

NSW PUBLIC HEALTH BULLETIN

Tobacco Control in NSW

Good progress in tobacco control in NSW

GUEST EDITORS

John M. Sanders^{A,C} and Chris E. Rissel^B

^ACentre for Health Advancement, NSW Department of Health

^BHealth Promotion Service, Sydney South West Area Health Service

^CCorresponding author: jsand@doh.health.nsw.gov.au

A previous issue of the *NSW Public Health Bulletin* (2004) highlighted an enviable track record of tobacco control in New South Wales (NSW).¹ These interventions continue to drive down the prevalence rates of smoking. The percentage of people aged 16 years and over who smoke 'daily' or 'occasionally' has undergone an unprecedented drop from 20.9% in 2004 to 20.1% in 2005, with a further decrease to 17.7% in 2006.²

This drop in smoking prevalence has largely been the result of changes to smoking legislation, improved treatment services for smokers and increased cessation training for health professionals. In addition, the Cancer Institute NSW has invested substantially in major anti-smoking advertising campaigns, including TV advertisements showing the consequences of smoking and promoting the Quitline.

However, tobacco smoking is arguably still the single largest preventable cause of premature death and disease in Australia, and we cannot afford to become complacent by ignoring this issue in either the general community or special population groups.

Smoking rates in some groups of the population are higher than others and these include Aboriginal and Torres Strait Islander people, socially and economically disadvantaged people, the unemployed, people with a mental illness and certain ethnic groups that have the highest current prevalence rates of smoking in NSW and who experience a larger burden of tobacco-related illness and mortality. The *NSW Tobacco Action Plan 2005–2009*, in addition to outlining strategies to reduce tobacco use in the general population, specifically identifies high-prevalence and high-risk populations to ensure that smoking in these groups is addressed as

a priority.³ The NSW Cancer Council's *Tobacco Control and Social Equity Strategy* has reinforced this same priority.⁴

This issue of the *Bulletin* illustrates some of these developments in tobacco control in NSW and contains several original perspectives on the introduction of smoke-free environment policies and a focus on disadvantaged populations.

John Sanders highlights the findings of two reports prepared by Collins and Lapsley for the NSW Department of Health, which describe the financial and social costs of tobacco use in NSW, and reminds us of the heavy toll that the use of tobacco extracts. Gow, Weir and Marich describe how the Greater Southern Area Health Service has risen to the challenge and developed a Tobacco Control Plan for their rural region. This plan has prioritised local action and focussed on a smoke-free status for all NSW Health sites within the Area Health Service: supporting cessation for clients and staff; developing specific interventions for pregnant women; reducing environmental tobacco smoke; prioritising Aboriginal and Torres Strait Islander peoples and people on low incomes; and maintaining pressure on reducing sales of cigarettes to minors.

Health services should play a lead role in tobacco control, and yet need to do more before smoking care is delivered effectively and routinely in the health care setting. Freund et al. review the literature on smoking-care provision in hospitals and propose several strategies for how this service can be enhanced. Mitchell et al., in *Enabling the NSW Health workforce to provide evidence-based smoking cessation advice through competency-based training delivered via video conferencing*, describe the development of national

competency standards in smoking cessation that formed part of the *NSW Tobacco Action Plan 2005–2009*.

Going completely smoke free is a good example of institutional role modelling, and Kia et al. describe their experiences of implementing a Smoke-Free Environment policy in the Northern Coast Area Health Service. The Health Promotion Tobacco Team adopted a change-management approach called Smoke-Free Health Care to engage management and staff across the health service. In *Tobacco and Aboriginal people in NSW*, Ivers presents evidence-based interventions to reduce the harm from tobacco use by Aboriginal people in NSW.

Encouraging smokers to quit is fundamental to tobacco control; Cotter and Perez describe how promoting the Quitline through anti-tobacco mass media campaign advertising encourages smokers to seek assistance to quit, and thereby increased their chances of successfully quitting. There is a clear relationship between the weight of television advertising (Target Audience Rating Points, known as TARPs) and the number of calls to the Quitline. General anti-tobacco advertising may also impact on adolescent smoking and help prevent the uptake of tobacco use.

Finally, the papers by van Beurden and co-workers, and Giffin and Eyeson-Annan describe the use of tobacco among young Australians. Van Beurden and co-workers

propose an interesting hypothesis to explain the high prevalence of tobacco use among young North Coast males. They argue that tobacco dependence is a function of high marijuana use in the area, and results from the mixing of cannabis with tobacco. Giffin and Eyeson-Annan present selected results from the *New South Wales School Students Health Behaviours Survey: 2005 Report*.

Tobacco control advocacy in NSW continues to be proactive and effective, although there is still more to be done, particularly with disadvantaged populations. However, we can take heart from the lower adolescent smoking rates, and hope that the next generation will continue to recognise the harms of tobacco smoking.

References

1. Chapman S. Tobacco Control in Australia: Victims of Our Past Success? *NSW Public Health Bull* 2004; 15(5–6): 85–7.
2. NSW Department of Health. NSW Population Health Survey 1997, 1997 and 2002–2006 (HOIST), Centre for Epidemiology and Research. North Sydney: NSW Department of Health, 2007. Available at <http://www.health.nsw.gov.au/public-health/survey/hsurvey.html>. Accessed 4 February 2008.
3. NSW Department of Health. *NSW Tobacco Action Plan 2005–2009: A vision for the future*. Sydney: NSW Department of Health, 2005.
4. The Cancer Council NSW. *Lifting the burden: tobacco control and social equity strategy*. Woolloomooloo: The Cancer Council NSW, 2006.

NSW PUBLIC HEALTH BULLETIN

The *NSW Public Health Bulletin* is a peer-reviewed journal produced by the NSW Department of Health and indexed in Medline. It has a NSW focus, however, it aims to support the practice of public health more broadly.

Editor

Dr Lynne Madden
BSc(Med)Hons1, MBBS, MPH, MSc, FFPH, FAFPHM

Editorial correspondence

Please address all correspondence and submissions to:

The Editor, *NSW Public Health Bulletin*
Locked Mail Bag 961
North Sydney NSW 2059 Australia
Email: phbulletin@doh.health.nsw.gov.au
Telephone: +61 2 9424 5876
Fax: +61 2 9391 9232

Submission of articles

The *Bulletin* accepts proffered and commissioned articles along with short reports, on all aspects of public health. Articles should be 1500–2000 words, not including tables and figures, and should include an abstract of up to 100 words. Articles should follow the journal style and layout as closely as possible, as described in the Instructions to Authors. Articles should be emailed in a Word for Windows format to: phbulletin@doh.health.nsw.gov.au, and should be accompanied by a covering letter signed by all authors and a License to Publish. The Instructions to Authors, License to Publish and other useful information can be downloaded from the *Bulletin* website.

Distribution

The *Bulletin* is freely available from the *Bulletin* website. Copies of the current issue and back issues can be downloaded in both PDF and HTML formats. If you would like to be notified when new issues of the *Bulletin* are available online, subscribe to the early alert email system at the *Bulletin* website. The early alert email contains the contents of each new issue along with electronic links to the articles. To receive a printed copy of the *Bulletin*, subscribe online at the *Bulletin* website, or contact your local public health unit or the editorial office.

Website: www.publish.csiro.au/journals/phb
Copyright © 2008 NSW Department of Health

Social cost of tobacco-related disease and best buys

John M. Sanders

Centre for Health Advancement, NSW Department of Health
Email: jsand@doh.health.nsw.gov.au

A previous special issue of the *Bulletin* on tobacco control contained an article by David Collins and Helen Lapsley on the social costs of smoking in Australia.¹ These same authors have undertaken a further research study for the NSW Department of Health to estimate the social costs of smoking in New South Wales (NSW) and the social benefits of reducing the prevalence of smoking in NSW.²

Recent findings in social cost of tobacco for NSW

For the financial year 1998–99, the social cost of tobacco use in NSW was estimated to be \$6.6 billion. This figure includes the tangible costs of tobacco use (such as net labour costs to the workforce and household, health care costs and resources used in tobacco consumption) and intangible costs. The estimated intangible social costs of tobacco use is \$4.79 billion, or 73% of total costs, and consists of loss of life resulting from the high level of premature mortality caused by smoking. The estimated direct health care cost is \$476 million, which includes costs in the medical (\$115 million), hospital (\$147 million), nursing home (\$147 million) and pharmaceutical (\$67 million) sectors.

Besides causing premature death in half of long-term smokers, there is a considerable cost to the health system. In 1998–99, there were 6860 deaths attributable to tobacco and 353 180 hospital-bed days caused by tobacco-related illness. In addition, involuntary smoking was identified as being responsible for the deaths of 78 people: 35 of them aged under 15 or unborn babies.

Recent findings in social benefit of tobacco for NSW

The Collins and Lapsley study applied the most conservative method of estimation to determine the social benefits of reducing smoking prevalence in NSW. The study found that for the financial year 2001–02, the value of reducing prevalence by 5% over a 5-year period was \$2.36 billion.

This represents \$9046 saved for each person prevented from smoking.

A separate report, commissioned by the Commonwealth Department of Health and Ageing, examined the benefit-to-cost ratio of major public health programs in Australia.³ The authors found that an investment of \$175 million in tobacco control programs during the period 1971 to 2000 provided a net benefit \$8.426 billion during this same period. This translates to a benefit-to-cost ratio of 49:1 – a figure that compares very favourably with other public health programs. For example, programs to reduce coronary heart disease had a benefit-to-cost ratio of 11.5:1; HIV/AIDS prevention, 5.2:1; *Haemophilis influenzae* type B vaccination, 1.1:1; and road safety programs, 1.8:1.

The findings of these two reports provide evidence that indicates the benefit of anti-smoking programs. The figures describe a potential for large social benefits to be gained from effective anti-smoking programs and demonstrate that in comparison to many other public health programs, anti-smoking programs would yield very high rates of return.

Copies of *Counting the costs of tobacco and the benefits of reducing smoking prevalence in NSW*² are available from the Better Health Centre Publications Warehouse (02) 9879 0443 or can be obtained from the NSW Health website: http://www.health.nsw.gov.au/pubs/2005/smoking_reduction.html

References

1. Collins D, Lapsley H. The social cost of smoking in Australia. *N S W Public Health Bull* 2004; 15(5–6): 92–4.
2. Collins DJ, Lapsley HM. *Counting the costs of tobacco and the benefits of reducing smoking prevalence in NSW*. Sydney: NSW Department of Health, 2005.
3. Applied Economics. *Returns on investment in public health: An epidemiological and economic analysis prepared for the Department of Health and Ageing*. Canberra: Commonwealth Department of Health and Aged Care, 2003.

The Greater Southern Area Health Service Tobacco Control Plan 2006–2009

Andrew J. Gow^A, Kylie M. Weir^{A,D} and
Andrew J. N. Marich^{A,B,C}

^APopulation Health, Greater Southern Area Health Service

^BNSW Public Health Officer Training Program,
NSW Department of Health

^CCentre for Health Protection, NSW Department of Health

^DCorresponding author. kylie.weir@gsahs.health.nsw.gov.au

Abstract: In response to the *NSW Tobacco Action Plan 2005–2009*, Greater Southern Area Health Service (GSAHS) has developed a local plan. This short report describes how activities promoted in the state plan were prioritised and six outcomes identified as the focus for the *GSAHS Tobacco Control Plan 2006–2009*.

NSW Health has articulated continued commitment to addressing the harm caused by smoking.^{1,2} Smoking is also of concern to Greater Southern Area Health Service (GSAHS), with prevalence rates in 2005 above the NSW rate at 22.5%.³ Five of the 10 NSW local government areas within the GSAHS have hospitalisation rates attributable to smoking-related disease that are more than twice the state average.³ Seven of the 29 NSW local government areas with rates of smoking during pregnancy that are more than twice the state average are also within the GSAHS.³

Responses to control tobacco-related harm require a sturdy framework for action. In the GSAHS, the intention was to implement the *NSW Tobacco Action Plan 2005–2009*. However, with the knowledge that it detailed more initiatives than could be successfully undertaken by the GSAHS, a local plan was developed. Activities from the *NSW Tobacco Action Plan 2005–2009* were reviewed and prioritised according to whether:

- there was good evidence to support the effectiveness of the intervention or activity
- the intervention or activity is legislated or mandated (for example, if the area health service receives funding from NSW Health for an intervention)
- the intervention or activity is likely to be appropriate and feasible for GSAHS in terms of cost, scale or setting

- the intervention or activity builds on existing programs and models of service delivery
- the intervention or activity addresses health inequities.

The resulting *GSAHS Tobacco Control Plan 2006–2009* has identified the following six key outcome areas:

1. Achieve totally smoke-free status at all NSW Health sites within the GSAHS
2. Support health workers to deliver brief interventions for smoking cessation to GSAHS clients, support inpatients and outpatients with smoking-cessation treatment and nicotine-dependence management
3. Reduce smoking in pregnant women and environmental tobacco smoke exposure for infants and children
4. Reduce smoking rates in at-risk population groups including Aboriginal and Torres Strait Islander peoples and people on low incomes
5. Reduce the inappropriate sale of tobacco by retailers
6. Reduce the impact of environmental tobacco smoke within the hospitality industry and in public places.

To date, action under the *GSAHS Tobacco Control Plan 2006–2009* has occurred to varying extents in most of the key outcome areas. Significant effort has been directed to achieving totally smoke-free status at all GSAHS sites, with a self-imposed deadline of 1 July 2007. This process has given impetus to the second key outcome area, particularly with regard to establishing procedures to manage nicotine-dependant inpatients and encouraging participation in cessation training. Good progress is also being made in key outcome areas 5 and 6, with GSAHS environmental health staff maintaining a rigorous program of education combined with inspection to ensure compliance with the law by the retail and hospitality industries.

Key outcome areas 3 and 4 continue to provide challenges. The slower progress here reflects the complexity of these tasks. Tobacco control initiatives with these subpopulations must address layers of determinants, including social norms and socioeconomic disadvantage. In contrast, the achievement of totally smoke-free environments and restrictions on the sale of tobacco are more easily addressed through legislation and policy enforcement.

The clarity of focus provided by the *GSAHS Tobacco Control Plan 2006–2009* has encouraged concerted effort on specified priorities. In a context of close competition for resources, with a dispersed population over a large

geographical area, clearly articulating a limited number of priorities that are realistic and achievable has been beneficial.

References

1. NSW Department of Health. *NSW Tobacco Action Plan 2001–2004*. Sydney: NSW Department of Health, 2001. Available at: http://www.health.nsw.gov.au/pubs/t/pdf/tobac_plan.pdf. Accessed 22 January 2008.
2. NSW Department of Health. *NSW Tobacco Action Plan 2005–2009: A vision for the future*. Sydney: NSW Department of Health, 2005. Available at: http://www.health.nsw.gov.au/pubs/2005/tobacco_ap_vision.html. Accessed 22 January 2008.
3. NSW Department of Health. *NSW Health 2006 Report of the NSW Chief Health Officer*. Sydney: NSW Department of Health, 2006. Available at <http://www.health.nsw.gov.au/public-health/chorep/>. Accessed 22 January 2008.

NSW Public Health Bulletin Subscription Form and Electronic Early Alert Service

To subscribe to the hard copy of the *NSW Public Health Bulletin* or to change your subscription details please complete this form and return it by email (phbulletin@doh.health.nsw.gov.au) or fax (61 2 9391 9232).

The *Bulletin* can be accessed electronically from www.publish.csiro.au/journals/phb. Subscribe to the Early Alert service to be notified as soon as it appears online (<http://publish.csiro.au/nid/226.htm?nid=25&aid=685>).

Subscription information

I wish to receive the *NSW Public Health Bulletin*:
My details are as follows

Name:

Organisation:

Mailing Address:

.....

State:Postcode: Country:

Telephone:..... Facsimile:

Email:

Change of Address

I wish to change my mailing details, as follows:

Name:

From: [Insert old address]

.....

.....

To: [Insert new address]

.....

.....

Provision of smoking care in NSW hospitals: opportunities for further enhancement

**Megan A. G. Freund^{A,C,D,F},
Elizabeth M. Campbell^{A,C,D},
Christine L. Paul^{B,C,D}, John H. Wiggers^{A,C,D},
Jenny J. Knight^{A,C,D} and Elayne N. Mitchell^E**

^AHunter New England Population Health,
Hunter New England Area Health Service

^BCentre for Health Research and Psycho-oncology (CHERP),
NSW Cancer Council

^CThe University of Newcastle

^DHunter Medical Research Institute

^ETobacco and Health Branch, NSW Department of Health

^FCorresponding author. megan.freund@hnehealth.nsw.gov.au

Abstract: The provision of smoking care, including the management of nicotine withdrawal and assistance with a quitting attempt, is identified as an important part of the overall care of hospitalised patients. Levels of smoking care delivery in hospitals have been less than optimal. Increasing this care across multiple facilities and units within NSW Health represents a significant challenge. This article examines levels of smoking care delivery in NSW hospitals, and research evidence and best practice recommendations to inform potential strategies to increase such care. It also reviews statewide initiatives implemented by NSW Health to enhance the delivery of smoking care and suggests further strategies that could facilitate this.

A considerable proportion of hospitalised patients are smokers (19–38%), and of this group, up to two-thirds are nicotine dependent.^{1–5} Smoking is banned in all buildings and grounds of the more than 200 NSW Health hospitals, with few exemptions.⁶ Hence, a significant proportion of the hospital population is likely to require assistance to cope with nicotine withdrawal.^{7–10} Support for quitting is also important, as 25% of patients report that they are ready to quit smoking and a further 45% are contemplating quitting.^{1,9} Despite this, the Australian health-care system appears to have regarded smoking as a lifestyle choice, rather than a medical condition to be treated.⁵

Hospital smoking care can be separated into two aspects. First, smoking care can support patients willing to use the hospital contact to commence a permanent quit attempt.^{10,11} Second, for patients unwilling to quit, smoking care can support temporary abstinence during the inpatient stay, provide patients with an opportunity to trial smoking cessation and prompt a future permanent quit attempt.^{12,13} Australia currently lacks a national guideline regarding hospital smoking care.⁵ However, in 2002, in recognition of the need for an evidence-based protocol for the treatment of inpatients who are smokers, the NSW Department of Health released the *Guide for the Management of Nicotine Dependent Inpatients* (the Guide).¹¹ The Guide was sent to Chief Executive Officers of each NSW area health service for distribution to hospitals and training divisions. Although the focus of the Guide was the management of the inpatient stay, it also provided recommendations for smoking-cessation care. The Guide's recommendations were compatible with several international smoking-cessation care guidelines and are summarised in Box 1.^{12–16}

Levels of smoking-care provision in NSW public hospitals

At the time of the Guide's release, a cross-sectional survey of senior managers representing 169 (82%) NSW public hospitals sought to determine the level of smoking care routinely provided to inpatients.¹⁷ Approximately two-thirds of managers (68%) reported most inpatients (80% or more) were informed of the smoke-free site policy. Eighty per cent of managers reported that most inpatients had their smoking status recorded in patient medical records. Only 1 to 8% of respondents reported that most patients were provided nicotine replacement therapy (NRT) or provided discharge-related care (Table 1).

A more robustly evaluated study investigated levels of smoking care provided to 617 nicotine-dependent patients discharged from four regional hospitals 6 to 18 months after the release of the Guide (unpublished data). Patient telephone surveys and audits of medical notes assessed receipt of 11 smoking care practices. The patient survey demonstrated that although the majority (79%) of patients were asked about their smoking status, only 47% were advised they should quit smoking and 8% were provided with NRT during their stay (Table 2). Discharge-related smoking care was the least provided smoking care element (1 to 7% of patients). The audit of medical notes demonstrated a similar pattern of smoking care delivery.

