Original Article

# Smoking in prisons: The need for effective and acceptable interventions

Catherine Ritter[a,*], Heino Stöver[b], Michael Levy[c], Jean-François Etter[d], and Bernice Elger[a]

[a]University Center of Legal Medicine of Geneva and Lausanne, Rue Michel-Servet 1, CH-1211 Geneva, Switzerland.
E-mails: Catherine.Ritter@unige.ch; Bernice.Elger@unige.ch

[b]Faculty of Health and Social Work, University of Applied Sciences, Nibelungenplatz 1, D-60318 Frankfurt, Germany.
E-mail: hstoever@fb4.fh-frankfurt.de

[c]School of Clinical Medicine, College of Medicine, Biology and Environment, Australian National University, GPO Box 825, Canberra City, ACT 2601, 0200 Australia.
E-mail: michael.levy@act.gov.au

[d]Faculty of Medicine, Institute of Social and Preventive Medicine, University of Geneva, Rue Michel-Servet 1, CH-1211 Geneva, Switzerland.
E-mail: Jean-Francois.Etter@unige.ch

*Corresponding author.

AUTHOR COPY

**Abstract** Tobacco-smoking prevalence has been decreasing in many high-income countries, but not in prison. We provide a summary of recent data on smoking in prison (United States, Australia, and Europe), and discuss examples of implemented policies for responding to environmental tobacco smoke (ETS), their health, humanitarian, and ethical aspects. We gathered data through a systematic literature review, and added the authors' ongoing experience in the implementation of smoking policies outside and inside prisons in Australia and Europe. Detainees' smoking prevalence varies between 64 per cent and 91.8 per cent, and can be more than three times as high as in the general population. Few data are available on the prevalence of smoking in women detainees and staff. Policies vary greatly. Bans may either be 'total' or 'partial' (smoking allowed in cells or designated places). A comprehensive policy strategy to reduce ETS needs a harm minimization philosophy, and should include environmental restrictions, information, and support to detainees and staff for smoking cessation, and health staff training in smoking cessation.
*Journal of Public Health Policy* (2011) **32**, 32–45. doi:10.1057/jphp.2010.47; published online 16 December 2010

**Keywords:** tobacco; smoking; policy; prison; ban

© 2011 Macmillan Publishers Ltd. 

## Introduction

Smoking prevalence and exposure to environmental tobacco smoke (ETS) are elevated in prisons, which creates a need for effective and acceptable interventions to reduce involuntary health risks to both detainees and staff. What are the appropriate interventions – from total tobacco bans to incentives and support for both prisoners and staff members – to cease tobacco smoking?

We summarize the literature on the prevalence of smoking among adult detainees and staff in prisons in different countries (the United States, Australia, and Europe), and provide examples of current policies intended to reduce ETS (Australia and Europe). We discuss critically their role, taking into account the aims and efficiency of public health interventions outside the prison context and in the broader frame of human rights laws and ethics. We bring issues regarding prisoners' physical and mental heath, drug dependence, and prison life into the discussion, illustrating the complexity of smoking in prison – the variety of factors interacting together that should be considered when elaborating policy.

AUTHOR COPY

## Methods

We gathered prevalence data and information on public health strategies through a systematic review and literature search (Pubmed, Informahealthcare, PsycInfo, Saphir, UpToDate, WHO, BDSP) conducted by Catherine Ritter. Our search terms were: smok* (*smoking, smokers, smoke free*), ban, smoking cessation, tobacco, policy, prevalence, prison, detainee*, staff, cardiovascular, risk factors, and health.

## Results

For smoking prevalence, three types of data are considered: prevalence among detainees and staff, comparisons between prevalence of tobacco smoking in prisons and in the general population, and gender-specific aspects.

