NSW PUBLIC HEALTH BULLETIN

Violence and Public Health

How can the health sector respond to violence?

GUEST EDITORS

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In 2007 violence is again on the front pages of our newspapers. As we write this editorial, a massacre of students at a university in the United States is igniting fresh debate about gun control there. Closer to home, the media is focusing on issues related to alcohol and violence in NSW. There is evidence that controlling alcohol consumption will have an effect on the occurrence of violence; debate is ongoing, and a policy response demanded by many public health practitioners. Bullying in schools and workplaces is also attracting increasing attention.

The health sector is at the forefront of responding to violence. Most health workers have experience of dealing with the effects of violence whether attending to victims in the small hours of the morning, notifying the Department of Community Services of a child at risk of abuse or managing aggressive clients in our services.

The health sector clearly has a role in mitigating the effects of violence, but what is its role in prevention? This is far more contentious, and many public health practitioners place violence prevention in the 'too hard' basket.

The first special issue of the *Bulletin* focusing on violence[1] investigated patterns of violence in NSW and examined, in particular, violence associated with injecting drug use and prison settings. In this issue, we focus on the challenge of interventions to prevent violence.

In common with other public health strategies, violence prevention interventions can be primary, secondary or tertiary, and can be population based or targeted towards individuals or communities at particular risk. The NSW Families First initiative, for example, is a population-based, primary prevention strategy, and one of the reported outcomes is reducing the risk of abuse of children and of the perpetration of violence in young adulthood.[2] Another example of preventive efforts is the night patrols instigated by some Indigenous communities – these are targeted towards young people and those under the influence of alcohol who are at highest risk of experiencing a violent incident. In contrast to unintentional injury prevention, preventing intentional injuries or violence often requires an enhanced focus on behavioural factors, such as relationship or conflict resolution skills. However, some more 'passive' environmental strategies have also been effective, such as designing public spaces so that people can see and interact with others. Most successful strategies are multisectoral and are tailored to the unique characteristics of particular communities.

In this issue of the *Bulletin*, we discuss the data sources that can be used to better understand violence in NSW. We argue that violence, according to the WHO definition, is a bigger problem in NSW than suggested by inpatient statistics. Our current data sources only partially capture the extent of violence, and our mechanisms for reviewing these data and feeding them back into policy processes are inadequate. Following through from research to enhancing policy and practice is an important and recurring theme in this *Bulletin*. NSW does not differ dramatically in terms of violence from other Australian states where violence remains a significant cause of harm; those most at risk are young adults, those living in rural and remote areas and Indigenous people. Men are most at risk of public violence and women of violence that occurs in private.

Is there any good news? There might be. A successful violence prevention program, the Alcohol Linking Program, has been initiated within the health sector and has now been

adopted by NSW Police across the whole state. The Alcohol Linking Program targets a specific risk factor in a geographical place, alcohol use on licenced premises. Police provide feedback to licencees on alcohol-related incidents associated with their premises. Wiggers, in this issue, reports that data collected for the program demonstrate that a small number of premises are responsible for a large proportion of incidents. This article demonstrates how this strategy can significantly reduce the number of violent incidents associated with a particular locality.

Secondary prevention, or reducing harm and adverse outcomes in victims, is the dominant paradigm for addressing domestic violence across most sectors. An important secondary prevention initiative instigated by NSW Health is the NSW Screening Program for Domestic Violence. The Program aims to identify current victims of domestic violence attending health services and help put in place strategies to reduce long-term harm. Spangaro's paper provides a summary of how the program has been implemented in NSW, and discusses important debates around how to ensure that screening is effective, ethical and safe.

Breckenridge and Maloney report on a qualitative study investigating how women can be enabled to stay in their homes after leaving a relationship with a violent partner. The authors make explicit the links between the health impacts of domestic violence, such as post traumatic stress disorder, depression and substance abuse, and the compounding effects of insecure housing and homelessness. An intervention based on this research is now being piloted in two Area Health Services.

Given the importance of whole of sector approaches in violence prevention, Harris *et al*. take a critical look at the 'whole of government' approach to tackling violence, and challenge the reader to consider the notion of community on which these are based. Given the challenges of working intersectorally, and the relative lack of evidence for 'whole of government' strategies to prevent violence, the authors argue for stronger intersectoral discussions before the implementation of interventions, with a clear focus on what could concretely be expected to be achieved. Systematic development of a shared 'program logic', the authors argue, is the key to successful whole of government interventions.

The papers presented here tell us that violence can indeed be prevented. However, to be effective, interventions must be informed by evidence, and interventions invariably require implementation in a coordinated manner across sectors. While other sectors already see health practitioners as key partners with unique insights in relation to violence prevention, they tend to focus on the clinical care role of health practitioners. Within public health and health promotion we are increasingly recognising what can and should be done, much of it upstream in relation to prevention. Failing to do so will leave untouched the unacceptable levels of this daily threat to safety and security.

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Preventing violence in New South Wales: data sources and their adequacy

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Abstract: Objectives: To describe data sources that are relevant to violence in NSW and recommend strategies for improving data collection and dissemination. **Methods**: Literature review, interviews with stakeholders and a survey of data custodians within NSW Health. **Results**: Data sources were mapped using a conceptual framework developed by the Australian Bureau of Statistics. We found that current data sources are only partially effective at characterising the burden of violence in NSW and there are inadequate mechanisms for data review and dissemination. **Conclusions**: Improving data collection and dissemination is the first step in the public health contribution towards reducing the burden of violence on society.

Public health efforts to prevent violence rely on information about communities most at risk of violence and the success (or otherwise) of current interventions. The World Health Organization World Report on Violence and Health recognised that information and data concerning violence are generally incomplete and inadequate for the purpose of public health action, and called for countries to enhance their ability to collect and present such data.[1] In this article we describe data sources that are relevant to violence in NSW and recommend strategies for improving data collection and dissemination.

Methods

As part of a larger project we interviewed 31 key stakeholders in government and non-government organisations in the health, community, criminology, police and other sectors, and asked them about what data sources they accessed for their violence prevention work. We distributed a short survey to custodians of 11 routine data collections managed within NSW Health that we identified as being relevant to violence; of the 11 custodians, nine responded. We also searched government websites and recent published literature to identify data sources.

Data sources

A conceptual framework

Data sources identified were mapped using a conceptual framework that was developed by the Australian Bureau of Statistics (ABS) for mapping information relevant to sexual assault.[2] This framework characterises data sources according to whether they provide information before an incident (context and risk factors), at the time of an incident (incident) or after an incident has occurred (responses and outcomes). Some datasets provide information at more than one of these levels. This information is summarised in Table 1.

Examples of sources and uses of data

Context

The context in which violence occurs includes individual factors, such as prior history of aggression; relationship factors, such as peer and family norms; community factors, such as social capital and residential mobility; and societal factors, such as historical and cultural circumstances. Risk factor studies, such as census data on employment and socioeconomic status, provide information on communities at known increased risk of violence, which can be used prospectively for planning interventions. Population level information, such as population density, drug and alcohol use and the status of women and children can be studied to determine relationships between these variables and violent incidents.

Example: The 2004 National Drug Strategy Household Survey[3] found that one in three people aged 14 years and over consumed alcohol in a way that put them at increased risk of alcohol-related harm in the short-term on at least one occasion in the preceding 12 months. Risky drinking peaked in men and women aged 20–29 years.

Risks

Actual and perceived risks of violence are best documented through population surveys, including victimisation surveys, which are usually anonymous and can facilitate calculation of the prevalence of violence.

Example: The 2004 NSW Population Health Survey[4] asked young people 16–25 years of age whether or not they had been victims of physical violence in the previous 12 months. Twelve and a half percent of young people had

Table 1.   Data sources relevant to violence in NSW – conceptual framework adapted from the Australian Bureau of Statistics[2]

Data sources	Custodian
Context	
National Drug Strategy Household Survey	Australian Institute of Health and Welfare
National Illicit Drug Reporting System	National Drug and Alcohol Research Centre, UNSW
Australian School Students Alcohol and Drugs Survey	Anti-Cancer Council of Victoria
ABS Census	Australian Bureau of Statistics
ABS SEIFA Indexes	Australian Bureau of Statistics
ABS Australian Women's Year Book	Australian Bureau of Statistics
National Firearms Monitoring Program	Australian Institute of Criminology
Community Attitudes to Violence Against Women (2006)	Australian Institute of Criminology
Community Atttitues about Child Abuse and Child Protection (2003)	Australian Childhood Foundation
Other studies including policy and media analyses	
Risk	
Women's Safety Survey	Australian Bureau of Statistics
National Personal Safety Survey	Australian Bureau of Statistics
Young Australians and Domestic Violence	Australian Institute of Criminology
Recorded Crime NSW	NSW Bureau of Crime Statistics and Research
National Aboriginal and Torres Strait Islander Social Survey	Australian Bureau of Statistics
National Aboriginal and Torres Strait Islander Health Survey	Australian Bureau of Statistics
NSW Population Health Survey	NSW Health
NSW Inmates Health Survey	Justice Health
NSW Young People in Custody Survey	NSW Department of Juvenile Justice
ABS Crime and Safety Survey, NSW	Australian Bureau of Statistics
Incident	
National Coroners' Information System	Victorian Institute of Forensic Medicine, Monash University
Causes of Death Collection	Australian Bureau of Statistics
National Mortality Database	Australian Institute of Health and Welfare
National Hospital Morbidity Database	Australian Institute of Health and Welfare
National Homicide Monitoring Program	Australian Institute of Criminology
National Firearms Monitoring Program	Australian Institute of Criminology
Recorded Crime NSW	NSW Bureau of Crime Statistics and Research
NSW Criminal Court Statistics	NSW Bureau of Crime Statistics and Research
NSW Inpatient Statistics Collection	NSW Health
NSW Emergency Department Data Collection	NSW Health
NSW Physical Abuse and Neglect of Children Data Collection	NSW Health
DOCS Client Information System (KIDS)	NSW Department of Community Services
BEACH (Bettering the Evaluation and Care of Health) dataset	Australian General Practice Statistics and Classification
Centre	
NSW Child Death Review Team Reports	NSW Commission for Children and Young People
Prison Injury Surveillance System	Justice Health
Individual clinic/medical records in public and private services	
Responses	
NSW Sexual Assault Data Collection	NSW Health
NSW Physical Abuse and Neglect of Children Data Collection	NSW Health
NSW Domestic Violence Screening Snapshot	NSW Health
NSW Health Incident Information Management System	NSW Health
NSW Criminal Court Statistics	NSW Bureau of Crime Statistics and Research
NSW Mental Health Outcomes Assessment Tool	NSW Health
NSW Sentinel Events Review Committee Reports	NSW Health
Alcohol and other Drug Treatment Services National Minimum Data Set	Australian Institute of Health and Welfare
Juvenile Justice National Minimum Data Set	Australian Institute of Health and Welfare
Child Protection National Minimum Data Set	Australian Institute of Health and Welfare
Admitted Patient Care National Minimum Data Set	Australian Institute of Health and Welfare
Community Mental Health Care National Minimum Data Set	Australian Institute of Health and Welfare
Admitted Patient Mental Health Care National Minimum Data Set	Australian Institute of Health and Welfare
Trauma Incident Review Teams	NSW Institute of Trauma and Injury Management
Impacts and outcomes	
Cost of Domestic Violence to the Australian Economy	Access Economics
International Violence Against Women Survey	Australian Institute of Criminology
Women's Health Australia	University of Newcastle
Injury Costs!	NSW Injury Risk Management Research Centre
Other studies assessing outcomes of violence	

experienced a violent incident. The young men who had been physically assaulted were most likely to be assaulted in an outdoor place or a licenced premise, whereas young women who had experienced physical assault were more likely to be assaulted in the home.

