

SUSTAINING ACTION TO PREVENT CANCER

GUEST EDITORIAL

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This issue of the *NSW Public Health Bulletin* is the third in a five-part series that examines cancer in NSW. This issue highlights the opportunity for prevention through tobacco control and sun protection. Tobacco control and sun protection are areas where public health interventions in Australia have been especially active and effective. In each case, there is evidence of widespread change in behaviour to reduce risk, and consequent improvements in health indicators in the longer term.

However, there is no room for complacency. There is significant scope to make further gains in tobacco control and sun protection given the size of the problems, the availability of effective interventions, and the feasibility and efficiency of interventions. Further action is specifically required to redress inequities, as the gains to date have been unequally distributed: more disadvantaged groups remain at higher risk.

Right now in NSW we have up-to-date policy and planning frameworks to drive active, coordinated prevention initiatives. The articles by O'Neill on tobacco control, and Ferguson and Vita on sun protection, describe the current directions. The opportunity for coordinated action by NSW is also reflected by the infrastructure, which includes partnership arrangements between the NSW Department of Health and the NSW Cancer Council on specific projects and the operation of statewide sun protection and tobacco control networks.

As illustrated in the case studies by Penman and Soulos, prevention initiatives can be diverse and wide-ranging. The importance of working at many levels within organisations and across sectors, in order to have a significant effect on health outcomes has been well documented by health promotion experts.

Tobacco control and sun protection remain high priorities for action in cancer control and public health, at both national and state levels. The challenge remains to apply what we know, and take sustained action on a scale that is sufficient to make a difference. ■■

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THE CURRENT FRAMEWORK FOR TOBACCO CONTROL

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Smoking causes one-third of all cancers and accounts for around 6,600 cancer-related deaths in Australia each year.¹ This article describes the draft *Tobacco Action Plan 2001–2004*, produced by the NSW Department of Health, which aims to improve people's health by eliminating or reducing their exposure to tobacco.

TOBACCO AND CANCER

Cancers with smoking as a major cause include:

- lung cancer
- oesophageal cancer
- oropharyngeal cancer
- cervical cancer.²

Lung cancer remains the leading cause of death due to cancer in Australian men. Men have always had a higher prevalence of smoking than women, although the rates of smoking between men and women are converging. Of cases of lung cancer, 84 per cent in men and 77 per cent in women can be attributed to smoking. Duration of smoking, in particular the role of smoking early in life, is the most significant factor known to influence the risk of developing lung cancer. Most smokers take up the habit while still teenagers.²

THE TOBACCO ACTION PLAN 2001–2004

The draft *Tobacco Action Plan 2001–2004* has been developed by the NSW Department of Health in collaboration with key stakeholders. It represents an ongoing commitment to tobacco control in NSW and provides a framework for improving the health of the people of NSW by eliminating or reducing their exposure to tobacco in all its forms. The plan accords with the *National Tobacco Strategy 1999–2003*, and builds upon the previous NSW Department of Health tobacco strategy, the *Tobacco and Health Strategy 1995–1999*.

In line with the National Tobacco Strategy, the plan focuses on the following six areas:

- community awareness and education
- smoking cessation
- availability and supply of tobacco products
- marketing and promotion of tobacco
- tobacco product regulation
- exposure to environmental tobacco smoke.

The major priority within the plan is reducing the prevalence of smoking. Preventing uptake of smoking and improving the availability and accessibility of cessation services for smokers who wish to quit will

result in fewer users of tobacco products in the long term and, consequently, reduce morbidity and premature mortality in NSW. In addition to this priority for the whole population, a number of target groups are also prioritised within the plan:

- children and young people;
- Aboriginal and Torres Strait Islander populations;
- non-English speaking background communities with high smoking rates;
- people with a mental illness.

ADDRESSING SMOKING PREVALENCE: PUBLIC EDUCATION AND CESSATION SERVICES

The National Tobacco Campaign *Every cigarette is doing you damage* has been the most successful anti-smoking campaign aimed at current smokers. Findings have included a statistically significant reduction of about 1.5 per cent in the estimated adult prevalence of smoking in Australia.³ The NSW QUIT Campaign supports the National Tobacco Campaign and other national and international events such as World No Tobacco Day (WNTD) and the New Year Campaign.

Activities in NSW for the WNTD 2000 included:

- commercials in the electronic media;
- advertisements in the print media;
- development of promotional resources;
- health promotions on the NSW Department of Health's Web site;
- a campaign targeting smokers from non-English speaking backgrounds;
- area health service grants for local promotional activities.

In 2000, the NSW Department of Health provided sponsorship for:

- the Rock Eisteddfod Challenge (REC), a performing arts competition for secondary schools;
- the National Rugby League (NRL) Smoke Free Final Series. This was complemented by a tobacco prevention program in schools, which included a pilot program run in three areas of NSW this year as part of the NRL Junior Development Program.

Cessation services offered in NSW include a 24-hour Quitline service through which smokers wishing to cease smoking can order a Quit kit and/or speak to a counsellor. The area health services also provide counselling and some also run quit groups when there is a demand.

The NSW Department of Health supports easier access by smokers to nicotine replacement therapy (NRT). While there is no move to make such therapies available through the Pharmaceutical Benefits Scheme (PBS), a number of

hospitals in the state provide NRT free of charge to inpatients.

AVAILABILITY AND MARKETING OF TOBACCO

NSW is a recognised leader in restricting the sale of tobacco to people under the age of 18. The *Public Health Act 1991* was amended in 1996 to incorporate a proof of age requirement, and this amendment was strengthened by the implementation of routine compliance monitoring of tobacco retailers. Compliance monitoring is conducted with the assistance of underage volunteers who, under the supervision of health staff, attempt to buy cigarettes. Stores at which these underage volunteers are able to purchase cigarettes are given a warning notice in the first instance, and if they are again found selling tobacco to minors prosecution will usually follow. Around 125 successful prosecutions of retailers selling tobacco to minors have been recorded in NSW. The proportion of stores not selling to the volunteers, with results pooled from all area health services, provides a measure of the NSW compliance rate. In 1998–1999, NSW achieved a state average compliance rate of 84 per cent, which decreased slightly to 80 per cent in 1999–2000.

NSW has also strengthened its tobacco advertising laws, and the enforcement of these laws commenced in January 2000. Tobacco advertising is not permitted in NSW, and there are restrictions on the way tobacco can be displayed for sale. This is aimed at reducing the visibility of tobacco products in the community, which is particularly important in preventing the uptake of smoking among young people.

SMOKING IN PUBLIC PLACES

In NSW, the *Smoke Free Environment Act 2000* came into effect on 6 September 2000. The Act:

- bans smoking in enclosed public places including shopping centres, restaurants, cafes, schools and colleges;
- provides an exemption from this ban in hotels, nightclubs, registered clubs, casino bar and gaming areas, and licensed reception areas in restaurants (smoking bans will extend to dining areas of hotels and clubs and licensed reception areas in restaurants from 6 September 2001);
- makes it an offence to smoke in an enclosed public place;
- requires the proprietor of a premises to direct patrons to stop smoking and, if the patrons continue to smoke, to leave the premises;
- includes the smoking of herbal cigarettes.

The Department of Health has conducted the first phase of a public education campaign to advise the general public and proprietors of the requirements of the

legislation; this is to be followed up with further education and information.

The 1999 *Smoke Free Workplace Policy* was developed in consultation with area health services, health unions and WorkCover NSW with the goal to prohibit smoking throughout all area health service buildings; and in vehicles and property controlled by NSW Health by September 2002. The policy will provide employees and the public with a smoke free environment, increase cessation opportunities, set a healthy example to the community, and provide a best practice model for organisations wishing to go smoke free.

PROTECTING CHILDREN FROM ENVIRONMENTAL TOBACCO SMOKE

A team of non-government organisations comprised of the National Heart Foundation of Australia (NSW Division), the Cancer Council of NSW, the Sudden Infant Death Association, and the Asthma Foundation of NSW have been awarded a grant by the NSW Department of Health to identify and examine research that underpins evidence-based interventions to reduce the exposure of children to environmental tobacco smoke.

OLYMPIC AND PARALYMPIC NON SMOKING POLICY

The Sydney Organising Committee for the Olympic Games (SOCOG) adopted a total indoor non-smoking policy. Smoking was not permitted in spectator areas inside Olympic or Paralympic venues; however, venues had designated outdoor smoking areas.

THE FUTURE—IMPROVING PRODUCT REGULATION

Tobacco, which contains nicotine, is highly addictive. However, unlike alcohol and other drugs, the sale of tobacco is subject to few restrictions, and the content of cigarettes is largely dependent on decisions of the manufacturers. There is great room for improvement in the regulation of tobacco products and in the provision of information to consumers and the general public about the constituents of tobacco products and tobacco smoke.

The draft *Tobacco Action Plan 2001–2004* has identified improving tobacco product regulation as one of its six focus areas. The major strategy for the next five years in this regard is to develop, in collaboration with the Federal Government, a framework for the regulation of tobacco and nicotine products that may include:

- disclosure of contents, ingredients, nicotine levels, additives and poisons found in tobacco and tobacco smoke;

- labelling health warnings on packages;
- taxation;
- the illicit tobacco trade;
- regulation of contents, ingredients, nicotine levels, additives and poisons found in tobacco.

WORKING AS A TEAM

In addition to the NSW Department of Health, there are many other stakeholders within NSW who are actively involved in the implementation of the draft *Tobacco Action Plan 2001–2004*. These include other government departments and non-government organisations such as the Cancer Council of NSW, the National Heart Foundation of Australia (NSW Division), and anti-smoking groups. The Tobacco Control Network was established in 2000 under the draft *Tobacco Action Plan 2001–2004*, with the aim of bringing together a large group of people who work on tobacco control to share information and ideas and to work collaboratively on projects aimed at reducing tobacco related harm.

The Tobacco Legislation Compliance (TLC) group, also formed as part of the plan, examines issues relating to the

implementation of legislation and related programs such as the sales to minors program, enforcement of advertising laws and the introduction of smoke free public places legislation.

For further information on any of the above initiatives contact the Tobacco and Health Unit, NSW Department of Health, 73 Miller Street, North Sydney, NSW 2060; telephone: (02) 9391 9268; facsimile: (02) 9391 9579; or email: coneil@doh.health.nsw.gov.au.