## Smoking prevalence

Depending on country, prison type (prison, jail, remand), and study year, the prevalence of tobacco smoking in prisons varied between 64 per cent and 91.8 per cent.[1–7]

In the United States, the prevalence of smoking among prisoners (79 per cent) was more than three times as great as in the general population (23 per cent).[8,9] In Australia, the difference was even greater: smoking prevalence being 79–90 per cent among prisoners, compared with 17–19 per cent in the general population.[10] A significant decrease in smoking prevalence in prisoners occurred between 1996 and 2001 (from 88 per cent to 79 per cent).[11]

As the majority of prisoners are men, prevalence rates are best compared to those of men in the general population of the same age. In Europe, adult (men and women) smoking prevalence has been estimated to be around 27 per cent (around 40 per cent in men and around 18 per cent in women).[12] For prisons, both prevalence and policy have been studied most often in male prisons.[13] Comparisons of smoking by women detainees are difficult (Table 1).

In 2008, the Scottish prison service reported no change in the prevalence of smoking over the previous 4 years: 80 per cent (2004), 78 per cent (2005 and 2006).[15] In Switzerland, a study in a pre-trial jail showed significantly different prevalence among 'good sleepers' and patients complaining of insomnia. Seventy four per cent of insomniac prisoners smoked versus 53 per cent of good sleepers ($P = 0.007$).[18]

In the United States, the smoking prevalence among incarcerated women ranged from 42 per cent to 91 per cent, two to four times more than among women in the general population. [19–22]

AUTHOR COPY

**Table 1:** Prevalence's data – male prisoner population

| *Country/Place* | *Prevalence (%)* | *Reference* |
|---|---|---|
| Lithuania | 85.5 | Narkauskaite *et al*[7] |
| Poland | 81 | Sieminska *et al*[1] |
| London | 78 | Heidari *et al*[14] |
| Scotland | 79 | SPS[15] |
| Germany | 88 | Tielking *et al*[2] |
| France | 64 | Sahajian *et al*[16] |
| France | 90 | Sannier *et al*[17] |
| Greece | 91.8 | Lekka *et al*[5] |

Two Australian studies reported smoking prevalence rates of 81 per cent[23] and 83 per cent[24] for female inmates (Table 2).

Globally, the prevalence of tobacco smoking is closely correlated to drug-related behaviors – on entry. Illicit drug use is estimated to be around 75 per cent.[27] Imprisoned pregnant women are also likely to smoke (66 per cent).[28]

Few studies have looked at the prevalence of smoking among prison staff. In the United States, 24 per cent of prison staff members were current smokers, 38 per cent were ex-smokers, and 38 per cent never smoked.[29] In Australia, 40 per cent of prison staff smoke.[30] In Europe, a prevalence of 17 per cent has been reported in England.[4]

## Policy strategies for responding to ETS

There is no consistent public health strategy for smoking in Australian prisons. It is still a common practice to provide tobacco to newly arrived detainees, thereby engaging prisoners in the tobacco 'market' regardless of whether or not they are smokers.[31] Few prison health services provide fully developed tobacco cessation programs,[32] but these programs are becoming more common.[33]

Western Australia has developed a smoking reduction plan for prisons.[30] Smoking is permitted in outdoor areas and inside cells, but not in indoor shared living spaces. Smoke-free units exist. Other strategies, such as limiting the number of cigarettes that can be purchased or specific shared cell approaches are under development. Queensland Corrective Services have issued a strategy[34] that addresses both prisoner and staff issues. It aims to reduce the harm associated with tobacco use and exposure to ETS using education and communication, smoking cessation support, pricing and supply of nicotine replacement therapy (NRT), and environmental restrictions. The number of places where inmates can smoke is restricted, that is, smoking is prohibited in all cells.