Incident

Information at the incident level is primarily provided by routine datasets such as the NSW Inpatient Statistics Collection, NSW Recorded Crime Statistics[5] and the ABS Mortality Collection. NSW Ambulance Service data could potentially provide information about violent incidents but are currently insufficiently sensitive for this purpose. The national Bettering the Evaluation and Care of Health (BEACH) general practice dataset includes information about violence coded according to International Classification of Primary Care (ICPC) codes, but the number of identified incidents of violence is very small.

Example: The NSW Inpatient Statistics Collection demonstrates that approximately 6000 people are admitted to hospitals in NSW every year for 'interpersonal violence' and males are three to four times more likely to be admitted than females.[6]

Responses

Data describing responses to violence by the health system include the National Minimum Data Sets collected through health service delivery points, such as drug and alcohol services,[4] mental health services, trauma centres and child protection services and incident monitoring systems, such as the NSW Health Incident Information Management System, which documents reported violent incidents affecting clients or staff within NSW health services. In addition, specific mechanisms have been established in part to analyse system responses to serious incidents, such as the NSW Child Death Review Team[7] and the Mental Health Sentinel Event Review Committee.[8]

Example: National data on patient-safety-related incidents from national incident management data demonstrated that from January 1998 to June 2002, 3621 incidents within the health system involved physical violence or a violent verbal exchange.[9] The proportion of total incidents involving violence was higher in emergency departments and much higher in mental health units. These data were used to recommend strategies to train and protect staff in methods to deal with violent incidents.

Impacts and outcomes

The impacts and outcomes of violence are poorly described in current data collections. In particular, there is generally poor assessment of the psychological impacts of violence. Economic studies of the impacts of violence are important but have been conducted infrequently.[10,11]

Example: The NSW Injury Risk Management Research Centre estimated the costs to NSW of various forms of injury during the period 1998–99.[12] The study estimated that self-harm was the second most costly form of injury to NSW ($588 million) and assaults were the fifth most costly mechanism of injury ($134 million). Falls are the most costly mechanism of injury at an estimated $644 million in 1998–99.

NSW Health data sources relevant to violence

Table 2 provides an overview of the strengths and limitations of specific datasets relevant to violence managed by NSW Health, based on the comments of our informants, results of the survey conducted and a review by the UNSW team.

Adequacy of current datasets

Stakeholders interviewed were asked in general terms about the adequacy of the data sources they use. Some common themes emerged from these discussions:

Data sources are not comparable

Different data sources measure different variables, making comparison difficult. For example, sexual violence may be measured through data on presentations to sexual assault centres, presentations to emergency departments, police reports, court reports and population surveys measuring histories of sexual violence in childhood or adulthood. Sexual violence is defined differently in each of these data collections: for example, the legal definition of sexual assault used in criminal prosecution is much narrower than the definitions of sexual victimisation used in population surveys. Given that these collections are not linked, it is difficult to know how much overlap there is. One stakeholder from outside the health sector articulated the need for different sectors to share data more effectively:

'The links between assault prevention, health outcomes and violence prevention are so clear, it is almost ridiculous that we are not sitting at a table on a monthly basis and comparing data…if anything can be done better it is the way we compare data'.

Significant under-reporting

In concert with literature in the area, stakeholders interviewed perceived there to be significant under-reporting of intimate partner violence, sexual violence, elder abuse, school bullying and assaults on hospital staff. Some stakeholders were reluctant to identify violence if they perceived it would compromise provision of care or that there were inadequate referral mechanisms to follow up events identified: 'We are not seeking to get individual level reporting of stuff around DV (domestic violence), child reporting…we wouldn't know what to do with it'. Under-identification of Indigenous status and inaccurate reporting of violence in Indigenous communities were also reported.

Table 2.   Routine data collections relevant to violence administered by NSW Health

Data collection	Access and dissemination	Strengths	Limitations	Known gaps	Comments
Emergency Department Data Collection	HOIST[A] access; data in Chief Health Officer's Report; available to institutions upon request	Captures the majority of Emergency Department presentations in NSW	Poor quality data on diagnoses and no data on external causes; not professionally coded; incomplete coverage in NSW; one or more week's time delay in supply of information	Routine recording of injury intent and mechanism	Potential to improve diagnosis coding for violence related emergency department visits
Public Health Real Time Emergency Surveillance System	Internal departmental access only	Captures incidents in real time; potential to identify violence via triage narrative	In early stages; not primarily for capturing data on injury	Details of injury mechanism, external cause	Identify key terms for describing injury secondary to violence; train triage staff in use of these terms
Inpatient Statistics Collection	HOIST* access; data in Chief Health Officer's Report; available to institutions upon request; NSW Injury Profiles published	Includes all admitted patients to public hospitals, private hospitals, psychiatric hospitals, multi-purpose services and day procedure centres. Commonly used and cited dataset on injuries and violence; identification of violence according to ICD-10-a.m. codes	Multiple counting of separations; poor reporting of relationship between victim and perpetrator; activity when injured codes not useful for intentional injuries	Inaccurate recording of Indigenous status	Categories of 'interpersonal violence' could be disaggregated for reporting purposes, for example physical assault v. sexual assault; work could be done to estimate the cost of interpersonal violence in NSW; potential for more accurate coding of perpetrator, place of occurrence and involvement of alcohol and other drugs
Physical Abuse and Neglect of Children (PANOC) Data Collection	Ad hoc reports to NSW Health; other agencies upon request	Details of type and extent of abuse experienced by referred children; continuous data from 2000; data used for planning interventions	Only captures children referred by DOCS to the service (substantiated cases of child abuse); limited details of identified perpetrator	Depends on data entry at services	Production of accessible reports would assist usefulness
Sexual Assault Data Collection	Ad hoc reports to NSW Health; other agencies upon request	Demographic data of victim/client; records some details of perpetrator; other forms of abuse identified for children (eg exposure to domestic violence); continuous data from 1987-web-based collection started 2000	Only captures adults and children accessing sexual assault services	Depends on data entry at services	Production of accessible reports would assist usefulness
Incident Information Management System	Internal departmental access only	Systematic recording of incidents in NSW Health services, including violent incidents; information on victim and perpetrator	Relatively new system	Not determined	Currently working to make data more readily available
Mental Health Outcome and Assessment Tools	Not available outside the health . sector. Reports based on minimum datasets produced at national level only.	Specific flags for child protection issues, suicide/self-harm, vulnerability to abuse. History taking about previous experiences of violence. Screening for domestic violence incorporated.	Relatively new system; detailed clinical assessment tools in patient files only; national data collection on minimum items related to violence; difficult for outside agencies to access data; limited potential for public health purposes at present	Limited information in Minimum Data Set relevant to violence	Potentially useful data for local analysis and clinical audits; potential for longer term development

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Table 2.   continued

Data collection	Access and dissemination	Strengths	Limitations	Known gaps	Comments
Routine Screening for Domestic Violence Program	Annual snapshot report	Routine enquiry to women presenting to some services in NSW; only statewide source of data on domestic violence	Not yet comprehensively implemented.	Only screening level information provided about violence	Integration into standard data collection tools and participation by all target services would assist usefulness and representativeness of data
NSW Trauma Minimum Data Set	Annual report	Captures patients with serious or critical injuries presenting to NSW major trauma centres; documents mechanisms of injury including blunt assault, stabbing and shooting	Violence is not always clearly indicated as a contributing factor	Minor injuries	Dataset could be used for assessing costs to the health system of violence resulting in serious or critical injury
NSW Prison Injury Surveillance System	Restricted access to Justice Health staff	Text description of injury; records details of injuries not captured by custodial incident reporting systems; records type of injury, location, intent and treatment	Based on self-referral to prison clinics; self-reported intent	Incomplete coverage	Resources to mine the data and undertake site visits and training would improve utility of system
Inmate Health Surveys/ Young People in Custody Health Survey	Publicly available report	Broad range of data collected, including injuries in previous 3 months; data on child sexual abuse collected; data collected via face to face interviews	Data collected every 5 years	Not determined	Potential to further mine data given appropriate resources
NSW Health Survey Program	HOIST* access; data in Chief Health Officer's Report; available to institutions upon request	Good quality data on range of health issues across several surveys; recent questions on youth violence in Population Health Survey	Possible ethical issues	Detailed information on victims or perpetrators of violence	Potential to add further question modules relevant to violence

AHOIST is an acronym for the Health Outcomes and Information Statistical Toolkit, which is a collection of databases (data warehouse) maintained by the Epidemiology and Surveillance Branch of the NSW Department of Health. HOIST is only available to staff of the NSW public health system.