Box 1. Care recommended by the *Guide for the Management of Nicotine Dependent Inpatients* produced by NSW Department of Health

Recommended actions

1. Identify tobacco users on admission

- Ex-smokers: encourage continued abstinence
- Daily/Occasional smokers: follow steps 2-5

2. Manage inpatient nicotine withdrawal

- Inform patient of the NSW Health Smoke Free Workplace Policy
- Specify treatment contraindications if they leave the ward/facility to smoke
- Discuss options for the management of nicotine dependence:
 - abstinence
 - abstinence plus nicotine replacement therapy (if not contraindicated)
 - smoking off-site/in a designated area

3. Prescribe nicotine replacement therapy

- Arrange prescription of nicotine replacement therapy
- Record:
 - nicotine replacement therapy type and dose on medications chart
 - 'nicotine dependent' in patient notes

4. Monitor patient withdrawal symptoms

- Review nicotine replacement therapy dose/product if patient experiences withdrawal symptoms

5 Discharge

- Encourage future quit attempt for patients who plan to resume smoking after discharge
- For patients who do not plan to smoke after discharge:
 - Arrange 3 days post discharge nicotine replacement therapy
 - Include treatment summary in discharge plan
 - Advise patient seek support from GP/pharmacist/Quitline (Ph: 137848)

Source: NSW Department of Health. *Guide for the management of nicotine dependant inpatients. Summary of evidence.* NSW Health Department. Sydney 2002.

The senior hospital manager survey suggested that levels of smoking-care provision were generally low at the time of the Guide's release, and the later patient survey and notes audit study demonstrated that the dissemination of the Guide had not achieved high levels of smoking care in the hospitals involved. Both studies suggested that a minority of patients were routinely provided smoking care sufficient to assist with a smoking-cessation attempt or to manage nicotine-withdrawal symptoms. This pattern of high levels of smoking status assessment and lower levels of other elements of smoking-care provision is similar to that found in overseas studies.^{18–24} The results suggest that the assessment of smoking status is conducted more as an administrative task, rather than to trigger appropriate care.

Barriers to smoking-care provision

Poor levels of smoking care may be a result of the unique hospital setting barriers to the provision of such care.²⁵ Suggested barriers include: a lack of role delineation regarding who should provide each aspect of smoking care; limited opportunities for follow-up; underutilised referral to quit smoking services; and organisational barriers related to hospital systems not being geared toward preventive care.²⁵

The dissemination of the Guide was an important step towards increasing hospital smoking care. However, the Guide's distribution was through relatively passive means. At the time of the Guide's release, no support was provided to area health services to aid its adoption. The clinical practice change literature suggests that passive distribution of guidelines is not likely to be effective, and intensive dissemination methods are required to significantly impact on care provision.^{26–30} This suggestion is supported by the continuing low levels of smoking-care provision in countries that have previously released smoking-cessation care guidelines.^{18,23,31–36}

Best practice strategies to increase provision of smoking care

Guidance regarding the most effective strategies to increase smoking care potentially comes from several sources, including evidence from literature reviews, evidence from well designed individual studies and comments from experts in the field. Currently, there is no review that specifically examines the effectiveness of strategies designed to increase smoking care in hospitals. Reviews of clinical practice change generally have demonstrated that strategies such as educational outreach visits, reminders, interactive educational meetings and multi-faceted interventions are effective.^{26–30,37}

Several individual controlled studies have examined the effect of an intervention on levels of hospital smoking-care delivery.^{21,38–48} Most studies employed multiple intervention strategies.^{21,38,40–43,45,46,48} The capacity of this evidence base to guide health care providers is restricted because the majority of studies were: undertaken before the release of smoking-care guidelines; conducted in the USA; addressed single units within a hospital or patient groups with a single diagnosis; and reported on a limited range of smoking care practices (few reported on the provision of NRT and post-discharge cessation assistance).^{5,21,38–48} Such studies reported variable intervention effectiveness, with the majority finding at least one positive outcome.

Since the Guide's release, one published Australian study has addressed intervention effectiveness in increasing hospital smoking care.⁴⁸ A randomised controlled trial examined the effect of an intervention on the provision of

Table 1. Proportion of NSW public hospitals providing smoking care (n = 169) reported by a survey of senior hospital managers at the time of the release of the *Guide for the Management of Nicotine Dependent Inpatients*

Smoking care item provided ^a	Proportion of patients provided care							
	0%		5–45%		50–75%		80–100%	
	n	%	n	%	n	%	n	%
Informed Smoke Free Workplace Policy	18	11.7	7	4.5	25	16.2	104	67.5
Smoking status recorded	3	1.9	10	6.4	18	11.5	125	80.1
Nicotine dependence assessed	49	31.4	22	14.1	19	12.2	67	42.9
Smoking management discussed	37	26.1	38	26.8	19	13.4	48	33.8
Nicotine dependence recorded	58	38.9	15	10.1	14	9.4	62	41.6
Prescribed nicotine replacement therapy	79	52.3	63	41.7	8	5.3	1	0.7
Withdrawal symptoms monitored	88	57.5	32	20.9	9	5.9	24	15.7
Asked intent to smoke post-discharge	91	61.5	38	25.7	7	4.7	12	8.1
Provided nicotine replacement therapy on discharge	123	78.8	20	12.8	2	1.3	11	7.1
Smoking treatment in discharge summary	123	79.9	22	14.3	2	1.3	7	4.5

^a Sample sizes varied per care item due to missing data (n = 142–156).
Source: Freund M, Campbell E, Paul C, Sakrouge R, Wiggers J. Smoking care provision in smoke-free hospitals in Australia. *Prev Med* 2005; 41(1):151–8.

smoking-cessation care in a pre-surgical clinic of a major teaching hospital in NSW (control n = 86, intervention n = 124 patients). Intervention strategies included:

- identification of opinion leaders
- establishment of local consensus regarding smoking-care delivery
- computerised support systems to prompt, facilitate and provide elements of cessation care
- tailored self-help material for patients
- staff training
- monitoring and feedback of care provision performance.

That study demonstrated large increases (up to 89%) in a range of care elements over the trial's 6 month duration including NRT provision.⁴⁸

Although there is some deficiency in the evidence base, particularly that regarding hospital-wide smoking care across multiple facilities, commentators have provided guidance for how hospital administrators can increase smoking-care delivery. These recommendations include: strong management support; systematic identification and recording of smoking status; tracking systems to ensure smoking-care follow-up; provision of education and

Table 2. Proportion of patients provided with smoking care (11 smoking-care practices) in four regional NSW hospitals.^a Results of a survey of nicotine-dependent patients and audits of their medical records following the release of the *Guide for the Management of Nicotine Dependent Inpatients*

Smoking-care item	Patient reported care (n = 617)		Medical notes recorded care (n = 376)	
	n	%	n	%
Smoking status assessed	486	78.8	351	93.4
Informed cannot smoke ^b	199	32.3	–	–
Advised to quit permanently ^b	289	46.8	–	–
Management discussed	217	35.2	37	9.8
Offered nicotine replacement therapy	111	18.0	33	8.8
Provided nicotine replacement therapy	47	7.6	30	8.0
Withdrawal monitored	78	12.6	10	2.7
Provided written resources	87	14.1	5	1.3
Asked intent to smoke post-discharge	43	7.0	14	3.7
Advised of post-discharge support	26	4.2	7	1.9
Provided post-discharge nicotine replacement therapy	8	1.3	9	2.4

^a Generally lower levels of smoking-care provision were demonstrated by medical notes audit compared with patient report, a finding supported by previous evidence.^{60,61}
^b The smoking-care practices 'informed cannot smoke' and 'advised to quit permanently' were not assessed via medical notes audit.
Source: unpublished data.

resources to staff; feedback on care delivery performance; identification of health professionals to deliver care; inclusion of nicotine dependence pharmacotherapy on formularies; and smoke-free site compliance.^{12,13,49}

NSW Health initiatives to support adoption of smoking care

Subsequent to the release of the Guide, NSW Health has implemented a range of statewide strategies, in accordance with the available evidence and recommendations, to support hospital smoking care provision. These include:

- *Quitline fax referral forms.* Clinicians can complete a fax referral form to refer a patient to a free call-back service from the NSW Quitline.⁵⁰
- *Accredited smoking-cessation competency training.* As part of the national Population Health Training Package, competency standards and learning and assessment materials were developed. A 20-hour pilot training course was delivered via videoconference to more than 300 clinicians at 27 sites in 2007.
- *Smoke-free policy.* The NSW Health's mandatory 'Progression of the NSW Health Smoke Free Workplace Policy 2005' requires all Area Health Services to progress towards smoke-free campuses.
- *Research funding.* The NSW Health Promotion Demonstration Grants Scheme funded a study to investigate whether a multi-strategic intervention increased hospital-wide smoking-care provision in two regional hospitals compared with matched controls.
- *Clinician and patient smoking-cessation resources.* Non-hospital specific resources, such as the guideline, *Let's take a moment, quit smoking brief intervention: a guide for all health professionals*, and a DVD, *Health Smart – Nicotine Replacement Therapy*, are available.⁵¹
- *Smoking-cessation forums.* Non-hospital specific forums have been convened to assist information sharing, dissemination and advocacy of smoking care (e.g. the Tobacco Control Network (TOBNET) and a smoking-cessation listserve).

The NSW Department of Health has planned several additional activities to further enhance smoking care. These include: a recommendation for systematic collection of hospital patient smoking-status data; encouragement of each area health service to collect data on the provision of smoking-cessation care and smoking-cessation outcomes; statewide standing orders for hospital nurse-initiated NRT provision; and integration of referral to the NSW Health Quitline into hospital discharge plans.⁸

Additional strategies to increase routine provision of smoking care in hospitals

It is not yet known if significant improvements in smoking-care delivery have occurred in response to the

initiatives outlined above. However, based on available evidence and recommendations, several additional strategies may further enhance the delivery of smoking care. These include:

- *Supportive systems to prompt and facilitate smoking care.* As demonstrated by the Wolfenden et al. study, strategies that more directly address local systems and procedures of care delivery may produce higher levels of smoking care provision.^{48,52–55} The planned initiatives regarding performance monitoring of the recording of smoking status and area health service encouragement to collect data on the provision of smoking care are important. However, to prompt and sustain large scale changes in smoking-care provision, statewide systems including a range of mandated smoking care fields in medical records, linked to automated prompts and Quitline referral, are required.^{12,54,56–58} Existing information technology presents a barrier to the achievement of such a system; however, the planned introduction of electronic medical records may facilitate this in the future.^{56,57}
- *Compliance monitoring and reporting.* Currently hospitals are not accountable for the levels of smoking care provided to patients. Increased engagement from hospital leaders may be enhanced if smoking care delivery becomes a reportable requirement for hospital accreditation, similar to US models.^{57,59} This strategy is supported by the National Tobacco Strategy 2004–2009, which calls for the identification and treatment of smokers to be a performance indicator for Australian hospitals.⁸ The routine or regular collection of data describing a range of smoking care practices will also help gauge the impact of implemented initiatives. Compliance monitoring would need to address the potential difficulties in routinely collecting smoking-care data across the diverse hospital medical record systems that currently exist across NSW Health. Recently the NSW Hospital manager survey of smoking-care provision was repeated. Although data are not yet available, the results will provide some insight into the impact of the current initiatives on the delivery of smoking care.
- *Smoking-cessation training.* It is unlikely that all clinicians will undertake the 20-hour accredited training course made available by the NSW Department of Health or self-educate using existing resources. It is also unlikely that adequate numbers of smoking-cessation counsellors will be provided to each NSW hospital. As it is recommended that all clinicians possess the necessary skills to identify, provide brief advice and refer to ongoing cessation assistance, mandatory routine training similar to infection control training could be considered for all clinical staff.⁴⁹

Conclusions

The initiatives and activities undertaken by NSW Health to date have supported the provision of smoking care to hospitalised patients. However, further initiatives may be required to ensure every patient has the opportunity to be offered this care. Continuing strong leadership and systems-level change at the state level will be required if the maxim 'prevention is everyone's business' is to become a reality with regard to the delivery of hospital smoking care.

References

1. Baratiny G, Campbell E, Sanson-Fisher R, Cockburn J. Hospital patients receptive to quit smoking advice. *Health Promot J Austr* 2003; 14(1): 69.
2. Bittoun R, McMahon M, Bryant DH. Smoking in hospitalised patients. *Addict Behav* 1991; 16(1-2): 79-81. doi:10.1016/0306-4603(91)90043-H
3. Mathers C, Vos T, Stevenson C. *Burden of Disease and Injury in Australia*. Canberra: Australian Institute of Health and Welfare, 1999.
4. Schofield PE, Hill DJ. How accurate is in-patient smoking status data collected by hospital admissions staff? *Aust N Z J Public Health* 1999; 23(6): 654-6.
5. Ministerial Council on Drug Strategy. *National Tobacco Strategy, 2004-2009: The Strategy*. Canberra: Commonwealth of Australia, 2004 Available from: [http://www.health.gov.au/internet/wcms/publishing.nsf/Content/E955EA2B5D178432CA256FD30017A522/\\$File/tobccstrat2.pdf](http://www.health.gov.au/internet/wcms/publishing.nsf/Content/E955EA2B5D178432CA256FD30017A522/$File/tobccstrat2.pdf). Accessed on 15 May 2007.
6. New South Wales Health Department. *Smoke-Free Workplace Policy*. Sydney: New South Wales Health Department, 1999.
7. Emmons KM, Goldstein MG. Smokers who are hospitalized: A window of opportunity for cessation interventions. *Prev Med* 1992; 21: 262-9. doi:10.1016/0091-7435(92)90024-C
8. New South Wales Department of Health. *NSW Tobacco Action Plan 2005-2009*. Sydney: NSW Department of Health, 2005 Available from: http://www.health.nsw.gov.au/pubs/2005/pdf/tobacco_ap_vision.pdf. Accessed on 27 April 2007.
9. Rigotti NA, Arnsten JH, McKool KM, Wood-Reid KM, Paternak RC, Singer DE. Smoking by patients in a smoke-free hospital prevalence, predictors, and implications. *Prev Med* 2000; 31(2): 159-66. doi:10.1006/pmed.2000.0695
10. Zack E. Smoking withdrawal and prolonged hospitalization. *Clin J Oncol Nurs* 2002; 6(1): 7-11. doi:10.1188/02.CJON.7-11
11. New South Wales Department of Health. *Guide for the management of nicotine dependant inpatients. Summary of Evidence*. Sydney: NSW Health Department, 2002.
12. Fiore MC, Bailey WC, Cohen SJ, Dorfman SF, Goldstein MG, Gritz ER. *Treating tobacco use and dependence: Clinical practice guideline*. Rockville, MD, USA: US Department of Health and Human Services, Public Health Service, 2000.
13. West R, McNeill A, Raw M. Smoking cessation guidelines for health professionals: an update. *Thorax* 2000; 55(12): 987-99. doi:10.1136/thorax.55.12.987
14. Health Promotion Division Ministry of Health. *Clinical practice guidelines on treatment of tobacco use and dependence 2003*. Kuala Lumpur, Malaysia: Ministry of Health, 2003.
15. Raw M, McNeill A, West R. Smoking cessation guidelines for health professionals. A guide to effective smoking cessation interventions for the health care system. *Thorax* 1998; 53: S1-18. Suppl 5
16. Wolfenden L, Campbell E, Walsh R, Wiggers J. Smoking cessation interventions for in-patients: a selective review with recommendations for hospital-based health professionals. *Drug Alcohol Rev* 2003; 22(4): 437-52. doi:10.1080/09595230310001613967
17. Freund M, Campbell E, Paul C, Sakrouge R, Wiggers J. Smoking care provision in smoke-free hospitals in Australia. *Prev Med* 2005; 41(1): 151-8. doi:10.1016/j.ypmed.2004.09.044
18. Ahluwalia JS, Gibson CA, Kenney E, Wallace DD, Resnicow K. Smoking status as a vital sign. *J Gen Intern Med* 1999; 14: 402-8. doi:10.1046/j.1525-1497.1999.09078.x
19. Barnoya J, Glantz S. Knowledge and use of tobacco among Guatemalan physicians. *Cancer Causes Control* 2002; 13: 879-81.
20. Bock BC, Becker B, Monteiro R, Partridge R, Fisher S, Spencer J. Physician intervention and patient risk perception among smokers with acute respiratory illness in the emergency department. *Prev Med* 2001; 32: 175-81. doi:10.1006/pmed.2000.0799
21. Bolman C, de Vries H, van Breukelen G. Evaluation of a nurse-managed minimal-contact smoking cessation intervention for cardiac inpatients. *Health Educ Res* 2002; 17(1): 99-116. doi:10.1093/her/17.1.99
22. Nollen NL, Adewale S, Okuyemi KS, Ahluwalia JS, Parakoyi A. Workplace tobacco policies and smoking cessation practices of physicians. *J Natl Med Assoc* 2004; 96(6): 838-42.
23. Sheahan SL. Documentation of health risks and health promotion counseling by emergency department nurse practitioners and physicians. *J Nurs Scholarsh* 2000; 32(3): 245-50. doi:10.1111/j.1547-5069.2000.00245.x
24. van Berkel TFM, Boersma H, De Baquert D, Deckers JW, Wood D. Registration and management of smoking behaviour in patients with coronary heart disease. *Eur Heart J* 1999; 20: 1630-7. doi:10.1053/euhj.1999.1635
25. Orleans CT, Kristeller JL, Gritz ER. Helping hospitalized smokers quit: new directions for treatment and research. *J Consult Clin Psychol* 1993; 61(5): 778-89. doi:10.1037/0022-006X.61.5.778
26. Bero LA, Grilli R, Grimshaw JM. Closing the gap between research and practice: An overview of systematic reviews of interventions to promote the implementation of research findings. *BMJ* 1998; 317(7156): 465-8.
27. Grimshaw J, Eccles M, Thomas R, MacLennan G, Ramsay C, Fraser C et al. Toward evidence-based quality improvement. Evidence (and its limitations) of the effectiveness of guideline dissemination and implementation strategies 1966-1998. *J Gen Intern Med* 2006; 21(Suppl 2): S14-20.
28. Grimshaw JM, Shirran L, Thomas R, Mowatt G, Fraser C, Bero L et al. Changing Provider Behavior. *Med Care* 2001; 39(Supplement 2): II-2-45. doi:10.1097/00005650-200108002-00002
29. Grol R, Baker R, Moss F. Quality improvement research: understanding the science of change in health care. *Qual Saf Health Care* 2002; 11(2): 110-1. doi:10.1136/qhc.11.2.110
30. Solberg LI, Brekke ML, Fazio CJ, Fowles J, Jacobsen DN, Kottke TE et al. Lessons from experienced guideline imple-