AUTHOR COPY

**Table 2:** Prevalence's data – female prisoner population

| *Country/Place* | *Prevalence (%)* | *Source* |
|---|---|---|
| Lithuania | 82.1 | Narkauskaite *et al*[7] |
| United Kingdom | 85 | Plugge *et al*[25] |
| France | 63 | Dupont[26] |

Social marketing (use of commercial marketing principles to achieve behavioral change) has been suggested as a framework to achieve behavioral changes.[33]

In the United Kingdom, a Prison Service Instruction stated that all establishments should have a new policy to reduce ETS.[35] All indoor areas are required to be smoke-free, with one exception: cells occupied by smokers over 18 years of age. Prisoners may smoke only in their cells. Non-smokers share cells only with non-smokers; in rooms where smoking is allowed, no ventilation system should open into any other room of the prison; smoking is prohibited during work, education, and other activities or while in prison vehicles; no tobacco/cigarettes and lighters can be brought to court; if prisoners may not return to their cells during work, they are allowed to smoke in designated outdoor spaces; mother and baby units are declared as totally smoke-free.[35–38]

A wide range of treatments and interventions to support smoking cessation is provided: brief interventions, individual support, and advice by health-care staff (nurses) and smoking cessation advisors; NRT; acupuncture; smoking cessation courses; and, in a few cases, incentives such as increased access to physical exercise. The high prevalence of smokers and waiting lists for prisoner support (individual and groups) were seen as major barriers to implement the new policy.[4] Experience with social marketing strategies has also been studied.[39]

As in other federations, like Australia and the United States, in Switzerland too there is no uniformity. Cantonal laws govern smoking in prisons. Each canton or even each prison develops its own approach to smoking, resulting in great variability of strategies. Smoking is usually allowed in individual and common cells shared by smokers and in designated smoking rooms, but common areas (dining rooms, sport, and working places) are largely non-smoking. In the last 3–5 years, laws have reversed older policies that have permitted smoking in common rooms, but because of fire risks, not in cells.

AUTHOR COPY

## Prison staff

Many reports of smoke-free policies in the US prisons indicate that the issues around staff tobacco use are more challenging than prisoners' use.[40] Interestingly, in a survey conducted in 2003,

employees were more receptive to tobacco-smoking restrictions for inmates, but less supportive of restrictions for staff members. Most supported an indoor smoking ban, but not a total ban on smoking. Of the facilities surveyed, 77 per cent prohibited tobacco use by prisoners, although 79 per cent of them allowed staff use on the premises.[8] Staff influences enforcement of smoking bans[41] and employee unions may even block the implementation of tobacco policy.[42]

In the United Kingdom, staff may smoke in designated areas during breaks, but not in enclosed spaces. Staff who wished to give up smoking reported a lack of support for their wishes.[4]

## Ethical and humanitarian aspects

Access to tobacco for detainees addicted to it has been considered as important by international humanitarian law. These laws support provision of tobacco to prisoners, but do not mention the problem of passive smoking (ETS) that results from smoking tobacco. Indeed, article 89 of the Fourth Geneva Convention states that the 'use of tobacco shall be permitted', and article 98 mentions tobacco among the substances that detained persons should be allowed to purchase, adding that detainees 'shall receive regular allowances, sufficient to enable them to purchase' these goods and articles.[43]

In a commentary to this Geneva Convention, the reason for this provision is explained in more detail, illuminating tobacco's paradox of toxicity in a substance that may help some people endure life in prison: 'Tobacco is not an article of prime necessity; it is even to some extent a poison: many people do completely without it while others may be suddenly deprived of it without suffering physical inconvenience, and even with advantage to their health. But it is a fact that from a psychological point of view tobacco plays a very important part in the life of men in confinement. It calms the nerves of the smokers and helps them to bear their suffering, while it provides non-smokers with a valuable form of currency which enables them to procure other advantages in exchange. Tobacco is not harmful in the way that alcohol is, and the Convention, in placing it among the things like water which are essential for the internees, recognizes the important part played by this harmless narcotic in soothing men's minds and nerves'.[44]

AUTHOR COPY

In 1986, however, the 25th International Conference of the Red Cross acknowledged the harms of tobacco and encouraged national societies, in line with WHO endeavors, to 'establish, in case of need, programmes of education and public information on the effects of the use of tobacco', and to support measures of the World Health Organization for the implementation of strategies on smoking control.