Inadequate identification of intent, external causes of violence and the relationship between victim and perpetrator

The majority of victims of violence seen in the health sector are not admitted to hospital, but are seen in the emergency department or as outpatients. However, most data collections beyond the Inpatient Statistics Collection do not routinely record the intent of injuries, the external cause of injuries and the relationship between the victim and perpetrator. Although the Emergency Department Data Collection was identified as a key information source for improvement, this collection does not function primarily as

Table 3. Key resources relevant to violence prevention in NSW

Organisation/document title	URL
Australian Childhood Foundation	www.childhood.org.au
Aboriginal Child Sexual Assault Taskforce	http://www.lawlink.nsw.gov.au/acsat
AIHW National Injury Surveillance Unit	http://www.nisu.flinders.edu.au
Australian Institute of Health and Welfare	http://www.aihw.org.au
Allerton M, Kenny D, Champion U, Butler T. *NSW young people in custody health survey: A summary of key findings.* Sydney: NSW Department of Juvenile Justice, 2003.	www.aic.gov.au/conferences/2003-juvenile/kenny.html
Australian Bureau of Statistics	http://www.abs.gov.au/websitedbs/d3310114.nsf/ Home/themes- go to Crime and Justice and Health themes.
Australian Centre for the Study of Sexual Assault	http://www.aifs.gov.au/acssa/index.html
Australian Domestic and Family Violence Clearinghouse	http://www.austdvclearinghouse.unsw.edu.au/
Australian Institute of Criminology	http://www.aic.gov.au/
BEACH (Bettering the Evaluation and Care of Health)	http://www.fmrc.org.au/beach.htm
Bureau of Crime Statistics and Research, NSW Attorney-General's Department	http://www.lawlink.nsw.gov.au/lawlink/bocsar/ ll_bocsar.nsf/pages/bocsar_aboutus
Al-Yaman F, Van Doeland M, Wallis M. *Family violence among Aboriginal and Torres Strait Islander peoples.* Canberra: AIHW November 2006.	http://www.aihw.gov.au/publications/index.cfm/title/10372
Illicit Drug Reporting System, National Drug and Alcohol Research Centre	http://notes.med.unsw.edu.au/NDARCWeb.nsf/page/IDRSa
Justice Health, Inmate Health Survey 2001	http://www.justicehealth.nsw.gov.au/pubs/Inmate_ Health_Survey_2001.pdf
National Association for the Prevention of Childhood Abuse and Neglect	www.napcan.org.au
National Child Protection Clearinghouse	http://www.aifs.gov.au/nch/
National Coroners Information System	http://www.vifp.monash.edu.au/ncis
NSW Chief Health Officer's Report 2004	http://www.health.nsw.gov.au/public-health/chorep/chorep.html
NSW Child Deaths Review Team	http://www.kids.nsw.gov.au/publications/cdrt2000.html
NSW Health Inpatient Statistics Collection	http://www.health.nsw.gov.au/im/ims/isc/
NSW Health Routine Screening for Domestic Violence Snapshot Report 2004	http://www.health.nsw.gov.au/pubs/2005/routine_ screeningfn.html
NSW Health Survey 2004	http://www.health.nsw.gov.au/public-health/survey/hs04/ prodout/toc/toc.htm
NSW Injury Risk Management Research Centre	http://www.irmrc.unsw.edu.au/
NSW Institute of Trauma and Injury Management	http://www.itim.nsw.gov.au
Memmott P, Stacy R, Chambers C, Keys C. *Violence in indigenous communities.* Canberra: Commonwealth Attorney-General's Department, 2001	http://www.ncp.gov.au/agd/www/Ncphome.nsf/Page/ 3AF90A4576B81394CA256B430001AF24?OpenDocument
Mouzos J, Makkai T. *Women's experiences of male violence: findings from the Australian component of the International Violence Against Women Survey (IVAWS).* Canberra: Australian Institute of Criminology, 2004	http://www.aic.gov.au/publications/rpp/56/index.html
Office for the Status of Women & Access Economics, The Costs of Domestic Violence to the Australian Economy, 2004	www.accesseconomics.com.au
Women's Health Australia (The Australian Longitudinal Study on Women's Health)	http://www.alswh.org.au/

a surveillance system and significant barriers to collecting good quality data in this setting were identified.

Accessing health data is difficult unless you know how

Several stakeholders outside the health sector reported that health data were difficult to access unless you knew where to look: 'Health is such a complicated organisation from the outside'. One suggested that it would be 'really good to have a contact in Health we can call up and say – right is it realistic for us to ask for this information – does it exist?' Another thought that 'A one-stop shop outlining the health data, who is the data custodian, how you get access to it…something like that would be beneficial'.

Some data are misleading

There are some communities 'hidden' in the statistics, such as gay and lesbian victims of both intimate partner and street violence, as most datasets do not record information on sexual identity. One stakeholder felt very strongly that the health sector collects poor quality data on child health, including child abuse, as most information is collected via parents rather than from children themselves.

Discussion

Public health surveillance should enable the definition of public health priorities; the characterisation of disease by time, place and person; the detection of unusual patterns of occurrence or epidemics; the evaluation of prevention and control programs; and the projection of future trends and health care needs.[13] All of these are relevant to violence, which can be detected to some degree in routine datasets at the incident level. However, certain forms of violence are likely to be significantly under-reported,[14,15] and even large scale victimisation surveys have been unable to systematically document the experiences of some groups, such as adult survivors of sexual assault, people from non-English speaking backgrounds, sex workers and the homeless.[2]

All routine data collection systems have weaknesses; added to these are some specific limitations of data collected about violence. Particular issues are the lack of resources and personnel to focus on violence in particular, and the use of non-standardised terms and protocols which limit the comparability of results derived from separate data sources or data collection instruments.[16]

To facilitate a broad understanding of the complex patterns of violence within society, information from different sources and different sectors is required. The increased use of data linkage methods is likely to assist with making these data more useful. Table 3 summarises the range of information that is available to violence prevention practitioners in NSW. It is not sufficient to characterise violence using only the ICD codes for assault in the NSW Inpatient Statistics Collection. Basing policy on these measures of morbidity alone will significantly underestimate the burden of violence in NSW. As victims of violence have higher health care needs and consume more health resources than those who have not been victimised,[1,17] it is appropriate that health systems pay particular attention to identifying violence and target programs to where they are most needed.

Collecting information about personal experiences of violence highlights specific ethical and logistic issues that may not be relevant to other forms of information gathering. In particular, respondents should not be adversely affected or revictimised in any way by participating in data collection.[2] Routine datasets often collect data on violence as a by-product of their main purpose, and are therefore unlikely to compromise staff time or patient acceptability. However, as discussed previously, many victims of violence are unlikely to be identified unless more active methods of information gathering are instituted.

Conclusions

Current information systems to characterise violence in NSW are only partially effective. Stakeholders reported that data about violence in general were not representative, were of variable quality and were difficult to access. In addition, there appear to be few systematic mechanisms by which information about violence is regularly reviewed and fed back into policy processes. Key recommendations arising from this project are currently being formulated for consideration by NSW Health.

Public health research, advocacy and intervention depend upon accurate estimations of the burden of injury. Improving information systems is the first step in the public health contribution to reducing the burden of violence on society.

Acknowledgements

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Reducing alcohol-related violence and improving community safety: the Alcohol Linking Program

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Abstract: Harm associated with the consumption of alcohol on licensed premises is an issue of increasing community concern. This paper reports on a decade-long research initiative that involved the development and implementation of police systems designed to enhance identification of, and police capacity to respond to, premises suggested to be associated with such harms. The outcomes of the Alcohol Linking Program demonstrate enhanced information regarding the occurrence and characteristics of alcohol-related incidents; there are more than 34 000 such incidents each year in rural and regional NSW. Evaluation of the impact of an educational intervention demonstrated reductions of about 15% in the number of alcohol-related incidents linked with such premises. The Program has subsequently been adopted into routine practice on a system-wide basis by the NSW Police and New Zealand Police. Opportunities exist for public health practitioners to contribute to reducing alcohol-related harm in the community through the development of equivalent surveillance systems in emergency departments, monitoring licencee compliance with the *Liquor Act*, and through injury prevention, health promotion and drug and alcohol practitioners enhancing the capacity of licencees to serve alcohol responsibly.

Alcohol-related violence is a significant cause of harm in most countries.[1] Australian studies suggest that incidents of assault, domestic violence, unintentional injuries and traffic accidents account for 68% of all alcohol-related hospitalisations and 54% of all alcohol-related deaths, highlighting the significance of the acute effects of alcohol intoxication.[2]

Alcohol-related harms are associated with a variety of individual and environmental determinants.[1] Substantial acute alcohol-related harm is associated with the excessive consumption of alcohol on licensed premises.[1] In Australia, almost half of all alcohol is sold, and approximately 30% consumed, on licensed premises.[3,4] However, more than half of all drivers who are charged with drink-driving have consumed alcohol on licensed premises before the incident,[4] and 60% of all alcohol-related incidents attended by police occur on or within sight of a licensed premises.[5]

Despite data suggesting an association between alcohol consumption and harm, understanding of the extent of alcohol involvement in incidents attended by the police is limited due to a small number of studies,[5,6] the limited amount of information about alcohol consumption that is collected by police,[7] and by inconsistencies in police collection and recording of such information.[5]

Program aim

In response to these circumstances, the Alcohol Linking Program, a collaborative venture between Hunter New England Population Health, the University of Newcastle and NSW Police has been undertaken for more than a decade to improve community safety by enhancing the collection and recording by police of alcohol intelligence information, and by applying this information to reduce the harms associated with the excessive consumption of alcohol on licensed premises.[8] This paper provides an overview of this program of research.

The Alcohol Linking Program

The Alcohol Linking Program involves police routinely gathering and recording the alcohol consumption characteristics of persons involved in police-attended incidents. This information describes whether the person consumed alcohol before the incident (observation or reported), their intoxication status (based on observation of behavioural signs), their last place of alcohol consumption (reported) and, if the last place was a licensed premises, the name and

address of the premises. If a person was recorded as having consumed alcohol before the incident, the incident was considered to be 'alcohol-related'. If the person was recorded to have consumed alcohol at a particular licensed premises, the alcohol-related incident was considered to be 'linked' to that premises.

The Alcohol Linking Program specifically assessed the use of this intelligence information in an educative intervention delivered by police to licensed premises. The intervention involved police mailing to licencees a report that provided details of police-attended incidents reported to have followed consumption of alcohol on their premises. The report provided information regarding the type, time, date and place of each incident, and the alcohol and intoxication status of the person, and their age and gender. Those premises that were associated with such incidents were also the subject of a structured audit, conducted by police, of their responsible service of alcohol and management practices. The results of the audit were provided to licencees in a subsequent educative feedback visit.

Efficacy of the Program

The efficacy of this intelligence-based policing intervention was assessed in a randomised controlled trial involving all 398 licensed premises in the Hunter and Central Coast regions of NSW. Half of the premises were randomly allocated to receive the Alcohol Linking Program intervention (experimental group), and half were allocated to receive normal policing (control group). All experimental group premises received the mailed report, and those with at least one associated incident received the audit on one occasion. Police-recorded alcohol-related incidents associated with licensed premises were the outcomes of interest. The number of such incidents for three-month pre- and postintervention periods were compared for both groups of premises.

Over the three-month follow-up period, police-attended alcohol-related incidents associated with experimental group premises declined by 36% relative to the preintervention period, whereas such incidents associated with control group premises declined by 21%, resulting in 61 fewer incidents associated with the experimental group premises.[8]

Adoption of the Program into routine practice

Based upon the positive outcomes of the efficacy study, a further trial was undertaken to determine the impact of the Program when adopted into routine policing practice. This pre-post trial was conducted with all 1400 licensed premises and all 2500 police in the Hunter Region and in Western NSW.

All licensed premises received the mailed report on three occasions, and approximately 8% of premises with the greatest number of 'linked' incidents received the audit on two occasions. Once again police-recorded alcohol-related incidents associated with licensed premises were the outcomes of interest. The number of such incidents, pre- and postintervention, were compared for the trial area and a comparison area in NSW.