- menters: attend to many factors and use multiple strategies. *Jt Comm J Qual Improv* 2000; 26(4): 171–88.
31. Basnyat PS, Moseley LG, Al-Rawi M, Lewis MH. Medical audit: Smoking: do vascular surgeons practise what they preach? *Ann R Coll Surg Engl* 2000; 82: 424–7.
 32. Bratzler DW, Oehlert WH, Walkingstick K, Murray CK, Shook C, Cardiac CP. Care of acute myocardial infarction in Oklahoma: an update from the Cooperative Cardiovascular Project. *J Okla State Med Assoc* 2001; 94(10): 443–50.
 33. Butler MW, O'Mahoney MJ, Donnelly SC, McDonnell TJ. Managing exacerbations of COPD: Room for improvement. *Ir Med J* 2004; 97(4): 108–10.
 34. Druss BG, Bradford D, Rosenheck RA, Radford MJ, Krumholz HM. Quality of medical care and excess mortality in older patients with mental disorders. *Arch Gen Psychiatry* 2001; 58(6): 565–72. doi:10.1001/archpsyc.58.6.565
 35. Kava T, Taylor J, Gamble E, Partridge MR. The availability of smoking cessation advice from health professionals: A census from one East London District. *Respir Med* 2000; 94: 983–4. doi:10.1053/rmed.2000.0871
 36. Nohria A, Chen Y, Morton DJ, Walsh R, Vlases PH, Krumholz HM. Congestive Heart Failure: Quality of care for patients hospitalized with heart failure at academic medical centers. *Am Heart J* 1999; 137(6): 1028–34. doi:10.1016/S0002-8703(99)70358-3
 37. Hulscher MEJL, Wensing M, Van Der Weijend T, Grol R. Interventions to implement prevention in primary care. *Cochrane Database of Systematic Reviews* 2006; (1): CD000362.
 38. Allen B Jr, Pederson LL, Leonard EH. Effectiveness of physicians-in-training counseling for smoking cessation in African Americans. *J Natl Med Assoc* 1998; 90(10): 597–604.
 39. Cooke M, Mattick RP, Walsh RA. Differential uptake of a smoking cessation programme disseminated to doctors and midwives in antenatal clinics. *Addiction* 2001; 96(3): 495–505. doi:10.1046/j.1360-0443.2001.96349512.x
 40. Cooke M, Mattick RP, Walsh RA. Implementation of the 'Fresh Start' smoking cessation programme to 23 antenatal clinics: a randomized controlled trial investigating two methods of dissemination. *Drug Alcohol Rev* 2001; 20(1): 19–28. doi:10.1080/09595230124432
 41. Cooke M, Mattick RP, Campbell E. The dissemination of a smoking cessation program to 23 antenatal clinics: the predictors of initial program adoption by managers. *Aust N Z J Public Health* 1999; 23(1): 99–103.
 42. Hajek P, Taylor Z, Mills P. Brief intervention during hospital admission to help patients to give up smoking after myocardial infarction and bypass surgery: randomised controlled trial. *BMJ* 2002; 324(7329): 87–9.
 43. Mehta RH, Montoyo CK, Gallogly M, Baker P, Blount A, Faul J et al. Improving quality of care for acute myocardial infarction. *JAMA* 2002; 287(10): 1269–76. doi:10.1001/jama.287.10.1269
 44. Rigotti NA, Arnsten JH, McKool KM, Wood-Reid KM, Pasternak RC, Singer DE. Efficacy of a smoking cessation program for hospital patients. *Arch Intern Med* 1997; 157(22): 2653–8. doi:10.1001/archinte.157.22.2653
 45. Schnoll RA, Zhang B, Rue M, Krook JE, Spears WT, Marcus AC et al. Brief physician-initiated quit-smoking strategies for clinical oncology settings: a trial coordinated by the Eastern Cooperative Oncology Group. *J Clin Oncol* 2003; 21(2): 355–65. doi:10.1200/JCO.2003.04.122
 46. Walsh RA, Redman S, Brinsmead MW, Byrne JM, Melmeth A. A smoking cessation program at a public antenatal clinic. *Am J Public Health* 1997; 87(7): 1201–4.
 47. Walsh RA, Redman S, Byrne JM, Melmeth A, Brinsmead MW. Process measures in an antenatal smoking cessation trial: another part of the picture. *Health Educ Res* 2000; 15(4): 469–83. doi:10.1093/her/15.4.469
 48. Wolfenden L, Wiggers J, Knight J, Campbell E, Spigelman A, Kerridge R et al. Increasing smoking cessation care in a preoperative clinic: a randomized controlled trial. *Prev Med* 2005; 41(1): 284–90. doi:10.1016/j.ypmed.2004.11.011
 49. Miller NH. Translating smoking cessation research findings into clinical practice: the "staying free" program. *Nurs Res* 2006; 55(Suppl 4): S38–43. doi:10.1097/00006199-200607001-00006
 50. New South Wales Department of Health. *Quitline Referral Forms*. Sydney: New South Wales Department of Health, 2007. Available from: http://www.health.nsw.gov.au/public-health/health-promotion/tobacco/quitline/quitline_alliance.pdf. Accessed 1 June 2007.
 51. New South Wales Department of Health. *Cessation Resources*. Sydney: New South Wales Department of Health, 2007. Available from: <http://www.health.nsw.gov.au/public-health/health-promotion/tobacco/resources/cessation.html>. Accessed 1 June 2007.
 52. Curry SJ. Organizational interventions to encourage guideline implementation. *Chest* 2000; 118(2): 40S–6S. doi:10.1378/chest.118.2_suppl.40S
 53. Orleans CT, Woolf SH, Rothemich SF, Marks JS, Isham GJ. The top priority: building a better system for tobacco-cessation counseling. *Am J Prev Med* 2006; 31(1): 103–6. doi:10.1016/j.amepre.2006.03.015
 54. Goldstein MG. Missed opportunities to assist hospitalized smokers. *Am J Prev Med* 1999; 17(4): 317–8. doi:10.1016/S0749-3797(99)00096-3
 55. Lancaster T, Silagy C, Fowler G. Training health professionals in smoking cessation (Review). *Cochrane Database of Systematic Reviews* 2000; (3): CD000214. doi:10.1002/14651858.CD000214
 56. Conroy MB, Majchrzak NE, Silverman CB, Chang Y, Regan S, Schneider LI et al. Measuring provider adherence to tobacco treatment guidelines: a comparison of electronic medical record review, patient survey, and provider survey. *Nicotine Tob Res* 2005; 7(Suppl 1): S35–43. doi:10.1080/14622200500077966
 57. Keller PA, Fiore MC, Curry SJ, Orleans CT. Systems change to improve health and health care: lessons from addressing tobacco in managed care. *Nicotine Tob Res* 2005; 7(Suppl 1): S5–8. doi:10.1080/14622200500077966
 58. Lichtenstein E. Behavioral research contributions and needs in cancer prevention and control: tobacco use prevention and cessation. *Prev Med* 1997; 26(5 Pt 2): 557–63. doi:10.1006/pmed.1997.0210
 59. Orleans CT, Abrams DB, Gruman JC. Will healthcare take tobacco addiction seriously? Using policy to drive practice. *Medscape General Medicine* 2001; 3(2): 15.
 60. Solberg LI. Practical implications of recall bias. *Tob Control* 1996; 5(2): 95–6.
 61. Ward JE, Sanson-Fisher RW. Accuracy of patient recall of opportunistic smoking cessation advice in general practice. *Tob Control* 1996; 5(1): 110–3.

Enabling the NSW Health workforce to provide evidence-based smoking-cessation advice through competency-based training delivered via video conferencing

*Elayne N. Mitchell^{A,B}, Barbara N. Hawkshaw^A,
Carlie-Jane Naylor^A, Dias Soewido^A and
John M. Sanders^A*

^ACentre for Health Advancement, NSW Health

^BCorresponding author. emite@doh.health.nsw.gov.au

Abstract: Tobacco-related disease is estimated to cost the NSW health system more than \$476 million in direct health care costs annually. Population-based smoking-cessation interventions, including brief intervention by health professionals, are effective and cost effective. As the prevalence of smoking in the general community declines, more highly dependent ‘treatment-resistant’ smokers may present a challenge to the health system. International guidelines recommend that health systems invest in training for health professionals in best practice smoking cessation. As part of the NSW Tobacco Action Plan 2005–2009, NSW Department of Health developed national competency standards in smoking cessation, designed learning and assessment materials and delivered training to more than 300 health professionals via videoconference. Building the capacity of the NSW Health workforce to address smoking cessation as part of their routine practice is essential for addressing future challenges in tobacco control.

The harm caused by smoking

Tobacco smoking is recognised as one of the leading preventable causes of illness and premature death in Australia, particularly from cancer, cardiovascular disease and chronic obstructive pulmonary disease. In 2004, there were 6507 tobacco-related deaths and 55 591 tobacco-related hospitalisations reported in NSW.¹ Tobacco also causes harm to non-smokers through their exposure to environmental tobacco smoke (passive smoking).

Current smoking prevalence in NSW has steadily declined over recent decades, and reduced dramatically in one year from 20.1% in 2005 to 17.7% in 2006.² However, smoking prevalence in some population groups remains significantly higher than the NSW average. These groups include the most socially disadvantaged: Aboriginal people; some culturally and linguistically diverse groups; people with a mental illness; and inmates of correctional settings.³

Collins and Lapsley conservatively estimated the cost of treating tobacco-related illnesses in NSW hospitals in 1998–99 to be \$254 million in bed days alone (353 180 bed days).⁴ Annual NSW health-care costs, including medical, hospital, nursing homes, ambulance and pharmaceuticals, were estimated to cost \$476.8 million. The total annual social cost of tobacco smoking to NSW, including ‘tangible’ costs – such as premature death, sickness, labour in the workforce and the household – as well as ‘intangible’ costs – such as loss of life – was estimated to be more than \$6.5 billion (Table 1).⁴

Smoking cessation and population health

The World Health Organization (WHO) has forecast that most tobacco-related deaths projected to 2030 will be among people who currently smoke.⁵ Increasing cessation (quitting) in existing adult smokers is important because they die from tobacco-related disease in their most productive years. Adult smoking cessation is essential to improving public health relatively quickly. Due to the delay of 25–30 years between the onset of smoking and the development of serious disease, mortality rates from tobacco smoking would rise if there was only a reduction in uptake of smoking among young people without cessation among existing adult smokers.^{5,6}

Thus efforts to reduce adult smoking (increasing cessation) are likely to have a greater effect on mortality in the medium term than preventing the ‘take-up’ of tobacco smoking among young people, and international evidence demonstrates the need to address the balance between treatment and prevention.^{5,6} The best investment in population-based tobacco control is to implement broad-based policies for prevention and cessation simultaneously.⁵

Table 1. Comparison of smoking-attributable social costs in NSW and Australia 1998–99

	NSW (\$ million)	Australia (\$ million)	NSW as percentage of Australia
Tangible	1782.2	7586.7	23.5
Intangible	4794.0	13476.3	35.6
Total	6576.2	21063.0	31.2

Source: Collins DJ, Lapsley HM. *Counting the costs of tobacco and the benefits of reducing smoking prevalence in NSW*. Report prepared for the NSW Department of Health, Sydney: NSW Health, 2005.⁴

The WHO recommends that each time smokers have contact with the health system they should receive an evidence-based brief intervention.⁵ In order to develop smoking-cessation treatment services, the WHO recommends training specialist smoking-cessation counsellors to deliver support to health professionals, including those in primary care, to raise the issue of smoking, assess interest in quitting and then give brief advice and/or refer to specialist treatment where available. This model is reflected in the brief intervention approach known as the ‘5 As’: ask, advise, assess, assist and arrange. NSW Health published a guide for health professionals that outlines the brief intervention approach and summarises the evidence for treating nicotine dependence.⁷ The WHO recommends that basic standards should be set for training and an adequate training capacity should be ensured before developing treatment services.⁵

The involvement of health workers in offering smoking-cessation support should be based on their access to smokers and their level of training and skill in this area. Consequently, health workers are not constrained by their professional designation in providing this support.⁸ Raw et al. state ‘smoking cessation interventions are guaranteed to bring significant population health gains for relatively modest expenditure and in the long term reduce healthcare costs related to smoking’.⁹ However, to maximise the population health benefits, effective and cost effective interventions need to be integrated into routine clinical care throughout the health-care system.

The international treaty to which Australia is a full signatory nation, the WHO Framework Convention on Tobacco Control, reflects the necessity for a multi-strategic approach and outlines general obligations for signatory countries, including an obligation to: ‘develop and disseminate evidence-based guidelines and implement effective programs and services for treating tobacco dependence’.¹⁰ The Australian National Tobacco Strategy 2004–2009 states that ‘training for health professionals must be addressed as part of a comprehensive policy to treat tobacco dependence’ and outlines the national competency standards for smoking cessation developed by NSW Health.^{3,11} Supporting smokers to quit is a key focus area of the NSW Tobacco Action Plan 2005–2009 (the Plan) that sets out the NSW Government’s commitment to

the prevention and reduction of tobacco-related harm in NSW.³

A challenge for health systems

Contact with smokers through the health-care system provides an opportunity to offer support and advice in making a quit attempt.^{12–14} Smokers may be more likely to consider changing their behaviour and accepting advice from health workers during their contact with the health service. Evidence-based recommendations for Australian health services include: that all hospitalised smokers should be provided with effective smoking-cessation treatments; that hospital systems should be implemented to routinely identify and treat smokers; that hospitals should become completely smoke free; and that hospital staff as well as patients who are smokers should be provided with cessation assistance.¹⁴

As smoking prevalence declines in the general population, there may remain a group of highly nicotine-dependent smokers that finds it very difficult to quit and need more intensive support services and pharmacotherapies.¹⁵ Helping these smokers to quit is likely to present a major challenge for the health system in the future.

Within the community, there is a range of methods for smoking cessation that are not supported by evidence from peer-reviewed scientific literature. Examples of such ‘treatment’ include hypnotherapy, acupuncture, laser treatments, cigarette filter blockers and group-based methods that claim artificially high, unsubstantiated success rates. There is a risk with such programs that smokers who do not succeed using non-evidence-based treatments may delay further quit attempts. Therefore, ensuring equitable access and availability of evidence-based treatment is an important role for the health system.

In the NSW health system, the number of staff with the capacity to offer either brief or intensive smoking-cessation support is often limited by a lack of skills, knowledge and confidence. Smokers who come into contact with the health system have varying levels of nicotine dependence and readiness to quit; therefore health workers need to be familiar with the different types of evidence-based interventions. To ensure the health workforce has the relevant skills, knowledge and confidence to offer consistent, evidence-based interventions for smoking cessation,

NSW Health provided standardised training in smoking cessation.

Training in best-practice smoking cessation

The WHO published evidence-based recommendations on the treatment of tobacco dependence and states that support and treatment to help smokers quit is one of a range of approaches to tobacco control.⁸ This is an issue not just for individual health professionals in their work with smokers, but also for entire health systems. The WHO recommendation relating to training follows:

Health professionals should be trained to advise and help smokers stop smoking, and health care purchasers should ensure the provision of adequate training budgets and training programmes. Education and training for the different types of interventions should be provided not only at the post-graduate and clinical level, but should start at under-graduate and basic level, in medical and nursing schools and other relevant training institutions (WHO 2001).⁸

In general, training and accreditation in international programs is ‘tiered,’ with training in brief intervention for health workers to use in their routine role, as well as training in more intensive interventions for those treating smokers who need more support to quit. Provision of both levels of treatment are required to maximise access, quality and cost effectiveness, and to match the complexity of smokers’ needs.^{5,8,16}

Until recently, there was an unco-ordinated approach to the provision of quality training in smoking-cessation best practice in NSW. There are individual experts who offer intensive, high-quality training to small numbers of health professionals. Another training provider in NSW is the NSW Quitline telephone service that employs one statewide trainer to conduct smoking-cessation training for groups of health professionals across NSW. Training in tobacco-related knowledge and skills is also provided in the curriculum of a small number of medical schools.¹⁷

The total number of health workers who can be trained using these models is insufficient to provide adequate smoking-cessation expertise across NSW. Consequently smokers who came into contact with a NSW health service were unlikely to receive evidence-based advice and support to make a quit attempt. A co-ordinated approach to training in smoking cessation in NSW could increase the number of health workers who have improved knowledge and skills to provide brief intervention and/or specialised cessation advice. Training can assist in embedding responsibility for best practice intervention for tobacco dependence in clinical systems.

Competency standards for smoking cessation

In October 2005, following a national consultation process,

the National Training Quality Council (previously Australian National Training Authority) and all state and territory education departments endorsed the national vocational education and training (VET) Population Health Qualifications Framework. The national package includes two elective units of competency in tobacco use and treatment of nicotine dependence developed by the former Tobacco and Health Branch of the NSW Department of Health, with the assistance of smoking-cessation experts.

The competency standards can be used to guide training and participants can be assessed for their competency in the two units. Those assessed as competent are eligible to receive two VET Statements of Attainment. The electives can be used towards a Certificate IV in Population Health or other relevant vocational qualifications. They can also be used to recognise current competency; guide other professional development activity and measure and benchmark performance according to best practice.

Using telehealth technology to deliver training

There are approximately 230 public hospitals in NSW, and the health workforce is dispersed over a vast distance in a range of settings, from rural and remote outreach clinics to metropolitan-based tertiary hospitals. Fahey et al. found that time was the most significant barrier to professional development for health workers.¹⁸ Cost, travel and lack of knowledge about training opportunities were also barriers.

Improved training, especially for staff located in rural and remote communities, is one of the aims of NSW Health Telehealth Funding Initiative. Telehealth is ‘the transmission of images, voice and data between two or more health units via digital telecommunications’. The purpose of the NSW Telehealth program is to link health services and provide local access to clinical advice, consultation, education and training services. The telehealth technology provides the capacity to deliver standardised training quickly and effectively to a large number of health workers simultaneously. This may increase the potential for workforce development goals to be achieved more rapidly and therefore allow the health system to respond to health priorities more efficiently.

In 2005, the Tobacco and Health Branch was successful in attracting funding from the NSW Telehealth Funding Initiative to deliver smoking-cessation training to health workers across NSW using video-conference technology. The ‘assisting smokers to quit’ training project was developed to incorporate the new national competency standards into learning and assessment materials designed to fit the videoconference medium.

In early 2007, more than 300 health workers at 27 video-conference sites across NSW were trained in evidence-based smoking-cessation interventions. Results of the

evaluation of the project demonstrate that this training achieved its goals of increasing the knowledge and skills of the participants, and that they were satisfied with the training, resources and delivery method. The results will be reported in a separate publication.

Ensuring that the health workforce can provide evidence-based smoking-cessation advice to smokers meets the strategic directions outlined in the NSW State Health Plan 'Towards 2010', particularly 'Make prevention everybody's business'; 'Strengthen primary health and continuing care in the community'; and 'Make smart choices about the costs and benefits of health services'.¹⁹ The NSW Telehealth smoking-cessation training project and the national competency standards in smoking cessation will assist NSW Area Health Services to meet a performance indicator in the NSW Chief Health Officer's Population Health Service Level Agreement 2007–08. The performance indicator refers to 'number of staff trained in smoking cessation' (Personal communication, Office of the NSW Chief Health Officer, December 2007).

A comprehensive tobacco control program is in place in NSW to reduce the prevalence of smoking in NSW.³ The evidence suggests that there may be challenges ahead in addressing smoking in subgroups of the population with higher prevalence of smoking and higher nicotine dependence. Smoking-cessation interventions implemented throughout the health system are both effective and cost effective when compared with other routine prevention measures.⁵ Building the skills of the NSW Health workforce to address smoking cessation as part of their routine practice is an essential strategy to meet the challenges ahead in tobacco control. A health workforce educated in evidence-based best practice in cessation is well placed to provide brief, or more intensive interventions, in response to future demand for services.