## Discussion

Although tobacco control by regulation has been incremental, unrelenting, and successful, until recently, the same principles have been notably lacking in prisons. Prohibiting tobacco use by prisoners may be supported by staff, but a difficult challenge lays ahead. How to elaborate a strategy to reduce ETS while preserving the rights of prisoners who smoke (the majority) with minimal contamination of the environment for non-smoking prisoners and staff (the minority)?

Prisons host mostly disadvantaged people from lower socio-economic groups who, as such, have poorer health, more substance abuse, and smoking than the rest of the community. They endure a higher burden of mental illness and engage in unhealthy lifestyles (for example, smoking, physical inactivity, overweight, drug use).[6,45]

Researchers have reported a close correlation between the level of education and prevalence of smoking: less educated men and women use tobacco more because 'More educated inmates can cope better and in a more rational way with the stress of imprisonment'.[7]

Cigarettes play a more complex role than the simple fact of smoking: as a coping strategy to manage stressful situations (imprisonment, transfers, court appearances, sanctions, and prison visits),[6] as currency, as social common ground, and as help to alleviate boredom.[33]

These factors explain the high prevalence of smoking among prisoners and need to be taken into account when implementing public health strategies: 'Smoking cessation programs in prisons should be tailored to the unique stresses of the prison environment'.[6] Increased activities, employment, and education may be important to support smoking cessation.[30]

Australia has hesitated to promote strategies for responding to ETS in prison, despite the substantial gains made in the general community over the last 40 years. This fear stems in part from a riot at Woodford Prison in Queensland in April 1997.[31] A simple

AUTHOR COPY

smoking ban had negative impacts: the creation of a black market and continued smoking in prison and when released. Considering those results and the great demand for smoking cessation help,[24] smoking cessation support seemed absolutely necessary.[32] These policies brought great improvement, and thus the next step is their integration in national tobacco control policy.[33]

In the United Kingdom, the Prison Service Instruction sets a clear objective: to attain a 100 per cent smoke-free prison in the future. In practice, however, the ban is partial, as prisoners over 18 years of age are allowed to smoke in individual cells. All prisons do have a policy to reduce ETS with many of them providing a good range of cessation support to detainees, but differences remain in services provided for staff. Given its key role-enforcing policy, the staff needs more support for its own cessation. Free NRT and clinics on-site during the working day have been suggested.[4]

Research on smoking in prison brings advantages: evidence-based knowledge contributes to better decisions; staff and detainees can express concerns and opinions – which might prepare people for changes. Smoking becomes a worthwhile matter to discuss. Although slow and time consuming, a research-based approach has to be pursued, if there are to be national guidelines.

The examples of strategies we have presented show changes in recent years: ETS is now tackled with a more comprehensive approach, although difficulties remain, and each strategy has advantages and limits.

Total smoking bans seem to go beyond restrictions imposed on the general population. They are coercive, forcing people to adopt a behavior involuntarily. Total bans fail to recognize people's diversity, and how much they wish to stop smoking.[46] Despite bans, most prisoners continue to smoke during incarceration.[32,41] As tobacco becomes an illicit item, bans encourage smuggling, and a particular criminality develops around tobacco trade, in which the staff often gets involved.[32] Violating the ban may lead to disciplinary actions that negatively influence rehabilitation.[13]

Partial bans may be more realistic and more ethical, because, at the private level, each individual retains some freedom to smoke '… recognizing that this may be regarded as either their permanent or temporary home'.[47] Partial bans do diminish the health risks associated with ETS and support smoking reduction and cessation as eased by a smoke-free environment.[12]

AUTHOR COPY

Interventions considering only environmental restrictions (with smoking either totally or partially prohibited) remain insufficient, because without a coherent and global policy, health risks associated with ETS may be increased during incarceration.[13]

As frequently observed about drug dependence, a range of answers and solutions are available to those facing it. Thus, a coherent and global public health strategy to reduce ETS in prison should at least include:

- environmental restrictions;
- information and support for both detainees and staff to quit smoking (access to NRT, individual or group support therapy, self-help materials);
- train health staff in smoking cessation.

