (of 68 visitors observed) before and after the smokefree policy was introduced (p<0.0001).* *Cigarette butt count from ashtrays: Morning and afternoon counts of cigarette butts from ashtrays at the hospital's elevator lobbies, waiting lounges and hospital entrances at the parking garages were conducted monthly in the 6 months before policy implementation and at 1, 3 and 6 months following implementation. (Note that the ashtrays remained in place after implementation as they were wall-mounted). A significant reduction of 80.7% in counts was recorded in the elevator lobby areas after smokefree implementation (from n=958 to n=184, p<0.01) and a significant decrease of 96.8% was recorded in the waiting lounges after implementation (from n=342 to n=11, p<0.01). There was a non-significant increase of 7.7% in the number of butts recorded in ashtrays at the hospital entrances at the parking garages (from n=90 to n=97); the change was only significant (p<0.05) for the morning count in this location which increased by 88.2% (from n=17*	

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
				to n=32). *Counts of negligent smoking fires: During the 4 years preceding implementation of the smokefree policy, there was an average of 20 fire incidents per year in the hospital (range, 12-29 incidents). There were no fire incidents due to negligent smoking within the first year of the smokefree policy.* *Change in indoor ETS levels: Passive diffusion nicotine monitors were used to measure atmospheric nicotine vapour as a proxy for environmental tobacco smoke (ETS) levels in seven indoor locations around the hospital at 1 and 8 months pre-implementation and 8 months post-implementation. In six locations there was a significant decrease in median levels of nicotine concentrations after smokefree was implemented: in visitor/patient waiting areas (from 3.88 to 0.28 mg/m3) and in cafeterias (from 7.06 to 0.22 mg/m3) (both p<0.001); in staff lounges (from 2.43 to 0.12 mg/m3) and in offices (from 2.05 to 0.12 mg/m3) (both p<0.01); in corridors and elevators (from 2.28 to 0.20 mg/m3) and in patient areas (from 0.84 to 0.12 mg/m3) (both p<0.05). The decrease in median concentration of vapour-phase nicotine in restrooms of to 17.71 to 10.00 mg/m3 was not significant, and the levels of ETS were high before and after implementation of smokefree.*	

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
				Relevant results - other *During the year between surveys, the reported cross sectional smoking prevalence declined by 25%, from 21.7% to 16.2% (p=0.0001).* *The self reported sustained quitting rate in the respondents in the year between surveys was 20.4% (91/446).* **Attrition details** Number lost to follow-up *Only those who filled in the initial survey and still working for the hospital were followed up at the 6 months and 1 year time point. At 6 months - 5190 who had filled in the questionnaire were still working for the hospital*	
Velasco (1996) **Authors** *Velasco et al.* *[Ryabik, Lippmann & Mount]* **Year** 1996 *A two-year follow-up on the effects of a smoking ban in an inpatient psychiatric service*. 1994 *[An earlier paper reported on the first 2 waves of data collection: Implementation of a smoking ban on a locked psychiatric unit.]* **Aim of study** *The effects of prohibiting*	**Country** USA **Urban/Rural setting** Not reported **Secondary Care Setting** Mental Health **Source population** Patients **Source population demographics** Health status *About 40% have psychosis, 40% affective disorder, 20% chemical dependence or personality or organic mental disorders.* Smoking status *Smokers and non-smokers.* **Recruitment** Not applicable *No recruitment. Observations of those in inpatient facility.* **Population selection criteria**	**Method of allocation** Not applicable **Smokefree implementation stage** Smokefree in place *Implemented 1st Oct 91* **When assessed** Before implementation – single time point *6 weeks immediately prior (14th Aug-30th Sep 91)* After implementation – multiple time points *6 weeks immediately after (1st Oct-12th Nov 91) and 6 weeks two years later (1st Oct-3rd Nov 93)* **Where** Mental Health **Smokefree coverage** Other *Prohibited cigarette smoking of inpatients.* **Supporting strategies/ interventions** Posters/signage Pharmacotherapies/NRT	**Primary outcomes** Other consequence(s) - objective *Number of incidents before and after implementation of the ban in 1991 and during the follow up period in 1993.