References

- Population Health Division. *The health of the people of New South Wales - report of the Chief Health Officer*. Sydney: NSW Department of Health, 2007. Available at: <http://www.health.nsw.gov.au/public-health/chorep/toc/choindex.htm>. Accessed 12 September 2007.
- Centre for Epidemiology and Research. *2006 Report on adult health from the New South Wales population health survey*. Sydney: NSW Department of Health, 2007.
- NSW Department of Health. *NSW Tobacco Action Plan 2005–2009: A vision for the future*. Sydney: NSW Department of Health, 2005.
- Collins DJ, Lapsley HM. *Counting the costs of tobacco and the benefits of reducing smoking prevalence in NSW*. Sydney: NSW Department of Health, 2005.
- World Health Organization. *WHO European strategy for smoking cessation policy*. Copenhagen: World Health Organization Regional Office for Europe, 2003.
- The World Bank. *Curbing the epidemic governments and the economics of tobacco control*. International Bank for Reconstruction and Development, Washington DC, 1999.
- NSW Department of Health. *Let's Take a Moment – quit smoking brief intervention – a guide for all health professionals*. Sydney: NSW Department of Health, 2005.
- World Health Organization. *WHO evidence based recommendations on the treatment of tobacco dependence*. Copenhagen: World Health Organization European Partnership Project to Reduce Tobacco Dependence, 2001.
- Raw M, McNeill A, West R. Smoking cessation: evidence based recommendations for the healthcare system. *BMJ* 1999; 318: 182–5.
- World Health Organization. *WHO framework convention on tobacco control*. Geneva: World Health Organization, 2003.
- Commonwealth of Australia. *National tobacco strategy, 2004–2009: the strategy ministerial council on drug strategy*. Canberra: Commonwealth of Australia, 2005. Available at http://www.fwabs.health.nsw.gov.au/public-health/health-promotion/tobacco/pdf/national_tobacco_strategy_2004-2009.pdf
- Emmons KM, Goldstein MG. Smokers who are hospitalized: A window of opportunity for cessation interventions. *Prev Med* 1992; 21: 262–9. doi:10.1016/0091-7435(92)90024-C
- Fiore MC, Bailey WC, Cohen SJ, Dorfman SF, Goldstein MG, Gritz ER et al. *Treating tobacco use and dependence: clinical practice guideline*. Rockville, MD, USA: US Department of Health and Human Services, Public Health Service, 2000.
- Miller M, Wood L. *Smoking cessation interventions: Review of evidence and implications for best practice in health care settings*. Canberra: Australian Government, Department of Health and Ageing, 2001.
- Emery S, Gilpin E, Ake C, Farkas A, Pierce J. Characterizing and Identifying "Hard-Core" Smokers: Implications for Further Reducing Smoking Prevalence. *Am J Public Health* 2000; 90: 384–94.
- Pbert L, Ockene J, Ewy B, Sachs Leicher E, Warner D. Development of a state wide tobacco treatment specialist training and certification programme for Massachusetts. *Tob Control* 2000; 9: 372–81. doi:10.1136/tc.9.4.372
- Richmond R, Debono D, Larcos D, Kehoe L. Worldwide survey of education on tobacco in medical schools *Tob Control* 1998; 7: 247–52.
- Fahey A, Day N, Gelber H. Tele-education in child mental health for rural allied health workers. *J Telemed Telecare* 2003; 9: 84–8. doi:10.1258/135763303321327939
- NSW Department of Health *A new direction for NSW: State Health Plan, Towards 2010*. Sydney: NSW Department of Health, 2007.

Smoke Free Health Care: an organisational change to increase effective intervention for tobacco

Annie M. Kia^{A,C}, Eric K. van Beurden^A, Gavin S. Dart^A, Cecily M. Barrack^B and Mark D. Mitchell^A

^ANorth Coast Health Promotion, Population Health, Planning and Performance Directorate, North Coast Area Health Service

^BChronic Care, North Coast Area Health Service

^CCorresponding author. annie.kia@ncahs.health.nsw.gov.au

Abstract: In 1999, the *NSW Health Smoke Free Workplace Policy* directed that grounds of health sites would become smoke free, in addition to the existing policy requiring smoke-free buildings. This was one of the first attempts by any health service to exclude tobacco entirely from health sites. This task required the adoption of evidence-based management of tobacco dependence and changing the culture of smoking in the health service. There were many barriers to implementation.

In North Coast Area Health Service (NCAHS), the Health Promotion Tobacco Team adopted a change-management approach called Smoke Free Health Care to increase effective intervention for tobacco across the health service. This used a ‘hearts and minds’ communication strategy to maximise the belief that change was possible. This report describes the process by which smoke-free status was achieved in all NCAHS hospital, community health and drug and alcohol detoxification sites by July 2007.

The *NSW Health 1999 Smoke Free Workplace Policy* (SFWP) directed all area health services to go smoke free before September 2002, subject to a review process.¹ However, by 2002, the most concerted efforts to implement the SFWP had been frustrated by multiple barriers. There was major risk of non-compliance in moving sites to a smoke-free status in the face of resistance.

The former Northern Rivers Area Health Service (NRAHS) responded by successfully rolling out smoke-free policies, using a systematic and innovative change management process consistent with Kotter’s steps for

transformation in organisations.² Kotter’s eight steps include establishing urgency, forming a powerful coalition, creating a vision, communicating the vision, empowering others to act, creating short-term wins and consolidating and institutionalising new approaches.² The NRAHS process was affected by the 2005–2006 restructure of NSW Health, but ultimately became stronger after the Mid North Coast Area Health Service and NRAHS merged to become North Coast Area Health Service.

2002: leadership, sharing the vision, mapping and consultation

During 2002, within the former NRAHS, it was recognised that the existing SFWP Working Group was ineffective because it lacked influence. The Chief Executive therefore established a high-level Smoke Free Steering Committee, which he chaired, and a Smoke Free Co-ordinator was appointed to facilitate the transition. This began a five-year process of sustained engagement to bring about effective change across the health service.

In late 2002, a forum was held for senior managers and union representatives to prioritise tobacco control and address participants’ concerns. Following the forum, where attendance was compulsory, the Co-ordinator met with managers, union representatives and staff across the NRAHS, presenting the reasons for addressing tobacco (503 people in 29 sessions). Concerns were voiced as were valuable ideas, which were subsequently developed. These consultations revealed that many staff had a poor understanding of tobacco addiction and nicotine titration and dosing. Many staff members, both smokers and non-smokers, were resistant, believing the smoke-free policy offended smokers’ ‘rights’, could lead to violence, was impractical or would just ‘never happen’.

It emerged that some settings had a ‘culture of smoking’, with considerable positive social reinforcement through shared breaks with colleagues in smoking areas. In mental health, Aboriginal health and youth work settings, it was not unusual for staff to smoke with clients during health service delivery. It was also accepted practice for staff to facilitate the smoking of inpatients by helping them to smoking zones, and some emergency department staff kept cigarettes for patients to help manage behaviour. Exposure of staff to second-hand smoke was common.

Changing attitudes and behaviour regarding tobacco is challenging because nicotine is a drug of dependence and smokers need to dose themselves frequently to avoid withdrawal.³ This had implications for how staff managed smoking of inpatients in smoke-free hospitals, and also for the approximately 22% of staff who smoked at the time that the policy was launched.⁴ While many staff became champions of the policy, not all could separate their personal smoking from their professional role.

Implementing the policy therefore involved a transformational effort in a large organisation, covering human resource management, corporate governance, workforce development and clinical care. However, the challenges of implementation were matched by corresponding opportunities for tobacco control. With a workforce of approximately 8000 people and a large public interface, the now-amalgamated NCAHS has a large potential to deliver congruent messages about tobacco control to the population.

In response to the issues that emerged from mapping and consultation, the Health Promotion Team in NRAHS developed an innovative approach to change attitudes and behaviours across the workforce. Because of anxiety about the policy, this needed to acknowledge both think-

ing and feeling elements to bring the majority of staff 'on board'. The project was renamed *Smoke Free Health Care* (SFHC) to signal that this was about improved care when addressing tobacco wherever it intersected with the health service. Effective intervention incorporated both the delivery of evidence-based care for tobacco dependent patients and the delivery of congruent 'tobacco messages' via environmental policies. The clinical and environmental dimensions were conceived as inter-dependent: success in one domain supported success in the other.

Since the scope of the organisational change was broad, health settings were addressed sequentially, starting with community health. The primary tool in changing the thinking, beliefs and behaviours of staff was mandatory education. This education that reached the majority of staff across NCAHS (Table 1), countered myths about tobacco and presented reasons of change.

2003–2004: getting runs on the board – *Smoke Free Community Visits Policy*

Early consultations revealed exposure of staff to tobacco smoke during home visits. To address this, a *Smoke Free Community Visits Policy* was developed with positive

Table 1. A summary of evaluation and monitoring of Smoke Free Health Care compliance and education in North Coast Area Health Service

Item	Sites	Evaluation findings
Smoke-free status	43 health sites including 22 hospitals, 20 non-inpatient services, 1 Drug and Alcohol Detoxification facility	All sites adopted 100% total smoke-free status between October 2002 and June 2007
Compulsory education sessions (smoke-free transition, smoke-free community visits and other)	Senior Managers, education and consultation sessions, hospital transitions, Community Health, Oral Health, Aboriginal Health, Allied Health, Mental Health	Smoke-free transition education: 280 sessions and 2789 people. Smoke-free community visits and other education sessions: 79 sessions, 1072 people
Evaluation of smoke-free community visit education	Community Health, Oral Health, Aboriginal Health, Allied Health	Significant improvements in knowledge and attitudes in relation to tobacco intervention pre to post education sessions
Clinical practice improvement project	Tweed Hospital pilot implementation 2004	15-week ward audit before, during and after implementation. Substantial increase in information provided to patients; NRT offered or provided; and nicotine-withdrawal monitoring
Physical site reviews	15 Smoke Free Health Care inpatient hospitals	Signage: more than 90% appropriate at all sites. Butts: cigarette butt litter now rarely seen on site. Smokers: majority of inpatients, visitors and staff comply and smoke off hospital grounds
Detailed clinical audit	Grafton, Maclean and Lismore Hospitals	39% were given verbal advice to quit, 52% were offered NRT, 52% were not smoking during admission
Retrospective medical record audit of identified smokers	Grafton Hospital	18% used NRT during their hospitalisation, 73% had completed Substance Use History Forms in notes, 43% had completed the Smoke Free Health Care Patient Waiver
Staff smoking survey	Grafton, Maclean	1999 NRAHS staff smoking survey: 22% of staff were current smokers. 2006 Grafton and Maclean health sites one year after going smoke free: 16% were current smokers, 5% of all staff had quit smoking during last 12 months

leadership from community health. The policy directed that staff should not smoke while delivering a health service, nor allow themselves to be exposed to second-hand smoke during home visits. It was implemented via compulsory training for all staff who conducted home visits (290 staff at 25 sites).

Evaluation showed that these one-hour sessions delivered by a persuasive and credible communicator could significantly shift knowledge and beliefs, and increased workers' intentions to discuss smoking with smoking clients whenever possible.⁵ These sessions became the model for implementing all smoke-free guidelines and policies. Despite anxieties expressed at the beginning of the change-management process, the *Smoke Free Community Visits Policy* was implemented without difficulty and was well accepted by clients. This success provided leverage when it came to addressing smoking in inpatient facilities.

Smoke-free initiatives were presented to the peak Mental Health Community Participation Forum, and were made a standing item on the NRAHS Aboriginal Health Council. Early on, some Aboriginal Health Workers expressed concern about the smoke-free policy. It was agreed that smoke-free initiatives should be conveyed through stories in the Aboriginal media and letters to Aboriginal Land Councils. A culturally appropriate leaflet was developed asking Aboriginal clients to protect the health of staff by making their home smoke-free during health service delivery.

The implementation experience of *Smoke Free Community Visits* involving shifting staff through anxiety–resistance–adaptation was repeated as SFHC actively sought to change norms in successive health settings through compulsory education. Once managers and staff were given well researched information, anxiety abated and staff began to believe that smoke-free policies might work. Good compliance outcomes could only be achieved if there was a critical mass of staff willing to approach those smoking on health sites and ask them to take their cigarette off health grounds.

2003–2004: developing a means to care for inpatients who smoke

Following the mapping phase, a Nicotine Addiction Clinical Advisory Group (NACAG) was created via a partnership with NCAHS Chronic Care to develop a best practice guideline for the management of nicotine-dependent inpatients, underpinned by the option of nurse-initiated nicotine replacement therapy (NRT). Formalising this important process took longer than anticipated because of the discrepancy between the evidence for NRT safety and the overly cautious contra-indications on product information.

The membership of NACAG was strategically chosen and included key clinicians representing chronic care, nursing,

medical officers, drug and alcohol, mental health, pharmacy, and health promotion. The Area Pharmacy Manager provided guidance where NRT product information was not consistent with the evidence for safety. The group reviewed the literature on the assessment of nicotine dependence and on the safety and efficacy of NRT in relation to pregnancy, lactation, cardiovascular disease, mental health and concurrent smoking with NRT.

The group developed a comprehensive *Practice Guideline for Management of Nicotine Dependent Inpatients* that incorporated nurse-initiated NRT under Standing Orders. In response to the nurses' concerns about compliance and liability, a Patient Smoking Waiver form was developed with advice from the Legal Branch at the NSW Department of Health. Focus groups with nurses revealed a consensus of opinion that all inpatients identified as smokers should be asked to sign the Waiver. The Waiver stated 'I have been advised against smoking while receiving care from this health facility' and 'I agree to not hold the Health Service responsible if my condition gets worse or some harm comes to me as a result of me leaving a health service building to smoke'. During subsequent mandatory education, it was helpful to inform nurses that the Waiver had arisen from a consultative process.

To help nurses implement the guideline, a user-friendly ward-kit was developed. This included: a laminated flow-chart and summary; tear-off pads for a nicotine withdrawal monitoring form; the Patient Smoking Form Waiver; and two resources – an *NRT Fact Sheet* explaining how to use the different types of NRT as single or combination therapy and a brochure, *Caring for Smokers in Hospital*, explaining the smoke-free policy, tobacco dependence and treatment.

The draft *Guideline* was distributed to a wide range of clinicians including all medical officers, including cardiologists, gynaecologists and paediatricians, requesting feedback. This *Guideline* became the basis for progressing hospitals to smoke-free status.

2003–2007: building on successes – making sites smoke free

The progression of sites to smoke-free status began in 2003, starting with non-hospital sites where there was strong management support. Each success was acknowledged by the Chief Executive. Over the next four years, the regular reporting of each site's progression to smoke-free status created momentum and eventually a demand that the roll out be accelerated.

In May 2004, the Tweed Hospital became the first of 20 hospitals to go smoke free. This provided a pilot site for implementation of the *Guideline*. To identify and resolve any barriers, a Clinical Practice Improvement Project involving ward nurses, the Nurse Unit Manager, Night

Supervisor, Pharmacist and Resident Medical Officer was conducted. This project resolved issues surrounding the availability of NRT on the ward.

During the 4 weeks before the hospital went smoke free, compulsory 1-hour Smoke Free Transition education sessions were provided for nursing and allied health staff. These sessions covered the reasons for going smoke free, compliance management, tobacco addiction and treatment and the *Guideline*. The *Guideline* was also explained to senior and junior medical officers at a hospital Grand Round, which presented evidence-based treatment for tobacco addiction.

In addition to these education sessions, flexible education was provided via the Smoke Free Quiz. This tested knowledge regarding tobacco addiction, compliance and clinical management and clinical teams could compete for a small prize. The quiz focussed attention on the smoke-free launch day, enabled managers to show their strong support for the process, and generated an atmosphere of goodwill.

The affective side of the change management process was also addressed by two humorous costumed figures called 'Nic n Tina' – the 'cold turkeys'. The appearance of Nic n Tina helped switch anxiety to humour while drawing attention to the smoke-free launch date. Their narratives reinforced key educational messages, and they also attracted media coverage.

The continuation of weekly ward audits for eight weeks after the Tweed Hospital went smoke free provided quantitative evidence that there had been an increase in the provision of information to patients about smoking and the provision of NRT for patients and staff (Table 1). Nursing staff commented that most inpatients were now abstaining from smoking during their admission. Anecdotal reports indicated that some staff had quit smoking and that those who continued to smoke were leaving the site to do so.

Transferring the vision to other sites

The pilot at Tweed Heads enabled the refinement of what became known as the smoke-free transition blitz, an intensive period of intervention in the weeks before making a hospital smoke free, with the goal of increasing the capacity to manage nicotine-dependent patients while changing the culture of smoking. The blitz contained the following elements:

- Establish a hospital action plan to ensure implementation in all settings
- Hold an initial Smoke Free Transition session for all managers to enable informed leadership
- Organise for the attendance of all staff (clinical, administrative, ancillary) at compulsory Smoke Free Transition training

- Address the affective element via the Smoke Free Quiz and Nic n Tina
- Inform staff of their role in managing compliance
- Support staff smoking cessation via education and subsidised or free NRT.

The sequential roll-out enabled learning and continuous improvement, because each time success was achieved in a difficult setting, this could be shared with other sites. For example, when Lismore Base Hospital went smoke free in 2005, the positive leadership of management at the emergency department (ED) led to the development of an *ED Guide for Managing Nicotine Dependent Patients with Mental Illness*. This effective tool enabled compliance from patients that many staff had previously considered too difficult to manage in a smoke-free environment. After this, this Guide supported progress in other hospitals.

Review processes and outcomes

In order to help anchor the behavioural changes in organisational culture, a review of hospital sites was conducted 4–12 months after each site went smoke free. Senior managers were interviewed about their perceptions of the change process, and opportunistic interviews provided a sample of staff responses. Site inspections revealed that, in general, there was good compliance from staff, patients and the public, and that the 'disaster scenarios' anticipated by some staff did not eventuate. While most of the smoking behaviour had shifted off-site, there were still some occasions when inpatients and staff smoked on the grounds of hospitals. These reviews showed that a positive approach from managers and staff could produce good public compliance even in challenging environments such as needle syringe programs and emergency departments. Unexpected positive outcomes were noted, such as the observation that staff time was no longer absorbed by taking patients outside to smoke. A site review report was provided to the hospital executive team as evidence of effective management of tobacco, for their accreditation process.

During the review process there were many reports of staff who quit smoking as a result of the site going smoke free. A survey conducted at Maclean and Grafton Hospitals revealed that the staff smoking rate had dropped after those sites went smoke free (Table 1).

Ward audits conducted at the Tweed Hospital before and after implementation showed that SFHC resulted in an increase in information about smoking being provided to patients, NRT being offered to patients, and nicotine withdrawal monitoring (Table 1). However, subsequent site reviews at 15 hospital sites and three clinical site audits conducted after the intervention also revealed that a significant number of tobacco-dependent patients continued to receive suboptimal clinical care for nicotine depend-

ence (Table 1). One of the greatest challenges of implementing the smoke-free policy was that no part of the clinical system carried responsibility for updating clinicians on evidence-based treatment of tobacco dependence. SFHC sought to deal with this deficit by providing ward resource kits and extensive compulsory education during implementation. However, the issue of where responsibility rests for ongoing education of clinical staff in treatment for tobacco dependence remains uncertain, presenting a risk to sustainability.

Conclusion and recommendations

While there has been a range of successful outcomes, the issue of suboptimal clinical management of nicotine dependent inpatients is yet to be resolved. This reflects ongoing barriers, mainly related to the fact that no part of the clinical system is responsible for knowledge mobilisation in the clinical field of tobacco addiction and treatment. Indeed, while the prevention end of the health service continuum is clearly carried by population health services, there is no clear carriage for the treatment end of this continuum in the clinical services. While SFHC has been successful in changing the culture of smoking in

health settings, there is clearly further work to be done to ensure that evidence-based treatment for tobacco addiction is underpinned by clinical structures.

Acknowledgments

A large number of people made SFHC possible. These include: John Whiteford, Michelle Daly, Lyndy McPhee, Joanne Petrovic, Denise Hughes, Leanne Bacon, Ros Tokley, Chris Crawford, Uta Dietrich, Vahid Saberi, Gerry Williams, Franklin John-Leader and Jan Mills.

References

1. Health NSW. *Smoke Free Workplace Policy*. Gladesville: NSW Health Department, 2000.
2. Kotter JP. Leading change: Why transformation efforts fail. *Harv Bus Rev* 1995; (March–April): 59–67. doi:10.1225/95204
3. Benowitz NL. Pharmacologic aspects of cigarette smoking and nicotine addiction. *N Engl J Med* 1988; 319: 1318–30.
4. Van Beurden E. *Northern Rivers Area Health Service survey of staff smoking and quitting – descriptive analysis*. Lismore: Northern Rivers Area Health Service, 1999. 5pp.
5. Donoghue D, Passey M. *An evaluation of the “Smoke Free Community Visits Training” November 2003 to June 2004*. Lismore: Northern Rivers University Department of Rural Health, 2005.

Tobacco and Aboriginal people in NSW

Rowena G. Ivers

*Illawarra Aboriginal Medical Service
Email: rowenaivers@bigpond.com*

Abstract: Tobacco use is a major cause of morbidity and mortality for Aboriginal people in NSW. Few interventions to reduce the harm resulting from tobacco use have been developed specifically for this population. However, brief interventions for smoking cessation, pharmacotherapies such as nicotine replacement therapy, bupropion and varenicline, quit groups and interventions aimed at reducing smoking by pregnant women and hospital inpatients are likely to be effective. Broader population interventions such as anti-tobacco advertising, price rises for tobacco products and prevention of sales to minors are also likely to be effective in reducing the harm resulting from tobacco use.