Adoption strategies

The adoption of the Program into routine policing practice involved the implementation of a multistrategic intervention to modify existing NSW Police infrastructure and procedures. The various strategies involved:

- gaining senior police leadership support for enhancement of police prevention of alcohol-related crime in general, and the Alcohol Linking Program in particular,
- modification of statewide police computing systems that mandated the standardised recording of data, and its collation and retrieval,
- face-to-face training of all police regarding the Program rationale and procedures and
- distribution to police of monthly reports regarding performance against agreed data collection and recording benchmarks.

The results demonstrated that up to 34000 incidents of alcohol-related crime occur each year in the trial area. Up to 69% of disorder offences were alcohol-related. In rural areas, police attended an alcohol-related incident approximately every 30 minutes. In urban areas, up to 60% of alcohol-related incidents followed consumption of alcohol on licensed premises. Not all premises were associated with such harm, with 30% of premises contributing to approximately 78% of all incidents associated with licensed premises. In some cases, single premises were associated with up to 190 incidents per year.

Over a three-month period, the number of people in the trial area who consumed alcohol before becoming involved in a police-attended incident decreased by approximately 10%, compared with an increase of 6.7% in the comparison area. Based on these positive outcomes, the Program has subsequently been fully adopted into routine practice by all police in two jurisdictions (NSW Police and New Zealand Police).

Interpretation of the findings described above needs to be considered in the light of the limitations of using agency-collected data. These limitations include issues of consistency of police data recording, and in the case of this program of research, the use of self-report data as the basis for determining the success of the Program. Similarly, the interpretation of findings needs to be considered in the light of the use of a non-equivalent comparison area.

Implications for public health

The outcomes of the Alcohol Linking Program have several implications for the health care system and the community more broadly. First, the findings demonstrate the extent of alcohol-related harm in the community and consequently, the need for a 'whole of community' response directed at its reduction. Second, the findings demonstrate the ability of health and public health practitioners to contribute to such a reduction. Further opportunities for such a contribution include, for example, the implementation of an equivalent surveillance system in emergency departments to identify the need for local community-based alcohol interventions. Public health staff can also contribute to reducing alcohol-related harm by taking a role in monitoring licencee compliance with the *Liquor Act*, as occurs in other jurisdictions, and occurs in NSW with respect to licencee compliance with Smoke Free legislation. Injury prevention, health promotion and drug and alcohol practitioners have the potential to contribute to enhancing the capacity of licencees to serve alcohol responsibly, to further enhancing police capacity and to enhancing community understanding of the need for responsible alcohol consumption more generally.

Acknowledgements

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The NSW Health routine screening for domestic violence program

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Abstract: Routine questioning of women about abuse by their intimate partner has been progressively introduced in NSW in antenatal, early childhood, alcohol and other drug and mental health services since 2001. This was done because of the serious health consequences of domestic violence and the low identification rate of abuse by health services. Following a pilot that found strong support from female patients, this strategy is now well established in NSW public health services. Recent data indicate that approximately 10 000 women a month are asked these questions and that 7.3% of them report experiences of physical abuse or fear caused by their partner or ex-partner within the past 12 months.

Domestic violence is the leading contributor to death, disability and illness in women aged 15–44[1] years and results in health costs of $314 million annually in Australia.[2] Routine screening is a low cost measure that is aimed at the identification and early intervention of domestic violence. It has been introduced for women entering antenatal, early childhood, mental health and drug and alcohol services operated by NSW Health. This paper describes the background and key features of this program, current patterns in disclosures and a recently commenced study on the impact of screening.

Research and policy in support of routine screening for domestic violence by health services emerged in the 1990s. This work was led by the USA. The American Medical Association guidelines on partner violence issued in 1992 stated:
'domestic violence and its medical and psychiatric sequelae are sufficiently prevalent to justify routine screening of all women patients in emergency, paediatric, pre natal and mental health settings'.[3]

The introduction of screening, which comprises universal, systematic questioning of all female patients in selected services, was seen as an appropriate means to enable health services to identify and respond to patients who are experiencing violence.

The NSW Department of Health drew on this literature when it began to develop a statewide domestic violence policy in 1998. Issues identified were the serious health effects of domestic violence and the high use of health services by victims coupled with low identification of the problem by health services.[4] Low identification can lead to missed opportunities to refer victims to appropriate services as well as inappropriate health care responses.

The development of the NSW Health initiative

Following positive staff and stakeholder feedback, the Department piloted screening for domestic abuse by partners in 2000. The pilot took place in one rural and one metropolitan Area Health Service. Review of case files established that screening increased identification of violence. For example, in one of the two Area Health Services where the pilot occurred, a file review of presentations in the participating services revealed that domestic violence was identified in 2% of cases in a one-month period, compared with 13% during the pilot period.[5] In addition, of 586 women who completed post-screening surveys, 97% supported the program.[5]

In 2001, after further development of tools, all Area Health Services were offered training by the NSW Education Centre Against Violence to implement the screening program. In 2003, the NSW Health document *Policy and procedures for identifying and responding to domestic violence*, directed all public antenatal, early childhood health, drug and alcohol and mental health services to introduce screening.[6] The focus on female patients and on partner abuse, as opposed to all forms of family violence, highlights the populations most at risk of serious violence. So too does the selection of these programs, which are those with patient populations among whom prevalence of abuse is either high, the onset of abuse is likely or risk is elevated.

The screening questions are included in the assessment process and built into existing tools such as the Mental Health Outcomes Assessment Tool (MH-OAT). Prior to asking the questions health workers inform patients that all women are asked the same questions, the rationale for

the questions (violence is widespread and affects women's health), that they may choose not to answer and that confidentiality may be limited if serious risk of harm is disclosed.[6]

The questions asked are:
Q1: Within the last year have you been hit, slapped or hurt in other ways by your partner or ex-partner?
and
Q2: Are you frightened of your partner or ex-partner?

If a woman answers 'yes' to either question, follow up questions are asked to determine whether she wants help and whether she is in immediate danger. Screening only occurs if the woman is alone, and is done on subsequent visits if it can't be performed at first presentation.[6]

Dilemmas in introducing routine questioning

Asking women about their experiences of violence where this is not the reason for their presentation creates several ethical issues. These include:
- Should women be warned about reporting requirements that will affect the confidentiality of a disclosure?
- Is it fair to ask women these questions if the health system does not have domestic violence services to respond?
- How can workers assist women who are being abused but who may be too fearful to disclose?
- How can women's safety be protected in this process?

Some strategies for addressing these are:
- the preamble which warns women about limited confidentiality,
- the offer of an information card which contains a 24-hour telephone number and key messages, to all women regardless of their response and
- a policy of screening women alone.

The information card is wallet-sized and discrete. It is intended that by giving the card to all women, primary prevention may also occur.

The design and introduction of the initiative was under-taken in close collaboration with service providers. The provision of staff training, scripted questions, an implementation protocol and the use of short and concrete questions are features designed to facilitate and sustain implementation. The literature supports the importance of these factors in implementing screening. The absence of training,[7] written questionnaires,[8–10] staff time,[7] policies and institutional support[11] and monitoring[12] have all been identified as impediments to maintaining screening for domestic violence.

Monitoring the program

The NSW Health program is currently monitored by an annual one-month snapshot in which all screening sites copy the screening forms, which are retained in the file, and record the numbers screened. These data are collated and analysed by the Primary Health and Community Partnerships Branch in the Department of Health. The decision not to collect continuous data was made to both minimise staff workload, and to retain an emphasis on the strategy as a clinical rather than a data gathering exercise.

In the month for which the most recent data are available (November 2005), a total of 10 090 women were screened.[13] This is an increase of almost 25% from the previous year,[14] and more than double the number screened in 2003.[15] If this figure is consistent for all months, then approximately 120 000 women presenting to NSW Health Services are asked the questions annually.

Antenatal services are the largest service of those participating in the program, comprising 38% of the total women screened, followed by early childhood, mental health and alcohol and other drug services.[13] In addition to the services that were directed by the policy to introduce the questions, several other programs in some Area Health Services have elected to adopt them. These include child health, women's health and sexual health services.

The disclosure rate for domestic violence, defined as a positive answer to either or both of the screening questions, is 7.3%. This figure has remained relatively constant throughout the expansion of the initiative and correlates

Table 1.   NSW Health routine screening for domestic violence program – preliminary results for November 2005

	Number of eligible women who presented	Number screened	% screened	Number who answered 'yes' to Q1 and/or 2	% who answered 'yes' to Q1 and/or 2
Antenatal	4679	3881	83	216	5.6
AOD	906	754	83	238	31.6
ECH	5744	3188	56	73	2.3
Mental health	1577	898	57	119	13.3
Women's health	451	361	80	20	5.5
Additional programs	2933	1008	34	70	6.9
Total	16 290	10 090	62	736	7.3

with the most recent Australian findings that 8% of women have experienced physical abuse within the past year.[16] There are, however, significant differences between the different programs, as shown in Table 1.These differences are consistent with the literature describing domestic violence in these populations.

The most common reason for not screening in NSW Health settings in 2005 was the presence of a partner or other person (60%). Less than 1% of women declined to answer the questions.[13]

Current debates in relation to the strategy

The challenge of maintaining a high screening rate is one of several issues being debated in the literature. Another is whether there is sufficient evidence to justify universal screening. Three systematic reviews question the sufficiency of the evidence to warrant universal screening for domestic violence.[17–19] Because of these findings, several commentators have proposed that case finding, or asking only where there is a high index of suspicion, is preferred to universal screening.[20,21] It is not clear, however, how the evidence supports this alternative approach. There is agreement that the term 'screening' is problematic because systematic questioning about violence is not a highly sensitive tool and the problem it identifies, domestic violence, does not have an agreed effective treatment. It is generally considered by proponents of evidence-based medicine that meeting these two tests is necessary before a new screening test is introduced.[22,23] However, some argue that screening is more than a test, acting as a form of intervention,[24,25] and enables diagnosis and ongoing clinical care of patients.[25, 26]

There also appears to be agreement that further evidence is needed to answer the questions: Does screening reduce abuse? Does it cause harm? What outcomes can be expected?

Impact study

Under a partnership between the University of New South Wales School of Public Health and Community Medicine and the NSW Department of Health, a mixed methods study is being undertaken that follows up women six months after they are screened. The aim is to determine women's perceptions of the impact of screening on the level of abuse being experienced, actions taken as a result of the screening and changes in attitudes towards abuse and health services. The research will also consider whether the screening has any adverse effects. It is intended that as a result of this study greater understanding of the impact of the NSW Health program will be gained. In addition, it should contribute to the evidence on intervening safely in the health system to interrupt domestic violence.

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Leaving violent relationships and avoiding homelessness – providing a choice for women and their children

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Abstract: The report *Staying Home/Leaving Violence* describes a research study that explores how women, leaving a relationship where they experience domestic violence, can remain safely in their own homes with their children, with the violent offender being removed. In this qualitative study, 29 women were interviewed about their experiences of leaving a violent relationship. Of these 29 women, nine remained in their own home. This article describes the factors that enabled these nine women to remain in their homes and comments on the policy and practice implications for health workers.

