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WOMEN'S HEALTH IN NSW: WHERE TO NOW?

GUEST EDITORIAL

Jeanette Ward
Director, Needs Assessment & Health Outcomes Unit
Division of Population Health
Central Sydney Area Health Service

New South Wales has a proud tradition of innovation and excellence in women's health. When the Leichhardt Women's Health Centre opened in Sydney on 8 March 1974 (International Women's Day), it became the first dedicated women's health centre in Australia.[1] By the end of 1975, two more centres, Liverpool and the Working Women's Centre at Mayfield in Newcastle, had been established. As recommended by the Womens' Health Policy Committee, convened by the NSW Department of Health, NSW then established a Women's Health Unit within the Department in 1985 and appointed regional womens' health coordinators, among other strategic initiatives.[1]

Strategic partnerships with non-government agencies were then pursued by the Women's Health Unit. For example, the NSW Faculty of the Royal Australian College of General Practitioners was awarded funds in 1986 to develop a Course of Advanced Training (CAT) in Womens' Health, which continues.[2] The late 1980s were remarkable for initiatives in women's cancer screening, including the creation of a Screening Evaluation Co-ordination Unit, which facilitated State–Commonwealth dialogue and realised an evidence-based approach to public health policy through strategic research of a scope and significance yet to be matched elsewhere in population health.[3,4] Cost-sharing between the States and the Commonwealth of these and other women's health programs ensured their viability in NSW and other states throughout the 1990s. Evaluations of womens' health nurse practitioners and reviews of tertiary gynaecological and maternity services in NSW set national benchmarks.

Achievements in NSW over these two decades reinforced the philosophy and principles of the National Womens' Health Policy,

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first published in 1989, namely:

1. The social view of health that recognises that:
   - health is determined by a broad range of social, environmental, economic and biological factors;
   - differences in health status and health outcomes are linked to gender, age, socioeconomic status, ethnicity, disability, location and environment;
   - health promotion, disease prevention, equity of access to appropriate and affordable services, and strengthening the primary health care system are necessary, along with high-quality illness treatment services;
   - information, consultation and community development are important elements of the health process.
2. Women's health policy must encompass all of women's lifespan and reflect women's various roles in Australian society, not just their reproductive role.
3. Greater participation by women in decision-making about health services and health policy, as both consumers and providers must be promoted.
4. Women's rights to be treated with dignity in an environment that provides for privacy, informed consent and confidentiality must be recognised.
5. Informed decisions require accessible information that is appropriately targeted for different socio-economic, educational and cultural groups.
6. Accurate data and research concerning women's health, women's views about health and strategies that most effectively address women's health needs are essential as a basis for developing, implementing and evaluating policy .[5]

Yet there is no cause for complacency. The issue of women's health has not entered the mainstream as effectively as it could have.[6] Other global movements, such as health improvement, equity, social capital or quality may well overtake women's health as catalysts for health reform across NSW. As each of these can trace their origins back to the broader social changes of the 1970s from which feminism also developed, it would seem that women's health has little to fear. Or has it?

This first of a two-part series to appear in the *NSW Public Health Bulletin* contains essential reading for those eager to learn the current status of women's health in NSW. Elena Murty summarises new directions in policy development, placing in context the recent *Strategic Framework to Advance the Health of Women*. Pickett describes the work of the Older Women's Network, Moore and Connolly describe the results of an evaluation of a community intervention to raise awareness about domestic violence, Boyce identifies how early intervention strategies could be used to prevent women developing postnatal depression and, finally, Purcell describes the effect of smoking on women's health. The second issue in the series will focus on women's health research.

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NEW WAYS OF THINKING ABOUT WOMEN'S HEALTH

Elena Murty
Senior Policy Analyst, Women's Health
Health Services Policy Branch
NSW Department of Health

The NSW Department of Health has recently released in draft form a *Strategic Framework to Advance the Health of Women*. Developed through an extensive consultation process begun in 1996, it represents the next step in an ongoing commitment to develop and improve the policies and services that support the health of women in NSW. This article describes the rationale supporting the development of the strategy and its principal elements.

BACKGROUND

In June 1996 women comprised 50.2 per cent of the NSW population.[1] They are both major users of health services and providers of a large proportion of formal and informal health care through their participation in the NSW Health workforce and as health carers in the family–private sphere.

The reasons why women become ill, and how they stay healthy, are often different to the experience of men as a result of their differing roles, responsibilities and access to resources. Consequently, gender is increasingly recognised by the health care system as a determinant of health.

Over the past three decades there have been many changes to health services to improve their responsiveness to women's needs and to ensure that they are delivered in an appropriate manner. The National Women's Health Policy (1989),[2] and the implementation of the National Women's Health Program in NSW have helped to reorient health services to be more responsive to the social influences that affect the health and wellbeing of women. Positions such as women's health coordinators have been created, and a comprehensive range of services, such as birth centres and sexual assault units, have been established.

The pattern of illness and health experienced by women is changing. More young women at secondary school smoke than do young men.[3] While breast cancer is the most common form of malignant cancer and the leading cause of cancer-related death in women, lung cancer is the second most common cause of cancer-related death. Indeed, as male death rates from lung cancer decline, female rates continue to rise.[3]

Low socio-economic status is linked with poor health and women are affected disproportionately. For example, in 1996, 57 per cent of women in the workforce aged 15 years and over had a weekly income less than $300 compared to 37 percent of men.[3]

The number of Apprehended Violence Orders is increasing.[4] The report *Women's Safety Australia 1996* estimated that, of women aged 15 years and over, 2.2 million had suffered physical violence and 1.2 million had suffered sexual violence.[5,6] Violence directed towards pregnant women is associated with higher maternal rates of depression, suicide attempts, and tobacco, alcohol and illicit drug use.[7]

KEY POLICIES IN WOMEN'S HEALTH

Several policies of the past decade have informed current policy and practice.

The National Women's Health Policy (1989)

This policy identified seven priority health issues and five key action areas. The priority health issues were:

- reproductive health and sexuality
- health of ageing women
- emotional and mental health
- violence against women
- occupational health and safety
- health needs of carers
- health effects of sex role stereotyping on women.

The key action areas were:

- improving health services for women
- providing health information for women
- researching and collecting data on the health of women
- ensuring women's participation in decision-making about health
- training health care providers.