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ADVOCACY FOR TOBACCO CONTROL

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Although Australia is regarded as an example of best practice in tobacco control, the failure to achieve substantial reductions in smoking prevalence throughout the 1990s has been a source of frustration to its exponents. Not that the tobacco industry has had it all its own way:

- relatively constant prevalence belies significant drops in aggregate cigarette consumption;
- off-pack cigarette advertising has been virtually abolished;
- greater control is being exercised over sales to minors;
- nicotine replacement therapy can now be publicly promoted and is available over-the-counter;
- we have entered the new millennium with most public places now smoke free, and there is a very real commitment on the part of many governments to finishing this particular job.

But in some respects, it is striking how effectively the tobacco industry has turned political opinion on issues of central importance to it. The Corporate Affairs Plan of October 1992 for Philip Morris (Australia) Limited proposed to divert the Ministerial Council on Drug

Strategy from its 'misplaced' priority on tobacco towards illicit drugs.¹ Anti-smoking campaigns were to be focused on youth, with the industry preferably taking a leading role according to this plan. This agenda was to be supported with 'enhanced' political connectivity, alliances with other industry groups, and the representation of Philip Morris as 'Philip Morris companies', not 'Philip Morris, the tobacco company'. Doubtless, enhanced connectivity would have carried a powerful message about the contribution of tobacco to the Australian economy.

In these circumstances, the interest of public health groups in developing new approaches to supplement the established portfolio of smoking abatement measures is understandable. Of these, litigation and regulation have been the most promoted. This article reviews the current role of litigation and regulation in tobacco control, and suggests other measures that can be taken to reduce tobacco smoking.

LITIGATION

The 11th World Conference on Tobacco or Health (WCTOH) was recently held in Chicago in the afterglow of the award of punitive damages in the case of *Engle versus Reynolds Tobacco Company*. So it is scarcely surprising that litigation ranked high on the conference

agenda, and that it was hailed it as a new force for changing the face of tobacco control globally.

Had the industry been on trial at the 11th WCTOH, there would have been little doubt about the verdict. Indeed, the scale, variety and sophistication of the tobacco companies' deception is breathtaking, as is their indifference to the health of their customers. Industry documents reveal a deliberate global strategy to create and sustain public controversy over the relationship of smoking to health. The tobacco industry has indicated that it has created a so-called smoking and health controversy while possessing the knowledge to resolve it; and it has designed cigarettes that are more effective in establishing addiction, and marketed light cigarettes as a means of reassuring smokers and dissuading them from quitting.

The key questions are whether a court of law will deliver judgement in the same way, and whether a judgment will enforce business penalties on the industry that are favourable to public health. The prospect of recovering money to finance health care for people with tobacco-related diseases has a clear public health benefit. However, no third party action has yet won a favourable judgement, with the action run by the United States Attorneys-General being settled prior to judgment. In Australia, the current action by the Tobacco Control Coalition has as one object: the creation of a fund to support comprehensive national smoking abatement measures; but almost all other cases, here and overseas, have been concerned with damages for smoking-related disorders.

There is no doubt that tobacco industry defence in litigation has been dealt a blow by the revelations contained in company documents. It is a pity that discovery in the United States did not extend to issues such as marketing to children, and that the documents obtained from the British American Tobacco Company (BAT) remain difficult to access. However, what is available has served to destroy the core defence of the tobacco industry: that is, the assumption of risk. This doctrine precludes recovery when a plaintiff subjectively appreciated a risk and voluntarily encountered and accepted the risk. A 1977 document of the BAT is one of many that showed the industry's growing appreciation of the role of addiction in smoking behaviour,² and their subsequent manipulation of nicotine delivery in 'low' delivery cigarettes shows how they exploited this.

The marketing of low tar and nicotine cigarettes (TNC) has been another area of vulnerability exposed by tobacco industry documents. The industry privately held the view that low tar cigarettes could not be held to be safer, but successfully marketed the proposition that they were an alternative to quitting. Population surveys conducted by the American Cancer Society suggest that the 'low TNC' era has been associated with an increase in the rate

of lung cancer among smokers.³ It was a period through which the cigarette became an increasingly engineered product, and the companies acquired a mountain of internal scientific knowledge showing the harm that this might cause. Smoker compensation is perhaps the best known of these effects, but they include a lowering of aerosol particle size, ventilation hole blocking, and indifference to results of mutagenicity tests on tobacco smoke.

Yet success in a damages action remains challenging. The tobacco industry has been repeatedly successful in challenging the role of tobacco in causing cancer in individual plaintiffs. Even in NSW there are so-called expert witnesses who are happy to argue all manner of arcane alternatives. But damages need to be pressed on a mass scale if they are to seriously wound the industry. The success of a class action in *Engle versus Reynolds Tobacco Company* was therefore most encouraging, but it must yet survive on appeal. The recent attempt in *Nixon versus Philip Morris* to mount a class action in the Australian Federal Court failed before the appeal bench earlier this year.

REGULATION

When industry documents revealed how the industry had effectively manipulated the cigarette as a drug delivery device, the United States Food and Drug Administration began a sustained attempt to bring tobacco under its jurisdiction. If successful, and if an effective regulatory scheme were available, this may have been a powerful new tool in the tobacco control portfolio. However, the effort failed in the United States Supreme Court, and barring specific action by Congress, seems to be stalled.

There is an intuitive appeal in the proposition that the constituents of tobacco may be regulated to reduce or eliminate harm. The level of harmful constituents in tobacco or its pyrolysis products could be reduced, subject to the availability of means; additives could be subject to similar controls to food additives; and nicotine might be lowered to make cigarettes progressively less addictive, to the point of consumer refusal. Alternatively, nicotine levels might be liberalised to reduce the aerosol dose required for health effect and taste.

The Draft of the NSW Tobacco Action Plan (TAP) released for public consultation earlier this year has, for the first time, included tobacco product regulation as a key focus area. NSW recognises the Commonwealth Government as the lead agency in this field and plans to collaborate with them in the area of labelling of health warnings and the disclosure of contents of tobacco products. These issues have been explored in a consultation document circulated by the Commonwealth Government.⁴

It is sobering to realise that the delivery of low tar and nicotine cigarettes was initially championed by health

authorities, and imposed by regulation. The tobacco industry became more enthusiastic proponents when they realised the marketing advantages. This experience highlights the difficulties when faced with an industry whose global scientific knowledge and technical capacity cannot feasibly be matched without investment well beyond that which Australian governments have been prepared to spend, and where a regulatory scheme would effectively sanction a huge population health experiment whose effects may take years to evaluate.

OTHER MEASURES

The purpose of the forgoing discussion has not been to discount new strategies, but to reflect on the high degree of uncertainty surrounding their outcome. It is not inappropriate to incorporate higher risk and developmental elements in an overall public health portfolio. The key issue is how program resources should be allocated across the portfolio.

The NSW TAP affirms the effectiveness of early campaigns in this country. The recent National Tobacco Campaign, and the experience of California and Massachusetts, demonstrate that smoking prevalence can be quite rapidly reduced to levels well below what we have achieved with expenditures that are modest in health terms. It may well be that there are limits to the effect and reach of such campaigns. But at that point, with the constituency for smoking reduced by the decline in smoking rates, and the constituency against smoking mobilised through the campaigns, such measures may be more achievable. It is little wonder that the tobacco industry buried a research report in 1977 that documented the effectiveness of anti-tobacco advertising.⁵

It is a weakness of the smoking and health movement in Australia that it is seen by other sectors, and particularly by other portfolios in government, as a matter exclusively for the health portfolio. It is now a relatively simple matter for the industry to build a constituency among other portfolios, whether by playing on the contribution of tobacco to the economy, its false notions of market freedom, or its spurious claims to supply a 'legal' product.

The NSW Department of Fair Trading administers an admirable piece of legislation, the *Fair Trading Act 1987*. Among its provisions are sanctions against misleading and deceptive conduct, the establishment of product safety committees, and provision for the recall of defective goods. At the Commonwealth level, there is similar power to recall defective products, while the powers of the Australian Competition & Consumer Commission under the Trade Practices Act are considerable. There may be opportunities to collaborate with the small business sector to restructure the retail tobacco industry; to revisit a licensing scheme; and to raise economic issues with the Commonwealth Treasurer in the light of the World Bank report *Curbing the Epidemic*. Finally, the relationship of tobacco to the protection of children, the welfare of prisoners, and to other drug use, deserves an airing within government.

As 'tobacco or health' is now a major social movement, it is scarcely surprising that new ideas and opportunities to advance its goals are being promoted. However, this should not blind the public health community to the importance of committing most resources to measures that are proven to work and that involve least risk to the community.

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COCHRANE COLLABORATION HEALTH PROMOTION AND PUBLIC HEALTH WEBSITE

The Cochrane Collaboration has established a Health Promotion and Public Health specialty Field to promote the production, dissemination and use of systematic reviews of the effectiveness of health promotion and public health interventions: *Compiling best available evidence to guide practice and policy is the motivation, the challenge and the nexus of the work of our Field*.

Elizabeth Waters, Director, Research and Public Health Unit, Department of Paediatrics, Royal Children's Hospital, Melbourne, is one of the two Field Coordinators.

Further details about the activities of the Field, how to contribute to it, how to receive the Field's electronic newsletter, etc. can be obtained from the website: <http://vhpax.vichealth.vic.gov.au/cochrane>.

A STRATEGIC FRAMEWORK FOR SKIN CANCER PREVENTION IN NSW

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Skin cancer remains an important public health issue in Australia due to its high prevalence, large burden on the health system and amenability to prevention. NSW has a strong track record of successful sun protection programs. This article presents the key directions as set out in the recently released *NSW Skin Cancer Prevention Strategic Plan 2001–2005*. The article also provides an overview of the organisational partnerships, networks and relationships that provide the building blocks for increasing the capacity to implement skin cancer prevention programs in NSW.

SKIN CANCER: AN IMPORTANT PUBLIC HEALTH ISSUE

Australian cancer incidence figures are dominated by skin cancer. New cases of skin cancer outnumber all other forms of cancer by more than three to one.¹ Currently, there are around 1,300 deaths each year caused by the disease. In 1993–1994, diagnosis and treatment of skin cancer was estimated to cost the Australian community substantially more than any other cancer.² Because of its high prevalence and cost to the community, well-established aetiology, and the availability of effective preventive strategies, control of skin cancer has been nominated as a national health priority area.³

Although Australia still has the highest incidence of skin cancer in the world, recent trends provide cause for optimism. The incidence of basal cell carcinoma and melanoma in younger people (under 55), especially among women, have begun to level off and, in some age groups, begun to decline.⁴ The pattern of change is consistent with the trends that would be expected to result from the effect of skin cancer prevention programs undertaken over the last two decades.