* *Nursing staff prospectively documented the following data: daily census; number of security calls, applications of seclusion and restraint, verbal assaults, and physical assaults per shift; number of administrations of prn medication for anxiety per day; number of patients per day who received nicotine gum or transdermal nicotine; and number of discharges against medical advice per day.* **Follow-up periods** Follow-up period(s) **Method of analysis**	**Primary outcomes** Relevant results - other *Means for the three time periods compared showed significant differences in-* *Number of verbal assaults (F=8.80, df=2,109, p<0.001) during the period immediately after implementation in 1991 was significantly higher than in the period before implementation, but no difference in the number of assaults before implementation and in 1993 follow up.* *Number of applications of soft restraints (F=14.36, df=2,105, p<0.001) were applied significantly more often during the 1993 follow up period than during the period before implementation of the ban.*	**Limitations identified by author(s)** Identified by author(s) *lack of control group and possible cohort effects.* *Some smoking patients were only partially abstinent from tobacco, as they continued to smoke during out of hospital activities. It may be that the study would have found more significant results had the researchers been able to ensure that absolutely no smoking had taken place during the hospitalisation period. Retrospectively it was noted that there were some brief gaps of data collection in the second 6 week period. Because of this, data were aggregated*

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
cigarette smoking on the behaviour of patients on a psychiatric inpatient unit were assessed immediately after implementation of a smoking ban and two years later. **Study design** Cohort study **Quality score** - **External validity score** -	% participation not reported *Participation of all those in inpatient facility.* **Potential sources of bias** Not applicable **Setting** *25 bed, locked inpatient psychiatric service in the university of Louisville Hospital which serves primarily an inner city population.*	Other strategies: *Patient notification prior to admission* **Sample size** Total sample *1991 (immediately prior and immediately post-ban combined): n=193 patients; 1993: n=96 patients* *Sample characteristics: 991 (immediately prior and immediately post-ban combined): 52% female; 70% Caucasian, 28% African American, 2% other. 1993: 53% women; 63% Caucasian, 36% African American, 1% other. Average length of stay approximately 9 days in 1991 and in 1993; and daily patient census and patient diagnosis similar in both years.* **Baseline comparison** Not applicable **Study sufficiently powered?** + *Does not state was significance level is used however 0.06 is outlined as significant in the paper.*	Method(s) of analysis *Means for the three time periods were compared using analysis of variance. Simple F tests were used to compare means for the period before implementation of the smoking ban with means for each of the two periods after the ban.*	*Number of patients who received replacement nicotine (F=8.09, df=2,106, p<0.001) compared with the period before the ban, consumption of replacement nicotine was higher both during the period immediately after implementation of the ban and during the 1993 follow up.* *The use of prn medication for anxiety (f=2.89, df=2,107, p<0.06) was significantly higher during the period immediately after implementation of the ban than during the period before the ban.* *The mean number of physical assaults, security calls and discharges against medical advice did not change significantly between any of the three time periods.* **Attrition details** Not applicable	*into time increments of 7 day units for analysis. This resulted in a 6 week baseline with a 4-week post smoking ban test period.* *Generalisability of the findings may be limited to patients in inner city teaching hospitals.* **Limitations identified by review team** **Evidence gaps/future research recommendations** *Additional research should include studies of a longer duration. As the current study period was only 12 weeks long, it may be that the increase in agitation was due in part to the novelty of the situation. Future patient populations who have become more accustomed to smoke-free environments might be less affected by this change.* **Source of funding** Not reported