The National Women's Health Program

An initiative managed by the Commonwealth Department of Human Services and Aged Care, who provided funds to the NSW Department of Health to support the implementation of the National Women's Health Policy on a 50:50 cost-shared basis. These program funds have been instrumental in establishing comprehensive women's health services across NSW to address the priorities and key action areas identified within the policy. Positions for women's health coordinators were established in each Area Health Service. They have become agents for change, influencing mainstream health services to adopt practices congruent with the National Women's Health Policy. There have been many achievements: for example, the program has been influential in improving access to health services for marginalised women, particularly women from non-English speaking backgrounds, rural women and Aboriginal and Torres Strait Islander women; and the participation by women on key committees in Area Health Services has increased.

Women's Health in NSW: A Guide to Health Improvement for Women 1998–2003

The development and release of this discussion paper identified broad strategic directions for improving the health of women in NSW.[8] This document, which incorporates a social view of health, addresses the health issues of women with the greatest need and takes a health outcomes approach.

NSW Strategic Directions for Health 1998–2003

This strategy identifies the four principal goals for the NSW health system: healthier people, fairer access, quality health care and better value.[9]

THE STRATEGIC FRAMEWORK TO ADVANCE THE HEALTH OF WOMEN

The goal of this strategic framework is 'to improve the health and well-being of all women, with a focus on those most at risk, and to encourage the health system to be more responsive to the needs of women'.[10] It promotes a social view of health, which recognises the links between social experiences, position within society, and health status. The strategy directs mainstream and women-specific health services to work to reduce the inequalities in health between men and women, and also between groups of women. The key elements of the framework are:

Women's health is the business of every health worker

Advancing the health of women is a responsibility shared

by all health workers and is not just the responsibility of women's health workers.

Reducing inequalities between men and women

Women and men differ in their roles and responsibilities and in their access to resources, including social and economic resources. These factors affect the health of women. The strategy acknowledges that the health system often reinforces these inequities.

Reducing inequalities in health between women

Not all women have the same opportunities for health. While maintaining a commitment to continue to improve the health of all women, the strategy will target groups of women who evidence suggests tend to have poorer health outcomes than other women. This includes groups such as:

- Aboriginal and Torres Straight Islander women
- women of non-English speaking background
- women with disabilities
- women of low socio-economic status
- women carers
- older women
- young women
- rural women.

The strategic framework will encourage health services to:

- identify groups of disadvantaged women and those with the poorest health outcomes
- target services and programs to address their particular health issues
- identify and address gaps in service provision.

FOUR KEY STRATEGIC DIRECTIONS

The strategic framework promotes:

Incorporating a gendered approach to health

The term 'gender' refers to certain roles, characteristics, responsibilities and expectations that our society ascribes on the basis of being female or male. The framework recognises that gender leads to different social, economic and political opportunities for women and men. These inequalities can create, maintain or exacerbate exposure to risk factors that endanger health. In order to identify and act on inequalities that arise from gender, the adoption of a gendered approach to health is required.

Service and policy development activities need to incorporate a gendered approach, and identify and evaluate their potential effects on women and men. In 2000, the NSW Department of Health will be releasing the Gender Equity in Health policy and gender equity checklists for policy and frontline service staff to assist in this process.

Working in collaboration with others to address the social determinants of health

In the past, health programs and policies tended to emphasise the biological aspects of health care, focusing on the bio-medical models of diagnosis, treatment and prevention of an individual's ill health. They often neglected other factors, such as the social and the economic, that affect the health of women.

The way forward in women's health requires a commitment to address a much broader range of factors influencing the health of women. To do this effectively, the NSW health system will need to work collaboratively with women in the community, other government departments, non-government agencies, advocacy groups, general practitioners and the private sector. This intersectoral collaboration will improve the capacity of the health system to maximise health outcomes for women and to develop measures reflecting social determinants that affect health outcomes for women.

Advancing research on women's health experience and morbidity

The health needs of women need to be represented adequately on the health research agenda. Research topics that are undertaken in epidemiological and clinical research areas have been criticised for not being equally relevant to both sexes and women not always being included in appropriate numbers among the subjects of research.

The challenge is to understand all health issues through a gender analysis. Research is needed to examine the way in which gender affects a wide range of priority public health issues, such as cardiovascular disease, smoking and mental health. Such research is necessary to determine the critical health issues for women and the effect of gender on health outcomes.

Applying a health outcomes approach to women's health

The Strategic Framework recognises that developing a health outcomes approach means that health services will need to measure a range of indicators, including social, economic and biological, to improve the health of women and, in particular, disadvantaged women.

Developing indicators that can adequately report on women's health outcomes is an important strategic direction to advance the provision of services to women.

GUIDING PRINCIPLES

The following principles underpin the development and implementation of the strategic framework:

- adopting a social view of health
- empowerment
- supporting primary health care principles
- recognising lifespan roles of women
- intersectoral partnerships
- participation of women in decision-making
- accessibility of services.

CONCLUSION

Health services need to continually adapt to the changing conditions that influence the health of women. From 1999, the NSW Department of Health will fund projects and programs that will contribute to implementing the *Strategic Framework to Advance the Health of Women* across the health system.

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Copies of the draft *Strategic Framework to Advance the Health of Women* can be obtained from Elena Murty by phone (02) 9391 9587, by fax (02) 9391 9615, or by email emurt@doh.health.nsw.gov.au

OLDER WOMEN'S WELLNESS

Mary-Kate Pickett
Policy Analyst, Women's Health
Health Services Policy Branch
NSW Department of Health

The stereotyped public image of older women is one of dependence and poor health. The reality is that older women are more often caring for a partner, spouse, neighbour or family member. Therefore, older women have an important role in providing support services in the community.[1] This article describes the work of the Older Women's Network to promote the wellbeing of older women.

Older women represent the majority within our ageing population. Gender as well as social, biological and economic factors have a profound effect on how people age and what options are available to them. Most older women experience disadvantages that have significant effects on their later years. These include:

- older women report higher levels of chronic conditions than men
- a majority of older women live on low incomes and have few assets
- fewer older women than men are employed
- older women are less likely to own their own accommodation
- more older women live in social and/or rural isolation.[2]

The Older Women's Network (OWN) is a community-based national organisation committed to promoting the rights, dignity and wellbeing of older women. The organisation has a strong advocacy role, promotes a positive image of older women, and provides and disseminates information for and about older women.