The 2004–05 National Aboriginal and Torres Strait Islander Health Survey reported that approximately 50% of Aboriginal and Torres Strait Islander people used tobacco, more than double the prevalence rate in the general Australian population.¹ In 2006, 17.7% of the New South Wales (NSW) population aged 16 years and over reported that they were current smokers.² In NSW, in 2002–2005, 43.2% of Aboriginal people in NSW, interviewed by phone, reported smoking daily or occasionally.³ The prevalence of tobacco use among pregnant Aboriginal women in NSW was 55.3% in 2005, compared with 14.3% for all NSW mothers.⁴

The use of tobacco is probably the major preventable cause of premature mortality and morbidity among Aboriginal people.⁵ The life expectancy of Aboriginal and Torres Strait Islander people is 15–20 years less than that for the general population, with much of this difference due to tobacco use.⁶ Tobacco also contributes to elevated morbidity and levels of hospitalisation for Aboriginal people.

The present article will present evidence-based interventions which may reduce the harm resulting from tobacco use by Aboriginal people in NSW, to inform decision making when planning and funding anti-tobacco activities. The NSW Tobacco Action Plan (2005–2009) priori-

tises tobacco control for Aboriginal people, with greater health equity as an ultimate aim.⁷ Yet the area of tobacco control for this population has been characterised by limited program delivery and minimal formal research or evaluation of tobacco interventions.^{8,9} Research from other populations can inform planning tobacco programs for this setting and will also be discussed in this article.

Providing advice on smoking cessation

There is good evidence that brief advice from health professionals (doctors, nurses and others) can help about 6% of smokers quit.^{10–12} At least two well-designed trials of such advice for Aboriginal and Torres Strait Islander smokers are underway in Queensland and the Northern Territory (NT). In NSW, the Smokecheck program, which entails training health professionals working with Aboriginal smokers in the delivery of smoking cessation advice, is about to be implemented and evaluated. Competency-based training in the delivery of smoking-cessation advice is also being delivered, including to some health professionals who work with Aboriginal communities. There is anecdotal evidence that Aboriginal Health Workers may not always be comfortable delivering such advice to smokers in their community, particularly if they themselves are smokers. However, it is important that opportunistic advice on cessation be given at every opportunity; for example, in Aboriginal medical services, other community health services and hospital settings.

Pharmacotherapies

There is evidence that nicotine replacement therapy (NRT) and bupropion increased cessation rates in other populations.¹³ A pre- and post-trial of NRT conducted in the NT showed free nicotine patches assisted 15% of Aboriginal smokers to quit over a 6-month period.¹⁴ Although NRT is likely to be inaccessible to many Aboriginal smokers because of its cost, some health services – for example, some Aboriginal Medical Services – choose to fund or subsidise NRT for smokers. Bupropion had not been evaluated specifically in an Indigenous setting, but recent results of a pilot program of bupropion use in correctional facility inmates, which included Aboriginal inmates, are encouraging. Varenicline has only recently been licensed for use in smoking cessation; however, two studies demonstrated that the abstinence rate was approximately 23% at 12 months, more than that for bupropion or placebo.^{15,16}

Tobacco interventions for pregnant women

Interventions to assist pregnant women to quit in other populations are successful in decreasing tobacco use and in increasing birthweight.¹⁷ Aboriginal infants are more

likely than others to have a low birth weight, and smoking by pregnant women may contribute to this. While a randomised trial of an intensive smoking-cessation intervention is underway, antenatal services for Aboriginal women (for example, in Aboriginal Medical Services and in public hospitals) should ensure that smoking-cessation advice is given to all pregnant smokers, and that they are offered referral to a specialist quit service where it is available. Pregnant women may also be offered NRT.¹⁸

Hospital-based smoking cessation interventions

There is evidence in other populations that high intensity interventions with inpatients result in higher quit rates.¹⁹ While there have been no trials of hospital-based cessation services for Aboriginal inpatients, as for all other inpatients who are smokers, they should be offered cessation support. According to the recommendations in NSW Health's *Guide for the Management of Nicotine Dependent Inpatients* all nicotine-dependent inpatients should be identified, informed of the smoke-free workplace policy and advised of their options for managing their nicotine withdrawal during their stay in hospital, for example through the provision of a three day supply of NRT.²⁰ They should also be offered further support in cessation following discharge.

Paid or unpaid media advertising

Reports from other populations show that media campaigns can result in a small reduction in the prevalence of smoking and may have prevented uptake among young people.²¹ In a survey of Aboriginal people in the NT, most recalled anti-tobacco advertising and some smokers had quit as a result of seeing this advertising.²²

Quit courses or support groups and quitlines

Quit courses and quitlines are effective for other populations but mainstream courses and quitlines may be relatively inaccessible or inappropriate for Aboriginal people.^{23–25} There have been no evaluations of quit courses or quitlines for Aboriginal people, or of Aboriginal people's use of mainstream services. However, they are likely to be useful for some people.

Sponsorship of cultural, sporting and community events

Events that are smoke free are effective in reducing exposure to environmental tobacco smoke and may promote a quit message.²⁶ Sponsorship has been used in Aboriginal anti-tobacco programs; however, such activities have not been evaluated.

Health promotion materials

The use of health promotion materials, including self-help materials, may help smokers to quit, although the evidence is unclear.²⁷ Aboriginal people are likely to prefer materials that: are targeted at their own community; use visual

media; or are easy to read, colourful and include pictures of local or well known people.²⁸

Control of advertising and sales promotion

Control of the advertising and promotion of tobacco products is likely to reduce consumption.²⁹ The effect of tobacco-advertising restrictions have not been evaluated for Indigenous people; however, as for other populations, it is likely to reduce consumption. Health warnings may be effective in reducing tobacco use, but their effect has not been evaluated for Aboriginal people. Written warnings may be less useful for people with low literacy skills.

Changes in taxation and tobacco pricing

Increases in price of tobacco products reduce consumption in other populations.³⁰ The effects of taxation and pricing changes have not been evaluated for Aboriginal people, but has the potential to decrease consumption. Increases in the price of tobacco products may result in financial hardship for smokers who do not reduce consumption and, for example, result in less money for food.

Legislation and policy on smoke-free public places and public transport

Interventions aimed at making public places smoke free are effective in reducing exposure to environmental tobacco smoke.³¹ There are no reports on the effect of smoke-free areas legislation on Aboriginal people, although policies banning smoking in mainstream organisations may have had some effect on encouraging some Aboriginal people to quit. Under the NSW *Smoke-free Environment Amendment Act 2004*, from July 2007, all enclosed areas of hotels, clubs and nightclubs that are open to the general public must be completely non-smoking. Licensed venues should display 'no smoking' signs in prominent positions in all smoke-free areas and remove all ashtrays, matches, lighters and other items used for smoking from smoke-free areas.³²

Preventing sales to minors

Restricting sales to minors may reduce access to tobacco, but does not necessarily prevent uptake of tobacco use.³³ There are no published examples of the effect of enforcing restrictions on sales to Aboriginal minors, but this is likely to be an important strategy in this population.

Conclusion

There has been little research and evaluation of anti-tobacco interventions for Aboriginal people, and limited population-specific service delivery in tobacco control in NSW. The implementation of Smokecheck, a program designed to train health professionals working with Aboriginal smokers, is encouraging. While the role of specialist tobacco workers in Aboriginal communities requires evaluation, access to mainstream specialist tobacco workers and pharmacotherapies to assist cessation

is important. Broader population health measures such as advertising campaigns and restrictions on smoking in public places are also likely to reduce the harm resulting from tobacco to Aboriginal people in NSW.

References

1. Commonwealth of Australia 2006 *National Aboriginal and Torres Strait Islander Health Survey Australia 2004–05*. ABS Catalogue No. 4715.0. Canberra: Commonwealth of Australia.
2. Centre for Epidemiology and Research. *2006 Report on Adult Health from the New South Wales Population Health Survey*. Sydney: NSW Department of Health, 2007.
3. Centre for Epidemiology and Research. *2002–2005 Report on Adult Aboriginal Health from the New South Wales Population Health Survey*. Sydney: NSW Department of Health, 2006.
4. Centre for Epidemiology and Research, NSW Department of Health. New South Wales Mothers and Babies 2005. *N S W Public Health Bull* 2007; 18: 1–137. S-1
5. Cunningham J, Condon JR. Premature mortality in Aboriginal adults in the Northern Territory, 1979–1991. *Med J Aust* 1996; 165: 309–12.
6. McLennan W, Madden R. *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples*. Canberra: Australian Bureau of Statistics, 1997.
7. NSW Health. Tobacco Action Plan NSW: 2005–9. Sydney: NSW Health, 2006. Available at http://www.health.nsw.gov.au/pubs/2005/pdf/tobacco_ap_bground.pdf (accessed 18.6.07).
8. Ivers RG. A review of tobacco interventions for Indigenous Australians. *Aust N Z J Public Health* 2003; 27(3): 294–9. doi:10.1111/j.1467-842X.2003.tb00398.x
9. Ivers RG. An evidence-based approach to planning tobacco interventions for Aboriginal people, 2004. *Drug Alcohol Rev* 2004; 23(1): 5–9. doi:10.1080/09595230410001645501
10. Silagy C, Ketteridge S. Physician advice for smoking cessation. *Cochrane Database of Systematic Reviews* 1996; (3): CD000165. doi:doi:10.1002/14651858.CD000165.pub2
11. Rice V, Stead L. Nursing interventions for smoking cessation. *Cochrane Database of Systematic Reviews* 1999; (3): CD001188.
12. Lancaster T, Stead LF. Individual behavioural counselling for smoking cessation. *Cochrane Database of Systematic Reviews* 2005; (2): CD001292.
13. Silagy C, Mant D, Fowler G, Lancaster T. Nicotine replacement therapy for smoking cessation. *Cochrane Database of Systematic Reviews* 2008; (1): CD000146.
14. Ivers RG, Farrington M, Burns CB, Bailie RS, D'Abbs PH, Richmond RL et al. A study of the use of free nicotine patches by Indigenous people. *Aust N Z J Public Health* 2003; 27(5): 486–90. doi:10.1111/j.1467-842X.2003.tb00819.x
15. Gonzales D, Rennard SI, Nides M, Oncken C, Azoulay S, Billing CB et al. Varenicline, an alpha4beta2 nicotinic acetylcholine receptor partial agonist vs sustained release bupropion and placebo for smoking cessation. *JAMA* 2006; 296: 47–55. doi:10.1001/jama.296.1.47
16. Jorenby DE, Taylor Hays J, Rigotti NA, Azoulay S, Watsky EJ, Williams KE et al. Efficacy of varenicline, an alpha4beta2 nicotinic acetylcholine receptor partial agonist vs placebo or sustained release bupropion for smoking cessation. *JAMA* 2006; 296: 56–63. doi:10.1001/jama.296.1.56
17. Lumley J, Oliver S, Waters E. Interventions for promoting smoking cessation during pregnancy. *Cochrane Database of Systematic Reviews* 1998; (2): CD001055.
18. Coleman T, Britton J, Thornton J. Nicotine replacement therapy in pregnancy is probably safer than smoking. *BMJ* 2004; 328(7446): 965–6. doi:10.1136/bmj.328.7446.965
19. Rigotti N, Munafo M, Murphy M, Stead L. Interventions for smoking cessation in hospitalised patients. *Cochrane Database of Systematic Reviews* 2001; (2): CD001837.
20. Wolfendon L, Freund M, Campbell E, Wiggers J, Paul C, Mitchell E. Managing nicotine dependence in NSW hospital patients. *N S W Public Health Bull* 2004; 15(5–6): 98–101. doi:doi:10.1071/NB04023
21. Sowden A, Arblaster L. Mass media interventions for preventing smoking in young. *Cochrane Database of Systematic Reviews* 1998; (4): CD001006.
22. Ivers R, Castro A, Parfitt D, Bailie RS, Richmond RL, D'Abbs PH. Television and delivery of health promotion programs to remote Aboriginal communities. *Health Promot J Austr* 2005; 16(2): 155–8.
23. Stead L, Lancaster T. Group behaviour therapy programmes for smoking cessation. *Cochrane Database of Systematic Reviews* 2005; (3): CD001007.
24. Stead L, Lancaster T. Telephone counselling for smoking cessation. *Cochrane Database of Systematic Reviews* 2001; (2): CD002850.
25. Australian Medical Association and Australian Pharmaceutical Manufacturer's Association. *Indigenous smoking: issues and responses*. Canberra: Australian Medical Association and Australian Pharmaceutical Manufacturer's Association, 2000.
26. Corti B, Holman C, Donovan R, Frizzell S, Carroll A. Using sponsorship to create healthy environments for sport, racing and arts venues in Western Australia. *Health Promot Int* 1995; 10(3): 185–97. doi:10.1093/heapro/10.3.185
27. Lancaster T, Stead L. Self-help interventions for smoking cessation. *Cochrane Database of Systematic Reviews* 1998; (4): CD001118.
28. O'Connor M, Parker E, Micklejohn B, Oldenburg B, Alati R. Heart Health education resources for Aboriginal and Torres Strait Islander communities: The Health Worker's view. *Aborig Isl Health Work J* 1999; 23(2): 20–3.
29. Contributors to the Cochrane Collaboration and the Campbell Collaboration. Evidence from systematic reviews of research relevant to implementing the 'wider public health' agenda. In *National Health Service Centre for Reviews and Dissemination*; 2000.
30. Manley M, Lynn W, Payne Epps R, Grande D, Glynn T, Shopland D. The American Stop Smoking Intervention Study for cancer prevention: an overview. *Tob Control* 1997; 6: S5–11. doi:10.1136/tc.6.suppl_2.S5Suppl 2
31. Serra C, Cabezas C, Bonfill X, Pladevall-Vila M. Interventions for preventing tobacco smoking in public places. *Cochrane Database of Systematic Reviews* 2000; (3): CD001294. doi:10.1002/14651858.CD001294
32. Health NSW. *NSW Smoke-free Environment Amendment Act 2004*. Available at: <http://www.health.nsw.gov.au/public-health/health-promotion/tobacco/sfeaa2004.html>. Accessed 18 June 2007.
33. Stead L, Lancaster T. Interventions for preventing tobacco sales to minors. 1999; (4): CD001497. doi:10.1002/14651858.CD001497.pub2

Smokers respond to anti-tobacco mass media campaigns in NSW by calling the Quitline

Trish Cotter^{A,C}, Donna A. Perez^A,
Anita L. Dessaix^A and James F. Bishop^B

^ACancer Prevention, Cancer Institute New South Wales

^BChief Cancer Officer, Cancer Institute New South Wales

^CCorresponding author. trish.cotter@cancerinstitute.org.au

Abstract: Objective: One aim of the anti-tobacco mass media campaigns in NSW is to increase the numbers of smokers calling the Quitline to seek assistance to quit. **Methods:** Investigation of the relationship between the weight of television advertising (Target Audience Rating Points: TARPs) and number of calls to the Quitline. **Results:** There is a high correlation between weekly Quitline calls and TARPs. **Conclusions:** Anti-tobacco mass media campaign advertising that promotes the Quitline number encourages smokers to seek assistance to quit.

The *NSW State Plan*, *NSW Cancer Plan* and the *NSW Tobacco Action Plan 2005–2009* set a target of an annual one percentage point reduction in smoking prevalence. Under these plans, the Cancer Institute NSW has the primary responsibility for the design, development and delivery of mass media campaigns that aim to influence smoking behaviours and encourage smokers to quit.^{1,2} Since 2004, the NSW Government has committed substantial funding to these campaigns.

In New South Wales (NSW) in 2006, smokers were the target of 32 weeks of anti-tobacco television advertising funded by the Cancer Institute NSW. In addition, at the beginning of 2006, the Commonwealth Government funded two campaigns totalling 10 weeks – the Australian Competition and Consumer Commission (ACCC) *Lights and Milds Campaign* and a *Primer Campaign* for the introduction of graphic health warnings on tobacco products. Advertisements for nicotine replacement therapy (NRT) products, funded by pharmaceutical companies, also aired throughout this period.

Telephone Quitlines providing counselling and support are effective in assisting smokers to quit.⁴ Previous studies have shown that smokers who call the Quitline, particularly those who use callback counselling, can increase their chances of quitting successfully.^{4,5}

The present study presents data on the relationship between anti-tobacco television advertising in 2006 and the volume of Quitline calls generated in response.

Methods

Advertising campaigns

The Cancer Institute NSW launched the first of its anti-tobacco mass media campaigns for 2006 on 18 April with a campaign to promote the services provided by the Quitline. This *Quitline Services Campaign* was followed closely by the first advertisement for the *Health Warnings Campaign – Amputation*, which was developed in partnership with Quit Victoria. The *Health Warnings Campaign* was designed to extend the meaning and personal relevance of the graphic health warnings on cigarette packs introduced in March 2006. *Mouth Cancer* was the second advertisement for the *Health Warnings Campaign* and was aired later in July and August 2006. The *Pubs and Clubs Campaign*, *Change is in the Air*, was aired, as in 2005, to coincide with the changes in legislation regarding smoking restrictions in NSW pubs and clubs in July (this campaign did not promote the Quitline number). Two campaigns previously aired in 2005 were repeated in 2006 – *Excuses* and *Parents*. An overview of the 2006 campaigns is provided in Table 1.

The target of the advertising was primarily adult smokers, although this varied between the campaigns. The Quitline number was shown at the end of all the advertisements to facilitate a smoker's behavioural response by calling the Quitline.

Television advertising activity

The standard advertising industry measure of television advertising weight scheduled to reach the target audience is a Target Audience Rating Point (TARP). It is an estimate based on Australian Television Audience Measurement (Oz TAM) and is a multiple of the percentage of the target audience reached by the campaign and the average number of times a target audience member is exposed to the

advertising. For example, one TARP represents 1% of the target audience who have had the opportunity to see a campaign advertisement on television once.^{6,7}

When developing a campaign, total weekly TARPs are normally the reference point. Total weekly TARPs of 200, for example, could be an aggregate of 20 TV spots or advertising placements each generating 10 TARPs. There will be audience duplication as viewers generally see more than one ad in a week. Weekly TARPs of 200 would reach approximately 70% of a target audience 2.8 times. The more weekly TARPs, the heavier the advertising and the more repetition generated.

Weekly television performance data for Cancer Institute NSW campaigns based on actual TARPs, including bonuses (extra spots aired in addition to TARPs that are paid for), was supplied by MediaCom. Data were weighted according to the metropolitan (Sydney) and regional (Northern and Southern NSW) television market population potentials for 2006 for each campaign. A hybrid Southern NSW market, including Wollongong, Central West (Orange, Wagga and Dubbo) and Albury, was created to account for the exclusion of Canberra in the media buy. The target age group for the campaigns varied across 2006, so the TARP weighting was conducted on the basis of a fixed category at 16 years and over. The metropolitan and regional data were then aggregated to give a total NSW figure for each campaign.

The TARPs for the two Commonwealth-funded campaigns have been sourced from ACNielsen and aggregated for NSW based on unweighted data. The TARPs for the NRT product advertising are not included in this data.

Quitline calls

Quitline call data are routinely collated nationally by the Tobacco Control Research and Evaluation Program, Cancer Council South Australia through the use of Telstra Analyser as part of the monitoring of the 137 848 (13QUIT) and 131 848 Quitline numbers. This allows assessment of the actual number of calls, with data available on successful (calls answered) and un-successful (not answered, abandoned or busy) calls. The call data presented in the present study represent successful calls made in NSW to both Quitline numbers. The number of callers going on to use the NSW Quitline telephone counselling service is also monitored; however, it is not reported here.