IDENTIFYING THE FOCUS FOR SKIN CANCER PREVENTION IN NSW

Unprotected exposure to solar ultraviolet radiation (UVR) continues to be the single most important modifiable risk factor for skin cancer. Consequently, there are substantial health, social and economic benefits from investing in coordinated and strategic skin cancer prevention programs that lead to reductions in population levels of UVR exposure. Based on evidence, the most effective programs are those that combine public education campaigns with policy and environmental strategies that are integrated across state, regional and local levels.⁵

NSW has a good track record in skin cancer prevention programs. The NSW Department of Health and the NSW Cancer Council have a well-established business partnership that has built on many of the health promotion efforts of the past. While early programs concentrated on providing information to encourage early detection, primary prevention strategies became the stronger focus as health promotion was established as an important component of the health system in the 1980s. Although the primary target of early preventive programs was individual behaviour change, goals of recent sun protection programs have broadened to include more sustainable policy, structural and environmental changes supportive of sun protection in a way that is consistent with state of the art public health interventions.⁶

Over the last decade mass media campaigns complemented by strategies to improve structural and environmental support for sun protection in both NSW and Victoria have demonstrated considerable success in improving knowledge, attitudes, and to a lesser degree sun protective behaviours, for quite modest levels of investment.^{7,8} Evaluation of the costs and benefits of preventive programs indicate substantial economic benefits for our health system in investing in skin cancer prevention programs, particularly those that combine media campaigns supported by regional strategies.⁹

Epidemiological evidence indicates that sun exposure during childhood and adolescence makes an important contribution to the lifelong risk of skin cancer. Strategies designed to reduce exposure of young people to UVR are considered to have the greatest potential to reduce skin cancer incidence rates in the long term. As a consequence, skin cancer prevention programs in NSW have focussed their attention on young people, parents, carers, and the settings in which young people spend time outdoors.

GOALS, STRATEGIC PRIORITIES AND KEY SETTINGS

The *Skin Cancer Prevention Strategic Plan 2001–2005* reflects an ongoing commitment to a coordinated and strategic approach to the prevention of skin cancer in NSW, consistent with *Healthy People 2005*. This is the second planning document jointly developed by the NSW Cancer Council and the NSW Department of Health. It builds on the excellent foundation established by the *Health Promotion Strategic Plan for Skin Cancer Control in New South Wales 1995–2000*, which successfully guided the development and implementation of state and regional skin cancer prevention strategies. Like its forerunner, the *Skin Cancer Prevention Strategic Plan 2001–2005* was refined through extensive consultation with representatives from the area health services, appropriate state government departments and other key stakeholders.

The timeframes within which public health goals are achieved are long-term. The public action taken today to create environments and organisational practices supportive of sun protection and encourage effective sun protection behaviour will pay dividends in 20 or 30 years time in the form of lower skin cancer rates in our population. The long-term goal of the plan is to reduce the incidence of skin cancer and associated morbidity and mortality by reducing population levels of exposure to UVR

The selection of strategies included in the current Strategic Plan was based on a combination of the current understanding of the aetiology of skin cancer, behavioural epidemiology, best practice in health promotion and skin cancer prevention and on the knowledge and experience of health promotion planners and practitioners. A complementary document *Sun Protection: A guide to develop better practice in skin cancer prevention in NSW*,⁵ provides a review of approaches and strategies available for skin cancer prevention and is useful for developing and implementing programs.

The Strategic Plan identifies strategic priorities in terms of target population groups, settings that provide the best opportunities for successful interventions, priority strategies and desirable partnerships to achieve success. The plan identifies three priority populations in order of public health importance:

- children (0–11 years)
- adolescents (12–19 years)
- adults with high intermittent or cumulative exposure.

It acknowledges the vital foundation provided by the sun protection infrastructure and also identifies five key settings:

- early childhood services
- schools
- sport and recreation
- local government
- workplaces.

Strategies proposed in the plan are organised according to their contribution to achieving favourable long-term and intermediate-term outcomes to reducing sun exposure in three broad areas:

- environmental outcomes (policy and structural support for sun protection);
- organisational outcomes (support and capacity for effective sun protection programs);
- community outcomes (positive knowledge, attitudes and practices for sun protection).

To assess the progress against the strategies in the plan, a comprehensive monitoring and evaluation framework capitalising on both existing monitoring systems and also additional data collection points is proposed.

SUN PROTECTION INFRASTRUCTURE

Reducing the population's exposure to solar UVR, through a combination of mass media campaigns and structural and environmental supports, requires a highly skilled, responsive and well-resourced sun protection infrastructure to steer the programs and strategies to achieve these outcomes.

The sun protection infrastructure in NSW includes policy makers, planners and people working in or contributing to sun protection programs in NSW Department of Health, NSW Cancer Council and the area health services. It also includes other state and local government departments, non-government organisations and private businesses that have the ability to influence and support policy, programs and products relating to sun protection. A conceptual model of the way in which the sun protection infrastructure operates in concert with key stakeholders to reach the priority target groups through the key settings is displayed in Figure 1.

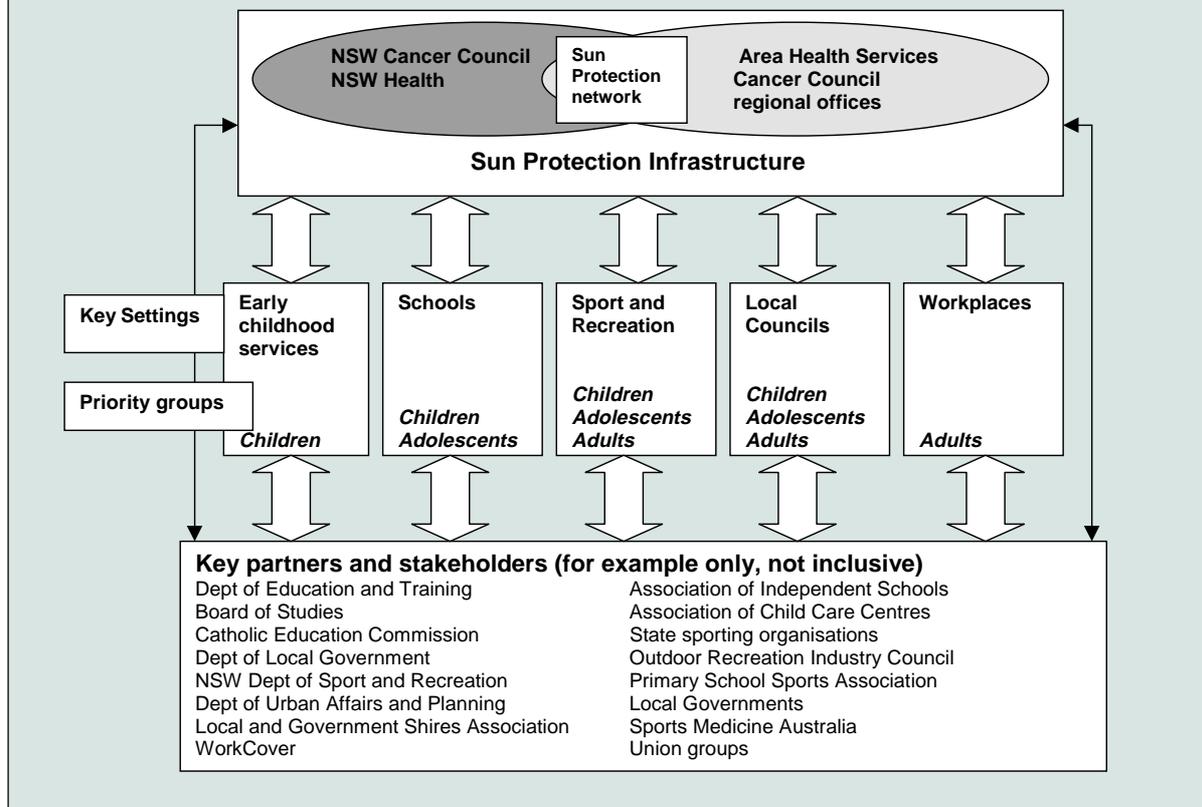
Through existing government and non-government organisations and their networks, there are opportunities to establish regulatory structures to encourage and support implementation of comprehensive sun protection policy and practices into the routine operations of workplaces and community organisations throughout NSW. This same 'infrastructure' has the potential to influence the design of public spaces, workplaces and recreational facilities to favour improved protection from UVR.

Government and peak bodies are able to support workplaces and community organisations' efforts in sun protection through a number of mechanisms, such as legislation, funding, licensing and accreditation requirements.

A network of area health service and NSW Cancer Council staff who work in skin cancer prevention (the NSW Sun Protection Network) was formed in 1996 to provide a forum for information exchange, coordination of state and regional activities, professional development and to foster greater collaboration between network members. The network, jointly administered by NSW Cancer Council and NSW Department of Health, has proved to be a valuable resource in planning, disseminating information and in implementing a range of sun protection strategies throughout NSW. The sun protection network underpins the sun protection infrastructure. In addition, general practitioners, community health nurses and other community workers have also been encouraged to play a role in educating and encouraging the general community to adopt improved sun protection behaviours. Ensuring there are effective and sustainable channels of communication in place is an important role of the sun protection infrastructure.

FIGURE 1

A CONCEPTUAL MODEL OF SUN PROTECTION INFRASTRUCTURE IN ACTION—TARGETING PRIORITY GROUPS IN FIVE KEY SETTINGS USING CAPACITY BUILDING APPROACHES



CONCLUSION

This paper has highlighted key directions and some of the important organisational partnerships, networks and relationships currently in place to implement skin cancer prevention programs in NSW over the next few years. With the strategic framework in place, coordinated action should be well supported and coordinated at all levels. An ongoing commitment by peak government and non-government agencies and their partners should ensure that skin cancer prevention is maintained as a high priority and that the most effective and sustainable public health action is implemented.

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THE ROLE OF SHADE IN SKIN CANCER PREVENTION

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One of the essential components of a comprehensive approach to skin cancer prevention is the provision and use of effective shade. The term 'effective shade' refers to shade that:

- falls in the right place at the right time of day and at the right time of year;
- protects against indirect solar ultraviolet radiation (UVR);
- is comfortable to use;
- is sympathetic to the surrounding environment.