Vorspan (2009) **Authors** *Vorspan et al.* **Year** 2009 **Aim of study** *To evaluate smoking exposure in employees from a psychiatric facility, when smoking became forbidden in all closed public places in France*	**Country** France **Urban/Rural setting** Urban *City* **Secondary Care Setting** Mental Health **Source population** Staff *Staff members (nurses, nursing assistants, psychiatrists, residents, administrative assistants)* **Source population demographics**	**Method of allocation** Investigator did not assign exposure Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *Implemented 1 Feb '07* **When assessed** Before implementation – single time point *1 month pre-ban (Jan '07), objective measures only* After implementation – single time point *1 month post-ban (Mar '07), objective and subjective measures*	**Primary outcomes** Compliance - subjective *Self-reported exposure to environmental tobacco smoke (recalled before ban; after the ban; respiratory symptoms (coughing, wheezing) or sensory symptoms (dry eyes, tobacco smells on your clothes) since the ban).* Compliance - objective *Smoking exposure measured by salivary cotinine levels (quantified by high performance liquid*	**Primary outcomes** Relevant results - compliance *Self-reported exposure to environmental tobacco smoke: Surveyed after the ban was implemented, n=40 non-smoking staff (97.5%) perceived that they were exposed to environmental tobacco smoked (ETS) at work before the indoor smoking ban.* *Surveyed after the ban, 76.2% non-smoking staff perceived that they were less exposed to smoking at work*	**Limitations identified by author(s)** None identified by author(s) **Limitations identified by review team** *No control group for temporal trends* **Evidence gaps/future research recommendations** None reported **Source of funding** Not reported

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
Study design Before-and-after study (with same sample after intervention) Cross-sectional study **Quality score** + **External validity score** +	Smoking status *All non-smokers* **Recruitment** Recruitment method *Advertising poster in psychiatry dept.; oral consent given; participation was anonymous.* **Population selection criteria** Inclusion criteria *Employees on day duty in the psychiatry dept.; non-smokers only.* Exclusion criteria *Staff working on night duty because patients smoke less at night. Smokers (n=14), assessed by CO smokerlyser ≥10ppm, were excluded from the analysis because of high variability in cotinine levels before and after the ban.* % participation agreement *100%* **Potential sources of bias** *100% participation; 25% (the smokers) excluded from the analysis* **Setting** *Psychiatry department of Fernand Widal hospital, in Paris*	**Where** Mental Health *Psychiatry department* **Smokefree coverage** Smokefree building(s) **Supporting strategies/ interventions** Pharmacotherapies/NRT *For inpatients experiencing withdrawal symptoms (patches 10-40mg/day, inhalators and ad libitum gum); therapies available for staff willing to quit* Closure of smoking rooms *Indoor smoking areas were closed* Other *Patients evaluated for outdoor smoking breaks, ranging from none, limited and accompanied by a nurse, to unlimited.* **Sample size** Total sample *N=42* *Sample characteristics: 76% women; mean age 37 (SD=10) years; location in hospital 62% ground floor, 38% 1st floor; 100% non-smokers, 100% smokerlyser CO measures <5ppm, n=2 lived with smoker.* **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported	*chromatography). Employees were defined as ''exposed'' before the ban if cotinine level >25ng/ml.* **Follow-up periods** Follow-up period(s) *3 months* **Method of analysis** Method(s) of analysis *Paired pre-ban and post-ban decrease in cotinine levels was tested with a one-tailed nonparametric Mann-Whitney U test. Subjective measures are described and compared according to pre-ban exposition with Chi-Square tests. Statistical analyses were performed with SPSS 12.0. One respondent excluded as cotinine result was missing.*	*after smokefree implementation. Sub-group differences: The level of perceived improvement in exposure to smoking at work after the ban was 100% among the "exposed" to ETS staff (who had high cotinine levels before the ban) (n=7) and 70.6% among the "non-exposed" to ETS staff (who had ≤25ng/ml cotinine levels) (n= 34). The difference in perceived improvement between groups was not statistically significant (Chi-Square=3, df=1, p=0.089).* *Sub-group differences: The level of perceived improvement in respiratory and sensory symptoms at work after the ban was 75% among the "exposed" to ETS staff (who had high cotinine levels before the ban) (n=7) and 41% among the "non-exposed" to ETS staff (who had ≤25ng/ml cotinine levels) (n= 34). The difference in perceived improvement between groups was not statistically significant (Chi-Square=2, df=1, p=0. 091). [subjective measures favour (direction of effect) smokefree]* *Smoking exposure measured by salivary cotinine levels: One month before the implementation of an indoor smoking ban, 83% (n=34) of non-smoking staff in the psychiatry department had a median of 0ng/ml cotinine level, thus defined as "non-exposed" to ETS at work (cotinine ≤25ng/ml); 17% (n=7) of the staff had cotinine levels >25ng/ml and were defined as "exposed" to ETS at work*	