To compare whether Quitline calls were correlated with TARPs, we calculated the correlated coefficient of the weekly counts of Quitline calls and weekly aggregated NSW TARPs using R8 statistical software.⁸

Results

Figure 1 plots the weekly aggregate TARPs for each campaign and successful calls to the Quitline for 2006. The media schedule differed across the campaigns and con-

Table 1. Overview of 2006 anti-tobacco campaigns funded by Cancer Institute NSW

Campaigns 2006	Description	Aim and target	Media
<i>Quitline Services:</i> April to October – flighted ^a	Six 15-second advertisements featuring Quitline advisers talking about several topics, including planning to quit, cravings, nicotine replacement therapy, callbacks, previous attempts and no best way to quit.	Aims to provide smokers with an insight into the Quitline and the range of services and support available. Target: 18–24 years	Television Radio Press Outdoor
<i>Health Warnings:</i> May to October – flighted	<i>Amputation</i> – features an operation to remove a leg that has gangrene. <i>Mouth Cancer</i> – features a woman with visual symptoms of mouth cancer.	Aims to build on the graphic health warnings on tobacco products and increase impact when a smoker purchases a tobacco product. Target: 18–24 years	Television Radio Press Outdoor
<i>Change is in the Air</i> (Pubs and Clubs): June/July. Joint project with NSW Health	Features David Callan (an Irish comedian) talking about smoking restrictions in NSW pubs and clubs.	Aims to increase awareness among the NSW community of the new changes to smoking inside licensed venues. Target: 18–39 years	Television Radio Press Ambient ^b
<i>Excuses (Echo 1&2):</i> May/June	Features several scenarios of excuses smokers use and the health consequences of not quitting. Re-run from 2005.	Aims to encourage smokers to put quitting on 'today's agenda' by tackling the excuses for delaying quitting. Target: 25–54 years	Television Press
<i>Parents:</i> September	Features a young girl talking to her father who is in a hospital bed. Re-run from 2005.	Aims to highlight the impact of smoking on the health of the smoker and also on the smoker's relationship with loved ones. Target: 30–49 years	Television Radio Press Cinema

^aFlighted means the scheduling of advertising campaigns in irregular bursts followed by periods of relative or complete inactivity.³
^bAmbient media include bathroom advertising.

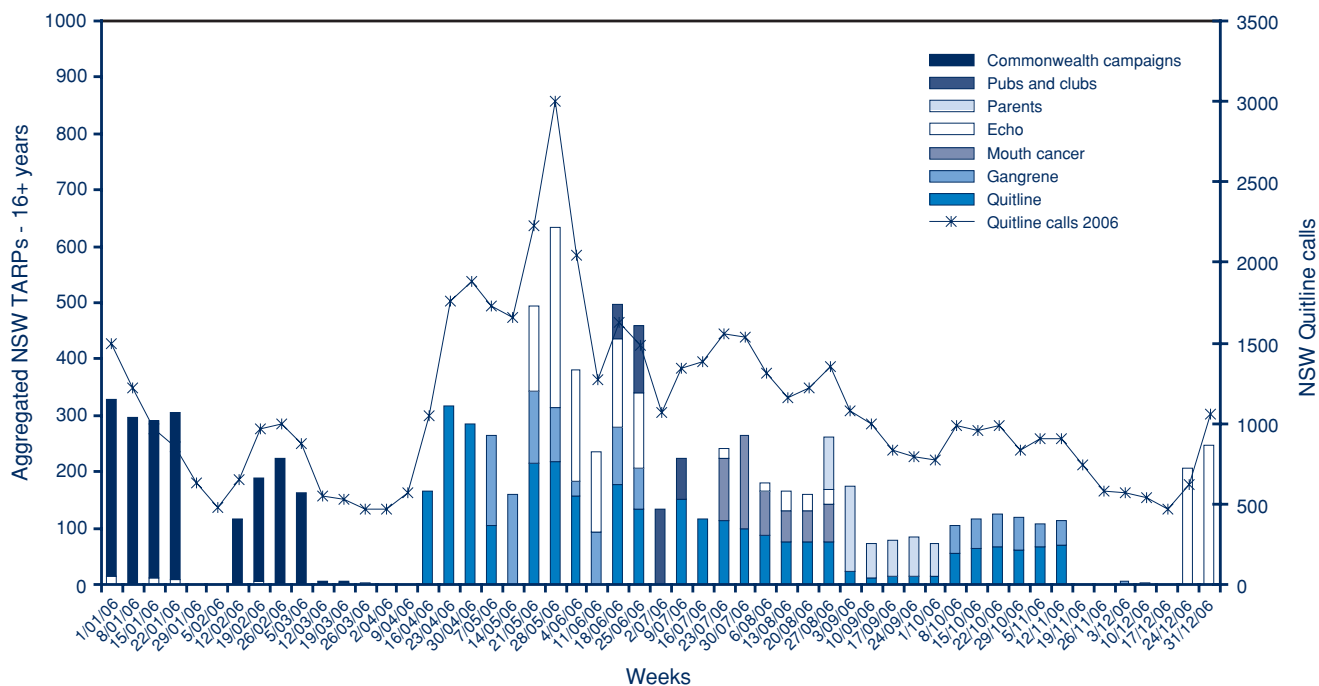


Fig. 1. Weekly target audience rating points (TARPs) for television anti-tobacco campaigns for the NSW population over the age of 16 years compared with the number of calls to the NSW Quitline in 2006

sisted of periods where there was overlap, with up to four campaigns on air in mid to late June. Over the period from April to December 2006, Quitline calls were highly correlated with TARPs (correlation coefficient, $r = 0.88$; $p < 0.001$).

An average of just over 1200 calls per week were achieved over the period April to December, relative to an average of just over 190 TARPs. A decreasing trend in Quitline calls was also observed over the period July to November, corresponding with reduced TARP levels; an average of just over 1000 calls per week was achieved over this period relative to an average of just over 130 TARPs.

In 2006, the largest peak in calls occurred in May and was highest in the week that included World No Tobacco Day (31 May), with just over 3000 calls. Although there were high TARP levels, there are usually several public relations activities associated with this day. The next highest peak in calls followed the launch of the Quitline Services Campaign in April 2006, with calls increasing to 1883 after three weeks on air – more than triple the calls compared with the week before the launch.

Discussion

A significant relationship was demonstrated between Quitline calls and TARPs, similar to that found in response to the National Tobacco Campaign over the period 1997 to 1998.^{7,9,10} The volume of calls to the Quitline was influenced by three main factors in 2006: the introduction of graphic warnings on packs (from March) featuring the Quitline number; public relations activities in May for

World No Tobacco Day; and television advertising weight or TARPs.

The results also indicate that low to medium TARP levels (an average of just over 130) could generate a reasonable amount of calls per week (average just over 1000). All of the campaigns appear to have played a role in generating calls.

The results presented here provide further evidence that television advertising not only promotes awareness of the Quitline number, but also leads to a call response. Increasing the number of smokers calling the Quitline is a desired outcome given that it can increase their chances of quitting successfully.^{4,5} However, previous studies have also shown that only a small proportion of smokers will call the Quitline for assistance to quit.¹⁰ Therefore the Quitline call response does not provide a complete picture of the community impact of anti-tobacco mass media campaigns.

Conclusion

The results indicate that promoting the Quitline through anti-tobacco mass media campaign advertising does encourage smokers to seek assistance to quit.

Acknowledgment

The authors would like to thank Arthur Hung for his assistance with the statistical analysis.

References

1. Cancer Institute New South Wales. *NSW cancer plan 2007–2010*. Sydney: Cancer Institute NSW, 2006.

2. NSW Department of Health. *NSW Tobacco Action Plan 2005–2009*. North Sydney: NSW Department of Health, 2005.
3. Monash University. Marketing dictionary. Available at . Accessed 28 June 2007. doi:<http://www.buseco.monash.edu.au/mkt/dictionary/>
4. Stead LF, Perera R, Lancaster T. Telephone counselling for smoking cessation *Cochrane Database of Systematic Reviews* 2006; (3): CD002850.
5. Borland R, Segan CJ, Livingston PM, Owen N. The effectiveness of callback counselling for smoking cessation: a randomized trial. *Addiction* 2001; 96: 881–9. doi:10.1046/j.1360-0443.2001.9668819.x
6. Donovan R, Henley N. *Social marketing: principles and practice*. Melbourne: IP Communications, 2003.
7. Williams P, Bleasdale T. The relationship between campaign television activity and Quitline call data. In: Hassard K, editor. *Australia's national tobacco campaign: evaluation report, volume one*. Canberra: Commonwealth Department of Health and Aged Care, 1999.
8. R Development Core Team. *R: a language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing, 2007. Available at <http://www.r-project.org>. Accessed 11 January 2008.
9. Tan N, Hassard K. Quitline calls and campaign television investment. In: Hassard K, editor. *Australia's national tobacco campaign: evaluation report, volume two*. Canberra: Commonwealth Department of Health and Aged Care, 2000.
10. Miller CL, Wakefield M, Roberts L. Uptake and effectiveness of the Australian telephone Quitline service in the context of a mass media campaign. *Tob Control* 2003; 12: 53–8.

The Mull Hypothesis: is cannabis use contributing to high tobacco use prevalence among young North Coast males?

Eric K. van Beurden^A, Avigdor Zask^A, Megan Passey^B and Annie M. Kia^A

^ANorth Coast Health Promotion, Population Health, Planning and Performance Directorate, North Coast Area Health Service

^BDepartment of Rural Health (Northern Rivers), University of Sydney and North Coast Area Health Service

^CCorresponding author. avigdor.zask@ncahs.health.nsw.gov.au

Abstract: Men aged 25–34 years, in North Coast NSW, have higher documented smoking rates than elsewhere in the state. The present paper explores potential causes of elevated smoking rates in this population and proposes that tobacco dependence resulting from ‘mulling’ (mixing) cannabis with tobacco may be contributing.

Young people can become dependent on tobacco by initially mixing it with cannabis.^{1–3} This ‘reverse gateway’ process is contrary to the theory that tobacco use precedes cannabis use.⁴ The present paper proposes that the high smoking prevalence documented in North Coast men aged 25–34 years may reflect this. These rates are higher than for other rural areas and New South Wales (NSW) in general (Figure 1).⁵ They are also higher than rates in women and these trends are consistent over time.⁵ NSW Health Survey sample sizes are primarily designed for population health indicators monitored at an area health service level. Analysing the survey data for a small subgroup, such as an age group within one gender, has an inherent weakness due to inadequate sample size. Despite this, the difference in 2004 reached significance (Table 1). Although the data are not presented here, a similar trend is evident among men 35–44 years old.

Possible causes of high smoking rates

Four possible causes are considered in the light of available evidence. First, it may be a statistical aberration due to the small size of the cohort samples in the Health Survey. Rates for men aged 25–34 years (1998 and 2002 to 2005) are based on 70–200 respondents.⁵ However, this is an unlikely cause of a trend that is consistent over time.

Second, the high rates may be reflective of the North Coast Area Health Service (NCAHS) being the most socio-economically disadvantaged area in NSW with the highest combined unemployment–sickness–disability benefit recipient rate.^{6–8} Low socio-economic status is a potential contributor; however, it is unclear why this would not also cause an elevation in smoking rates in women.

Third, and linked to socio-economic status, is the fact that the NCAHS has the second highest proportion of Aboriginal residents of all the area health services in NSW (3.6%).⁹ Evidence suggests that more Aboriginal people smoke than non-Aboriginal people do.^{7,9} However, high smoking rates in 3.6% of the population (as opposed to 1.9% of the NSW population) would only contribute another 1–2%, with little effect on the rate for all young men.

The Mull Hypothesis

The fourth considered cause is that many young men become dependent on tobacco through the ‘reverse gateway’ process.¹ Subsequently, long-term cannabis users find it difficult to quit smoking tobacco because of the reinforcing influence of their cannabis use.³ Furthermore, cannabis use is at its highest in this male age group, at double the female rates.⁷ Thus, while there has been a general reduction in smoking over the last decade, this trend may have been attenuated in the North Coast because of the many cannabis users who were unable to quit using tobacco.

Since the 1970s, the North Coast alternative lifestyle movement has normalised cannabis use.¹⁰ Although data

Table 1. Comparison of the prevalence, with 95% confidence intervals, for smoking in 25–34 year old North Coast males with populations for NSW and two other rural Area Health Services in 2004.

Population Group	Prevalence %	95%CI %
NCAHS	64.1	49.1–79.1
GSAHS	34.3	19.1–49.6
GWAHS	39.0	26.2–51.8
NSW	29.8	24.1–35.5

NCAHS: North Coast Area Health Service; GSAHS: Greater Southern Area Health Service; GWAHS: Greater Western Area Health Service.

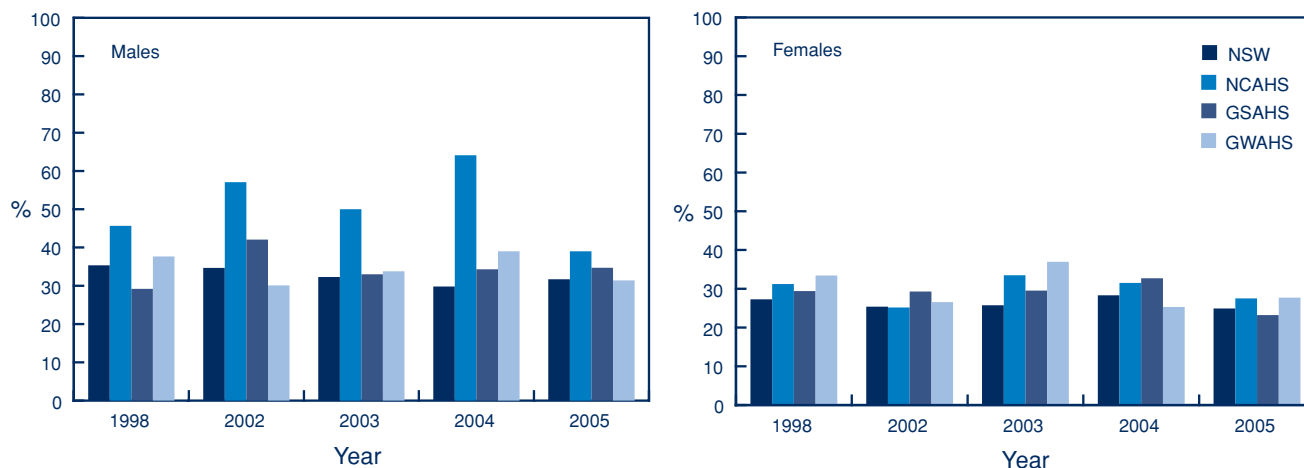


Fig. 1. Comparison of the prevalence (%) of current tobacco smoking for 25–34 year old North Coast males and females with populations for NSW and two other rural Area Health Services for the period 1998–2005.

Source: NSW Health Survey.³ NCAHS: North Coast Area Health Service; GSAHS: Greater Southern Area Health Service; GWAHS: Greater Western Area Health Service.

were not available on rates of cannabis use in NCAHS compared with the rest of NSW, crime statistics suggest that cannabis use is higher; convictions for cultivation, use, possession and related crime incidents are the highest in NSW.^{10–14}

During the 2006 National Cannabis Strategy consultations representatives from the North Coast cannabis-using community expressed concern that young users were becoming tobacco dependent due to ‘mulling up’. The Mull Hypothesis may therefore explain part of excess tobacco use in young men on the North Coast, and has implications for tobacco control wherever young people experiment with use of cannabis.

Investigating the trend

The documented smoking rates for young North Coast men could be validated by larger sampling by the Health Survey or through advanced analysis of repeated trend data. Additional questions might clarify the prevalence of cannabis use and ‘mulling’, and whether people who do not smoke tobacco other than in their cannabis mix identify as tobacco smokers. Complementary data sources could also be explored.

Conclusion

To develop harm reduction strategies, interactions between onset and frequency of tobacco and cannabis use and the associated socio-economic factors need clarification, as does the nexus of reasons, circumstances and meanings of use.

Acknowledgments

We wish to thank Therese Dunn for data analysis, Reyna Dight, David Reilly and Gerry Williams for expert advice and Geoff Morgan for constructive comments.

References

- Patton GC, Coffey C, Carlin JB, Sawyer SM, Lynskey M. Reverse gateways? Frequent cannabis use as a predictor of tobacco initiation and nicotine dependence. *Addiction* 2005; 100(10): 1518–25. doi:10.1111/j.1360-0443.2005.01220.x
- Humfleet GL, Haas AL. Is marijuana use becoming a ‘gateway’ to nicotine dependence? *Addiction* 2004; 99: 5–6. doi:10.1111/j.1360-0443.2004.00596.x
- Amos A, Wiltshire S, Bostock Y, Haw S, McNeill A. ‘You can’t go without a fag... you need it for your hash’ – a qualitative exploration of smoking, cannabis and young people. *Addiction* 2004; 99(1): 77–81. doi:10.1111/j.1360-0443.2004.00531.x
- Kandel DB, Yamaguchi K, Chen K. Stages of progression in drug involvement from adolescence to adulthood: Further evidence for the gateway theory. *J Stud Alcohol* 1992; 53: 447–57.
- Population Health Division. *The health of the people of New South Wales: Report of the Chief Health Officer. Health-related behaviours smoking in adults*. Sydney: NSW Department of Health, 2004.
- Barbeau EM, Krieger N, Soobader M-J. Working class matters: Socioeconomic disadvantage, race/ethnicity, gender, and smoking in NHIS 2000. *Am J Public Health* 2004; 94(2): 269–78.
- Australian Institute of Health & Welfare. *2004 National drug strategy household survey: detailed findings*. AIHW cat. no. PHE66. Canberra: AIHW (Drug Statistics Series No. 16), 2005.
- Population Health Division. *The health of the people of New South Wales: Report of the Chief Health Officer. Social determinants socioeconomic indices*. Sydney: NSW Department of Health, 2004.
- Population Health Division. *The Health of the People of New South Wales: Report of the Chief Health Officer. Aboriginal and Torres Strait Islander peoples Indigenous population by local government area*. Sydney: NSW Department of Health, 2004.

10. Reilly D, Didcott P, Swift W, Hall W. Long-term cannabis use: characteristics of users in Australian rural area. *Addiction* 1998; 93(6): 837–46. doi:10.1046/j.1360-0443.1998.9368375.x
11. Transport and Population Data Centre: NSW Department of Planning. *NSW SLA Population Projections 2001–2031, 2004 Release: Detailed Data*, Version 1.2. Sydney: NSW Department of Planning, 2004.
12. Helliwell D, Reilly D, Rippingale C. Establishing a drug and alcohol service in an Australian rural area. *Drug Alcohol Rev* 1992; 11: 371–8. doi:10.1080/09595239200185501
13. Major C. Deadlocked: The drug law debate in Australia – 90’s style. *Connexions* 1994; 14: 8–16.
14. Moffatt S, Goh D, Fitzgerald J. *New South Wales Recorded Crime Statistics 2004*. Sydney: NSW Bureau of Crime Statistics and Research, 2005.

Tobacco smoking among secondary school students in NSW

Michael Giffin^{A,B} and Margo Eyeson-Annan^A

^ANSW Health Survey Program, Centre for Epidemiology and Research, NSW Department of Health

^BCorresponding author: michael.giffin@doh.health.nsw.gov.au

In New South Wales (NSW), it is illegal to sell or supply tobacco to a person under 18 years of age. Most people who become long-term smokers start smoking in their teenage years. Early uptake is associated with heavier smoking and greater difficulty in quitting. Preventing adolescents from becoming regular users of tobacco is an important goal of tobacco control programs in Australia.¹⁻⁴

In 2005, the New South Wales School Students Health Behaviours Survey asked students aged 12–17 years a range of questions about smoking prevention, behaviour, addiction and influences. This article describes results for selected questions. Further details on the survey methods, questions asked and complete results for smoking and other health behaviours can be obtained from the *New South Wales School Students Health Behaviours*

Survey: 2005 Report at <http://www.health.nsw.gov.au/publichealth/surveys/index.asp>.⁵

Results

Smoking prevention

In 2005, among students aged 12–17 years, 92.4% had a lesson or part of a lesson about tobacco smoking. There was no significant difference between male and female students. Students aged 12–15 years (93.6%) were significantly more likely than students aged 16–17 years (89.1%) to have had a lesson or part of a lesson about tobacco smoking. There was no significant difference by socioeconomic level, or between urban areas or rural areas; however, students living in the North Coast Area Health Service (96.4%) were significantly more likely to have had a lesson or part of a lesson about smoking, compared with the overall student population.