OWN has been developing and promoting a wellness model for older women since 1995. The model involves older women identifying their health needs and, in response, designing and implementing programs and activities that are managed and delivered by older women. The model focuses on diversity, consultation and the importance of older women as facilitators and role models.[3]

Centres in Bankstown and North Sydney have received funding from various sources, including the NSW Department of Health, to support a wide range of wellness activities. An important aspect of these centres, and the wellness model, is to reduce social isolation by recognising the important role that older women have in the community.

In July 1999, a statewide forum was held at Sydney University to discuss models of wellness and to explore

the sustainability of older women's wellness initiatives. The forum was a collaborative project of the Department of Ageing and Disability, NSW Department of Health, Department for Women, OWN and the Benevolent Society for the International Year of Older Persons. Projects showcased at the forum included those operating in a remote rural community in the New England area and partnership models between groups of older women and local councils or community health services. A key component of successful wellness initiatives is ownership of the project by older women.

As part of the NSW Healthy Ageing Framework, funding from the National Women's Health Program has been allocated to two projects to promote older women's wellness. The Rural Women's Network has received funding to implement a multimedia campaign for rural older women, with particular emphasis on women in remote areas. OWN has received funding to build on the outcomes of the Older Women's Wellness Forum and to promote older women's wellness models.

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FROM COMMUNITY ATTITUDES TO COMMUNITY ACTION: OPPOSING DOMESTIC VIOLENCE

Margo Moore
Women's Health Coordinator
Division of Population Health
South Western Sydney Area Health Service

Anne Connolly
Women's Health Coordinator
Division of Population Health
Central Sydney Area Health Service

This article reports on the results of a survey to evaluate the effectiveness of an intervention to raise awareness about domestic violence within four community groups: Arabic, Tongan, Vietnamese and Chinese, in the South Western and Central Sydney Area.

The 1996 Women's Safety Australia survey, conducted by the Australian Bureau of Statistics, established a population prevalence of domestic violence for Australian women.[1] Of women who had ever been married or lived in a de facto relationship, 22.5 per cent had experienced violence by a partner at some time during the relationship. Sixty-one percent of women who experienced violence by a current partner reported having children in their care and 36 per cent reported that their children had witnessed the violence.

The high prevalence of domestic violence occurs alongside a high tolerance to domestic violence within the Australian community. A survey of community attitudes to domestic violence by the Office of the Status of Women in 1995 found that 18 per cent of Australians believe there are circumstances in which domestic violence is acceptable.[2] Despite what is now known about the prevalence of and attitudes to domestic violence in the general community, less is known about attitudes to domestic violence in specific cultural groups in Australia.

A recent study measured attitudes to domestic violence in Arabic, Tongan, Vietnamese and Chinese community groups before and after implementation of a community-based intervention to change attitudes towards, as well as raise awareness about, domestic violence.[3] The study compared differences between the four groups and the results of the 1995 national survey on attitudes to domestic violence in the Australian community.

The results showed significant differences in attitudes to domestic violence between the four cultural groups and the larger Australian community. Pre-intervention respondents in the four groups were less informed about domestic violence and had less serious perceptions of the types of violence that occur. Following a media campaign and a number of community events, the second survey showed significant changes in attitudes and awareness about domestic violence. This result was more pronounced in the new arrival groups. In the pre-intervention survey, domestic violence was more commonly seen as an issue to be dealt with by the family, an attitude that changed significantly after the intervention. After the campaign and community events, people were more likely to identify domestic violence as an issue, and were more likely to rate the types of domestic violence as serious. In the post-intervention survey, 77 per cent of respondents rated domestic violence as a crime, compared to 63 per cent in the pre-intervention survey.

Successful strategies to address domestic violence involve intersectoral responses by the police, legal, community and government agencies. However, most non-English

speaking background community groups have not been involved in these coordinated responses to domestic violence.This research established the need to work with specific cultural groups to address domestic violence. It successfully challenged the tolerance to domestic violence and showed that community involvement is crucial in designing culture-specific interventions. The study aimed to strengthen existing community capacity to address domestic violence within each community group by building on existing networks. The project was a balanced approach to providing communities with information and skills about how to respond to domestic violence and recognising and building on existing community strengths.

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SMOKING AND WOMEN

Kate Purcell
Principal Policy Officer
Public Health Legislation Project
NSW Department of Health

This article provides an overview of the effect of smoking on women and how health services can support women to quit.

For almost 60 years, until the recent restrictions on advertising, women have been exposed to images of smoking in a variety of media, including billboard advertisements, movies and women's magazines. Tobacco company documents confirm that the industry has spent large sums of money positioning smoking as a gateway to glamour, beauty, independence, a slim body, success and romance. In Australia, the industry aggressively marketed brands designed to appeal to teenage girls and young women.

In 1992, just over 5,000 Australian women died from tobacco-related illness (more than one woman every two hours), and lung cancer is second only to breast cancer as the most common cause of cancer deaths among women. Recent research indicates that women who smoke at the same level as men have a higher risk of developing lung cancer than men.[1] Other research suggests that the younger people are when they take up smoking, the greater their chance of developing cancer later in life because early smoking appears to cause greater damage to DNA.[2]

Like men, women who smoke are likely to die of lung and other cancers, heart disease, stroke and respiratory diseases. In addition, women also experience gender-specific problems and additional health risks. These include:

- *Menstrual problems and reduced fertility*
  Women who smoke more than 20 cigarettes a day are three times more likely than non-smokers to take more than a year to conceive and have a greater risk of ectopic pregnancy and miscarriage.[3]
- *Increased risk of cancer of the cervix and vulva*
  It has been estimated that 19 per cent of cervical cancer and 40 per cent of vulvar cancer is caused by smoking.[4]
- *Increased risk of osteoporosis*
  For women who smoke 20 cigarettes a day through adulthood, bone density will have reduced by five to 10 per cent by the time they reach menopause.[4]
- *Prenatal problems*
  Smoking women experience complications in pregnancy and labour, including a greater risk of miscarriage, premature labour and low-birth-weight babies.[4]
- *Postnatal problems*
  Children of smoking mothers are at increased risk of SIDS and childhood asthma.[4]
- *Heart disease and stroke*
  Women who use oral contraceptives and who smoke have a tenfold increase in risk of heart disease and stroke compared to non-smokers.[5]

Health professionals have an important role in providing information and in encouraging and supporting women in their attempts to quit smoking. About 180,000 Australians quit smoking each year and, for most smokers, successful quitting usually takes a number of attempts.