But these programs will be insufficient unless educational and occupational activities, drug dependence treatments, and other somatic or psychological health services are present.

Health professionals alone have little impact on most aspects of prison life that influence smoking – stress, inactivity, boredom, and loneliness; or on learning to cope with prison stress by other means than smoking.[7] Prisoners have serious health problems. Age-specific prevalence of hypercholesterolemia and angina in younger prisoners exceeds that for the general population.[11] Cardiovascular diseases among elderly prisoners are comparable to what is seen in non-prisoners who are 10 years older.[48] Smoking certainly plays an important role in advancing morbidity, and because of poor general health of prisoners its negative effects may be greater.[30] Smoking cessation support must not ignore illicit drug use and mental illness, both strongly related to tobacco use.[1,6] Research on and intervention for substance use and/or mental illness treatment must become part of smoking cessation in prison.

One reason that smoking rules in prisons are changing is that, at last, smoking is considered as a public health problem that cannot be ignored or minimized, including by health staff members. Smoking is treated as a drug dependence, like other addictions and according to the 'equivalence principles of health care' in prison.[49] One who wants to stop smoking increasingly has access to the means to do so. And by doing that, views tobacco like the general community.

AUTHOR COPY

In the general community, non-smoking is normal, whereas among prisoners the 'normative' behavior remains smoking, putting the non-smoker in the submissive position. In the world outside prisons, the human rights of non-smokers have tipped the balance to non-smoking, recognizing the risks associated with passive smoking (ETS). The evidence favoring smoking restrictions in closed venues is overwhelming.[50]

ETS is a complex matter that prisons had to face following the trend prevailing in the society. Changes have started locally, mostly at institutions; now controlling ETS in prisons must be written into national tobacco control programmes. As most policies are organized by target populations, they still tackle prisoners' and staff's basic requirements in the context of cessation support and occupational health protection. The upcoming strategies need to be based on one common goal: to have everyone live or work in a health-protecting environment, protected from ETS.

The main challenge is not only to diminish or eradicate ETS, a health-damaging component, and help people to change their behaviors, but also to find ways to share a common space among individuals who behave in different ways. Learning the rules of smoking-restricting policy will prepare individuals to adopt ways, rules, and norms of the greater society.

## Conclusions

The prevalence of tobacco smoking in prison is high. As smoke harms health, both smokers' and non-smokers', it is a major public health concern. In the last few years, laws and policies have tackled smoking, and in prisons too.[31,32] Some countries have moved towards a total ban on smoking and others chose 'restricted smoking' areas. The latter seems closer to human rights and ethics traditions. Cessation support (to stop smoking), training health staff, and alternative ways to reduce inactivity and/or cope with stress, and education are absolute musts for a global public health approach to reduce ETS in prison. If prisons adopt an overarching philosophy of harm minimization, it will also reduce the likelihood of tobacco becoming a 'currency' within an internal prison market.

Limiting the intervention to environmental rules alone, especially total bans, without helping individuals (detainees and staff) will repeat

AUTHOR COPY

the repression-oriented approach to drug dependence: prohibit the habit, assuming that to be sufficient to resolve, in the long term, the individuals' relation to a drug. The history of drug politics has shown how unsuccessful such limited interventions can be.

## About the Authors

Catherine Ritter, MD, is a Research Fellow at the University Center of Legal Medicine of Geneva and Lausanne, Geneva, Switzerland.

Heino Stöver is at the University of Applied Sciences, Faculty of Health and Social Work, Frankfurt, Germany.

Michael Levy is at the School of Clinical Medicine, College of Medicine, Biology, and Environment, Australian National University, Canberra, Australia.

Jean-François Etter is at the Institute of Social and Preventive Medicine, Faculty of Medicine, University of Geneva, Geneva, Switzerland.