To encourage the greater provision of more effective shade in the community the NSW Cancer Council and the NSW Department of Health have published a book *Under cover: Guidelines for shade planning and design*.

Under cover explains the fundamentals of shade planning and design in a clear, comprehensive and user-friendly manner. Its content focuses on the following six subject areas, an understanding of which is considered necessary to achieve effective shade.

SUN FACTS

Shade planners need to understand the phenomena of direct and indirect UVR. Direct UVR reaches us in a straight line from the sun. Indirect UVR is reflected or scattered from the ground and other surfaces or from atmospheric particles such as dust or clouds. Because of indirect UVR, it is possible for an individual to become sunburnt while seemingly protected by shade. Being sunburnt while sitting in the shade of a beach umbrella is an example of this.

The sun's daily and annual pathways also need to be understood. These determine where shade will fall at a particular time of the day and year as well having a major influence on UVR intensity. Other factors that affect UVR levels include geographic location, cloud cover, stratospheric ozone, altitude, surrounding environment and atmospheric dust and air pollution.

PROTECTING AGAINST SOLAR UVR

For protection against UVR, environmental strategies (that is, the use of barriers to provide shade) such as landscaping and the provision of built structures should be used to support personal strategies (such the use of protective clothing, hats and sunscreen).

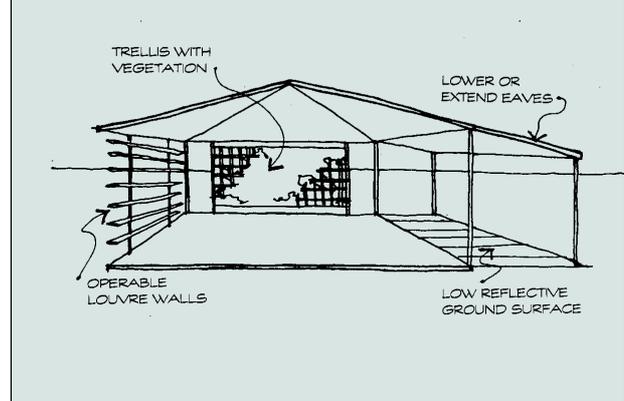
Shade barriers need to be of sufficient size, located in the right place and provide at least 94 per cent protection against direct UVR.

Key strategies for controlling indirect UVR include the following:

- ensure shade structures or trees are of an adequate size (so that people can move away from the edges of a shaded area where indirect UVR will be greater);
- treat ground or other surfaces (hard, smooth surfaces reflect more than soft, varied surfaces);
- provide shade for surfaces that are likely to act as a source of indirect UVR.

FIGURE 2

COMBINING STRATEGIES TO CONTROL INDIRECT UVR



One of the fundamental truths in shade planning and design is that if a shaded space is not comfortable then people will not use it. Examples of methods often used for increasing the comfort of a shaded space include orienting openings of structures to capture prevailing summer breezes (cross-ventilation) and excluding winter winds. *Under cover* provides examples of methods applicable to the specific climate zones of NSW.

PROVIDING SHADE

There are a large range of available shade solutions and ways of creating attractive UVR-protective environments. They can incorporate natural shade or built shade (or combinations of these). However it is important to note that there are advantages *and* disadvantages of both natural and built shade.

Examples of the benefits of natural shade include its aesthetic appeal, its characteristic cooling effect and its environmental benefits: for example, low levels of embodied energy (that is, the sum of all energy used to produce a product, material or structure including extraction and processing of raw materials, manufacturing, assembly and transportation), and fewer disposal problems. On the other hand, there are disadvantages associated with natural shade

(vegetation takes a long time to grow and the growth patterns are not entirely predictable).

Examples of the benefits of built shade include the precision with which shade needs can be met and the different possible uses of built systems (for example: weather protection, rainwater collection for irrigation purposes, and the support of photovoltaic cells for electricity generation). The disadvantages of built shade are mainly environmental. For example, many building materials contain non-renewable resources. Also, built systems often contain high levels of embodied energy.

Shade planners should be aware of the various qualities of commonly used shade materials. Considerations include materials' UVR-protective performance, light transmission levels, solar heat gain, maintenance requirements, environmental considerations and relative costs.

THE SHADE PROJECT

There are three main stages in a shade project: planning, design and construction (or in the case of natural shade, planting). The following steps and principles should be considered during each of these stages.

In the planning stage consider:

- the establishment of a project team, including key stakeholders such as property owners; and managers, site user representatives and other interested parties;
- consultation with other interested parties such as site users and workers;
- undertaking a shade audit—this will determine the adequacy of existing shade and whether there is a need for more shade (*Under cover* includes a comprehensive step-by-step procedure for conducting a shade audit);
- preparation of a design brief for the purpose of documenting the shade needs of a site so that an appropriate solution can be designed;
- exploration of potential sources of funding.

Key issues that need to be considered during the design stage include:

- the need to consult with local councils (regarding development controls, etc.);
- the most appropriate shade system (natural, built or combinations of these);
- whether professional assistance (for example: architects and landscape architects) will be required;
- the relative costs of various shade solutions (structures that are cheap to purchase may have high ongoing maintenance costs).

Points to consider during the construction of built shade include:

- the need to read and understand contract documents;

- the need to obtain the builder's construction program, insurance certificates, guarantees on materials and anticipated schedule for progress payments;
- the need to obtain the engineering certification of structures and components.

SITE-SPECIFIC CONSIDERATIONS

There are a range of issues that need to be considered when planning and designing shade for specific sites. Examples of issues that need to be considered at most sites include:

Safety

For example, it is important to ensure that structures do not create safety hazards. Support systems should be placed so as to minimise intrusion into circulation areas (that is, areas through which people move). At sites such as child care centres and schools, upright posts should be clearly visible and have rounded edges and padding. The planting of hazardous plant and tree species (for example, those that are toxic, have spikes or thorns or attract bees) should be avoided.

Site usage patterns

The type of activities that take place at a site and the time of day and year they are likely to occur is a major consideration in planning shade. Sufficient shade should be available at times of heaviest usage, especially when these coincide with periods of peak ambient UVR. To achieve this, it may often be necessary to supplement permanent shade with demountable structures.

Climatic conditions

It is important to take into account the overall climate as well as the micro-climatic conditions of the area in which shade is to be provided. Such an understanding helps to ensure that the shaded area will be comfortable to use as well as minimising the risk of damage to shade structures (for example, from strong winds or weather-induced corrosion).

Aesthetics

A poorly designed or located structure can generate enormous community displeasure. Shade design should therefore aim to be aesthetically pleasing as well as practical. Generally, an approach that combines both natural and built shade will contribute to greater aesthetic appeal.

Sightlines

This consideration is important at any site where supervision of site users is necessary. Such sites would include child care centres, schools and public swimming pools. At these sites, shade structures and trees should not obstruct the view of supervisors (for example, teachers and lifeguards). This consideration is also important at outdoor entertainment venues where audience or spectator views may be obstructed.

Vandalism

At many locations, the risk of vandalism needs to be considered. In high-risk areas, built structures need to be—as much as is possible—vandal-resistant. The use of demountable instead of permanent structures is one strategy that may overcome the problem of vandalism.

CONCLUSION

It should be noted that despite the obvious benefits of using effective shade as a means of protecting against solar UVR, it is unlikely that shade in outdoor environments will ever provide total UVR protection. It is therefore prudent that individuals also use personal forms of protection such as wearing sun protective

clothing, hats, sunscreen and sunglasses. Particular care should be taken during the hours of 10.00 a.m. and 3.00 p.m. when solar UVR levels are at their peak. ☀

For further information about the role of shade in skin cancer prevention, or to obtain copies of *Under cover: Guidelines for shade planning and design*, (at a cost of \$22 per copy including GST, postage and handling) contact the Cancer Prevention Unit, Cancer Council New South Wales, PO Box 572, Kings Cross, New South Wales 1340; telephone: 61 2 9334 1900; fax: 61 2 9326 9328; or email: gregs@nswcc.org.au.

SUICIDE IN NEW SOUTH WALES: THE NSW SUICIDE DATA REPORT

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The NSW Suicide Prevention Strategy has identified suicide prevention as a high priority for government and the community.¹ Death by suicide is a relatively uncommon event; however, more people in NSW now die from suicide than road injury. Nationally, two per cent of all deaths were attributed to suicide in 1998.² This article describes the *Suicide in New South Wales—The NSW Suicide Data Report*,³ which has been developed and produced by the Centre for Mental Health, and presents improved information on suicide, hospitalisation following attempted suicide, and risk of suicide, both at a state and an area health service level.

BACKGROUND

The main objective of the report is to provide statistical information about suicide in NSW to assist program planners, policy makers and health care providers to identify risks, trends, magnitude, and other features of suicide-related problems, for the effective planning of population-based and clinical interventions such as suicide prevention programs and other services.

The report has been compiled using mortality data from the Australian Bureau of Statistics (ABS), hospitalisation data from the Inpatient Statistics Collection (ISC), and data from other published sources in Australia and overseas. The latest financial year for which complete mortality data was available at the time of the report was 1996–97.

The report is divided into four chapters:

- all ages (15 to 80+)
- young people (15 to 24 years)

- older people (65+)
- groups at risk.

Each chapter includes a short section on suicide prevention issues, and relevant sub-sections on:

- suicide deaths
- suicide attempts
- suicide means.

The report also provides comprehensive information on suicide death for every area health service by calendar year, age and gender. This information will be updated annually on the Web version of the report, as the ABS mortality data becomes available for subsequent years.

An overview of suicide in NSW has been assembled using prevalence data for:

- suicide attempts
- hospitalisation following attempted suicide
- access to community services by mental health patients
- the time between transfer and discharge to death,

allowing an estimation of the number of suicide-related events for a single year. An example of this overview is presented as Figure 3. The major results of the report are described below.