After quitting, the body can rid itself of nicotine and carbon monoxide within a few hours and nicotine by-products within a few days. Blood flow to the limbs improves within two months, and the lungs clean

themselves within three months.[6] If a woman gives up smoking by the 16th week of pregnancy, her risk of delivering a low-weight baby is similar to that of a non-smoker.[7]

The fear of gaining weight is often mentioned as an important issue for women smokers. In one survey, 25 per cent of women stated that a fear of gaining weight was a major factor discouraging them from quitting (twice the proportion of men).[4] Weight gain may occur after quitting because of the absence of nicotine, which suppresses appetite and increases a person's metabolic rate. However, only 14 per cent of both male and female quitters report weight gain as a disadvantage once they have stopped smoking.[4] Other research indicates that the average weight gain is about 2.3 kg.[7]

Cessation advice for women should address their specific concerns. For some women, this may involve providing advice on making their home smoke-free and reducing exposure of children to passive smoking. For those who smoke 10 or more cigarettes a day, nicotine replacement therapy doubles a smoker's chance of a successful attempt to quit. Some women may seek advice and support during pregnancy, while many others, especially those concerned about gaining weight, could benefit from complementary advice about nutrition, exercise and stress management as part of a smoking cessation intervention.

Advice on quitting smoking is available from the Quitline on 131 848 or the NSW Quit Campaign on 9818 0450.

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POSTNATAL DEPRESSION

Professor Philip Boyce
Area Director of Mental Health
Wentworth Area Health Service

Up to 15 per cent of women suffer from an episode of depression in the first six months following childbirth.[1] Postnatal depression is no different symptomatically from depression that arises at other times in the life cycle; its uniqueness and importance lies in its close association with childbirth and the predicability of it emerging after childbirth.[2]

The causes of postnatal depression are predominantly psychosocial, with little evidence to support a hormonal cause.[1] The physiological and emotional stresses associated with childbirth, and the role and identity changes a woman experiences along with the stress associated with caring for a new infant, act as the precipitant to depression among vulnerable individuals.

The key risk factors for women are: poor social support, particularly lack of emotional and, to a lesser extent, practical support from partners in caring for their babies;[3] lack of other sources of practical support; having an anxious personality; and obstetric factors such as early discharge from hospital,[4] a traumatic delivery or caesarean section.[5]

Recent research has found that postnatal depression has a profound impact on the healthy development of an infant. Infants of mothers suffering from postnatal depression may have impaired cognitive development and difficulty in forming attachments. The long-term sequelae of such developmental difficulties have not been researched; however, it is speculated that they contribute to the development of such common psychiatric disorders as depression, anxiety, and drug and alcohol problems. Postnatal depression may also be the first episode in a life-long pattern of recurrent depression for some women, and early intervention may prevent this from occurring.

Finally, postnatal depression may also have adverse consequences for the woman's relationship with her partner, leading to relationship breakdown and all its attendant social consequences.

These detrimental outcomes of postnatal depression highlight the importance for early recognition and treatment of the disorder. It is now well recognised that the majority of instances of postnatal depression are not diagnosed or treated. One method of increasing the recognition of postnatal depression is to use a screening tool for the disorder. A proposed tool, the Edinburgh Postnatal Depression Scale,[6] has been developed to be used for such screening. This user-friendly, 10-item scale can be completed by a woman in a few minutes. A score of 12 or more suggests a high probability that a woman is suffering from major depression. In an Australian study, we found that women who scored greater than 12 met diagnostic criteria for major depression (sensitivity = 100 per cent, specificity = 95.7 per cent, positive predictive value = 0.69, likelihood ratio = 23.1).[7] Such a screening tool could be used routinely in early childhood clinics or when a woman attends her postnatal check-up at six to eight weeks postpartum. While women at high risk of developing postnatal depression may be targeted (for example, those lacking social support) screening in all populations is appropriate.

Although many women with postnatal depression will respond to specific but simple counselling in a primary health care setting,[8] some may need to be referred to specialist mental health services, particularly when the depression is complex or there is risk to the infant. Consequently, screening needs to be supported by appropriate referral for treatment.

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Submission of articles

Articles, news and comments should be 1000 words or less in length and include a summary of the key points to be made in the first paragraph. References should be set out in the Vancouver style, described in the *New England Journal of Medicine*, 1997; 336: 309–315. Send submitted articles on paper and in electronic form, either on disc (Word for Windows is preferred), or by email. The article must be accompanied by a letter signed by all authors. Full instructions for authors are available on request from the editor.

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INFECTIOUS DISEASES, NSW: NOVEMBER 1999

TRENDS

History made: measles transmission interrupted in NSW!

September 1999 was the first month since 1991, when the new Public Health Act's enhanced notification requirements began, that there were no reports of measles in NSW. (It is also most likely that this is the first month since colonial times that measles has not occurred in this state.) Indeed, the last laboratory-confirmed case was reported in July (two unconfirmed cases were reported in August). These data indicate that transmission of measles may have been interrupted for the first time in NSW.

Epidemics of measles tend to occur every three to five years. The last outbreak in NSW was in 1994 (Figure 1). It is likely that the next expected epidemic has been averted through a combination of the Australia-wide 1998 Measles Control Program,[1] and the increasing immunisation rates in the community.

The interruption of local transmission is a remarkable achievement, and those parents, clinicians, public health workers, school staff and—most importantly—children whose hard work helped bring this about deserve enormous thanks. While we will certainly see measles cases again soon (since it is still common around the world), this has demonstrated that measles eradication is possible provided we remain vigilant in:

- maximising immunisation of susceptible people
- ensuring all suspected cases are promptly reported to the local public health unit to enable the implementation of immediate control measures
- seeking (with the patient's consent) laboratory-confirmation of all suspected cases.

Re-emergence of pertussis?

In recent months, there has been a moderate increase in notifications of pertussis in some parts of the state, most notably in the Mid Western NSW and Hunter areas. While the number of cases reported for August (123) was well below the peaks reported in the last outbreak in late 1997 (more than 700 cases per month—see Figure 1), these data suggest that a resurgence of the illness may be on the way. Clinicians should check carefully that all children are up to date with their immunisations and consider the diagnosis in all patients with a prolonged coughing illness.