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
				pre-ban. (Exposed sub-sample characteristics: none lived with a smoker; occupation: nurse-assistant (n = 4), nurse (n = 2), pharmacist (n = 1); mean age 47 years; n=5 women; all worked on the ground floor (44% ground floor staff). *One month after the implementation of an indoor smoking ban, 83% (n=34) of non-smoking staff in the psychiatry department remained "non-exposed" to ETS at work (median of 0ng/ml cotinine level). In the sub-sample of "exposed" non-smokers (n=7), one month after the implementation of an indoor smoking ban there was a significant 8ng/ml decrease in mean cotinine level from 40 (SD=17) ng/ml pre-ban to 32 (SD=8) ng/ml post-ban (one-tailed Mann-Whitney U=1.69, p=0.045) but this sub-sample remained "exposed" (>25ng/ml cotinine).* *The authors hypothesise that, "the garden was already a smoking area before the ban and remained a smoking area after the ban, smoking patients and employees may smoke close enough to the windows, doors and halls of the ground floor facility to expose non-smokers … remaining smoking exposure originating from places other than work … [another] hypothesis is that the ban was broken" [p.531]* **Attrition details** Not applicable	
Wheeler (2007)	**Country** USA	**Method of allocation** Investigator did not assign exposure	**Primary outcomes** Compliance - subjective	**Primary outcomes** Relevant results - compliance	**Limitations identified by author(s)**

Study details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis	Results	Notes
Authors *Wheeler et al.* **Year** 2007 **Aim of study** *To measure the impact of the new smoke-free campus policies on employees and patients at the two institutions on the hospital campus.* **Study design** Before-and-after study (with different sample after intervention) **Quality score** - **External validity score** +	*Arkansas* **Urban/Rural setting** Not reported **Secondary Care Setting** Not Mental Health (Acute and/or Maternity) **Source population** Patients Staff **Source population demographics** Smoking status *Staff: convenience data collected for 2706/8484 (31.9%) current employees (site 1) by the occupational health office showed a 16.4% rate of smoking on 1st Jul 04 (3 days pre-implementation).* **Recruitment** Recruitment method *Questionnaire site 1 (staff): staff roster from HR Dept. used to randomly sample 1,400 from ~9,000 employees without replacement* Not applicable *For records data (hospital utilisation, employee resignations, terminations, hires)* **Population selection criteria** Inclusion criteria *Questionnaire site 1 (staff): university and hospital and faculty staff* Exclusion criteria not reported *Questionnaire site 1 (staff)* % participation agreement *60.1% (pre-implementation), 65.1% (post-implementation) for Questionnaire site 1* **Potential sources of bias**	Minimising of confounders not reported **Smokefree implementation stage** Smokefree in place *Site 1: announced 29th Oct 03, implemented 4th Jul 04; Site 2: announced Spring 04, implemented 6 months later (employees) and Spring 05 (12 months later) (employees, visitors, patients)* **When assessed** Before implementation – single time point *Site 1: Apr 04 (questionnaire), Jul 03-Jun 04 monthly mean (hospital utilisation), Jan 04 (employee resignations, terminations, hires); Site 2: 2 months after employee only ban (= 4 months pre-full smokefree) (questionnaire), May 04-Oct 04 monthly mean (hospital utilisation)* After implementation – single time point *Site 1: May 05 (questionnaire), Aug 04-Jul 05 monthly mean (hospital utilisation), Jan 05 (employee resignations, terminations, hires); Site 2: May 05-Oct 05 monthly mean (hospital utilisation)* **Where** Not Mental Health **Smokefree coverage** Smokefree building(s) Smokefree vehicles Smokefree grounds Other *All property owned or leased.