The literature frequently assumes that leaving a domestic violence relationship requires that women and their children leave the family home. Certainly for many women, leaving their home as a way of leaving the violent relationship is the only option that ensures their safety. This option, however, can be problematic for some women. For a proportion, despite leaving both their relationship and their home, the violence continues[1] or can escalate.[2] Moreover, there are other consequences of leaving the family home, which may result in some women feeling that they have no choice but to remain in, or subsequently return to, a violent relationship.[3] These include homelessness or ongoing housing difficulties,[4,5] poverty,[6] lack of ongoing police assistance to prevent postseparation violence[7,8] and ongoing difficulties with child contact arrangements and Family Court matters.[9] It would seem that notwithstanding the limited successes of public policy initiatives, such as refuges and supported accommodation schemes,[10] and criminal justice responses, such as apprehended violence orders (AVO),[8,11] many women experience a reduced quality of life and sense of well-being after leaving the family home – although they are safer in many instances.

More recently, researchers and practitioners have begun to explore other options that may potentially increase a woman's safety without necessitating her leaving her home. Edwards'[12] study on the use of exclusion provisions in AVOs in NSW is indicative of a move to eliminate violence from the home by excluding the offender rather than the victim(s). This genre of inquiry reorients research questions away from barriers to women leaving their home and towards the possibility of women and their children remaining in the family home while the offender leaves or is assisted to find alternative accommodation. The report *Staying Home/Leaving Violence* comprehensively extends this theme in its presentation of a study conducted by the Australian Domestic and Family Violence Clearinghouse in partnership with the Centre for Gender-Related Violence Studies, UNSW.[13] *Staying Home/Leaving Violence* explicitly focused on how women leaving violent relationships could potentially remain safely in their homes with their children, with the violent partner being removed.

This article presents a summary of aspects of this research and outlines implications for health policy and practice.

The Staying Home/Leaving Violence study

The *Staying Home/Leaving Violence* study is a retrospective qualitative research study that was conducted between October 2002 and December 2003. The geographic areas in NSW chosen for inclusion in the study were the Area Health Services of South Eastern Sydney, Western Sydney and Southern. Fourteen domestic violence services from these areas facilitated the participation of 29 women in face-to-face, in-depth interviews that primarily focused on their experiences of leaving violent relationships. Approval to conduct the research was provided by the Human Research Ethics Committee of the University of NSW.

All participants had left a relationship involving domestic violence and were living in safe situations at the time of interview. Fourteen of the women were from Anglo-

Australian backgrounds, nine from culturally and linguistically diverse backgrounds, five women were Aboriginal and one woman was Maori. The participants were aged between 22 and 63 years (approximately two thirds of the women were aged between 22–39 years). Twenty-seven of the women had a total of 78 children between them, with ages ranging from two months to adulthood. At the time of interview, most women could be described as being of low socio-economic status. Nineteen women were in receipt of a Centrelink pension, benefit or allowance, although many of the women combined this with part-time work or TAFE studies. The 10 remaining participants were in either part or full time paid employment.

Twenty women had long-term (longer than five years) relationships with their violent partner and twenty-two participants had sought some legal protection or had contact with the criminal justice system. On leaving their violent relationship, nine remained in their home and 20 left. The focus of this article is the experiences of the group of nine women who remained. A discussion of the reasons that the other participants left the family home is available in the project report.

Interviews were taped and transcribed in all but four situations, in which detailed notes were taken during the interviews. The data collected were thematically analysed for the participant's experiences, ideas and beliefs about leaving the violent relationship. To ensure that the women's stories are integral to this article, the participant's exact words will be presented in italics.

Factors underpinning women's choices to remain in the home

Three factors were identified that enabled these women to remain in their homes. An additional factor, related to the characteristics of the perpetrator, was critical in some, but not all, cases.

The women had a strong attachment to their home and felt they had a right to remain.

In direct contrast to many of the participants who left home, these women spoke about their attachment to their home; one stated, '*this was my home forever*'. Another echoed this sentiment stating, '*you've got your whole life here*'. The practicalities of leaving were also of concern as suggested by one woman: '*I really need that security…'cause I didn't want to be running around lost*'. Another women's attachment to her home was more pragmatic and related to the needs of her physically disabled son. Her home had been modified and was located near the special school he was attending. To leave the home would jeopardise his well-being.

Closely related to the women's attachment to the home was their sense that they had a right to remain there. In the

words of one, '*you make it your home and he shouldn't be able to force me out*'. Other women commented on the fairness of women being forced to leave. For example, '*I don't believe that a woman has to be chucked out of her own home and she's the one that's the victim, she's the victim*'. Other participants believed that they had been responsible for paying the mortgage or rent and that, therefore, they had paid for their home, '*every hard-working cent*'.

The violent partner was removed by the authorities (police and/or courts) or went voluntarily because he had other housing options

Five partners left voluntarily and four were removed by the police and/or by order of the court (family and local). Where the perpetrator left voluntarily, the woman had been able to 'stand her ground' and force them to leave – often due to her having some leverage such as knowledge of other criminal or antisocial activities, or by demanding that the man repay bond and any other money owed. Men left more readily if they had somewhere or someone else to go to. One woman describes the offender as being relieved not to have to pay her back the bond and leaving their home voluntarily to live in a boarding house where, '*he's just as happy as Larry*'.

Equally, the significance of police removing the violent partner combined with a Telephone Interim Order (with an exclusion condition), and then an AVO (with exclusion condition) cannot be over-emphasised. This process ensures that the violent partner is not only removed from the premises initially but is also kept away from the home. One woman believed that her experience with a proactive officer had been a turning point. Police had attended her home many times and on this final occasion had taken action by arresting her violent partner, taking him away and charging him with assault. Generally the women in this study identified police response as a critical factor in deciding to leave the violence.

While the women had concerns for their safety, they were not overwhelmed by fear, and had developed a range of safety measures to help them feel safer at home

While at least six of the nine women experienced extreme levels of physical violence from their partner, all nine believed that they had made choices or utilised strategies that contributed to an increased sense of empowerment and greater safety. Women identified the importance of (i) using existing criminal justice provisions and personnel, '*taking out an AVO has made me feel secure*'; (ii) making the house more secure and using available technology, '*I really think that it's essential to have a phone on…and also change the locks on your house*'; and (iii) reporting breaches of AVOs and dealing with the offender away from the home for child contact visits, as successful safety strategies.

The importance of developing these strategies is also that they allowed the women to no longer feel paralysed with fear and responsible for the violence. Moreover one participant articulated that developing safety strategies facilitated a shift in the dynamics of power and control, '*I had moved beyond fear*'. It also appeared that the women's emotional attachment to their partner changed significantly. They no longer respected or wanted to be in a relationship with their partner. As one woman stated, '*he spends most of his time at the pub so he may as well live there*'. While further research is required, it did appear that the women's growing empowerment coincided with a deepening dysfunction in their partner's lives. Of the nine ex-partners, only one did not have gambling and/or drug and alcohol problems.[13]

The perpetrator was intimidated by the police and courts and/or felt a duty to abide by legal rulings

An unanticipated finding was the partner's attitude and behaviour towards the law. Many of the 20 women who left their home described how their partners did not respect the police or the courts, disregarded AVOs and were not scared of going to gaol. However, for some but not all of the nine women who remained in their home, the perpetrator was intimidated by the police and the courts and felt a duty to abide by legal rulings. One participant encapsulated the fear this select group of offenders feel in relation to the criminal justice system, describing that her violent partner '*went to jelly*' in court and '*couldn't speak*' when confronted by police and the magistrate. The reaction of these offenders underscores both the importance and potential effectiveness of a coordinated criminal justice response.

Enhancing practice

The following strategies were identified from the findings as pertinent for health and welfare workers to consider in order for them to better assist women and their children to remain safely in their homes:
(1) removal of the violent partner from the home,
(2) keeping the violent partner out of the home over time,
(3) provision of immediate and longer-term safety for the woman and her children (including both physical and psychological well being) and
(4) longer-term support for the woman and children, and prevention of further violence.

The study also recommended several changes in relevant NSW government agencies with the aim of promoting a 'whole of government' policy and practice framework.[13] To further test practices that enabled women to stay in their homes on ending a violent relationship, it was envisaged that pilot service delivery models would be established in the three Area Health Services that participated in the original study. Two pilots have been established in the South Eastern Sydney Area Health Service and Southern Area Health Service. Several other regional areas have plans to establish similar models in their community. The evaluation of the pilot studies will provide information to the government and community sector on innovative responses to domestic violence.

Policy and practice implications for health workers

The recognition of domestic violence as a serious global public health problem by the World Health Organization's report on violence[14] underscores the importance of this issue for health workers. This is consistent with findings in the literature that domestic violence can result in post traumatic stress disorder for victims and children,[15] and other health issues such as depression, anxiety and phobias, suicide attempts, substance abuse, chronic pain syndromes, psychosomatic disorders, physical injury, gastrointestinal disorders, irritable bowel syndrome and a variety of reproductive consequences.[16] Children may suffer several adverse health consequences; for example, child abuse is more likely to occur in families experiencing domestic violence.[17]

The effects of homelessness or diminished life circumstances after leaving the family home compound the possible psychological, social and emotional after-effects of living with domestic violence. Health workers who see women and children at the time of crisis for medical services or for later follow-up in counselling and support services need to be aware that a lack of housing options contributes to a longer term negative impact on women's efforts to establish a safe, secure and appropriate family environment. The findings provide different practice strategies and postseparation choices, which health workers could incorporate into their existing practice and which may enhance the quality of life for women and children who leave a domestic violence relationship.

Conclusion

Enabling women and children to remain in their home also brings several wider social, economic and health benefits to the whole community, such as reducing women's homelessness and potential poverty; keeping children out of the child protection system and with their non-violent parent; minimising the trauma in women and children's lives and holding the perpetrator accountable for the violence. Seen from this perspective, supporting women and their children to remain in their homes is likely to be a cost-effective strategy, but more importantly it is a socially responsible solution that seeks to prioritise victims' needs and improve the health and well-being of women and children.

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Strengthening the effectiveness of 'whole of government' interventions to break the cycle of violence in disadvantaged communities

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Abstract: 'Whole of government' interventions are increasingly being used in disadvantaged communities to improve safety and break the cycle of violence. This paper draws on learning from the evaluation of two whole of government interventions in western Sydney that arose in response to community violence and extensive property damage. Methods for strengthening program logic and overcoming differences in perspective are outlined.

The vision of burning cars, conflicts between police and local residents, and strident calls for increased law and order intervention on talk-back radio remind us that crime, violence, perceptions of a lack of safety and security and marginalisation are the everyday experiences of many socially disadvantaged communities in NSW. While Redfern, Macquarie Fields and Dubbo have recently made the headlines, similar problems have been reported in Claymore, Miller and Bourke and other parts of NSW in the last decade.

