

LINKING PUBLIC HEALTH AND PERSONAL HEALTH

GUEST EDITORIAL

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When considering health inequalities, it is essential to consider the social causes, context, and consequences of the inequalities (that is, the big picture) as well as the meanings and manifestations of the inequalities in the lives of individuals (that is, the fine grain). Or, to adopt Charles Wright Mills's terminology in *The Sociological Imagination*, it is essential to be able to distinguish (and to understand) the ineluctable links between 'the public issues of social structure' and 'the personal troubles of milieu'.¹ This, the fifth, and for the time being the final, issue of the *NSW Public Health Bulletin* to focus on health inequalities, illustrates the links between public health issues and personal health troubles.

Seven articles are presented on the health of, and health care services for, particularly disadvantaged groups of Australians: Aborigines, people with particular illnesses (renal and vascular disease, mental illness, and physical disability), refugees, and obese people. Although the approaches adopted by the authors vary greatly, some recurrent themes emerge:

- having a broad, biopsychosocial (rather than limited, biomedical) understanding of the causes of a problem is more likely to lead to the development of appropriate preventive and treatment services;
- health problems tend to accumulate in the same individuals and the same communities, rather than being randomly distributed throughout society;
- when disadvantages are accumulating, interventions that break the vicious cycle of disadvantage are needed;
- difficult problems often require innovative interventions, which if successful need to be implemented, with modifications as necessary, wherever the problem exists;
- the availability and distribution of health care services does not always match the need for those services;

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- the patient's ideas about their own 'most important' problems and needs may be very different from the health professional's diagnosis and recommended treatment;
- the health care system often fails to provide quite simple services and facilities that would benefit disadvantaged people;
- notwithstanding the very best intentions of health services providers, disadvantaged people often face a variety of physical, cultural, financial, and attitudinal barriers to accessing health services;
- professional expertise and modern technology are essential elements of patient care, but so are listening, empathy, humanity, and flexibility—particularly when dealing with patients with vastly different life stories;
- particularly when dealing with disadvantaged and minority groups, community consultation, and involvement are essential elements in the success of an intervention.

In addition, Mahoney provides an overview of an emerging technology, Health Impact Assessment. Whether it be human health or the environment, whether it be local or global, it is easy to think of many policies, programs, and developments that have had unexpected and often deleterious consequences. Health Impact Assessment is developing out of Environmental Impact Assessment, in an attempt to predict and optimise the consequences for health of developments inside and outside the health portfolio. Interestingly, NSW has started to go down this track. Under the Gaming Machines Regulation 2002, a Social Impact Assessment (SIA) of the likely impact on the local community must be conducted whenever an application is made to increase the number of poker machines in a hotel or club. It is a requirement that the SIA be sent to the relevant area health service for comment before the Liquor Administration Board makes a decision on the application.²

To conclude our responsibilities as guest editors of this series of the *NSW Public Health Bulletin* focusing on inequalities in health, we would like to emphasise that:

- there are substantial and persisting inequalities in health in NSW: simply, the more affluent and/or privileged a person or group is, the healthier they are;
- the inequalities are similar in origin and magnitude to those observed in the rest of Australia and other developed nations;
- many of these inequalities are inequitable; that is, they are both preventable and unjust;
- health inequalities have their origins in upstream factors (social, economic, and environmental), midstream factors (psychosocial and behavioural) and downstream factors (genetic and physiological) that operate globally, nationally, locally, and individually;
- routine data collections must be maintained to monitor changes in inequalities in Australia;
- regular reporting of an index of human and social capital would help to reorient thinking on social and

economic progress from a 'wealth-producing economy' to a 'health-producing society';³

- the emphasis of research should move away from simply describing health inequalities towards understanding their origins and developing and evaluating interventions to reduce them;
- lay knowledge and more sophisticated quantitative research methods must be used to understand the complexity of factors that create and maintain health inequalities;
- an evidence base of effective interventions must be developed;
- while social and political change is required at the global and national levels to reduce health inequalities, there is also much—that is often quite simple—that the health system, individual health care workers, and professional organisations, can do to reduce inequalities;
- action is required in many sectors and at many levels, and the health system must become skilled at developing coalitions and working in partnerships;
- all elements of the health system must adopt equity as an explicit goal and develop mechanisms for monitoring its achievement;
- the health system must work *with* disadvantaged individuals and communities (particularly with socially-excluded groups) to alter locally- and personally-modifiable factors that directly affect people's lives. This takes flexibility, sensitivity to cultural differences, long term commitment, and resourcing;
- care must be taken to ensure that health care services—particularly primary and secondary preventive services—do not improve population health while simultaneously exacerbating health inequalities;
- both universal (whole population) programs and programs targeting particular disadvantaged populations are needed to reduce inequalities;
- there is good evidence that investment in the early years of life has a positive effect on current and future health. This offers much scope for reducing health inequalities throughout life;
- health (inequality) impact statements are a promising initiative that warrant further development and testing;
- the increasing interest in equity in health has spawned some promising developments nationally (for instance, Medicare and the Health Inequalities Research Collaboration) and in NSW (for instance, the Resource Distribution Formula, the *Families First* initiative, and the Health and Equity Statement);
- notwithstanding the crucial role of other sectors, health workers must continue to be passionate and informed advocates for comprehensive action to reduce health inequalities;
- success must be judged not only by improvements in the health of the most disadvantaged but also by reductions in the health gap between rich and poor.