SUICIDE DEATHS

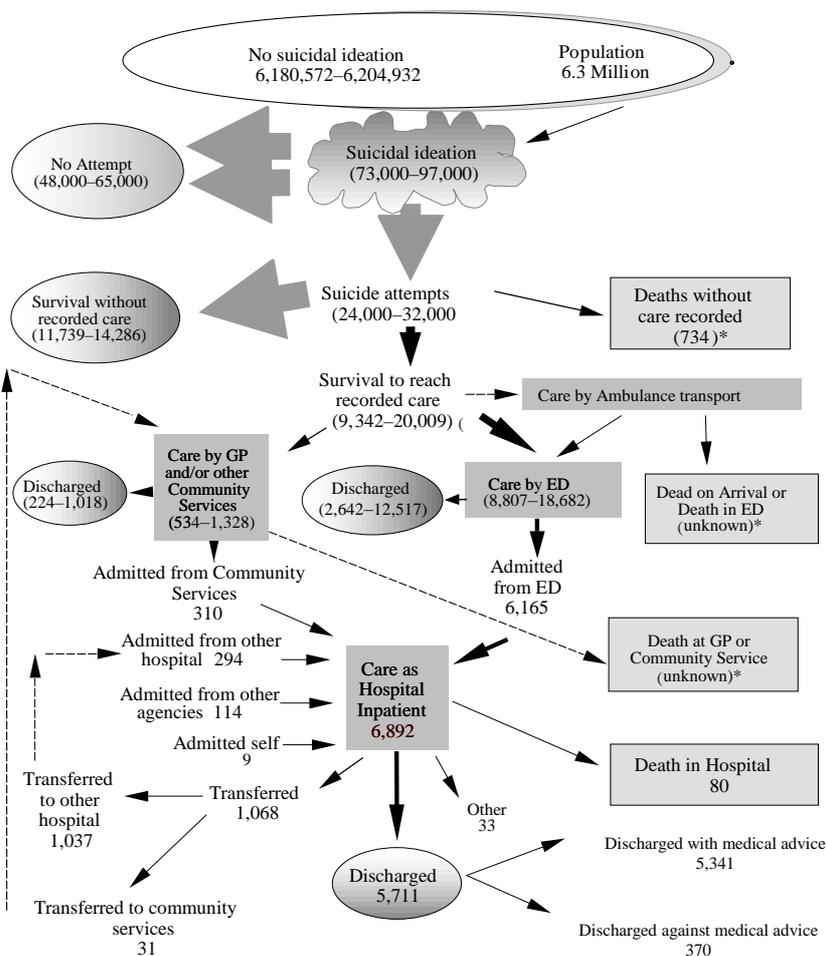
All ages

Suicide death rates, between 1973–74 and 1996–97, notwithstanding some fluctuations in the intervening years, have remained relatively stable for both males and females in all age groups (Figure 4).

Males have higher suicide death rates than females across all age groups. For males, the suicide death rate for 1996–

FIGURE 3

ESTIMATED NUMBERS OF SUICIDE-RELATED EVENTS, NSW, 1996–97



* All locations of death recorded as 'unknown' are indicated in the non-hospital death total of 734

Note: Suicide and self-inflicted injury were classified according to ICD-9 (E950–E959) external cause codes. NSW population estimates at 31 December, 1996–97 financial year is the most recent year for which complete suicide data are available. *All locations of death recorded as unknown is indicated in the non-hospital deaths. For explanation on how estimates were derived see: Sayer G, Stewart G, Chipps J. Suicide attempts in NSW: associated mortality and morbidity. NSW Public Health Bulletin 1996;7(6):55-63.

Source: ABS Mortality Data, NSW ISC Data and population estimates (HOIST), Centre for Mental Health, NSW Health Department. Estimates of mental health services were based on survey conducted in the Central Coast Health Service in February, March and April, 1998.

97 was nearly four times higher (20.9 deaths per 100,000) than for females (5.4 deaths per 100,000); however, between 1964–65 and 1996–97 the overall death rates due to suicide in males declined by 12 per cent. The corresponding rate of decline in males aged 65 years and older was 23 per cent; while in younger males aged 15–24 years the rate increased slightly (Figure 5). Males living in rural and outer metropolitan areas have higher death rates due to suicide than those living in metropolitan areas. Between 1971–72 and 1996–97, in rural health areas, death rates due to suicide for males increased by 36 per cent, and

increased in outer metropolitan health areas by 27 per cent. In metropolitan areas death rates due to suicide decreased by 13 per cent. These overall increases in rates are more evident since 1981–82 (Figure 6). Female suicide rates during this period have remained stable in all areas.

Younger people

In 1996–97, the death rate due to suicide in young people was 15.2 per 100,000. The rate for young males (23.3 per 100,000) was slightly more than three times that for young females (seven per 100,000). These findings are consistent with Australia-wide suicide data

FIGURE 4

DIRECTLY STANDARDISED SUICIDE RATES FOR ALL AGES BY SEX, NSW 1964-65 TO 1996-97

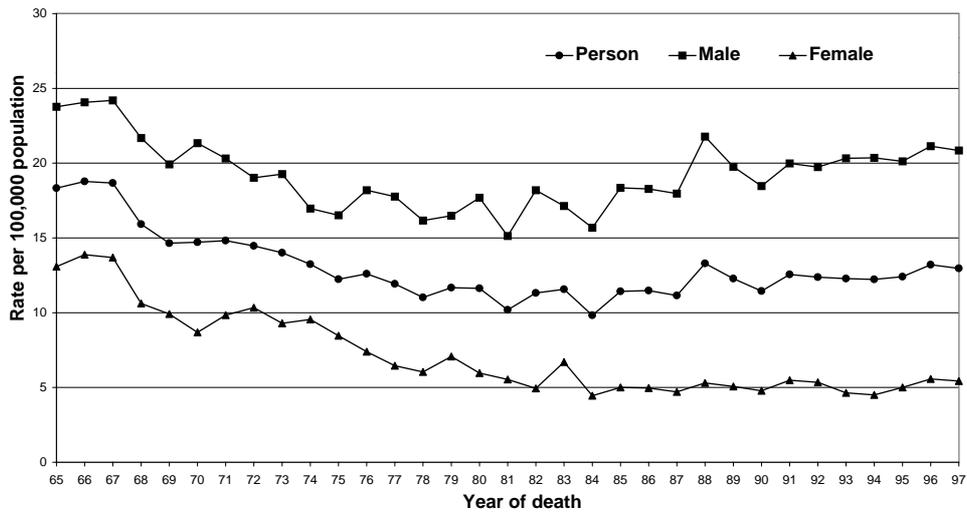


FIGURE 5

DIRECTLY STANDARDISED SUICIDE RATES FOR MALES ALL AGES BY AGE GROUPS, NSW 1964-65 TO 1996-97

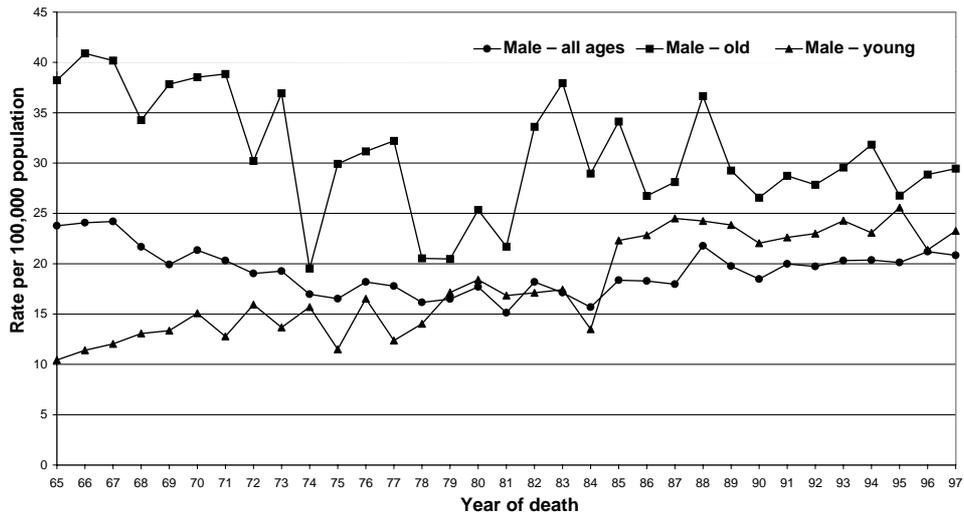
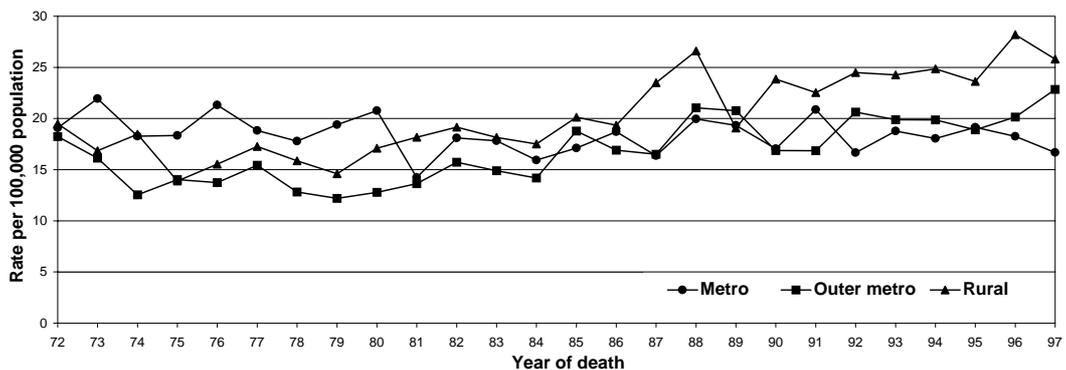


FIGURE 6

DIRECTLY STANDARDISED SUICIDE RATES FOR MALES ALL AGES BY METROPOLITAN, OUTER-METROPOLITAN AND RURAL AREAS, NSW, 1964-65 TO 1996-97



for males. Suicide in young males in Australia has increased nearly four-fold, from 6.8 per 100,000 in 1960 to 26 per 100,000 in 1994. In young females the rate increased two-fold, from two per 100,000 in 1960 to 4.3 per 100,000 in 1994.⁴

Older people

In 1996–97, the suicide death rate for older males was 29.4 per 100,000. For older females, the corresponding rate was eight per 100,000. Males older than 85 years had the highest suicide rate of any age group in 1996–97. However, because of the small number in this age group, it represented only 1.3 per cent of all male suicide deaths that year.

SUICIDE ATTEMPTS

All ages

In 1996–97, hospitalisation following an attempted suicide (111.4 per 100,000) was 8.6 times more common than the rate of suicide death (12.9 per 100,000) in people of all ages. The ratio of attempted suicide that resulted in hospitalisation to suicide death was 23.5:1 in females and 4.4:1 in males.