Bernice Elger is at the University Center of Legal Medicine of Geneva and Lausanne, Geneva, Switzerland.

AUTHOR COPY

## References

1. Sieminska, A., Jassem, E. and Konopa, K. (2006) Prisoners' attitudes towards cigarette smoking and smoking cessation: A questionnaire study in Poland. *BMC Public Health* 6: 181.
2. Tielking, K., Becker, S. and Stöver, H. (2003) Entwicklung gesundheitsfördern der Angebote im Justizvollzug: Eine Untersuchung zur gesundheitlichen Lage von Inhaftierten der Justizvollzugsanstalt Oldenburg.
3. Department of Health and HM Prison Service. (2007) Acquitted – Best practice guidance for developing smoking cessation services in prisons. London, http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4005383, accessed 23 April 2010.
4. Department of Health South West Regional PHG. (2007) Implementation of Smoke Free Prison Service Instruction: Survey of Prisons in the South West Region. Final Results (Report by Mary-Ann McKibben).
5. Lekka, N.P., Lee, K.H., Argyriou, A.A., Beratis, S. and Parks, R.W. (2007) Association of cigarette smoking and depressive symptoms in a forensic population. *Depress Anxiety* 24(5): 325–330.

6. Richmond, R., Butler, T., Wilhelm, K., Wodak, A., Cunningham, M. and Anderson, I. (2009) Tobacco in prisons: A focus group study. *Tobacco Control* 18(3): 176–182.
7. Narkauskaite, L., Juozulynas, A., Mackiewicz, Z., Surkiene, G. and Prapiestis, J. (2007) The prevalence of psychotropic substance use and its influencing factors in Lithuanian penitentiaries. *Medical Science Monitor: International Medical Journal of Experimental and Clinical Research* 13(3): CR131–CR135.
8. Chavez, R., Oto-Kent, D., Porter, J., Brown, K., Quirk, L. and Lewis, S. (2005) *Tobacco Policy, Cessation, and Education in Correctional Facilities*. Chicago, IL: National Commission on Correctional Health Care and National Network on Tobacco Prevention and Poverty.
9. Kauffman, R.M., Ferketich, A.K., Murray, D.M., Bellair, P.E. and Wewers, M.E. (2010) Measuring tobacco use in a prison population. *Nicotine & Tobacco Research* 12(6): 582–588.
10. Scollo, M. and Winstanley, M. (2008) *Tobacco in Australia: Facts and Issues*, 3rd edn. Melbourne: Cancer Council Victoria, http://www.tobaccoinaustralia.org.au, accessed 14 May 2010.
11. D'Souza, R.M., Butler, T. and Petrovsky, N. (2005) Assessment of cardiovascular disease risk factors and diabetes mellitus in Australian prisons: Is the prisoner population unhealthier than the rest of the Australian population? *Australian and New Zealand Journal of Public Health* 29(4): 318–323.
12. WHO. (2007) *The European Tobacco Control Report 2007*. Geneva: World Health Organization.
13. Eldridge, G.D. and Cropsey, K.L. (2009) Smoking bans and restrictions in U.S. prisons and jails: consequences for incarcerated women. *American Journal of Preventive Medicine* 37(2): S179–S180.
14. Heidari, E., Dickinson, C., Wilson, R. and Fiske, J. (2007) Oral health of remand prisoners in HMP Brixton, London. *British Dental Journal* 202(2): E5.
15. SPS. (2008) *11th Prisoner Survey.* Edingburgh, UK: Scottish Prison Service (SPS).
16. Sahajian, F., Lamothe, P. and Fabry, J. (2006) Consommation de substances psycho actives chez les personnes entrant en prison [Psychoactive substance use among newly incarcerated prison inmates]. *Santé Publique* 18(2): 223–234.
17. Sannier, O., Gignon, M., Defouilloy, C., Hermant, A., Manaouil, C. and Jardé, O. (2009) Dépistage de l'asthme et de la bronchopneumopathie obstructive à la maison d'arrêt d'Amiens: étude préliminaire transversale [Obstructive lung diseases in a French prison: Results of systematic screening]. *Revue de pneumologie clinique* 65(1): 1–8.
18. Elger, B. (2009) Prison life: Television, sports, work, stress and insomnia in a remand prison. *International Journal of Law and Psychiatry* 32(2): 74–83.
19. Durrah, T.L. (2005) Correlates of daily smoking among female arrestees in New York City and Los Angeles, 1997. *American Journal of Public Health* 95(10): 1788–1792.
20. Stuart, G.L. *et al* (2006) Readiness to quit cigarette smoking, intimate partner violence, and substance abuse among arrested violent women. *American Journal on Addictions* 15(5): 396–399.
21. Heng, C., Badner, V. and Freeman, K. (2006) Relationship of cigarette smoking to dental caries in a population of female inmates. *Journal of Correctional Health Care* 12(3): 164–174.
22. Cropsey, K., Eldridge, G.D. and Ladner, T. (2004) Smoking among female prisoners: An ignored public health epidemic. *Addictive Behaviors* 29(2): 425–431.
23. Awofeso, N., Testaz, R., Wyper, S. and Morris, S. (2001) Smoking prevalence in New South Wales correctional facilities, 2000. *Tobacco Control* 10(1): 84–85.
24. Belcher, J.M., Butler, T., Richmond, R.L., Wodak, A.D. and Wilhelm, K. (2006) Smoking and its correlates in an Australian prisoner population. *Drug and Alcohol Review* 25(4): 343–348.