Smoking behaviour

In 2005, among students aged 12–17 years, 10.3% were current tobacco smokers. There was no significant difference between male and female students. Students aged

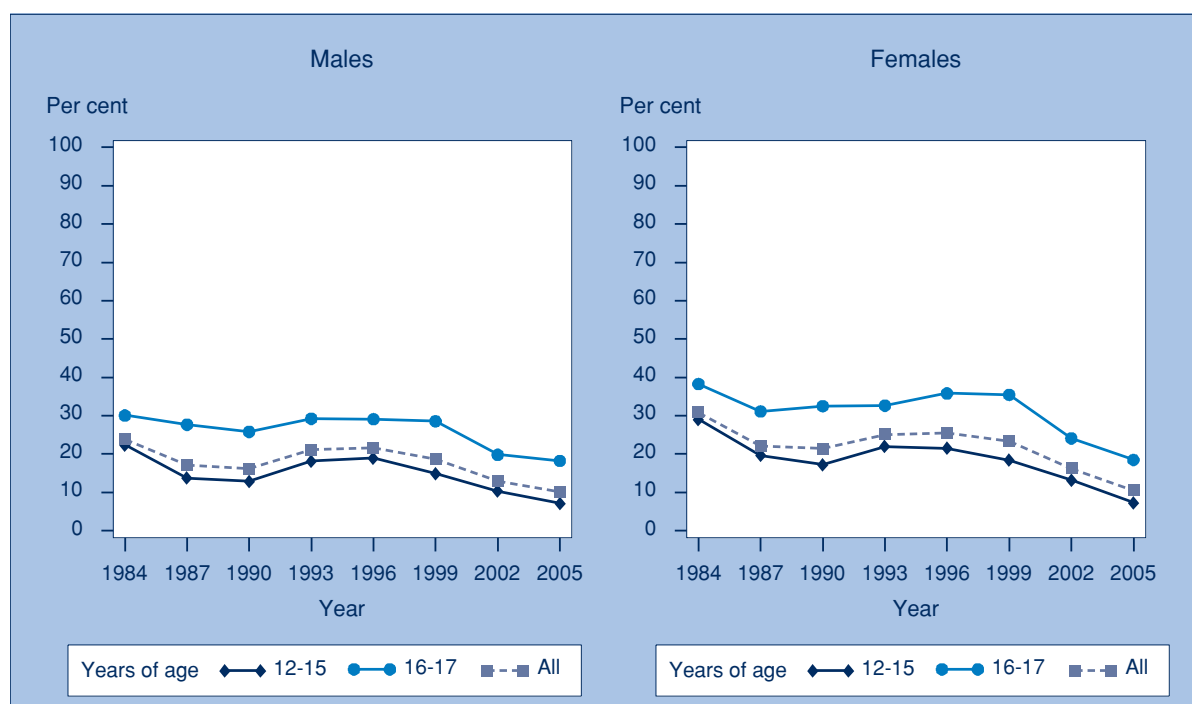


Fig. 1. Current tobacco smoker by year, students 12 to 17 years, NSW, 1984–2005

Source: *New South Wales School Students Health Behaviours Survey: 2005 Report* (HOIST). Sydney: Centre for Epidemiology and Research, NSW Department of Health.

16–17 years (18.4%) were significantly more likely than students aged 12–15 years (7.3%) to be current tobacco smokers. There was no significant difference by level of socio-economic disadvantage, or between rural areas and urban areas; however, students in the Greater Southern Area Health Service (14.1%) were significantly more likely, and students in the Sydney South West Area Health Service (6.9%) were significantly less likely, to be current tobacco smokers, compared with the overall student population. As shown in Figure 1, there has been a significant decrease in the proportion of students who are current tobacco smokers, between 1984 (27.3%) and 2005 (10.3%).

Smoking addiction

In 2005, among students aged 12–17 years who were current tobacco smokers, 21.3% thought they were addicted to tobacco. There was no significant difference between males and females, by level of socio-economic disadvantage, or between rural areas and urban areas; however, students in the Greater Western Area Health Service were significantly more likely to think they were addicted to tobacco (58.6%), compared with the overall student population. There has been no significant change in the proportion of students who think they are addicted to tobacco between 2002 and 2005.

Smoking influences

In 2005, among students aged 12–17 years, 56.9% thought smoking by celebrities encouraged young people to take up smoking. There was no significant difference between males and females, between age groups, by level of socio-

economic disadvantage, or between rural areas and urban areas; however, students in the Sydney South West Area Health Service (63.7%) were significantly more likely, and students in the Northern Sydney and Central Coast Area Health Service (50.8%) were significantly less likely, to think smoking by celebrities encourages young people to take up smoking.

The next New South Wales School Students Health Behaviours Survey is in 2008.

References

1. United States Department of Health and Human Services. *The health consequences of smoking: a report of the Surgeon-General*. Atlanta, GA, USA: United States Department of Health and Human Services, Centers for Disease Control and Prevention, Office on Smoking and Health, 2004. Available at http://www.cdc.gov/tobacco/sgr/sgr_2004/index.htm. Accessed 4 January 2008.
2. Drug Strategy Branch. *Smoking behaviours of Australian secondary school students in 2002*. Monograph Series No. 54. Canberra: Australian Government Department of Health and Ageing, 2004.
3. Centre for Behavioural Research in Cancer. *Smoking behaviours of Australian secondary school students in 2005*. Melbourne: The Cancer Council Victoria, 2006.
4. National Drug Strategy. *Environmental tobacco smoke in Australia*. Canberra: Commonwealth Department of Health and Ageing, 2002.
5. Centre for Epidemiology and Research. *New South Wales School Students Health Behaviours Survey: 2005 Report*. Sydney: NSW Department of Health, 2007. Available at <http://www.health.nsw.gov.au/publichealth/surveys/index.asp>. Accessed 4 January 2008.

BUG BREAKFAST IN THE BULLETIN

Infectious diseases in homeless people

Sian Rudge^A, Ian Webster^B and Ingrid van Beek^C

^ANSW Trainee Public Health Officer, NSW Department of Health

^BEmeritus Professor of Public Health and Community Medicine, University of New South Wales

^CKirketon Road Centre, South Eastern Sydney Illawarra Area Health Service

On census night in 2001 there were close to 27 000 homeless people in New South Wales (NSW). Almost 25% of these people were young people between 12 and 18 years old. The rate of homelessness was higher for Aboriginal people than non-Aboriginal people, and higher in coastal,

and rural and remote areas of NSW than in Sydney. Within Sydney, the rate of inner-city homelessness was six times higher than in the outer suburbs.¹

Many risk factors are associated with homelessness, including financial burdens and limited housing options. Mental health problems, often combined with drug or alcohol abuse, are common. For young people one of the main causes identified for being homeless is family breakdown. This may involve substance abuse by parents, or physical or sexual abuse of the young person.^{1,2}

The multiple causes and complexities of homelessness mean that the provision of adequate housing alone is often not enough. A co-ordinated approach to the management

of homelessness needs to address mental and physical health, addiction issues and social isolation.³

Why are homeless people at increased risk of infectious diseases?

Homeless people may be predisposed to infections because of their general poor health with lowered immunity, living conditions and poor hygiene.⁴ There may be several causes of poor health, including the prevalence of alcohol abuse, injecting drug use and heavy tobacco use, which are higher in the homeless than in the general population.⁴

Long-term alcohol abuse can cause liver damage, gastrointestinal bleeding, anaemia and neuropathies. Injecting drug use increases the risk of developing bloodborne and sexually transmitted infections. Heavy tobacco use can cause vascular disease and poor circulation, and is also a risk factor for developing chronic lung conditions and susceptibility to pneumonia. Poor nutrition can also contribute to lowered immunity.

Overcrowding in shelters or other temporary accommodation may expose people to infections and conditions where it is often not possible to maintain adequate hygiene. Homeless people are more likely to sustain injuries and be victims of violent crime, but are less likely to seek treatment, leading to the development of bacterial infections. Standing or walking for long periods, poorly fitting shoes, poor hygiene, poor circulation and poor sensation contribute to skin breakdown and the development of infections.

Mental illness may also contribute to the development of infectious diseases due to behaviours that may result in poor hygiene, injury, difficulty with seeking medical care and compliance with treatment. Other risks factors for the homeless include unsafe sex practices associated with multiple sexual partners or sex work, which increase the risk of sexually transmitted infections.

Role of government and non-government organisations

The Supported Accommodation Assistance Program (SAAP) was established to combine homelessness pro-

grams run by state, territory and Commonwealth governments under one nationally co-ordinated program. SAAP is Australia's primary response to homelessness, and funds non-government organisations to provide accommodation and related support services.⁵

The community sector plays a large role in the care of the homeless. These non-government organisations provide grassroots care for some of the most disadvantaged in our community. Funding for these organisations is often provided through a mix of government funding and grants, and donated funds.

Non-government organisations are providing services that address many issues associated with homelessness. The Matthew Talbot Hostel, run by the St Vincent de Paul Society, is the largest hostel for homeless men in Australasia and provides medical care as part of its services. The Kirketon Road Centre, part of the South East Sydney Illawarra Area Health Service, provides outreach and centre-based services for the homeless, sex workers and injecting drug users, to prevent and minimise HIV/AIDS and other transmissible infections.

References

1. Chamberlain C and MacKenzie D. *Counting the Homeless 2001*. Canberra: Australian Census Analytic Program, Australian Bureau of Statistics, November 2003.
2. Youth Accommodation Association. *Homelessness Youth in NSW – April 2007*. Redfern: Youth Accommodation Association, 2007. Available at <http://www.yaa.com.au/policydocuments/YHMDFactsandfigures2007.pdf>. Accessed 20 June 2007.
3. Audit Office of New South Wales. *Performance audit: responding to homelessness*. Sydney: State Library of New South Wales, 2007.
4. Raoult D, Foucault C, Brouqui P. Infections in the homeless. *Lancet Infect Dis* 2001; 1: 77–84. doi:10.1016/S1473-3099(01)00062-7
5. Commonwealth of Australia. *SAAP V Multilateral agreement: Multilateral agreement in relation to the Supported accommodation assistance program*. Canberra: Department of Families, Housing, Community Services and Indigenous Affairs, 2005. Available at [http://facs.gov.au/internet/facsinternet.nsf/vIA/saap3/\\$File/SAAP_V_Multilateral_Agreement.pdf](http://facs.gov.au/internet/facsinternet.nsf/vIA/saap3/$File/SAAP_V_Multilateral_Agreement.pdf). Accessed 15 June 2007.

Communicable Diseases Report, NSW, January and February 2008

Communicable Diseases Branch, NSW Department of Health

For updated information, including data and facts on specific diseases, visit www.health.nsw.gov.au and click on **Infectious Diseases**.

The communicable diseases site <http://www.health.nsw.gov.au/publichealth/infectious/index.asp> has been reborn using browser-friendly html formats to improve accessibility and as a result has a new address.

Figure 1 and Tables 1 and 2 show reports of communicable diseases received through to the end of February 2008 in New South Wales (NSW).

Measles outbreak

One case

In early January 2008, South Eastern Sydney Illawarra Public Health Unit (PHU) reported a confirmed measles case in a 12-year-old boy. The boy developed a fever of 38.5°C, sore throat and a slight cough. Two days later a rash appeared on his forehead, spreading to his face and behind his ears, and his temperature was reported as 38°C. The fever eased and the rash progressed to his trunk. Although the family reported no specific contact with other cases of measles, while overseas he did have contact with another child with a few spots on his hand thought to be caused by a viral illness. The child had returned from overseas by aeroplane during his infectious period (from just before onset of symptoms to 4 days after onset of the rash). The child had reportedly had two measles vaccinations some years before.

Measles is an acute viral disease that can have serious complications. In the past, measles infection was common in childhood. As a result of immunisation, measles is now rare in NSW.¹ The first symptoms of infection with measles include fever, tiredness, runny nose, cough and sore red eyes. These symptoms usually last for a few days before a red blotchy rash appears. The rash starts on the face and upper neck over 1 to 2 days, spreads down the body and usually lasts for 4 to 7 days.²

Measles is a notifiable disease in NSW and must be reported as soon as possible after diagnosis. PHUs investigate cases to identify possible epidemiological links and contacts to prevent further spread. Susceptible people, who have been exposed to measles, can avert disease if they receive measles vaccine within 72 hours of exposure or normal human immunoglobulin (NHIG) within seven days of exposure.

This was the first confirmed case of measles in NSW for over 5 months. As the diagnosis was confirmed more than 7 days after the child's flight, PHU staff contacted passengers seated in the same row and two rows fore and aft of the child to avoid infecting others should symptoms occur.

Nine more cases

Late in January 2008, Sydney West (SW) PHU reported three more cases of measles:

- **Case 1**, a 12-year-old boy, partially vaccinated, reported symptoms of fever, headache, cough and rash. Possible contacts were identified from a medical centre waiting room, cinema and the emergency department of hospital A.
- **Case 2** was a 10-month-old unvaccinated boy. Symptoms included fever, conjunctivitis and coryza followed 2 days later by a rash. The infant had attended a religious function during his exposure period. Contacts included a GP waiting room where the case was isolated and the emergency department waiting room of hospital A.
- **Case 3**, an 8-month-old unvaccinated girl, presented to the emergency department of hospital A with fever, cough, coryza, conjunctivitis and Koplik spots. A rash developed 2 days later. Possible contacts included attendees at a wedding and the emergency department waiting room of hospital A.

A clinic was held at hospital A for the susceptible contacts of these three cases who were offered measles–mumps–rubella (MMR) vaccine (22 contacts) and NHIG (four contacts).

SW PHU reported a further two cases in early February:

- **Case 4**, a woman in her 20s, presented to a GP with fever, sore throat and rash, and was later admitted to hospital B. Susceptible contacts were offered NHIG at a clinic held at hospital B and a medical centre in the area. Fifty-six susceptible persons received NHIG.

- **Case 5:** on return from an overseas holiday, a woman in her 20s presented to the emergency department of hospital D with fever, cough, conjunctivitis, Koplik spots and rash. Contacts included her immediate family (two required NHIG) and work colleagues.

The following week, SW PHU was notified of a further three possible cases, only one of which, case 6, was confirmed:

- **Case 6,** an unvaccinated 9-year-old girl presented to a GP with fever, cough, headache, coryza, photophobia and rash that had appeared three days later. Possible contacts of this girl were identified from primary school, after school care and school band. A clinic was held to offer NHIG prophylaxis: seven doses were provided including to the unvaccinated siblings of the girl with diagnosed measles.

Two children who attended the same child-care centre during their exposure period were notified in mid February:

- **Case 7,** an 11-month-old unvaccinated boy presented to a GP with cough, runny nose, conjunctivitis and fever followed by a rash three days later.
- **Case 8,** a 20-month-old unvaccinated boy presented to a GP with cough, coryza, fever and rash. Another case was subsequently confirmed.
- **Case 9** was a 13-year-old unvaccinated boy and the sibling of case 6. This case had received NHIG prophylaxis on day 7 post-exposure and presented with modified clinical symptoms of headache, sore eyes and clammy skin followed after one day by a rash. A post-exposure clinic was held at the high school for susceptible contacts: 20 received NHIG.

All except one of the confirmed cases notified during this outbreak were unvaccinated. A third of those who were unvaccinated were too young for a first dose of MMR. The remaining cases either had no recollection of vaccination or had chosen not to be vaccinated.

Further interventions

In response to the outbreak, PHUs conducted five clinics for prophylaxis treatment for susceptible contacts throughout January and February. The majority of susceptible contacts received NHIG. GPs and emergency departments were alerted to the measles outbreak through the media and professional networks using a faxed measles alert. Media releases were used to alert the community about the risk of measles and to provide information about prevention, specifically the importance of immunisation. To date, no common exposures have been identified for this outbreak.

This outbreak highlights the impact of unvaccinated populations on the transmission of measles in the community. The modified presentation of case 9 is a reminder that

atypical presentations and reduced prodromal periods may follow post-exposure prophylaxis.

Meningococcal disease

For January and February 2008, five cases of meningococcal disease were notified in NSW. All have survived. Of these, three were notified in January and two in February; three were males and three were under 5 years of age. One case was due to serogroup C (the vaccine-preventable strain) and three were due to serogroup B (for which there is no vaccine). For more information, see: <http://www.health.nsw.gov.au/publichealth/infectious/index.asp>.

Enteric diseases

In January 2008, NSW PHUs investigated 26 outbreaks of gastroenteritis, including 11 suspected foodborne outbreaks and 15 outbreaks suspected as been caused by person-to-person spread. The suspected foodborne outbreaks affected 61 people, ranging from 2 to 30 people per outbreak (median = 3). No causal pathogens were identified. The NSW Food Authority inspected commercial premises associated with suspected outbreaks.

Nine of the suspected person-to-person outbreaks occurred in aged care facilities, affecting a total of 191 people, and six in child-care centres, affecting 44 people. Norovirus was confirmed in one aged-care facility outbreak, rotavirus was identified in one child-care facility outbreak; similar viruses were likely to have caused the other outbreaks.

In February, NSW PHUs investigated nine outbreaks of gastroenteritis, including one suspected foodborne outbreak and eight outbreaks suspected as been caused by person-to-person spread. The foodborne outbreak was a large outbreak likely caused by *Bacillus cereus* and *Clostridium perfringens*. Up to 75 people who attended a catered function were reportedly ill. Of the eight outbreaks suspected as been caused by person-to-person spread, five occurred in child-care settings, two in aged-care facilities and one in a hospital.

Listeriosis

Listeriosis is a rare but serious illness caused by eating food contaminated with bacteria called *Listeria monocytogenes*. *Listeria* bacteria are common in soil and some foods such as pre-cooked chicken, rare meats, cold delicatessen meats, raw seafood, smoked fish and soft cheeses. Eating foods that contain *Listeria* does not cause illness in most people. Some people, such as the elderly, pregnant women and people with weakened immune systems, are more susceptible to contracting the illness. Over the last 5 years, there have been between one and six notifications per month and between 22 and 28 cases a year.

In January 2008, nine cases of listeriosis were notified in NSW. Cases were aged from 0 to 90 years. Six died,

including one stillborn baby. With the exception of the baby, those who died all had serious underlying illnesses. An epidemiological investigation found no links between the cases, and subsequent characterisation of the *Listeria* isolates from eight of the patients found distinct pulse field gel electrophoresis patterns. Although the number of cases is higher than expected for the month, available evidence indicates that the cases were not linked. No further cases have been reported through to mid February.

People who are pregnant or have immune dysfunction should avoid foods that may contain *Listeria*. For more information on listeriosis see: <http://www.health.nsw.gov.au/factsheets/infectious/listeriosis.html> and <http://www.foodauthority.nsw.gov.au/consumer/pregnancy.asp>.

Increased arbovirus activity

There have been increases in reported cases of Ross River virus and Barmah Forest virus infections in rural areas over summer. Both infections are spread by mosquitoes and may cause symptoms including fever, tiredness, rash and joint pain and swelling that last several days or longer. Murray Valley encephalitis (MVE) virus was identified in routine testing of mosquitoes trapped in early February near Griffith; however, chickens nearby have not tested positive for MVE and there is no evidence of human disease. Mosquitoes also transmit MVE, but human disease in NSW is rare. Most human infections do not lead to symptoms, but when they do occur they can be very serious. See: http://www.health.nsw.gov.au/factsheets/infectious/murray_valley_enceph.html. The local PHU has initiated additional local surveillance via hospital emergency departments, local doctors and laboratories.