Young people

In 1996–97, hospitalisation following a suicide attempt (215.7 per 100,000) was 14 times more common than the rate of suicide death (15.2 per 100,000) in young people. The ratio of attempted suicide that resulted in hospitalisation to suicide death was 40.3:1 in females and 6.6:1 in males.

Older People

Hospitalisation following suicide attempt is less common in older people than in people in other age groups. In 1996–97, hospitalisation following a suicide attempt (40 per 100,000) was 2.6 times more common than rate of suicide death (15.3 per 100,000) in older people. The ratio of attempted suicide that resulted in hospitalisation to suicide death was 6.1:1 in females and 1.3:1 in males.

Means of suicide attempts

In 1996–97, poisoning by medicinal agents was the main cause of hospital admission for suicide attempts (all ages: 78 per cent; male: 67 per cent; female: 86 per cent; young people: 78 per cent; male: 65 per cent; female: 86 per cent; older people: 68 per cent; male: 59 per cent; female: 75 per cent). Of all attempts at suicide, the three that caused the most fatalities were hanging (10 per cent), firearms (seven per cent) and motor vehicle carbon monoxide (MVCO) (22 per cent).

MEANS OF SUICIDE

All ages

Between 1979–80 and 1996–97, among males half of all suicides were by firearms (25 per cent) or hanging (24.2 per cent). Poisoning and MVCO account for another 11 per cent and 18 per cent of all suicides, respectively. Poisoning and hanging have remained the most

frequently used means of suicide in females accounting for 37 per cent and 16 per cent respectively, of all suicides.

Young people

Between 1979–80 and 1996–97, among young males almost three-quarters (71 per cent) of all suicides were by firearms (30 per cent); hanging (27.4 per cent); and MVCO (13.2 per cent). In young females, poisoning remained the most frequently used means of suicide. However, since 1991–92, the rate of suicide by hanging in young females has increased four-fold.

Older People

Between 1979–80 and 1996–97, among older males firearms (28 per cent) and hanging (23 per cent) were the two most common means of suicide. In older females, poisoning remained the most frequently used means of suicide followed by hanging.

URBAN AND RURAL DIFFERENCES

Between 1979–80 and 1996–97:

- metropolitan areas: poisoning and hanging were the most frequent means of suicide. Since 1992–93, suicide by poisoning has decreased slightly and suicide by hanging has increased.
- outer metropolitan areas: firearms were the main means of suicide in the first half of the period. Since 1987–88, hanging and MVCO have become the most frequent means of suicide.
- rural areas: firearms have been and remain the most frequent means of suicide. Since 1989–90, suicides by firearms have declined slightly followed by a corresponding increase in suicide by hanging and MVCO.

GROUPS MOST AT RISK

Migrants

Migrants, most notably from English-speaking countries, countries from Western, Northern and Eastern Europe have higher rates of suicide than the general NSW population.⁵ Migrants aged 65 years and older have significantly higher rates of suicide than the overall rate of suicide for all people 65 years and older in NSW.⁵

Aboriginal and Torres Strait Islanders

Suicide death among Aboriginal and Torres Strait Islander people has not been assessed in this report due to poor identification of indigenous status in NSW health data collections. However, findings from the literature show that suicide risk and rate for younger Aboriginal males is much higher than other younger males in the general population.⁶

Mental Health Clients

Mental health clients in NSW have a 10 times higher risk of suicide than that of the general population. The risk of suicide was greatest for patients with depression.⁷ About eight per cent of all people who committed suicide in NSW were active mental health clients,⁷ and at least 88

per cent of people who died from suicide may have suffered from a diagnosable mental disorder at the time.^{8,9}

CONCLUSION

Up-to-date information on suicide is necessary to ensure that programs and interventions target people most in need, and to improve gaps in suicide information.

- Data on suicide deaths show that older and younger males are at increased risk of suicide. Suicide prevention strategies should aim to increase the awareness of the risk of suicide for these groups among professional and other staff in health and community services.
- Data on suicide attempts shows that suicide prevention–intervention activities should target both male and females as they are equally at risk of suicidal behaviour.
- Data on suicide attempts are limited, except those attempts that result in hospitalisation. A previous attempt at suicide is the single best clinical indicator for increased suicide risk.¹⁰ It is important to improve the surveillance of suicide attempts, to provide accurate indicators of suicidal behaviour for prevention activities.

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Copies of *Suicide in New South Wales—The NSW Suicide Data Report* can be obtained by telephone: (02) 9391 9576; by fax: (02) 9391 9041; or by email: gansa@doh.health.nsw.gov.au. The report is also available via the Internet from: www.health.nsw.gov.au/policy/cmh/publications/suicidedata.html; or via the Intranet from: internal.health.nsw.gov.au/policy/cmh/publications/suicide/suicidedata.html.

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RUBELLA IN NSW 1991–2000

Julia Brotherton

NSW Public Health Officer Training Program

Mohammad Habib

Communicable Diseases Surveillance and Control Unit

In this article we review the epidemiology of rubella cases notified in NSW since 1991.

Rubella (German Measles) is an infectious, generally mild viral disease. It is of public health importance because rubella infection acquired during early pregnancy often results in foetal anomalies (congenital rubella syndrome). Vaccination against rubella provides a high degree of protection, and rates of rubella and congenital rubella syndrome have been reduced by community vaccination programs.

Humans are the only known host of the rubella virus, which is transmitted from person to person through respiratory droplets. The incubation period is 14–21 days, and the disease is infectious from one week before until four days after the onset of rash.

Symptoms of rubella may include signs of upper respiratory infection, mild fever and a rash that typically starts on the face and then progresses down the body. Swelling of lymph nodes, particularly around the jaw and ears, is common and generally precedes the rash. Joint aches are also common, particularly in women. Rare complications include thrombocytopenia (low platelet count) and encephalitis.

Congenital rubella syndrome occurs in up to 90 per cent of infants born to women who are infected with rubella during their first trimester of pregnancy.¹ Rubella infection can also lead to miscarriage. Problems associated with congenital rubella syndrome include heart defects, deafness, mental retardation, and eye problems including cataracts.

Confirmed cases of rubella and congenital rubella syndrome should be notified to public health units. Only laboratory confirmed cases of rubella are notifiable due to the low specificity of symptoms including the rash, which is variably present.^{1,2} Rubella notification in NSW allows monitoring of the epidemiology of the disease to inform prevention strategies.

METHODS

Under the NSW Public Health Act 1991, all laboratories, school principals, and directors of child care facilities must notify suspected cases of rubella to their local public health unit (PHU). PHU staff record the details of confirmed cases on a confidential statewide Notifiable Diseases Database (NDD). We analysed the characteristics of notified cases from NDD during the period 1991 to 2000

by date of onset. Notification rates were calculated using mid-year population estimates from the Australian Bureau of Statistics for each year.

RESULTS

During the 10-year period, 5270 laboratory confirmed cases of rubella were reported in NSW. The least number of reports of the disease were received in 1991 (60), the year when rubella first became notifiable, and the most in 1995 (2375) (Table 1). The average annual incidence for this period was 8.5 notifications per 100,000 persons.

Most rubella cases occurred in the spring, with 55 per cent of notifications occurring in September, October and November (see Figure 7). In 2000 the majority of cases notified resided in the Hunter and South Eastern Sydney areas; this clustering of cases by local area and time is typical of the overall pattern, with periodic outbreaks occurring in different geographical areas.

Age and Sex

Over the 10-year period 70 per cent (3693/5270) of cases were male (sex not reported in 74 cases). By year the percentage of males fluctuated between 51 per cent (1998) and 80 per cent (2000). Most male cases were aged 15–24 years (54 per cent). During the 1995 epidemic, notifications peaked in this group at 218 per 100,000 (see Table 2).

There were 736 notifications of rubella in women of child bearing age (15–44 years) reported in the 10 years (49 per cent of all female notifications). Notification rates among women of child bearing age peaked in 1995 at 18.8 per 100,000.

Comparing the periods 1991–1995 and 1996–2000, the distribution of notifications by age group changed; falling slightly in those aged 10–19 years and rising in those aged 20–29 (see Figure 8). During 1991–1995, 44 per cent of all notifications were in 10–19 year olds; during 1996–2000 this percentage fell to 36 per cent of notifications. Conversely notifications in 20–29 year olds rose from 24 per cent of notifications during 1991–1995 to 35 per cent of notifications during 1996–2000.

Vaccination status

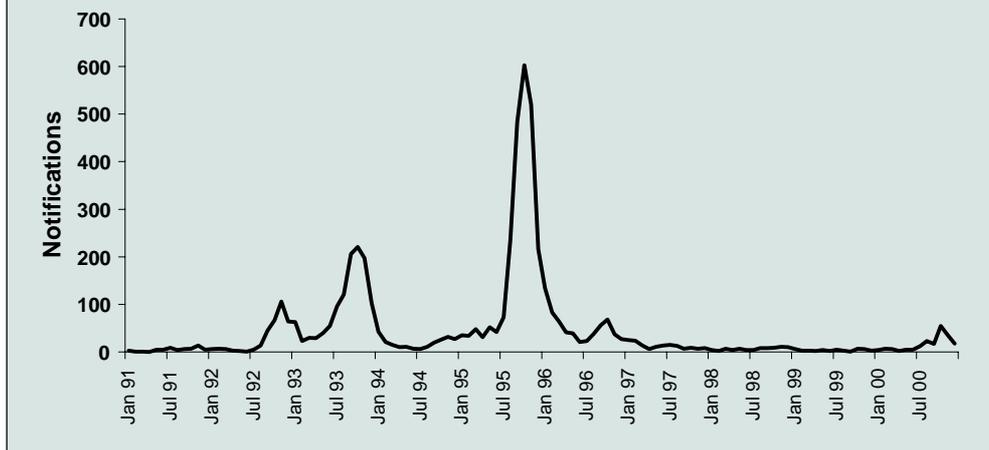
Vaccination status is poorly recorded on the NDD, probably because rubella is a laboratory notifiable disease and laboratories do not routinely report vaccination status. Since 1992, when vaccination status was sought on the NDD, only 18 per cent have had their vaccination status recorded. Only 15 per cent of these reported previous vaccination against rubella.