Reference

1. NSW Department of Health. The 1998 Measles Control Campaign. *NSW Public Health Bulletin* 1999; 10: 89–92.

NSW INFLUENZA SURVEILLANCE ACTIVITY UPDATE

Summary

In this final report for the 1999 influenza season, influenza activity continues it's downward trend. In August, reports of influenza A declined sharply, while influenza B emerged as the dominant strain. The number of cases of influenza B continued to fluctuate following a small peak in mid August. The influenza season arrived earlier in 1999 than in the previous few years, but did not exceed the peaks achieved in recent years.

Clinical activity

Figure 2 shows that the rate of reported influenza-like illness peaked in July and again in August. However, neither peak reached the levels achieved in 1997 and 1998. Reported activity decreased steadily during October to levels seen outside the influenza season. Reports were received this year from more than 30 sentinel general practitioners in four Public Health Units, including more than 3,500 consultations per week. This source of data may include illness due to causes other than influenza.

Virological activity

The laboratory reporting rate for influenza A continued at a low level during September, while influenza B decreased from a moderate peak to a low level (Figure 3). In the last week of September, five cases of influenza A (two virological, three serological), five cases of influenza B (all virological) and 20 cases of respiratory syncytical virus were reported. In the same week last year, there were no cases of influenza A or B and 17 of respiratory syncytical virus. This source of data tends to include a high proportion of hospitalised patients, particularly children, and may not accurately reflect the effect of influenza on other sections of the community.

Directed virological surveillance

The data over recent weeks showed a trend consistent with the other data sources discussed above. The number of samples submitted from patients with influenza-like illness decreased markedly, mirroring the decline in clinical activity Figure 2. The isolation rate for influenza A remained low during September, while the rate for influenza B decreased. Approximately 30 sentinel general practitioners participated in the scheme this year from Central Sydney, South Eastern Sydney, Western Sydney, Wentworth, Central Coast, Hunter, Illawarra, Greater Murray and Southern Areas.

International surveillance

There were no reports of influenza activity for September.

CLARIFICATION

In the August edition of the *NSW Public Health Bulletin*, (Volume 10, Number 8, p.108) it was noted there would be a change to the Bulletin's production schedule. Some readers may have been left with the impression that the timeliness of each issue was affected by delays in receiving infectious disease reports. This was not the intention of the Bulletin and we apologise for any misconception.

FIGURE 1

REPORTS OF SELECTED INFECTIOUS DISEASES, NSW, JANUARY 1994 TO SEPTEMBER 1999, BY MONTH OF ONSET

These are preliminary data: case counts in recent months may increase because of reporting delays