The underlying problems of these communities are often endemic and related to a lack of opportunities to fully participate in society.[1] The nature of the problems are well known to residents of the area, local service providers and local government, as well as state and national parliamentarians. Within these communities there is a general acceptance that 'tough on crime' strategies will be only part of action to prevent the conditions in which violence arises. There is general acceptance that a 'whole of government or community' approach is required that increases the visibility of police and access to human services, improves the amenity of local areas and builds the capacity of the local community to identify and work towards solving problems.[2] Because these 'whole of government' approaches can be resource-intensive and challenge organisations to work in new ways, there is increased pressure for evidence of effectiveness before these approaches are mainstreamed into routine ways of working.[3]

This paper is based on learning gained through the evaluation of 'two whole of government' interventions in communities in western Sydney. Both of these interventions arose in response to violent acts within these communities that resulted in injury and extensive property damage. These events mobilised local politicians, government and non-government service providers and citizen groups to come together to work on 'joined up' solutions. There was a wide range of interventions from increased police presence in the area, improvements in lighting and street scapes, outreach and co-location of human services, community development programs and housing improvements.

As evaluators of these programs, we became aware that there was often a 'program logic' gap between what was agreed as the rationale for the intervention, the expected outcomes and the actions undertaken. For example, it is often stated that the active engagement of the community in defining problems and seeking solutions is essential for long-term gains. However, in looking at project documentation and actions it was often unclear how this engagement would occur, especially in a context where timelines and project deliverables needed to be developed with short time frames before the programs had begun.

In their work on realistic evaluation, Pawson and Tilley state that we need to be clear about the overall goals of the intervention(s), the mechanisms or pathways through which they will be achieved, the expected outcomes and the contextual factors that will make this set of interventions unique.[4] As many of these interventions have not been researched and reported in the peer-reviewed literature, the failure to have a clearly articulated program logic adds to the difficulty of building a systematic evidence base of the effectiveness of 'whole of government' programs. Difficulties in developing program logic can be compounded when people are drawn from cross-disciplinary teams and professional groups that have differing views of the most effective approaches to common problems and ways of assessing evidence of effectiveness.

Box 1.   Increasing access to domestic violence support services

Despite a high level of reported domestic violence in the community, few women make use of domestic violence support services provided by a non-government organisation in the main shopping area that is located several kilometres away from the community centre.

The response from an interagency group to addressing this issue may vary according to how each of the participants understands what is meant by a community:

(1) *As a venue*: the focus may be on an outreach service to the community where it will be easier for women to access domestic violence services.

(2) *As a setting*: the focus may be on engaging other groups in the community to promote the service, linking women to other services in the area or providing additional services to meet the needs that women have expressed as high priority, for example, washing facilities.

(3) *As a dynamic system*: the focus may be on the historical relationships between the service and the community and the extent to which the service is seen as being 'imposed' from outside.

Based on our experience in evaluating the impact of 'whole of government' approaches in these communities we have identified two areas where fundamental differences in perspective between partners can occur and, if these are not recognised, make it difficult to develop an agreed program logic. These are: 'what do we mean by community?' and 'what are we trying to change or influence?'.

What is the definition of community that is being shared by those involved?

We have found it useful to think of a community in three ways, as this understanding affects how people think about intervention.

- A venue: a place where interventions can easily reach a large number of people;
- A setting: a defined organisation or structure where it is possible to work with people living and working in the area to achieve a set of agreed goals; and
- A dynamic system: a complex web of structures and relationships, webbed into the external environment, where action requires an internal and external focus that is constantly evolving.[5,6]

Box 1 provides an example of how these different interpretations of community influence responses to an issue.

What are those involved trying to achieve?

We have found that people involved in whole of 'government' initiatives often have difficulty in linking what they are trying to change with what they are doing and what they are expecting to achieve. For example, building a youth centre may be expected to have an impact on school retention rates, vandalism and depression. However, an examination of the strategies to be undertaken and the numbers of young people attending the youth centre suggests that these outcomes are unlikely to be achieved.

One way of unpacking these links in a community context is to decide if the focus of the intervention is:

- The **people** who are living in the community, where the focus is on changing specific individuals' life chances or addressing specific problems, such as getting young people back to school;
- The sense of **place** in the community, which McIntyre describes as the sociocultural and historical characteristics of communities, including shared values, traditions, norms and interests;[7] or
- The **space** within the community, such as the quality of the buildings, physical infrastructure, and natural environment.[8]

Box 2.   Getting young people off the streets

The number of young people wandering aimlessly around the area during the day, making noise and breaking bottles may cause high levels of fear in older residents. The response to this issue will depend on how people see the link between young people on the streets and crime. Those with:

(1) *A focus on people*: may look at why there are so many young people on the streets and work with the schools or local employment groups to increase opportunities for these young people to participate more constructively in the local community.

(2) *A focus on place*: may try and identify if there are any particular people or groups who are being targeted and look for ways of promoting more positive interaction.

(3) *A focus on space*: may define the problem as a need for recreational facilities or improved public transport for young people.

Generally interventions will need to occur at all these levels with action taken within the community and with outside groups who may control resources. However, the importance that each organisation places on each approach may vary. For example, the many local resident groups may stress the importance of a more visible police presence or greater recreational facilities. Youth workers may be interested in developing positive relationships with specific groups who appear to be at greater risk of being marginalised within the community. Local health workers may be concerned about drug and alcohol use. A failure to understand that each group has a different focus and a different way of understanding the priority that should be given to specific actions can often see people working against each other in situations where resources are scarce.

The concepts of 'space' and 'place' are often used interchangeably but their distinction is essential for focussed intervention. While 'space' describes where a location is, 'place' describes what a location is. Place is, therefore, an interpretation of physical space and community and has been linked to constructs of identity, illness and disability.[9] Box 2 provides an illustrative example.

Conclusion

Complex, inter-related problems require complex intervention. Few of us are working in environments where we can undertake extensive planning and review processes when responding to a community crisis that brings with it opportunities for the funding of new programs and ways of working. But we do need to develop an evidence base that demonstrates that what we are doing has the potential to make a difference.

At a practice level this can be done through systematic development of program logic to drive the interventions. Wherever possible this should be informed by the use of research evidence and subjected to rigorous evaluation. This can be facilitated by:

- Building a consensus across several different organisations about what we hope to achieve. This needs to recognise that each organisation will have their own 'core business' which affects how they see the problems and develops priorities for action. For example, some organisations may have a much stronger commitment to promoting access to services as a solution to problems, while others may have a stronger commitment to community development approaches.
- Recognising that the people working across the many organisations involved will be drawn from different disciplines and professional groups and that these backgrounds will inform the ways in which problems and solutions are defined and understood.
- Identifying what is already known about what works by drawing on the experiences of many different disciplines, including criminology, public health, political science, community psychology, sociology, human geography and community development.

- Training workers from a range of organisations and disciplines on evidence of effective action across these disciplines.
- Providing opportunities for reflection on areas where there are high levels of agreement and those where consensus is an ongoing issue.

Grappling with these sometimes difficult but important issues is essential if we are to build a shared and pragmatic evidence base for whole of government approaches in breaking the cycle of violence in disadvantaged communities.

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Bug Breakfast in the *Bulletin*: Human Papilloma Virus

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The Bug Breakfast topic for October was Human Papilloma Virus (HPV). The presenters covered the epidemiology of HPV, the newly introduced HPV vaccine and social and psychological issues relating to HPV vaccination.

Epidemiology of Human Papilloma Virus

HPV is the most prevalent viral sexually transmitted infection (STI) in the world; over 75% of sexually active adults will contract the virus at some stage in their life.[1] While the majority of infections are asymptomatic, a small proportion (1%) of people develop genital warts.[1] Genital HPV infection is also associated with precancerous changes in the cervix, vulva, anus and penis and cancers of the cervix, vagina and penis.[1] Cervical cancer can develop in up to 2% of infected people.[1] Worldwide there are over 30 million HPV cases diagnosed each year; 9.2 million of those (74%) are in the 15–24 year age group.[1] The risk factors for HPV infection include younger age at first sexual intercourse, a history of unprotected sex and other STIs and use of oral contraceptives.[1] High-risk behaviour and cervical biology place adolescents at a high risk of HPV infection.[1] Risk of infection increases substantially with each new partner and condom use is not fully protective. Australian women at an increased risk of contracting cervical cancer include those who are Aboriginal, live in rural and remote areas, are born overseas and who have not participated in cervical cancer screening programs.[2] Persistent infection with high-risk types of HPV is associated with the development of 99.8% of cases of cervical cancer.[1] There are approximately 15 high-risk (persistent and progressive) HPV types, of which HPV 16 and 18 are by far the most common, and these two types are responsible for more than 70% of all diagnosed cervical cancers. In addition, there are approximately 11 low-risk types, of which 6 and 11 are associated with clinical disease such as genital warts.[1]

HPV vaccine

The HPV vaccine was introduced onto the market in August 2006. The vaccine is a quadrivalent recombinant vaccine which protects against HPV types 16, 18, 6 and 11.[3] The vaccine is administered intramuscularly on a three-dose regimen at 0, 2 and 6 months.[3] Vaccine efficacy against these HPV types has been demonstrated in a number of double-blind randomised control trials involving more than 25 000 people in 33 countries. Phase III trials have reported 100% protection against precancerous cervical lesions and genital warts associated with HPV 16, 18, 6 and 11 in women aged 16–26 years naïve for these HPV types.[4] For women who have been exposed to one or more of these HPV types, protection is still afforded against the remaining types.[4] The vaccine is well tolerated and few adverse events have been reported. Swelling or tenderness at the injection site is the most common side-effect. The exact duration of protection is not yet known; however, based on the immunogenicity and four-year efficacy data available, lifelong protection is anticipated.[4] Vaccination will benefit girls and women from pre-adolescence onwards. The best time to vaccinate is before the onset of sexual activity, preferably in early adolescence when the maximum immune response is obtained.[5] Because the vaccine does not prevent infection with all HPV types associated with cervical cancer, regular participation (i.e. once every two years) in the cervical screening program by vaccinated women and adolescent girls is still strongly recommended.[5]

Social and psychological issues in HPV vaccination

Whilst the HPV vaccine has the potential to significantly reduce the health and psychological burden of cervical cancer, its introduction presents a major public health challenge due to the sensitivity and complex nature of the disease. As an STI, HPV has been associated with feelings of stigma, shame and embarrassment.[6] The key vaccine target group is presexually active children (from nine years of age) and the use of STI vaccines among this age group is likely to be contentious. HPV is also a complicated disease and the vaccine does not prevent all HPV types. Knowledge about HPV among both the public and health care providers is low and education is needed. General practitioners report limited knowledge of HPV and express concerns about raising the issue of an STI vaccine with parents.[7] Large population and community-based surveys indicate very low levels of awareness among the general public, with only 2% of Australians aware that HPV causes cervical cancer.[8] Similar findings are reported in the UK (1%) and Europe (3%).