Congenital rubella syndrome

Fourteen cases of congenital rubella syndrome were notified. Most cases were reported in 1996 (5 cases), which occurred in the year following the peak in rubella

TABLE 1**RUBELLA NOTIFICATIONS IN NSW 1991–2000: OVERALL RATES, RATES BY SEX, AND NOTIFICATIONS OF CONGENITAL RUBELLA SYNDROME.**

Year of onset	Notified cases	Rate/100,000	Rate/100,000 males	Rate /100,000 females	Cases Congenital Rubella Syndrome
1991	60	1.0	1.1	0.9	1
1992	326	5.5	7.1	3.8	0
1993	1184	19.7	27.1	12.3	2
1994	229	3.8	4.9	2.6	4
1995	2375	38.8	57.7	18.1	1
1996	631	10.2	14.0	6.3	5
1997	153	2.4	2.9	2.0	0
1998	78	1.2	1.3	1.2	0
1999	45	0.7	0.8	0.6	1
2000	189	2.9	4.7	1.1	0
Total	5270	8.5	12.0	4.8	14

FIGURE 7**RUBELLA NOTIFICATIONS IN NSW 1991–2000 BY ONSET**

notifications. Since 1997 there has only been one case reported (in 1999).

DISCUSSION

The incidence of rubella, as reflected by notification data, continues to fluctuate in NSW although it would appear that immunisation has been successful in averting infection in recent years.

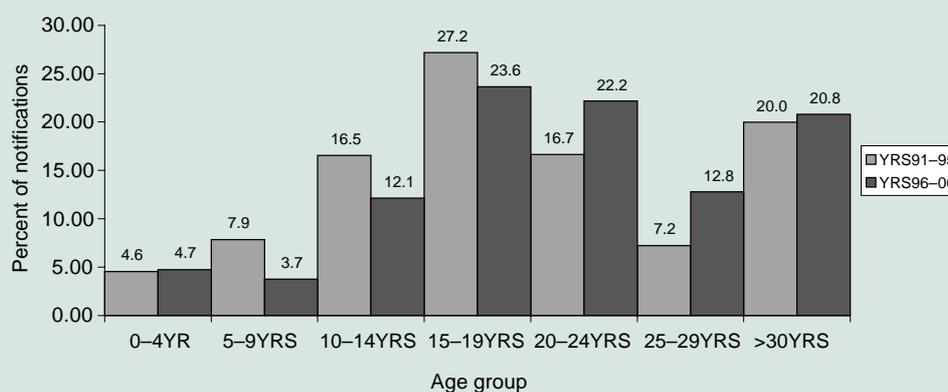
The age and sex distribution of notified cases demonstrates both the effectiveness of vaccination campaigns targeted at young women (the school girl rubella vaccination program commenced in 1971) and, paralleling this, the remaining susceptibility to the virus of the current cohort of young men.

In NSW, vaccination against rubella in childhood has been successfully implemented. The current vaccination schedule incorporates rubella vaccination as MMR

(measles, mumps and rubella vaccine) for all children at the age of 12 months, with a second dose at four years of age. MMR coverage is at over 90 per cent by age 24–27 months,³ and in 1998 during the Measles Control Campaign over 75 per cent of NSW primary school children received a dose of MMR.⁴ Thus rubella epidemics are now more likely to be sustained by non-immunised young adults than by children. In 1993 a school-based MMR vaccination program for 10–16 year olds replaced the school girl rubella vaccination program. The effect of this program may be reflected in the increasing proportion of notifications in the over-20s in more recent years, as this older group remains relatively under immunised. Because pregnant women are likely to have contact with non-immune young men, monitoring of cases of rubella and congenital rubella syndrome is critical to ensure that there is no paradoxical increase in cases of congenital rubella syndrome as rubella ceases to be a childhood disease that leads to long term immunity.⁵

TABLE 2**RUBELLA NOTIFICATION RATES NSW 1991–2001 IN YOUNG MEN AGED 15–24 AND WOMEN OF CHILD BEARING AGE (15–44 YEARS).**

Year of onset	Men aged 15–24 years		Women aged 15–44 years	
	Notified cases	Rate / 100,000	Notified cases	Rate / 100,000
1991	12	2.6	13	1.0
1992	115	24.7	53	3.9
1993	387	84.0	154	11.3
1994	82	17.9	43	3.1
1995	991	217.7	259	18.8
1996	238	52.8	113	8.1
1997	40	8.9	38	2.7
1998	13	2.9	23	1.6
1999	17	3.8	11	0.8
2000	109	24.1	29	2.0
Total 1991–2000	2004	44.0	736	5.3

FIGURE 8**RUBELLA NOTIFICATIONS NSW COMPARISON IN AGE COMPOSITION 1991–1995 WITH 1996–2000**

Notification data substantially underestimates rubella incidence since it only represents laboratory-confirmed cases. As just one of many causes of a febrile illness with rash, notifications reflect testing patterns rather than true incidence. Congenital rubella syndrome is also likely to be under reported to PHUs; a previous comparison of the number of cases identified by the Australian Paediatric Surveillance Unit, using active surveillance, with national notifications found that notifications recorded only a third of cases.⁵ However, rubella notification in NSW is likely to be highly specific, as the case definition requires laboratory confirmation.

Because vaccination is not 100 per cent effective in inducing life-long immunity to rubella,¹ ascertaining rubella immunity is a routine part of antenatal screening regardless of previous vaccination status. Rubella vaccination should not be given in pregnancy and it is therefore important that women considering pregnancy are aware of the need to check their immunity well before

they become pregnant. Women should be advised not to become pregnant until two months after vaccination.

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LEGIONNAIRES DISEASE

WHAT IS LEGIONNAIRES DISEASE?

- Legionnaires disease is an infection of the lungs (pneumonia) caused by bacteria of the *Legionella* family.
- Most reported cases of Legionnaires disease in NSW are caused by *Legionella pneumophila*. In NSW every year about 70 cases of Legionnaires disease are notified.
- *Legionella pneumophila* is usually found in water sources, whereas another bacteria of the *Legionella* family, *Legionella longbeachae* is commonly found in soil and potting mix.

WHAT ARE THE SYMPTOMS?

- Legionnaires disease usually causes fever, chills and a cough that may be dry or may produce sputum. Some people also have muscle aches, headache, tiredness, loss of appetite and diarrhoea. People can become very sick with pneumonia; most people recover but the disease is occasionally fatal.

HOW DO PEOPLE GET LEGIONNAIRES DISEASE?

- Legionnaires disease can occur after people have breathed in aerosols that have originated from water sources contaminated with *Legionella pneumophila* (for example: air conditioning cooling towers, whirlpool spas, showers) or sometimes from soil or potting mix contaminated with *Legionella longbeachae* bacteria. People may be exposed at home, at work, or in public places.
- It is **not spread** from person to person.
- The time between the patient's exposure to the bacteria and becoming sick is between two to 10 days.
- Legionnaires disease most often affects middle-aged and older people, particularly those who smoke cigarettes or who have chronic lung disease. Also at increased risk are people whose immune systems are suppressed by medications or diseases such as cancer, kidney failure, diabetes or AIDS.

HOW IS LEGIONNAIRES DISEASE DIAGNOSED AND TREATED?

- It is difficult to distinguish Legionnaires disease from other types of pneumonia by symptoms alone. Chest X-rays often show pneumonia but the diagnosis requires special tests.
- Tests of blood samples (taken three to six weeks apart), sputum and urine can be helpful for confirming the diagnosis.
- Legionnaires disease can be cured by treatment with antibiotics.
- Patients with Legionnaires disease may be treated in hospital with antibiotics through a drip. Some may need to be in an intensive care unit and may need assistance to breathe by a ventilator.

WHAT CAN BE DONE TO PREVENT LEGIONNAIRES DISEASE?

- *Legionella* bacteria can be found in many types of water systems. However, the bacteria reproduce to high numbers in warm, stagnant water. Improved design, disinfection and maintenance of cooling towers and plumbing systems limits the growth and spread of *Legionella* bacteria.
- *Legionella longbeachae* is common in the soil. Reducing exposure to potting mix dust by following the manufacturers warning present on potting mix labels; and wearing gloves and a mask when using potting mix may help to prevent infection. Wash your hands after handling potting mix or soil, especially before eating, drinking or smoking.

For more information contact your doctor, community health care centre, or your nearest public health unit.

(This fact sheet has been adapted from Centers for Disease Control and Prevention: Legionellosis, which can be viewed at www.cdc.gov/ncidod/dbmd/diseaseinfo/legionellosis_g.htm.) March 2001 ☒

COMMUNICABLE DISEASES, NSW: MARCH 2001

TRENDS

Notifications of communicable diseases in January 2001 were mainly in line with seasonal expectations (Figure 9, Table 3). Case reports of the **arboviruses**, Ross River virus and Barmah Forest infections, rose with the onset of summer, but have yet to reach the heights of previous seasons. Case reports of **pertussis** continue to decline, and monthly notifications of **hepatitis A** have remained relatively low for two years. This month we have included a graph of **new HIV diagnoses** reported by reference laboratories in NSW. The fall-off in notifications of HIV in recent months most likely reflects reporting delays. Despite month-to-month fluctuations, these data suggest a fairly consistent rate of new HIV infections in NSW over time.

MURRAY VALLEY ENCEPHALITIS VIRUS ACTIVITY IN WESTERN NSW

Murray Valley Encephalitis (MVE) is a potentially serious infection caused by a flavivirus that is transmitted by mosquitoes. Only one in approximately 1,000 persons infected will develop symptoms that include headache, neck stiffness, fever, tremor, weakness, confusion, fitting, and sometimes coma and death. It occurs at low level endemicity in north-western Australia, and is rare in NSW. The last occurrence in NSW was in 1974, as part of a nation-wide outbreak that led to approximately 58 cases, five of whom were infected in NSW. Thirteen people died.¹

Following the 1974 outbreak, an early-warning system for detecting the presence of flaviviruses was developed. Sentinel flocks of chickens are placed at various locations in inland NSW. The chickens' blood samples are tested weekly for antibodies to flaviviruses, including MVE and Kunjin. Mosquitos are also trapped for identification, quantification and virus isolation. Until February 2001, MVE had never been identified in the NSW chickens, or isolated from mosquitoes, since the program began 12 years ago. MVE has not been identified in people in NSW with encephalitis since 1974.