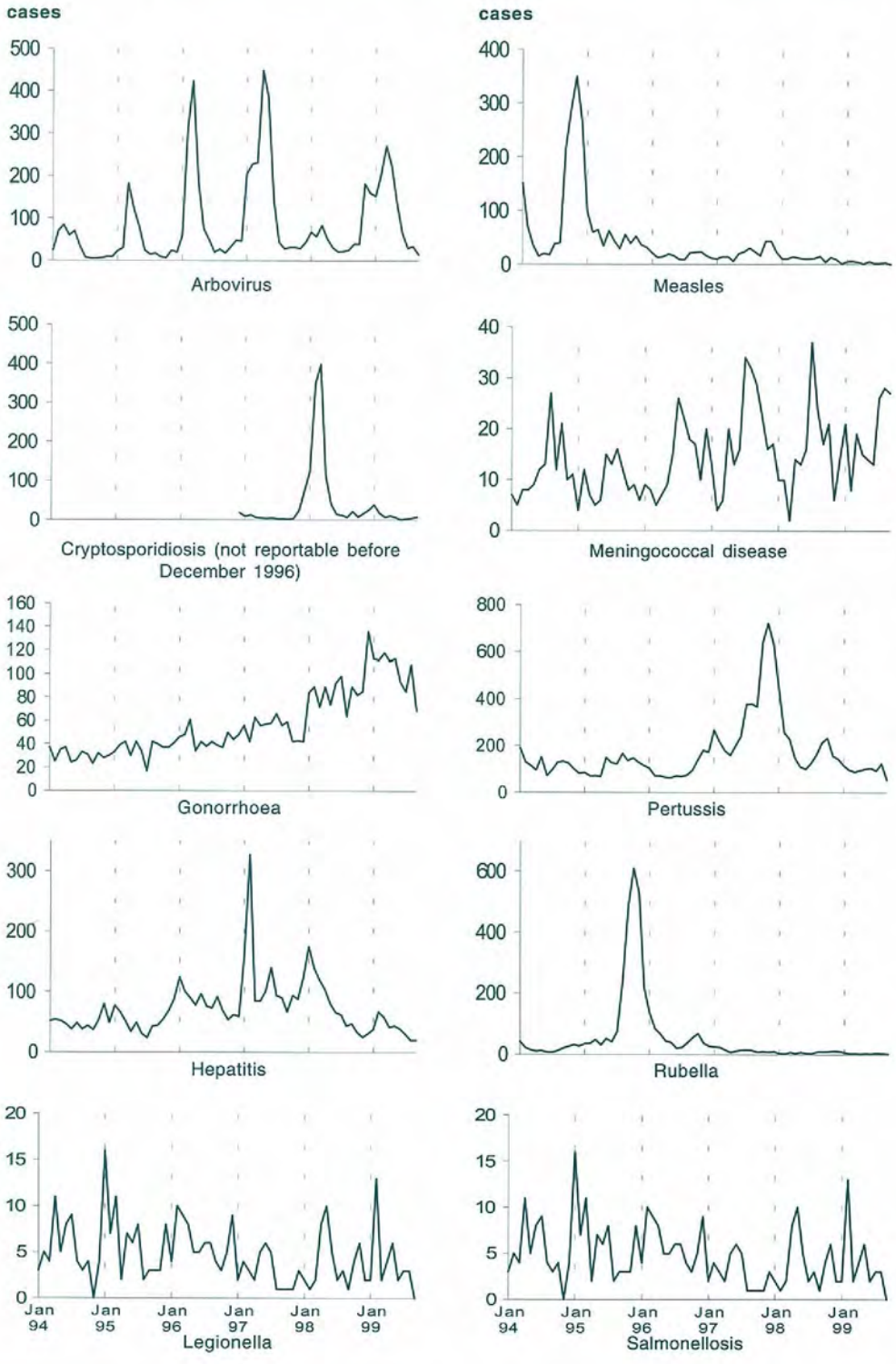


TABLE 1 REPORTS OF NOTIFIABLE CONDITIONS RECEIVED IN SEPTEMBER 1999 BY AREA HEALTH SERVICES

Condition	Area Health Service (1999)																	Total	
	CSA	NSA	WSA	WEN	SWS	CCA	HUN	ILL	SES	NRA	MNC	NEA	MAC	MWA	FWA	GMA	SA	for Sep†	To date†
Blood-borne and sexually transmitted																			
AIDS	4	3	–	–	–	3	–	–	2	–	–	–	–	–	–	–	–	15	109
HIV infection*	2	–	1	–	–	2	–	–	2	–	–	–	–	–	–	–	–	28	279
Hepatitis B: acute viral*	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	2	46
Hepatitis B: other*	48	34	3	6	3	5	11	3	39	5	–	3	1	–	1	4	4	170	2,452
Hepatitis C: acute viral*	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	2	39
Hepatitis C: other*	65	47	43	20	3	54	78	12	95	39	22	12	8	42	1	16	20	582	5,927
Hepatitis D: unspecified*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10
Hepatitis, acute viral (not otherwise specified)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Chancroid*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Chlamydia (genital)*	15	11	7	7	5	8	23	5	46	17	8	19	2	7	1	10	1	193	1,746
Gonorrhoea*	12	16	5	2	4	1	3	1	59	1	–	1	1	2	–	–	1	111	984
Syphilis	10	2	2	–	2	2	2	2	20	–	4	2	–	4	–	–	–	54	495
Vector-borne																			
Arboviral infection (BFV)*	–	–	–	–	–	1	1	–	–	3	2	1	–	–	–	3	–	11	219
Arboviral infection (RRV)*	–	–	–	–	1	–	3	1	1	1	5	–	2	–	–	1	–	15	1,021
Arboviral infection (Other)*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	15
Malaria*	2	5	–	–	2	–	1	–	–	1	–	–	–	–	–	–	–	11	150
Zoonoses	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–			
Brucellosis*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
Leptospirosis*	–	–	–	–	–	–	–	–	–	3	–	–	–	–	–	–	–	3	37
Q fever*	–	–	–	–	–	–	–	–	–	2	2	4	1	1	–	–	–	10	111
Respiratory and other																			
Blood lead level*	4	9	–	1	7	4	10	1	–	3	2	–	–	–	–	1	–	42	512
Legionnaires' Longbeachae*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	11
Legionnaires' Pneumophila*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	20
Legionnaires' (Other)*	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1	6
Leprosy	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1	1
Meningococcal infection (invasive)	3	4	3	3	–	–	2	–	5	1	1	–	–	1	–	–	1	26	168
Mycobacterial tuberculosis	8	8	–	–	1	1	–	2	7	–	–	–	1	1	–	1	1	31	309
Mycobacteria other than TB	6	9	–	–	–	1	–	3	2	2	2	–	–	–	–	–	2	27	298
Vaccine-preventable																			
Adverse event after immunisation	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	21
H. influenzae b infection (invasive)*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9
Measles	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1	28
Mumps*	–	–	–	–	1	–	–	–	1	–	1	–	–	–	–	–	–	3	21
Pertussis	9	24	10	3	14	2	24	2	13	–	3	2	2	26	–	3	6	145	988
Rubella*	–	1	–	1	–	–	–	–	1	–	–	–	–	–	–	–	–	3	31
Tetanus	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Faecal-oral																			
Botulism	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cholera*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
Cryptosporidiosis*	–	–	–	1	–	–	–	–	4	1	–	1	–	–	–	1	–	8	112
Giardiasis*	3	11	4	6	–	3	3	1	9	4	1	3	–	4	1	2	–	55	870
Food-borne illness (not otherwise specified)	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	25
Gastroenteritis (in an institution)	–	–	–	10	–	–	7	–	–	–	–	–	–	–	–	–	–	17	299
Haemolytic uraemic syndrome	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	9
Hepatitis A*	5	4	5	–	6	4	–	–	3	–	–	–	–	–	–	–	–	27	368
Hepatitis E*	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	6
Listeriosis*	–	–	–	2	–	–	–	–	2	–	–	–	–	1	–	–	–	5	16
Salmonellosis (not otherwise specified)*	5	6	6	4	4	2	5	1	6	6	5	5	1	2	–	5	2	67	1,181
Typhoid and paratyphoid*	–	1	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	2	23
Verotoxin producing *E. coli**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