Research shows that Australian parents are generally

supportive of HPV vaccination, with over 70% of those surveyed willing to have both their sons and daughters vaccinated; however, 64% expressed concerns about vaccine safety and a further 4% were concerned about promiscuity.[8] Factors associated with positive parental attitudes to HPV vaccine include: a strong desire to prevent serious illness regardless of the means of acquisition, a recommendation from a health care provider to get the child vaccinated and provision of the vaccine to children at an older age (11–12 years). Adolescents similarly have a high acceptance of the vaccination, with between 74% and 85% indicating they would be vaccinated. Health professionals have also reported a positive response to HPV vaccination with 98% likely to recommend vaccination in scenario-based studies.[9]

Summary

HPV is highly prevalent, with evidence of infection in nearly 80% of sexually active adults. Persistent infection with high-risk types of HPV is strongly associated with the development of cervical cancer. A safe, reliable and highly efficacious quadrivalent vaccine is available which protects against the four types of HPV most commonly associated with cervical cancer and genital warts. Australian parents, adolescents and health professionals appear generally supportive of HPV vaccination. Participation in cervical cancer screening is still required for vaccinated women.

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Mumps

What is mumps?

Mumps is an acute disease caused by the mumps virus. In the past, mumps infection was very common in childhood. Due to immunisation, it has become less common in Australia.

What are the symptoms?

- Common symptoms of mumps are fever, loss of appetite, tiredness and headache, followed by swelling and tenderness of the salivary glands. One or both of the parotid salivary glands are frequently affected (the parotid glands are salivary glands in the bottom of the cheeks near the angle of the jaw). Sometimes other salivary glands are also affected.
- About one third of people who have mumps infection do not show any symptoms at all.
- Mumps is usually a more severe illness in people who become infected after puberty.
- Complications from the mumps are rare but can include inflammation of the brain (encephalitis), the lining of the brain and spinal cord (meningitis), testicles (orchitis), ovaries (oophoritis) and pancreas (pancreatitis). Mumps can also cause spontaneous abortion and hearing loss. Sterility (inability to have children) in males is an extremely rare complication.

How is it spread?

- Mumps is spread when a person breathes in the mumps virus that has been coughed or sneezed into the air by an infectious person. The mumps virus can also spread from person to person via direct contact with infected saliva.
- People with mumps can be infectious up to seven days before and nine days after swelling of the salivary glands begins. Maximum infectiousness occurs between two days before to four days after the onset of symptoms.
- The time from being exposed to the virus and becoming sick can range from 12 to 25 days but is most commonly 16 to 18 days.

Who is at risk?

Anyone who comes into contact with infectious mumps can get mumps, unless they have been infected in the past, or have been immunised with MMR vaccine.

How is it prevented?

- People with mumps should stay at home until the swelling in the salivary glands disappears, or up to nine days after the onset of swelling (whichever is sooner) to help stop spreading the virus to others.
- A vaccine that only protects against mumps is not available in Australia; however, MMR vaccine protects against mumps, measles and rubella and is part of the standard vaccination schedule. MMR vaccine should be given to children at age 12 months and again at four years.
- People born after 1965 should ensure they have received two doses of MMR vaccine.

How is it diagnosed?

The doctor may diagnose mumps based on the person's symptoms and signs alone. A blood test or sample from the throat, urine or spinal cord fluid can confirm the diagnosis.

How is it treated?

There is no specific treatment for mumps. Simple analgesics may reduce pain and fever. Warm or cold packs to the swollen glands may provide relief.

What is the public health response?

- Laboratories, school principals and directors of childcare centres must report all cases of mumps to their local public health unit. These reports provide statistics to help understand trends in the incidence of mumps in the community.
- People with mumps should stay away from childcare, school or work for nine days after the onset of the swelling.

NSW⊕HEALTH

Communicable Diseases Report, New South Wales, for March and April 2007

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.**

Trends

Figure 1 and Tables 1 and 2 show reports of communicable diseases received through to the end of April 2007 in NSW.

Hepatitis A clinic

In March, Sydney South West Public Health Unit (PHU) initiated a large immunoglobulin clinic following identification of a sushi chef who had been working whilst infectious with hepatitis A. Following a media release, over 400 people received immunoglobulin which can prevent the development of hepatitis A if given within 14 days of exposure.

Salmonellosis outbreak

In late March, Sydney South West PHUwas notified of 10 people with gastroenteritis who presented to Concord Hospital. All cases reported eating pork or chicken rolls from a Sydney bakery. NSW Food Authority officers inspected the bakery and issued a prohibition order restricting the sale of pork and chicken rolls. Over 300 people were reported to the PHU with symptoms of salmonellosis (including diarrhoea, abdominal pain and vomiting). Laboratory results identified *Salmonella* Typhimurium phage type 9 in human, food and environmental samples. The source of contamination remains unclear.

HCV investigation

In late February 2007, a doctor notified the South Eastern Sydney and Illawarra PHU that three of his patients had been diagnosed with acute hepatitis C infection. All received parenteral vitamin therapy at his clinic. The patients, all woman in their 40s and 50s, were diagnosed in January 2007, February 2007 and late 2004.

PHU staff interviewed the cases in detail about risks, but no obvious source of infection was identified. All cases had received intramuscular vitamin B, intramuscular magnesium and intravenous vitamin C injections at the clinic.

An investigation was initiated to determine if hepatitis transmission had occurred in the practice, and if so, how, and whether other patients may be at risk. The doctor cooperated with the investigation and agreed to cease all vitamin therapy and venipunctures as a precautionary measure.

Laboratory tests comparing viral strains between patients were initiated. A review of infection control practices and interviews with staff could not identify a specific incident with the potential for transmission. As a precaution, staff training and procedural changes were recommended at the clinic. Investigators began contacting patients who received vitamin injections at the clinic on days when transmission was suspected of having occurred.

Hepatitis C is a viral infection of the liver that is primarily transmitted parenterally. Sexual transmission is rare and more likely when there is contact with blood.[1] In 60–70% of cases, hepatitis C infection is asymptomatic. A total of 20–30% of cases may have jaundice and 10–20% may experience non-specific symptoms such as anorexia, malaise or abdominal pain. Clinical illness occurs on average from six to seven weeks following exposure to the virus. The majority of patients infected with hepatitis C without treatment go on to develop a chronic infection,[2] and studies indicate that cirrhosis may develop in 4–24% of people after 20 years of infection.[3] Recent advances, in combination antiviral treatment, mean that a cure can be effected in up to two thirds of cases, depending on the viral genotype and stage of the infection.[4] There is currently no vaccine for hepatitis C. The investigation continues.

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Figure 1.   Reports of selected communicable diseases, NSW, January 2002 to April 2007, 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.
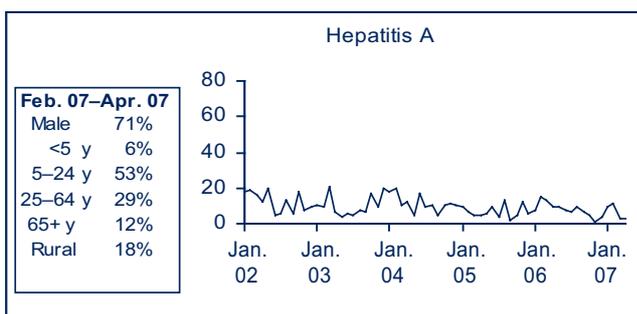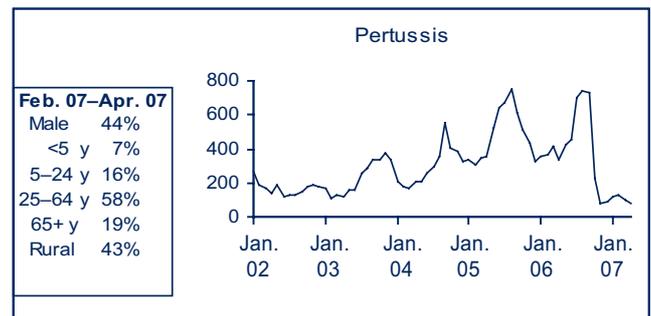
NSW Population	
Male	50%
<5 y	7%
5–24 y	27%
25–64 y	53%
65+ y	13%
Rural	46%

Arbovirus infections
■ BFV □ RRV

Feb. 07–Apr. 07	
Male	48%
<5 y	1%
5–24 y	11%
25–64 y	78%
65+ y	10%
Rural	92%

Legionnaires disease
□ *L. pneumophila* ■ *L. longbeachae*

Feb. 07–Apr. 07	
Male	60%
<5 y	0%
5–24 y	0%
25–64 y	44%
65+ y	56%
Rural	44%

Cryptosporidiosis

Feb. 07–Apr. 07	
Male	54%
<5 y	30%
5–24 y	35%
25–64 y	35%
65+ y	0%
Rural	46%

Measles
■ Measles lab conf □ Measles other

Feb. 07–Apr. 07	
Male	50%
<5 y	50%
5–24 y	0%
25–64 y	50%
65+ y	0%
Rural	100%

Gastroenteritis outbreaks in institutions
cases   - - - outbreaks   outbreaks
—— cases

Feb. 07–Apr. 07	
All outbreaks	44
Nursing homes	16
Hospitals	6
Child care	19
Schools	2
Other	1

Meningococcal disease
■ Men Gp B ■ Men Gp C □ Men other/unk

Feb. 07–Apr. 07	
Male	53%
<5 y	47%
5–24 y	33%
25–64 y	20%
65+ y	0%
Rural	40%

Gonorrhoea

Feb. 07–Apr. 07	
Male	84%
<5 y	0%
5–24 y	24%
25–64 y	76%
65+ y	0%
Rural	16%

Pertussis

Feb. 07–Apr. 07	
Male	44%
<5 y	7%
5–24 y	16%
25–64 y	58%
65+ y	19%
Rural	43%

Hepatitis A

Feb. 07–Apr. 07	
Male	71%
<5 y	6%
5–24 y	53%
25–64 y	29%
65+ y	12%
Rural	18%

Salmonella infections
□ S.Other ■ S.Typhimurium

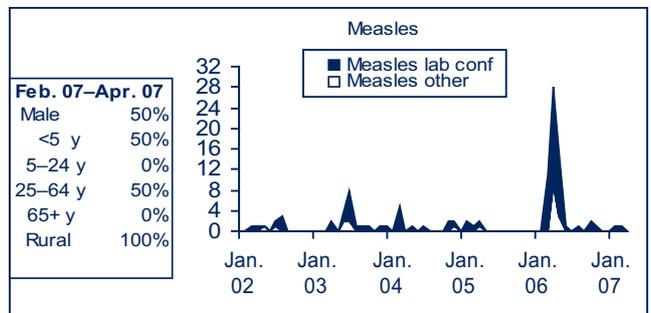| Feb. 07–Apr. 07	
Male	53%
<5 y	20%
5–24 y	30%
25–64 y	42%
65+ y	8%
Rural	37%