On the 15th February, testing (at the Institute of Clinical Pathology and Medical Research, Westmead Hospital, and also at the University of Western Australia) confirmed that MVE virus had been detected in the sentinel chicken flocks in remote western NSW: in two chickens from Menindee, two from Macquarie Marshes and one from Wanaaring. Other chickens in the affected flocks also seroconverted to Kunjin virus. On 21 February, further testing of the chickens indicated ongoing flavivirus activity in the Macquarie Marshes, and also detected activity at Bourke (also in western NSW).

In response, the public health units in the affected areas provided advice to local hospitals to report suspected human infection. No human clinical cases of MVE or

Kunjin virus infection have been identified to date (late February). The NSW Department of Health provided a media warning that MVE is likely to be present in NSW and that people in those areas should take personal protection measures to avoid being bitten by mosquitoes. Surveillance continues.

REFERENCE

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Dr Michael Giffin is managing editor.

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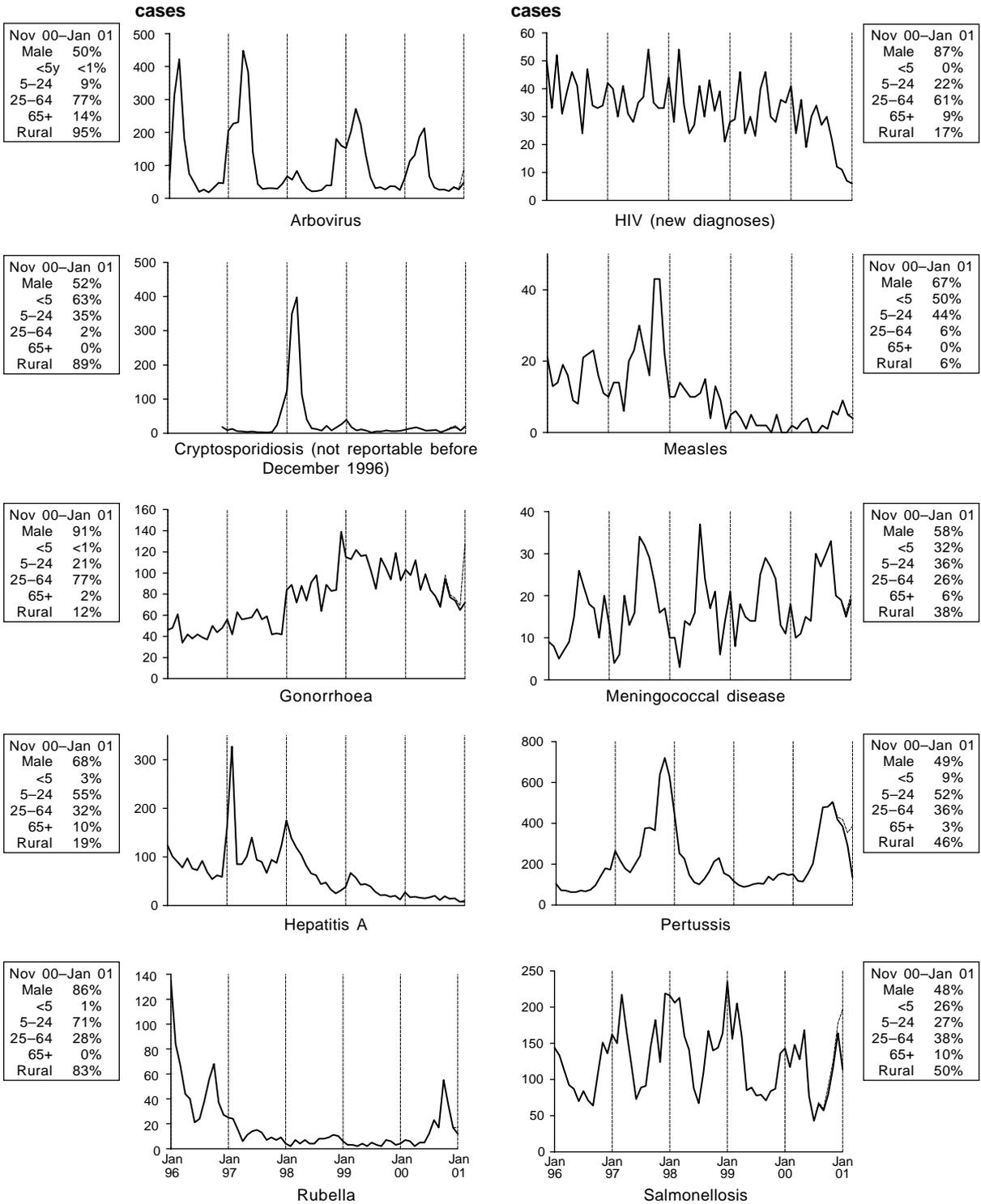


FIGURE 9

REPORTS OF SELECTED COMMUNICABLE DISEASES, NSW, JANUARY 1996 TO JANUARY 2001, BY MONTH OF ONSET

These are preliminary data: case counts for recent months may increase because of reporting delays. Laboratory-confirmed cases, except for measles, meningococcal disease and pertussis — actual — predicted after adjusting for likely reporting delays

NSW population	
Male	50%
<5	7%
5-24	28%
25-64	52%
65+	13%
Rural*	42%



* For definition, see *NSW Public Health Bulletin*, April 2000

TABLE 3 **REPORTS OF NOTIFIABLE CONDITIONS RECEIVED IN JANUARY 2001 BY AREA HEALTH SERVICES**

Condition	Area Health Service (2001)																	Total		
	CSA	NSA	WSA	WEN	SWS	CCA	HUN	ILL	SES	NRA	MNC	NEA	MAC	MWA	FWA	GMA	SA	CHS	for Jan†	To date†
Blood-borne and sexually transmitted																				
AIDS	6	3	2	-	2	2	-	4	4	-	-	2	-	-	-	-	1	-	26	26
HIV infection*	-	-	2	-	-	-	1	-	1	1	-	1	-	-	-	-	-	-	6	6
Hepatitis B - acute viral*	-	1	1	-	1	-	-	-	1	-	-	-	-	-	-	1	-	-	5	5
Hepatitis B - other*	2	30	58	7	129	13	6	5	46	-	1	3	2	3	4	1	3	-	314	314
Hepatitis C - acute viral*	-	3	-	2	-	-	-	-	-	1	1	-	-	1	-	-	-	-	8	8
Hepatitis C - other*	2	44	126	36	99	53	45	30	114	37	23	24	7	16	5	10	18	40	732	732
Hepatitis D - unspecified*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hepatitis, acute viral (not otherwise specified)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chancroid*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlamydia (genital)*	2	27	35	13	9	5	26	10	91	11	8	12	4	2	10	12	4	-	282	282
Gonorrhoea*	-	11	6	1	10	-	2	2	56	2	1	3	-	-	3	-	1	-	100	100
Syphilis	14	-	5	-	9	-	-	-	16	1	2	1	1	1	-	-	1	1	54	54
Vector-borne																				
Arboviral infection (BFV)*	-	-	-	-	-	-	1	2	-	3	5	1	-	-	1	-	1	-	14	14
Arboviral infection (RRV)*	-	2	1	-	-	-	2	1	1	3	3	9	3	2	2	7	-	-	36	36
Arboviral infection (Other)*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malaria*	-	-	1	-	2	-	2	-	1	-	1	-	1	1	-	-	1	-	11	11
Zoonoses																				
Anthrax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brucellosis*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptospirosis*	-	-	-	-	-	-	1	-	-	-	1	4	-	1	-	-	-	-	7	7
Lyssavirus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psittacosis	-	-	-	-	3	-	1	-	-	-	-	-	-	-	-	-	-	-	4	4
Q fever*	1	-	-	-	-	-	2	-	-	4	1	3	1	3	1	1	-	-	17	17
Respiratory and other																				
Blood lead level*	-	-	-	4	3	1	2	-	-	-	-	1	-	-	8	3	-	-	22	22
Influenza	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1
Invasive Pneumococcal Infection	-	-	-	2	-	-	-	-	2	-	-	1	-	-	-	-	-	-	5	5
Legionnaires' Longbeachae*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Legionnaires' Pneumophila*	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Legionnaires' (Other)*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leprosy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1
Meningococcal infection (invasive)	2	2	2	-	1	1	5	3	3	-	1	-	-	-	-	1	2	-	23	23
Mycobacterial tuberculosis	3	13	3	1	4	-	-	-	8	-	-	1	-	-	-	1	-	-	34	34
Mycobacteria other than TB	12	1	-	-	-	-	-	-	-	-	1	-	-	-	-	2	-	-	16	16
Vaccine-preventable																				
Adverse event after immunisation	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
H.influenzae b infection (invasive)*	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	1
Measles	1	-	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	4	4
Mumps*	1	-	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	4	4
Pertussis	14	30	41	20	33	9	53	9	27	11	5	17	12	15	-	10	5	-	311	311
Rubella*	3	-	-	1	-	-	11	1	1	-	1	1	-	-	-	-	-	-	19	19
Tetanus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Faecal-oral																				
Botulism	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cholera*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cryptosporidiosis*	-	-	1	-	1	-	1	-	1	6	3	1	3	-	-	-	3	-	20	20
Giardiasis*	-	6	9	4	5	3	4	1	16	6	2	6	2	1	-	2	-	-	67	67
Food borne illness (not otherwise specified)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gastroenteritis (in an institution)	-	26	1	-	-	-	51	-	2	-	-	17	-	-	-	-	-	-	97	97
Haemolytic uraemic syndrome	1	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	3	3
Hepatitis A*	1	-	2	-	3	-	2	1	-	-	-	1	-	-	1	-	-	-	11	11
Hepatitis E*	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1
Listeriosis*	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Salmonellosis (not otherwise specified)*	-	15	16	16	22	6	11	12	22	23	14	4	5	8	5	3	2	-	184	184
Shigellosis	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Typhoid and paratyphoid*	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Verotoxin producing Ecoli*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* lab-confirmed cases only † includes cases with unknown postcode

CSA = Central Sydney Area	WEN = Wentworth Area	HUN = Hunter Area	NRA = Northern Rivers Area	MAC = Macquarie Area	GMA = Greater Murray Area
NSA = Northern Sydney Area	SWS = South Western Sydney Area	ILL = Illawarra Area	MNC = North Coast Area	MWA = Mid Western Area	SA = Southern Area
WSA = Western Sydney Area	CCA = Central Coast Area	SES = South Eastern Sydney Area	NEA = New England Area	FWA = Far West Area	CHS = Corrections Health Service

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