* lab-confirmed cases only

† includes cases with unknown postcode

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

FIGURE 2

NSW GP SENTINEL SURVEILLANCE—INFLUENZA-LIKE ILLNESS, BY WEEK OF CONSULTATION, WITH HISTORICAL COMPARISONS

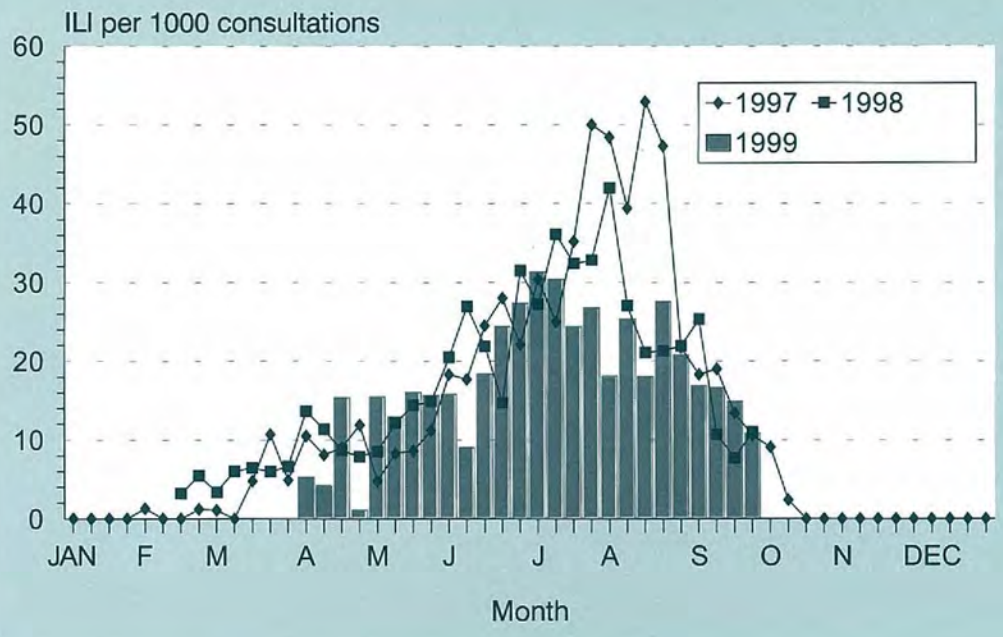
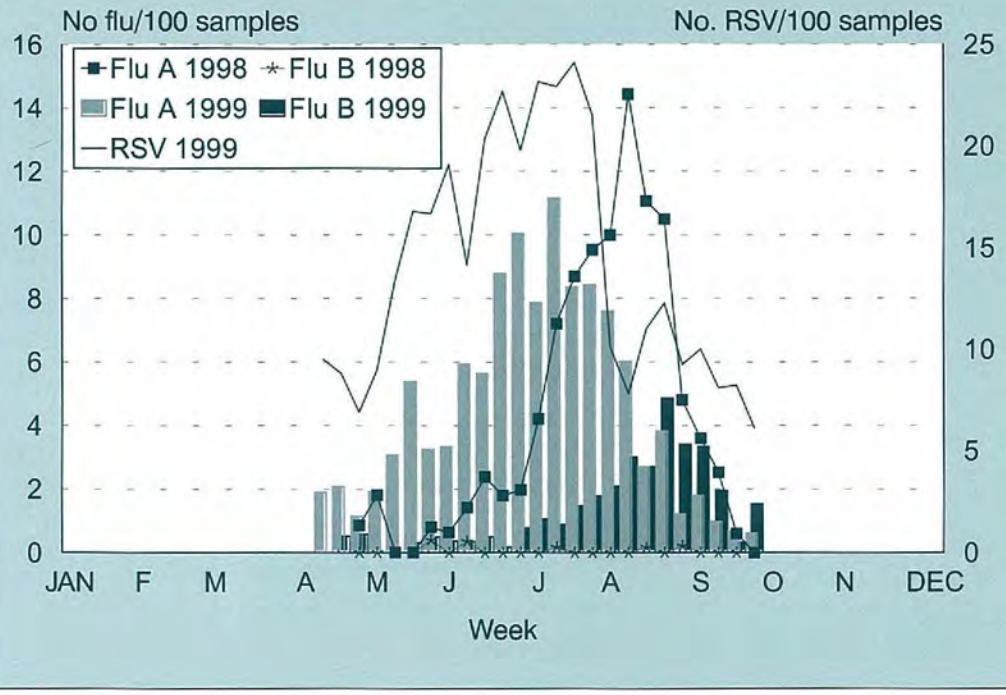


FIGURE 3

RESPIRATORY VIRUS ISOLATION RATES, NSW, 1990–1999



VALUE OF A REVERSE TRANSCRIPTASE-POLYMERASE CHAIN REACTION ASSAY FOR NORWALK-LIKE VIRUSES IN THE INVESTIGATION OF INSTITUTIONAL GASTROENTERITIS OUTBREAKS

Mark J. Ferson, Peter Yankos, Giulietta Pontivivo, Angela Wong, David Lee
South Eastern Sydney Public Health Unit
South Eastern Sydney Area Health Service

Monica Isaacs, Fifin Intan, Christopher J. McIver, William D. Rawlinson
Virology Division and Enteric Laboratories
South East Area Laboratory Services
South Eastern Sydney Area Health Service

This article reports two outbreaks of gastroenteritis which occurred in nursing homes in South Eastern Sydney during November 1998 in which an assay, developed by the South Eastern Area Laboratory Services (SEALS) Enteric and Virology Laboratories, was used to confirm the aetiological agent as Norwalk-like viruses (NLVs). This investigation was done as part of the Public Health Unit's response to the notification of gastroenteritis in an institution.

NLVs, types of small round-structured viruses (SRSVs), have been recognised since the 1970s as being responsible for epidemic gastroenteritis. Outbreaks, generally affecting older children and adults, have been associated with contaminated food (especially oysters),[1,2] or water, [3] and with person-to-person spread in closed institutions such as nursing homes and hospital wards. Such outbreaks tend to have common characteristics, including an incubation period of 24 to 48 hours, explosive onset, preponderance of vomiting in affected persons, and a relatively brief duration of illness in the range of 12 to 60 hours. In these outbreaks, the number of people affected has varied from fewer than 10 to several thousand.

In NSW, institutional outbreaks of gastroenteritis are notifiable by doctors in accordance with the *NSW Public Health Act 1991*. Once doctors or hospital staff report an outbreak it is the responsibility of Public Health Units to work with the staff and management of the institution to control the outbreak. In general, due to the lack of availability of rapid testing for NLV, Public Health Units have only rarely sought testing for this group of agents.

In South Eastern Sydney Area Health Service, the South Eastern Sydney Public Health Unit and the SEALS Enteric and Virology Laboratories have collaborated over a number of years in investigating gastroenteritis epidemics in community settings. During 1998 SEALS Virology developed and introduced a reverse transcriptase-polymerase chain reaction (RT-PCR) assay for detecting NLVs in stool samples that was suited to investigating outbreaks of acute gastroenteritis.

METHODS

Epidemiological and food investigation

On notification of a presumed outbreak of gastroenteritis in a community-based institution, the Public Health Unit mounted a public health response within 24 hours. This included an epidemiological investigation to ascertain the number and characteristics of people affected by the outbreak (cases), the severity and duration of illness, and any food which might be implicated as the source of infection. If the pattern of the outbreak or information provided by staff or cases suggested a point source (for example, contaminated food), a food investigation was also undertaken. Staff at the institution and the doctors caring for cases were asked to collect stool samples from cases early in their illness. These samples were delivered to the SEALS Enteric Laboratory, either by Public Health Unit staff or via a private pathology service.