Table 1.   Reports of notifiable conditions received in March 2007 by Area Health Services

Condition	Greater Southern GMA	SA	Greater Western FWA	MAC	MWA	Hunter/New England HUN	NEA	North Coast MNC	NRA	Northern Syd/Central Coast CCA	NSA	South Eastern Syd/Illawarra ILL	SES	Sydney South West CSA	SWS	Sydney West WEN	WSA	JHS	Total for Mar+	To date+
Blood-borne and sexually transmitted																				
Chancroid*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Chlamydia (genital)*	40	20	3	13	35	131	41	49	56	70	122	45	190	119	66	30	96	–	1142	3386
Gonorrhoea*	2	–	–	1	2	2	2	–	3	8	10	2	49	20	8	2	5	6	121	401
Hepatitis B – acute viral*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	14
Hepatitis B – other*	3	4	–	1	–	8	5	2	2	1	41	3	28	51	70	2	44	1	266	865
Hepatitis C – acute viral*	–	–	–	2	–	1	–	–	–	1	–	–	1	2	–	–	1	–	8	14
Hepatitis C – other*	12	16	4	9	14	55	15	22	30	28	23	24	43	63	66	24	50	29	533	1594
Hepatitis D – unspecified*	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1	3
Lymphogranuloma venereum	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Syphilis	–	2	–	3	2	5	3	1	2	1	7	6	35	22	9	2	9	1	111	322
Vector-borne																				
Barmah Forest virus*	1	15	1	–	–	17	4	9	7	3	3	3	–	–	–	–	–	–	60	136
Ross River virus*	1	2	2	8	4	10	3	9	10	2	3	3	2	1	–	–	1	–	61	167
Arboviral infection (Other)*	–	–	–	–	–	–	–	1	1	2	2	–	3	1	–	–	1	–	8	26
Malaria*	–	–	–	6	–	4	–	–	–	–	2	–	3	–	–	2	1	–	13	33
Zoonoses																				
Anthrax*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Brucellosis*	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	2	4
Leptospirosis*	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	2	4
Lyssavirus*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Psittacosis*	–	1	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	12
Q fever*	–	–	–	6	–	1	3	3	3	–	–	1	–	–	–	–	–	–	17	61
Respiratory and other																				
Blood lead level*	1	1	1	–	–	9	–	–	–	1	–	1	3	3	–	–	–	–	20	36
Influenza*	–	3	3	–	2	3	–	1	–	4	4	1	7	3	4	6	6	–	48	103
Invasive pneumococcal infection*	3	–	1	–	1	3	1	–	1	1	1	3	3	1	2	–	6	–	28	83
Legionella longbeachae infection*	–	–	–	1	–	1	1	–	1	–	1	2	1	1	1	–	1	–	7	10
Legionella pneumophila infection*	–	1	–	–	–	–	–	–	2	–	–	–	–	–	1	2	2	–	7	23
Legionnaires' disease (Other)*	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	1	1
Leprosy	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Meningococcal infection (invasive)*	–	1	–	1	–	1	–	1	1	2	–	1	1	1	–	1	2	–	11	19
Tuberculosis	–	–	–	–	–	3	–	–	–	4	4	6	6	2	4	–	9	–	32	93
Vaccine-preventable																				
Adverse event after immunisation**	–	–	–	1	–	–	–	–	–	2	–	–	–	–	–	–	–	–	3	8
H.influenzae b infection (invasive)*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Measles	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Mumps*	–	–	–	–	–	–	–	–	1	1	1	1	2	–	–	1	1	–	6	24
Pertussis*	2	3	–	3	2	10	3	4	4	5	13	3	12	8	8	2	13	–	95	358
Rubella*	–	–	–	–	–	1	–	–	–	–	–	–	–	1	–	–	1	–	1	6
Tetanus	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	3
Enteric																				
Botulism	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cholera*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cryptosporidiosis*	1	1	1	–	–	2	1	1	3	4	6	2	2	1	7	1	2	–	29	110
Giardiasis*	5	4	1	3	9	20	8	10	1	4	49	13	34	16	21	5	20	–	224	578
Haemolytic uraemic syndrome	–	–	–	1	–	1	–	–	–	–	–	–	–	1	–	1	1	–	2	4
Hepatitis A*	–	–	–	1	–	–	–	–	–	–	–	1	1	1	–	1	1	–	3	23
Hepatitis E*	–	–	–	–	–	1	–	–	–	–	–	–	1	1	–	–	–	–	2	3
Listeriosis*	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1	–	–	–	2	7
Salmonellosis*	6	5	2	2	4	28	15	11	33	17	43	9	36	22	28	19	41	1	323	840
Shigellosis*	–	–	–	–	–	–	–	–	3	–	1	–	3	2	–	–	–	–	9	16
Typhoid*	–	–	–	–	–	–	–	–	–	1	–	1	1	1	–	–	3	–	6	16
Verotoxin-producing E.coli*	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	1	1	–	2	4
Miscellaneous																				
Creutzfeldt–Jakob disease	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Meningococcal conjunctivitis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*Laboratory-confirmed cases only.   +Includes cases with unknown postcode.   ***HIV and AIDS data are reported separately in the Public Health Bulletin quarterly.   ^ Count contains several months of notifications submitted from a technical study.
N.B.: From 1 Jan. 2005, Hunter/New England AHS also comprises Great Lakes, Gloucester & Greater Taree LGAs; Sydney West also comprises Greater Lithgow LGA.   CCA, Central Coast Area; CHS, Corrections Health Service; CSA, Central Sydney Area; FWA, Far West Area; GMA, Greater Murray Area; HUN, Hunter Area; ILL, Illawarra Area; MAC, Macquarie Area; MNC, North Coast Area; MWA, Mid Western Area; NEA, North England Area; NRA, Northern Rivers Area; NSA, Northern Sydney Area; SA, Southern Area; SES, South Eastern Sydney Area; SWS, South Western Sydney Area; WEN, Wentworth Area; WSA, Western Sydney Area.

Table 2.   Reports of notifiable conditions received in April 2007 by Area Health Services

Condition	Greater Southern GMA	SA	Greater Western FWA	MAC	MWA	Hunter / New England HUN	NEA	North Coast MNC	NRA	Northern Syd / Central Coast CCA	NSA	South Eastern Syd / Illawarra ILL	SES	Sydney South West CSA	SWS	Sydney West WEN	WSA	JHS	Total for Apr.+	To date+
Blood-borne and sexually transmitted																				
Chancroid*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Chlamydia (genital)*	39	14	3	5	20	88	33	35	47	47	78	31	202	93	21	31	88	3	882	4311
Gonorrhoea*	–	–	–	1	–	2	–	2	3	3	16	3	49	17	3	2	9	–	111	529
Hepatitis B – acute viral*	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	2	16
Hepatitis B – other*	2	2	–	2	1	4	–	2	4	4	38	11	42	39	28	10	18	2	212	1090
Hepatitis C – acute viral*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	15
Hepatitis C – other*	12	17	2	7	10	35	9	11	27	23	27	23	64	60	29	12	36	37	445	2069
Hepatitis D – unspecified*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
Lymphogranuloma venereum	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Syphilis	1	–	–	2	–	2	2	1	6	2	2	2	32	12	5	–	12	–	82	399
Vector-borne																				
Barmah Forest virus*	2	41	–	2	1	8	–	11	13	4	–	19	2	1	–	–	–	–	100	237
Ross River virus*	1	6	2	3	2	13	11	25	12	2	3	3	1	1	1	3	–	–	90	258
Arboviral Infection (Other)*	–	1	–	–	–	–	–	–	–	2	3	1	1	1	–	–	–	–	10	36
Malaria*	1	1	–	–	–	–	–	2	–	–	1	–	–	1	–	–	–	–	6	38
Zoonoses																				
Anthrax*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Brucellosis*	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1	4
Leptospirosis*	–	–	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	–	2	6
Lyssavirus*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Psittacosis*	–	–	–	1	–	1	–	–	–	–	–	–	–	–	1	2	–	–	4	16
Q fever*	2	2	–	1	–	2	1	3	4	–	1	1	–	–	–	–	–	–	14	75
Respiratory and other																				
Blood lead level*	1	–	–	–	–	1	–	–	–	1	1	3	1	2	–	–	–	–	10	46
Influenza*	2	2	–	–	2	–	–	3	2	3	2	2	10	–	–	2	12	–	37	142
Invasive pneumococcal infection*	2	–	–	1	–	4	–	1	1	1	4	3	3	1	–	3	1	–	25	109
Legionella longbeachae infection*	–	–	–	–	–	–	1	–	1	–	–	–	3	–	–	–	–	–	3	12
Legionella pneumophila infection*	–	–	–	–	–	1	1	1	1	–	–	1	2	1	1	1	2	–	8	30
Legionnaires' disease (Other)*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Leprosy	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Meningococcal infection (invasive)*	1	1	–	–	–	–	–	–	–	–	1	–	2	–	–	–	1	–	5	23
Tuberculosis	1	–	–	–	–	2	–	–	–	2	2	1	4	–	–	1	4	–	17	113
Vaccine-preventable																				
Adverse event after immunisation**	–	2	–	–	–	1	–	–	–	5	–	–	1	–	–	–	–	–	9	20
H.influenzae b infection (invasive)*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Measles	–	–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	–	–	2	2
Mumps*	–	–	–	–	–	1	–	–	–	–	1	1	2	–	1	–	–	–	5	29
Pertussis	5	5	–	1	–	13	6	3	5	5	7	4	17	3	3	2	14	–	93	454
Rubella*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
Tetanus	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
Enteric																				
Botulism	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cholera*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Cryptosporidiosis*	1	–	–	–	4	1	1	1	1	–	2	–	4	1	4	–	–	–	22	134
Giardiasis*	2	6	1	4	1	20	4	2	2	6	31	6	30	16	5	3	20	–	160	750
Haemolytic uraemic syndrome	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	5
Hepatitis A*	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	2	24
Hepatitis E*	–	–	–	–	–	1	–	–	–	–	–	–	1	1	–	–	–	–	3	5
Listeriosis*	–	–	–	–	–	–	–	–	1	–	–	–	1	1	–	–	–	–	3	10
Salmonellosis*	6	4	–	1	4	25	9	9	22	61	60	11	33	101	45	7	88	–	490	1339
Shigellosis*	–	–	–	–	–	–	–	–	1	–	–	1	2	1	–	–	1	–	6	22
Typhoid*	1	–	–	–	–	–	–	–	–	–	–	–	2	1	–	–	1	–	5	21
Verotoxin-producing E.coli*	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	5
Miscellaneous																				
Creutzfeldt–Jakob disease	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Meningococcal conjunctivitis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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Contents

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