AUTHOR COPY

25. Plugge, E.H., Foster, C.E., Yudkin, P.L. and Douglas, N. (2009) Cardiovascular disease risk factors and women prisoners in the UK: The impact of imprisonment. *Health Promotion International* 24(4): 334–343.
26. Dupont, P. (2008) Is it possible to help prisoners to quit smoking? *La Revue de médecine interne/fondée ... par la Société nationale francaise de médecine interne* 29(5): 355–356.
27. Palmer, J. (2007) Special health requirements for female prisoners. In: L. Møller, H. Stöver, R. Jürgens, A. Gatherer and H. Nikogosian (eds.) *Health in Prisons: A WHO Guide to the Essentials in Prison Health*. Copenhagen: World Health Organization, Regional Office for Europe, pp. 157–170, http://www.euro.who.int/__data/assets/pdf_file/0009/99018/E90174.pdf, accessed 27 November 2010.
28. Knight, M. and Plugge, E. (2005) Risk factors for adverse perinatal outcomes in imprisoned pregnant women: A systematic review. *BMC Public Health* 5: 111.
29. Carpenter, M.J., Hughes, J.R., Solomon, L.J. and Powell, T.A. (2001) Smoking in correctional facilities: A survey of employees. *Tobacco Control* 10(1): 38–42.
30. Office of the Inspector of Custodial Services. (2008) Issue paper 1: Smoking in prison, p. 1, http://www.custodialinspector.wa.gov.au/go/publications-and-resources/issues-papers, accessed 24 April 2010.
31. Levy, M. (2010) Prisons: Issues to ponder. *Of Substance* 8(1): 12–13, http://www.ofsubstance.org.au/images/archive/pdf/ofsubstance_2010_1.pdf, accessed 27 November 2010.
32. Butler, T., Richmond, R., Belcher, J., Wilhelm, K. and Wodak, A. (2007) Should smoking be banned in prisons? *Tobacco Control* 16(5): 291–293.
33. Awofeso, N. (2003) Implementing smoking cessation programmes in prison settings. *Addiction Research and Theory* 11(2): 119–130.
34. Queensland Government CS. (2009) Custodial anti-smoking policy and implementation plan 2009–2011, http://www.correctiveservices.qld.gov.au/Resources/Procedures/Support_Services/Documents/spsprosmoking.shtml#4, accessed 23 April 2010.
35. HM Prison service. (2007) Smoke free legislation: Prison service application, http://psi.hmprisonservice.gov.uk/PSI_07_09_smoke_free_legislation.doc, accessed 3 May 2010.
36. NIPS. (2007) *Smoking Policy*. Belfast, UK: Northern Ireland Prison Service (NIPS).
37. MacAskill, S. and Hayton, P. (2007) *Stop smoking support in HM prisons: The impact of nicotine replacement therapy, Includes Best Practice Checklist*. Stirling, London: University of Stirling, Open University and Centre for Tobacco Control Research.
38. MacAskill, S. and Eadie, D. (2002) Evaluation of a Pilot Project on Smoking Cessation in Prisons. Final report, The University of Strathclyde, http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4034349.pdf, accessed 3 March 2010.
39. MacAskill, S. (2008) Social marketing with challenging target groups: Smoking cessation in prisons in England and Wales. *International Journal of Nonprofit and Voluntary Sector Marketing* 13(3), (Special issue: Social marketing): 251–261.
40. Lincoln, T., Chavez, R.S. and Langmore-Avila, E. (2005) US experience of smoke-free prisons. *British Medical Journal* 331(7530): 1473.
41. Cropsey, K.L. and Kristeller, J.L. (2005) The effects of a prison smoking ban on smoking behavior and withdrawal symptoms. *Addictive Behaviors* 30(3): 589–594.
42. Kauffman, R.M., Ferketich, A.K. and Wewers, M.E. (2008) Tobacco policy in American prisons, 2007. *Tobacco Control* 17(5): 357–360.
43. Convention. (1949) Geneva Convention (IV) relative to the protection of civilian persons in time of war. 12 August, http://www.icrc.org/ihl.nsf/FULL/380?OpenDocument, accessed 14 April 2010.
44. Commentary. (1949) Convention (IV) relative to the Protection of Civilian Persons in Time of War. Geneva. Commentary Part III: Status and treatment of protected persons #Section