To prevent these infections, avoid being bitten by mosquitoes:

- Avoid being outside in the late afternoon and dusk.
- Wear loose fitting, light coloured clothing when outside that covers your arms and legs, and use an insect repellent that contains the chemical diethyl toluamide (DEET) or picardin.
- Fit fly screens to all windows, doors and chimneys, and keep them in good repair.
- Use a knockdown insecticide in bedrooms half an hour before going to bed. Use insecticides according to instructions.
- Ensure open containers of water are removed from around the house to prevent mosquitoes breeding.
- Cover the openings to water tanks with fine steel mesh to prevent mosquitoes from laying eggs in the tank.
- Take precautions when camping, such as using flyscreens on caravans and tents and by sleeping under mosquito-proof nets. Take particular care while fishing, ensuring that you follow personal precautions to avoid being bitten by mosquitoes.

References

1. NSW Health Department. NSW Health Department Notifiable Diseases Database System (NDD)(HOIST). North Sydney: Communicable Diseases Branch and Epidemiology and Surveillance Branch, NSW Health Department, 2008.
2. Heymann DL (editor). *Control of communicable diseases manual*. 18th edition. Washington DC: American Public Health Association, 2004.

Figure 1. Reports of selected communicable diseases, NSW, January 2004 to February 2008, by month of onset.

Preliminary data: case counts in recent months may increase because of reporting delays.

Laboratory-confirmed cases only, except for measles, meningococcal disease and pertussis.

BFV, Barmah Forest virus infections; RRV, Ross River virus infections; Lab Conf, laboratory confirmed;

Men Gp C and Gp B, meningococcal disease due to serogroup C and serogroup B infection; other/unk, other or unknown serogroups.

NB: multiple series in graphs are stacked, except gastroenteritis outbreaks.

NB: Outbreaks are more likely to be reported by nursing homes and hospitals than by other institutions.

NSW Population	
Male	50%
<5 y	7%
5–24 y	27%
25–64 y	53%
65+ y	13%
Rural	46%

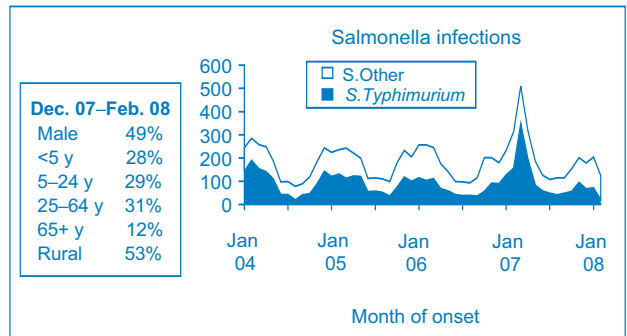
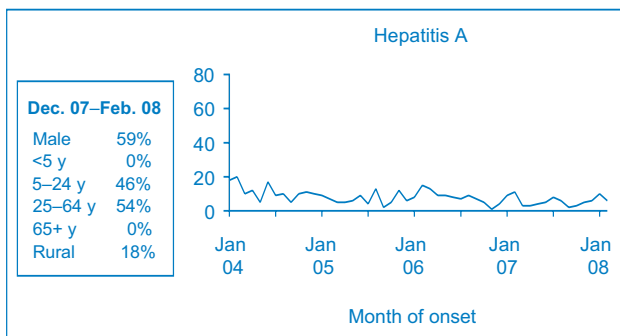
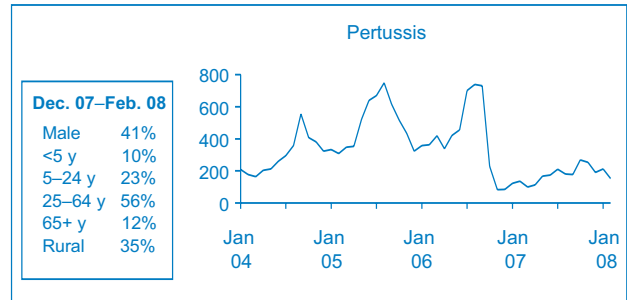
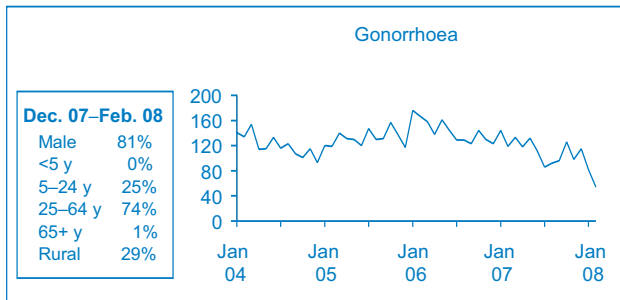
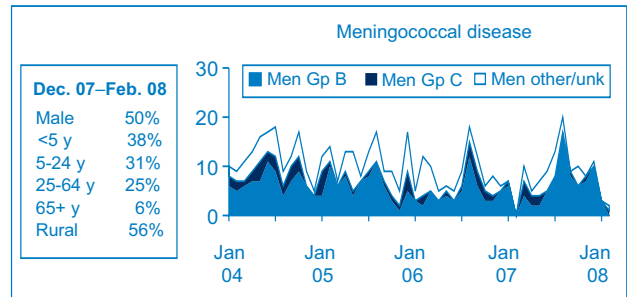
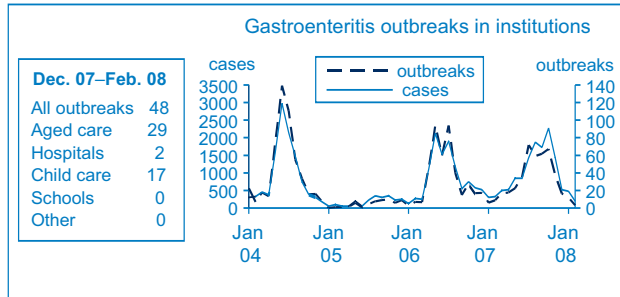
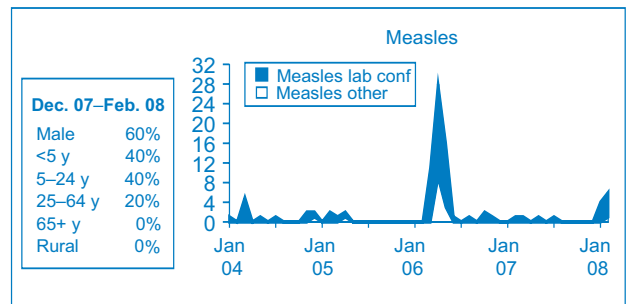
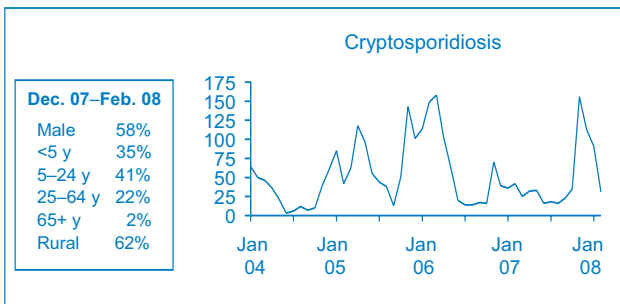
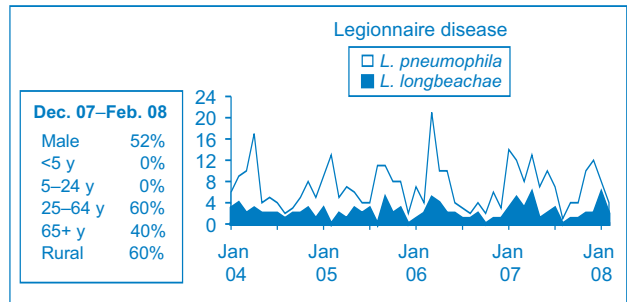
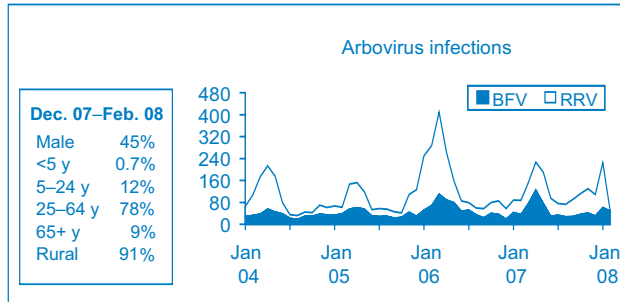


Table 1. Reports of notifiable conditions received in January 2008 by Area Health Services

Condition	Area Health Service (2008)												Total For Jan. ^c	Total To date			
	Greater Southern		Greater Western		Hunter/New England		North Coast		Northern Syd/ Central Coast		Sydney South West				Sydney West		JHS
	GMA	SA	FWA	MAC	MWA	HUN	NEA	MNC	NRA	CCA	NSA	ILL	SES	CSA	WEN	WSA	JHS
Bloodborne and sexually transmitted																	
Chancroid ^d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlamydia (genital) ^a	76	27	20	21	19	122	29	28	54	55	94	55	166	8	37	100	5
Gonorrhoea ^a	1	-	-	1	2	18	1	2	1	3	11	2	31	1	2	9	-
Hepatitis B – acute viral ^a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hepatitis B – other ^a	3	1	4	1	-	7	2	-	2	5	25	3	33	9	-	-	2
Hepatitis C – acute viral ^b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hepatitis C – other ^a	11	9	4	9	10	29	4	19	36	20	12	21	29	3	24	-	26
Hepatitis D – unspecified ^b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lymphogranuloma venereum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syphilis	3	1	-	-	1	2	2	4	-	1	4	1	33	21	4	5	-
Vectorborne																	
Barmah Forest virus ^a	-	2	1	-	-	14	6	10	13	4	1	2	1	-	-	1	-
Ross River virus ^a	9	3	6	18	9	19	17	12	11	6	1	5	4	2	1	4	-
Arboviral infection (other) ^a	1	2	-	-	-	1	-	1	1	4	-	-	1	1	-	-	-
Malaria ^a	-	-	-	-	-	-	-	-	1	-	-	-	1	1	-	-	-
Zoonoses																	
Anthrax ^d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brucellosis ^a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptospirosis ^a	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Lyssavirus ^a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psittacosis ^b	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Q fever ^a	-	3	1	2	-	2	9	3	1	1	-	-	-	-	-	1	23
Respiratory and other																	
Blood lead level ^b	-	-	1	8	-	2	-	-	1	-	-	-	-	-	2	-	-
Influenza ^a	2	1	-	-	-	2	-	-	3	-	-	2	-	-	2	4	-
Invasive pneumococcal infection ^a	1	1	1	1	-	2	-	-	1	2	-	1	2	1	-	2	-
Legionella longbeachae infection ^a	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Legionella pneumophila infection ^a	1	-	-	-	-	-	-	1	-	-	-	-	-	2	-	1	-
Legionnaire disease (other) ^b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptosy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infection (invasive) ^a	1	-	-	-	-	-	-	-	-	1	2	1	3	1	1	10	-
Tuberculosis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vaccine-preventable																	
Adverse event after immunisation ^b	-	-	-	-	-	-	-	-	-	3	2	1	2	-	-	-	-
H. influenzae b infection (invasive) ^b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Measles	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-
Mumps ^a	-	-	-	-	1	2	-	-	-	6	-	1	10	2	-	9	-
Pertussis	4	5	1	7	2	19	2	12	19	5	41	12	32	14	11	33	-
Rubella ^a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetanus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Enteric																	
Botulism	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cholera ^a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cryptosporidiosis ^a	8	6	1	2	6	8	13	4	7	3	6	6	10	1	5	9	-
Giardiasis ^a	1	2	-	2	1	13	9	3	1	10	25	12	21	1	6	25	-
Haemolytic uraemic syndrome	-	-	-	-	1	-	-	-	-	-	-	-	1	1	-	2	-
Hepatitis A ^a	-	-	-	-	-	-	-	-	-	-	3	-	-	1	-	-	-
Hepatitis E ^a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Listeriosis ^a	1	-	-	-	-	-	-	-	-	1	-	1	1	-	-	1	-
Salmonellosis ^a	7	4	4	4	4	26	12	5	31	17	17	6	19	7	11	19	-
Shigellosis ^a	-	2	-	-	-	-	-	-	-	1	1	1	1	-	-	1	-
Typhoid ^d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Verotoxin-producing E. coli ^a	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	2	-
Miscellaneous																	
Creutzfeldt-Jakob disease	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal conjunctivitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

^aLaboratory-confirmed cases only. ^bHIV and AIDS data are reported separately in the Public Health Bulletin quarterly; includes cases with unknown postcode. ^cFrom 1 January 2005; Hunter/New England AHS also comprises Great Lakes, Gloucester and Greater Taree LGAs; Sydney West also comprises Greater Lithgow LGA. ^dNB: Data is current and accurate as at the preparation date. The number of cases reported is, however, subject to change, as cases may be entered at a later date or retracted upon further investigation.

Table 2. Reports of notifiable conditions received in February 2008 by Area Health Services

Condition	Area Health Service (2008)										Total For Feb. ^c	Total To date								
	Greater Southern GMA	Greater Southern SA	FWA	Greater Western MAC	MWA	HUN	HUN/ New England	North Coast MNC	NRA	Northern Syd/ Central Coast CCA			NSA	ILL	Syd/Illawarra SES	CSA	Sydney West WEN	SWS	JHS	
Bloodborne and sexually transmitted																				
Chancroid ^a																				
Chlamydia (genital) ^a	55	24	11	17	15	118	38	48	55	49	112	38	194	2	27	88	3	921	1937	
Gonorrhoea ^a	1	1			1	11	1	1	4		10	4	25		3	9	1	77	178	
Hepatitis B – acute viral ^a									1											
Hepatitis B – other ^a	2	2	3			2	1		5	5	23	5	33	1	3	12	1	102	294	
Hepatitis C – acute viral ^a																				
Hepatitis C – other ^a	8	10	10	7	8	41	8	24	25	34	28	25	37		22	43	12	350	716	
Hepatitis D – unspecified ^a																				
Lymphogranuloma venereum																				
Syphilis	1		3			3	2	3	4		3	2	37	4		6		75	168	
Vectorborne																				
Barmah Forest virus ^a	2			2		20	4	9	19	3		1		1				61	117	
Ross River virus ^a	48	6	22	37	7	31	18	16	25	6	4	4	2	2		6		237	365	
Arboviral infection (other) ^a								1	1		2		3	1		3		12	25	
Malaria ^a		1												1		1		9	14	
Zoonoses																				
Anthrax ^a																				
Brucellosis ^a																				
Leptospirosis ^a																				
Lyssavirus ^a																				
Psittacosis ^a																				
Q fever ^a		1		1		1	4	2	3				1		1		14		38	
Respiratory and other																				
Blood lead level ^a			6	2		2		2	2		1				1			11	25	
Influenza ^a	3	2	1	1		3					1	1	2			3		17	33	
Invasive pneumococcal infection ^a	1					1		2		1						2		13	29	
Legionella longbeachae infection ^a												6						7	9	
Legionella pneumophila infection ^a	1							1								1		3	8	
Legionnaire disease (other) ^a													1					1	1	
Leprosy																		1	1	
Meningococcal infection (invasive) ^a																		2	5	
Tuberculosis						1				1			3		1			15	49	
Vaccine-preventable																				
Adverse event after immunisation				1		1				1		1	4	1	6	6		21	36	
H. influenzae b infection (invasive) ^b						1												1	1	
Measles											1				2	4		8	10	
Mumps ^a											1	1	8	1	1	2		14	46	
Pertussis	5	4	2	5		13	3	6	25	7	23	10	34	7	14	26		191	428	
Rubella ^a																				
Tetanus																				
Enteric																				
Baculum																				
Cholera ^a																				
Cryptosporidiosis ^a	1			2	4	4	2	1	4	1	9	3	11	3	3	4		56	160	
Giardiasis ^a	2	2		3	8	10	4	2	2	7	39	7	28		11	19		145	294	
Haemolytic uraemic syndrome																				
Hepatitis A ^a						1				1	2		2			2		10	18	
Hepatitis E ^a																1		3	2	
Listeriosis ^a													1	2		1		2	2	
Salmonellosis ^a	8	3	2	2	4	17	5	8	17	16	28	9	26	8	10	18		189	404	
Shigellosis ^a											1		4	1		1		10	15	
Typhoid ^a													1			2		5	6	
Verotoxin-producing E. coli ^b							1						1					2	4	
Miscellaneous																				
Creutzfeldt-Jakob disease																				
Meningococcal conjunctivitis																				

^alaboratory-confirmed cases only. ^bHIV and AIDS data are reported separately in the Public Health Bulletin quarterly. ^cincludes cases with unknown postcode. NB: From 1 January 2005, Hunter/New England AHS also comprises Great Lakes, Gloucester and Greater Taree LGAs. Sydney West also comprises Greater Lithgow LGA. NB: Data is current and accurate as at the preparation date. The number of cases reported is, however, subject to change, as cases may be entered at a later date or retracted upon further investigation. GMA, Greater Murray Area; MAC, Macquarie Area; NEA, New England Area; CCA, Central Coast Area; WEN, Wentworth Area; NSA, Northern Sydney Area; CSA, Central Sydney Area; FWA, Far West Area; WSA, Western Sydney Area; HUN, Hunter Area; SES, South Eastern Sydney Area; NRA, Northern Rivers Area; ILL, Illawarra Area; MWA, Mid Western Area; SWS, South Western Sydney Area; JHS, Justice Health Service; JHS, North Coast Area.

Contents

Special issue: Tobacco Control in NSW

- 45 Good progress in tobacco control in NSW**
Introduces the issue, describing the continuing initiatives in tobacco control in NSW that address disadvantaged populations and the introduction of smoke-free environments.
John M. Sanders, Chris E. Rissel
- 47 Social costs of tobacco-related disease, and best buys**
Introduces a recent report by Collins and Lapsley that describes the financial and social costs of tobacco in NSW
John M. Sanders
- 48 The Greater Southern Area Health Service Tobacco Control Plan 2006–2009**
Describes the local response of an area health service to the *NSW Tobacco Action Plan 2005–2009*
Andrew J. Gow, Kylie M. Weir, Andrew J. N. Marich
- 50 Provision of smoking care in NSW Hospitals: opportunities for further enhancement**
Describes smoking-care provisions in NSW public hospitals and strategies to increase provision.
Megan A. G. Freund, Elizabeth M. Campbell, Christine L. Paul, John H. Wiggers, Jenny J. Knight, Elayne N. Mitchell
- 56 Enabling the NSW Health workforce to provide evidence-based smoking-cessation advice through competency-based training delivered via video conferencing**
Describes the development of national competency standards in smoking cessation and their delivery and assessment through a telehealth network
Elayne N. Mitchell, Barbara N. Hawkshaw, Carlie-Jane Naylor, Dias Soewido, John M. Sanders
- 60 Smoke Free Health Care: an organisational change to increase effective intervention for tobacco**
Describes the Northern Coast Area Health Service organisational change required to successfully implement smoke-free status around its facilities.
Annie M. Kia, Eric K. van Beurden, Gavin S. Dart, Cecily C. Barrack, Mark D. Mitchell
- 65 Tobacco and Aboriginal people in NSW**
Summarises the evidence for interventions to reduce the harm from tobacco use by Aboriginal people in NSW.
Rowena G. Ivers
- 68 Smokers respond to anti-tobacco mass media campaigns in NSW by calling the Quitline**
Anti-tobacco television advertising generates an increase in calls to Quitline.
Trish Cotter, Donna A. Perez, Anita L. Dessaix, James F. Bishop
- 72 The Mull Hypothesis: is cannabis use contributing to high tobacco use prevalence among young North Coast males?**
Proposes that mixing cannabis with tobacco may contribute to tobacco dependence.
Eric K. van Beurden, Avigdor Zask, Megan Passey, Annie M. Kia
- 75 Tobacco smoking among secondary school students in NSW**
Introduces the NSW School Students Health Behaviours Survey: 2005 report.
Michael Giffin, Margot Eyeson-Annan

Regular features

Bug Breakfast in the Bulletin

- 76 Infectious diseases in homeless people**
Sian Rudge, Ian Webster, Ingrid van Beek

Communicable Diseases Report, NSW

- 78 January and February 2008**