Microbiological methods

Unconcentrated faecal samples stained with iodine were examined for white blood cells, cysts, ova, and parasites, then were cultured for bacterial pathogens (salmonella, shigella and campylobacter) using standard techniques. Faecal antigens of rotavirus, adenovirus and astrovirus were tested using commercial enzyme immunoassays (DAKO, Australia). NLVs were detected using RT-PCR with primers derived from the nucleotide sequences of the Camberwell and Bristol viruses (SRSV genogroup IIb).[4-6]

RESULTS

Outbreak 1

On 23 November, a nursing home in Sydney's southern suburbs reported an outbreak of gastroenteritis affecting staff and residents that had begun on 13 November. Of 53 residents, 28 had been unwell with diarrhoea and vomiting lasting up to 72 hours (mean 44 hours). Ten members of the nursing staff had a similar illness, and cases ranged in age from 30 to 97 years. The last new case occurred on 24 November (Figure 4). Analysis of questionnaires showed no association with specific foods.

An inspection of the kitchens was carried out and a number of problems were found with food storage temperatures. No illness was reported among food handlers. Microbial analysis of food samples showed presence of faecal coliforms in low numbers, which suggested unhygienic handling of some food items, although no food-borne pathogens were isolated. Nursing home staff were given instructions for controlling the outbreak, including an emphasis on handwashing and

FIGURE 4

EPIDEMIC CURVE, OUTBREAK 1, NOVEMBER 1998

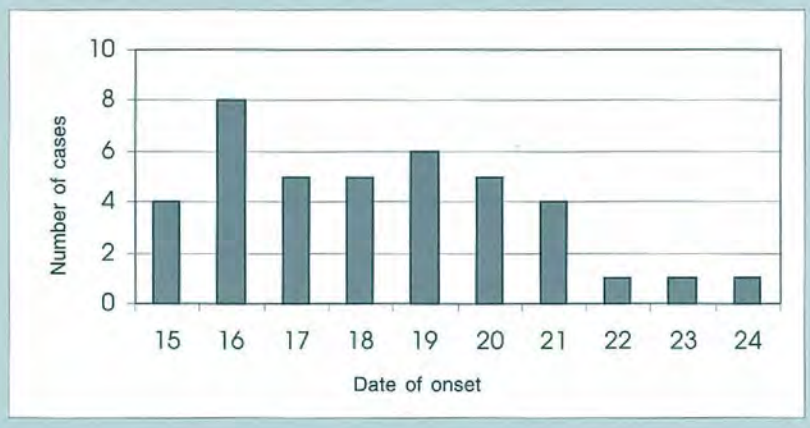


FIGURE 5

EPIDEMIC CURVE, OUTBREAK 2, NOVEMBER 1998

general hygiene, and isolating affected residents and the staff caring for them where feasible.

Stool samples collected toward the end of the outbreak were forwarded to SEALS for testing. All five samples were found to be positive for NLVs by RT-PCR and negative for other pathogens. Thus, it was considered that the outbreak was caused by person-to-person spread of NLVs.

Outbreak 2

On 24 November, a second nursing home (also in Sydney's south) reported an outbreak of gastroenteritis with onset of the first case on 20 November and the last case on 24 November. Of 104 residents, 38 had been unwell with diarrhoea, vomiting and abdominal cramps lasting five to 30 hours. Three members of staff reported a similar illness. Due to the pattern of cases (a small number, initially increasing, then declining) a food source was considered unlikely, and it was decided not to conduct a food investigation (Figure 5). No connection with the first outbreak was established.

A general inspection of the nursing home was carried out and a lack of handwashing facilities identified, which may have had a bearing on the propagation of the outbreak. As for the previous outbreak, instructions were given concerning measures to control transmission of infection.

Stool samples were collected from six cases on 25 and 26 November and forwarded to SEALS for testing. Five were

found to be positive for NLVs by RT-PCR. It was again considered that the outbreak was caused by person-to-person spread of NLVs.

DISCUSSION

Although many outbreaks of gastroenteritis may go unreported, public health authorities in NSW and elsewhere are required to respond to those outbreaks that are notified. These tend either to follow specific meals, catered functions or holiday camps, or to occur in residential or semi-closed institutions such as hospital wards, aged-care facilities and child-care centres. The purpose of the public health investigation is to determine a source, minimise further spread and guide affected individuals to appropriate health care.

Ideally, the public health response consists of an epidemiological investigation and a food–environmental investigation, both of which may be supported by microbiological testing. The epidemiology may suggest a point-source outbreak (based on finding a single illness peak and the fact that cases were exposed to one event or food item), person-to-person spread (in which new cases continue to occur over a period of time and there is no single risk factor for illness), or a combination of these mechanisms (where secondary cases may follow an initial peak). NLVs have been implicated both in point-source outbreaks (food- or water-borne) and those resulting from person-to-person spread.[7,8]

In many investigations of gastroenteritis outbreaks, the probable pathogen is inferred from the pattern of illness, and many outbreaks of NLV–SRSVs have been established in the past on this basis,[9] or with the retrospective assistance of electron microscopy, radioimmunoassay or serological studies.[10] More recently, the RT-PCR assay has been applied to such investigations. For example, a Dutch study conducted in 1996 found that 60 of 69 outbreaks were caused by SRSVs, the majority in nursing homes and hospital wards.[7] In a US survey of outbreaks of non-bacterial gastroenteritis conducted in 1996–97, NLVs were detected by RT-PCR in 86 of 90 outbreaks.[8]

The ready availability of a rapid turnaround RT-PCR assay for local NLV strains in public health microbiology laboratories should allow the identification of an aetiological agent in an increasing proportion of gastroenteritis outbreaks. A definitive diagnosis may be important in these investigations. Because of the ability for NLVs to persist in the environment,[11] NLV outbreaks may require additional and rigorous infection control measures to prevent recurrent outbreaks (for example, in cruise ships or child-care centres). In instances of water or food contamination, the knowledge that NLVs are the pathogens may help in both identifying the mechanism of contamination and in eliminating the source.

Although a relatively small number of stool samples (5–6) were collected during the outbreak investigations described here, and invariably at the end of the outbreak, the RT-PCR assay detected NLV RNA sequences in nearly all samples. The assay is extremely useful in these settings. The RT-PCR-based assay for NLVs, which is now available statewide through the SEALS Virology Laboratories, is a significant addition to the armamentarium for prompt public health response to gastroenteritis outbreaks.

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