AUTHOR COPY

IV: Regulations for the treatment of internees #Chapter III: Food and clothing Art. 89. 12 August, http://www.icrc.org/ihl.nsf/WebPrint/380-600100-COM?OpenDocument, accessed 14 April 2010.

45. Cropsey, K., Eldridge, G., Weaver, M., Villalobos, G., Stitzer, M. and Best, A. (2008) Smoking cessation intervention for female prisoners: Addressing an urgent public health need. *American Journal of Public Health* 98(10): 1894–1901.
46. Cropsey, K. and Kristeller, J. (2003) Motivational factors related to quitting smoking among prisoners during a smoking ban. *Addictive Behaviors* 28: 1081–1093.
47. NIPS. (2007) *Smoking Policy.* Belfast, UK: Northern Ireland Prison Service (NIPS), http://www.niprisonservice.gov.uk/module.cfm/opt/5/area/Publications/page/publications/archive/true/year/2009/month/3/cid/0/cid/19, accessed 14 April 2010.
48. Fazel, S., Hope, T., O'Donnell, I., Piper, M. and Jacoby, R. (2001) Health of elderly male prisoners: worse than the general population, worse than younger prisoners. *Age Ageing* 30(5): 403–407.
49. Coyle, A. (2007) Standard in prison health: The prisoner as a patient. In: L. Møller, H. Stöver, R. Jürgens, A. Gatherer and H. Nikogosian (eds.) *Health in Prisons: A WHO Guide to the Essentials in Prison Health*. Copenhagen: Word Health Organisation, Regional Office for Europe, p. 7-13, http://www.euro.who.int/__data/assets/pdf_file/0009/99018/E90174.pdf, accessed 27 November 2010.
50. Proescholdbell, S.K., Foley, K.L., Johnson, J. and Malek, S.H. (2008) Indoor air quality in prisons before and after implementation of a smoking ban law. *Tobacco Control* 17(2): 123–127.

AUTHOR COPY