* **Supporting strategies/ interventions** Written policy(ies) Implementation committee Posters/signage Staff meetings Staff letters/payslip notes Patient appointment letters Cessation support	*Site 1 (staff only): Employee exposure (self-report walking through cigarette smoke on campus)* Other consequence(s) - subjective *Site 1 (staff only): Employee smoking rates (self-report current smoker); [Employee likelihood to leave as a result of the new policy – attitude]* Other consequence(s) - objective *Employee resignations/terminations and new hires; Hospital utilisations (Monthly occupancy rates calculated using licensed bed and staffed bed counts, Meant patient bed days and Mean daily censuses (MDCs)); Cessation support utilisation (site 1 staff only)* **Follow-up periods** Follow-up period(s) *13 months (questionnaire, site 1 only), 12 months (other measures, sites 1 and 2)* **Method of analysis** Method(s) of analysis *Descriptive statistical methods of analyses included proportions and their standard errors. Rao-Scott Chi-square tests for independence (a design-adjusted version of the Pearson Chi-square test) were applied to compare the equality in proportions before and after policy implementation. Fisher's exact test was applied in instances where Chi-square cell expectancy assumptions were not met.*	*Site 1 (staff only): Employee exposure: significantly fewer employees reported that they had to walk through cigarette smoke on campus after the ban than before the ban (18.0% vs. 43.1%, p<0.0001). Results in favour of smokefree.* Relevant results - other *Employee resignations/terminations and new hires: There were no discernible changes in mean employee resignations/terminations after implementation of the campus smoking ban at site 1 or site 2. At site 1, the mean resignations/terminations rate for the 6-month period pre-implementation was 6.14% of all active employees, and 6.05% for the 6-month period post-implementation. There were no discernible changes in rate of new employee hires after implementation of the campus smoking ban at site 1 or site 2. (No further data reported.)* *Hospital utilisations (consumers' use of hospital): Site 1: The 12-month mean licensed bed occupancy changed little pre- and post implementation (57.0% to 58.1%), similarly the 12-month mean staffed bed occupancy changed little pre- and post implementation (87.2% to 87.8%). Over the measured 24 months, the mean monthly occupancy rate using staffed beds and licensed beds was 87.4% and 57.5%, respectively. For both measures, the lowest and highest monthly means occurred in the year*	Identified by author(s) *Study restricted to two hospital campuses and not all outcomes were measured on both campuses. Efforts to enrol other regional hospitals were limited by the hesitancy of institutions to commit to smoke-free and concerns about sharing proprietary information about employment statistics.* **Limitations identified by review team** *Limited reporting as many measures/parts to the study; self-selection bias; no control group* **Evidence gaps/future research recommendations** Evidence gaps *"Reasons that hospitals have not volunteered to go smoke-free have not been carefully studied"* **Source of funding** Government Voluntary/Charity

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	Mixed: Not applicable for patient/staff records data (no recruitment); Staff survey used HR roster to randomly sample 1,400 from ~9,000 employees without replacement, weighted by gender and age groups for representative estimates of employee population. 60.1% (pre-), 65.1% (post-) participation. No demographics for non-responders. **Setting** *Two sites: 1) Arkansas's university hospital and academic medical center and 2) a smaller, private children's hospital that uses the university's faculty and residents for its medical staff.*	Pharmacotherapies/NRT *Site 1: free to employees for 6m (Apr-Sep 04), on sale on campus to non-employees. Site 2: free to employees (open-ended), n sale on campus to non-employees.* Other *Staff appointed (site 1: wellness director, site 2: tobacco control specialist with cessation expertise); Site 1: portable pagers in emergency dept. for patrons/visitors who needed to leave campus to smoke; Scripts for staff to deal with patrons smoking; Staff violations dealt with by HR dept.; Written policy in new employees packs; Neighbouring businesses notified; Announcements in local media.* **Sample size** Total sample *Questionnaire site 1 (staff): n=842 (pre-implementation), n=912 (post-implementation)* *Sample characteristics: occupation distribution changed significantly due to a change in nurse respondents from 19% (pre-) to 11% (post-) (p<0.0001) and education distribution changed significantly due to decreases in 'high school or less' and 'college graduate' and an increases in 'professional or post-college education' (p=0.015). Gender (p=0.8964), age and race distributions did not change significantly between measures.* *Questionnaire site 2 (staff): n=183* **Baseline comparison** Not applicable **Study sufficiently powered?** Not reported		*before policy implementation. Comparing the 12-month means before and after smokefree implementation, the mean monthly number of patient bed days at site 1 was 7,012, with a low of 6,649 occurring before policy implementation (Nov 03) and a high of 7,409 occurring after implementation (Jul 05).* *The Mean Daily Census for the 12 months pre-implementation was 228.2 and for post-implementation was 232.6. Over the 24 months of the study period, the Mean Daily Census was 230.1, with the lowest census (218.9) and the highest census (244.4) both occurring prior to implementation (in Aug 03 and Feb 04 respectively).* *Site 2: Comparisons of the 6-month averages before and after implementation of the campus-wide smoke-free policy at site 2 show that the licensed bed occupancy rate increased slightly after implementation (from 73.3% to 74.7%) and the staffed bed occupancy rate declined slightly after implementation (from 79.3% to 71.6%). (There was a concurrent increase in the number of staffed beds over this period due to hospital expansion activities.) The mean monthly occupancy rate using staffed beds was 74.4%, with the lowest being 69.4% in May 2005 (post-implementation) and the highest being 82.8% in June 2004 (pre-implementation). The equivalent mean*	

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				monthly occupancy rate for licensed beds was 73.8%, with the lowest being 70.4% in August 2004 (pre-implementation) and the highest being 76.8% in June 2005 (post-implementation). Comparisons of the 6-month averages before and after implementation of the campus-wide smoke-free policy at site 2 show that the mean patient bed days increased slightly after implementation (from 6298 to 6413). During that period, the mean monthly patient days at site 2 were 6,305, with a low of 5,766 in Feb 05 and a high of 6,590 in May 04, both pre-implementation. The overall Mean Daily Census was 206.7, with August 2004 having the lowest Mean Daily Census (197.1, pre-implementation) and June 2005 having the highest Mean Daily Census (215.3, post-implementation). Comparisons of the 6-month averages before and after implementation of the campus-wide smoke-free policy at site 2 show that the Mean Daily Census increased slightly after implementation (from 205.4 to 209.2). *Overall demand for hospital services increased after implementation as indicated by 2% in mean patient bed days and mean daily censuses (in favour of smokefree).* *Cessation support utilisation (site 1 staff only): The cessation services at site 1 reported that 210 staff used one of the several cessation options offered. Quit rates were not reported.*	

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				No further details are reported, including the date of this data. *Employee smoking rates (Site 1 staff only): significantly fewer employees reported they were 'currently a cigarette smoker' after the ban than before the ban (2.6% vs. 9.6%, p<0.0001). (The researchers were "concerned that the rates in the survey were biased by smokers who did not report their behaviors" (p.751) and attempted to validate their results using other self-report surveys with site 1 employees: another survey reported pre-implementation prevalence as 16.4% and a further survey report post-implementation prevalence as 8%). Results in favour of smokefree.* *[Employee likelihood to leave as a result of the new policy: Staff only (site 1 pre- and post-measures, not reported if includes site 2 cross-sectional measures): "more employees stated that they were likely to stay as a result of the policy (more than 30% in both years) or were unaffected by the policy (60% or greater in both years) than those who said they were likely to leave because of the policy (less than 5% in both years)" (p.750). (The researchers were "concerned that underrepresentation of smokers, who may have chosen not to return the survey, might have influenced our results" (p.751) and reweighted the data (more weight to smokers to bring*	

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				the prevalence in Apr 04 and May 05 up to 15% and reduced weights to non-smokers). On reanalysis of the 'likelihood to leave as a result of the new policy' variable, percentages changed proportionally in both years, but only by 2-3% without any effect on significance testing. The results were still in favour of smokefree.)] **Attrition details** Not applicable	