In closing, we quote Peter Townsend, one of the authors of the Black Report:⁴ 'While representations of inequality [in relation to, for example, education, race, gender, housing, occupation, earnings, disposable income] are important in themselves and can produce findings of value, they are very restrictive unless they are treated as differences due to, or reinforcing, or influential in shaping, an hierarchical society. We must not pretend they are elements which can be treated, in their relationships with health, as independent of the entire structure. Even more important, the entire social structure has to be invoked to contribute to the full explanation of health in relation to any single one of these elements. In looking for successful programmes to reduce inequalities in health this is the critical first step in devising strategy.'⁵

OBITUARY

It is with considerable regret that the *NSW Public Health Bulletin* notes the death of Sir Douglas Black on 13 September 2002 at the age of 89. During an illustrious career Sir Douglas's appointments included Professor of Medicine at the University of Manchester, first Chief Scientist at the United Kingdom Department of Health,

and President of the Royal College of Physicians. He will, however, be most widely remembered as the chairman of the committee that was commissioned by the UK government to enquire into health inequalities in the UK and published in 1980 what has been known ever since as 'The Black Report'. His obituary in the *BMJ* can be read at: <http://bmj.com/cgi/content/full/325/7365/661>.

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THE RELATIONSHIP BETWEEN THE INCIDENCE OF END-STAGE RENAL DISEASE AND MARKERS OF SOCIOECONOMIC DISADVANTAGE

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The relationship between socioeconomic disadvantage and the health of Australians has frequently been reported,¹⁻³ but there has been no research on the relationship between socioeconomic disadvantage and end-stage renal disease (ESRD). Research on patterns of incidence of ESRD has generally been limited to a description of differences according to age, sex, 'race', and state or territory. In this article we describe the relationship between the incidence of ESRD and indicators of socioeconomic disadvantage at the area level.

METHODS

We report two separate but related studies:

- ESRD incidence among indigenous Australians by Aboriginal and Torres Strait Islander Commission (ATSIC) region;⁴
- ESRD incidence in the total population by Statistical Sub-Division (SSD) within capital cities.⁵

We obtained approval for the studies from the joint institutional ethics committee of the Royal Darwin Hospital and the Menzies School of Health Research.

Databases

Both studies used data from the Australia and New Zealand Dialysis and Transplant Registry (ANZDATA), which maintains a database of patients treated in Australia by maintenance dialysis or renal transplantation.⁶ The registry, funded by commonwealth and state governments and the Australian Kidney Foundation, enjoys the participation of all renal units that provide ESRD treatment. Individual data on levels of income, education, and employment are not collected by ANZDATA. We therefore used regional level socioeconomic data from the 1996 census and the National Perinatal Statistics Unit to examine the relationship between ESRD and disadvantage.

Statistical analyses

In both studies, we allocated patients to geographical regions and calculated an age- and sex- standardised incidence for ESRD. The methods used to allocate patients to regions have been discussed in detail elsewhere.^{5,7} We performed appropriate tests of correlation to determine the association between the standardised incidence ratios for ESRD and markers of regional disadvantage. In both studies, we used Australian Bureau of Statistics (ABS) population figures, derived using 1996 Census information on place of usual residence, to

calculate rates. The total Australian resident population was the index group (that is, where SIR = 1).

STUDY 1: INDIGENOUS ESRD INCIDENCE BY ATSI REGION

From 1st January 1993 to 31st December 1998, 719 indigenous patients started treatment in Australia. The 36 ATSI regions constituted the geographic units for our analysis because they are the smallest areas for which accurate population estimates are available.⁸

Because no generally accepted area-based index of socioeconomic disadvantage for indigenous Australians has been developed, we selected the following five indicators that feature in deprivation indexes:⁹⁻¹¹

- the proportion of adults who had left school aged 15 or less, or who had not attended school;¹²

- the unemployment rate (Community Development Employment Project [CDEP] participants have been classified as unemployed);¹²
- median household income divided by the average number of persons per household;¹³
- the average number of persons per bedroom;¹²
- the proportion of births less than 2500 grams.¹⁴

We generated an overall rank of socioeconomic disadvantage by combining the regional rankings on each indicator, with each indicator given equal weight.

Strong associations were evident between the incidence of ESRD and indicators of socioeconomic disadvantage (Table 1). The correlation with the overall rank of socioeconomic disadvantage was particularly strong (Table 1 and Figure 1).

TABLE 1

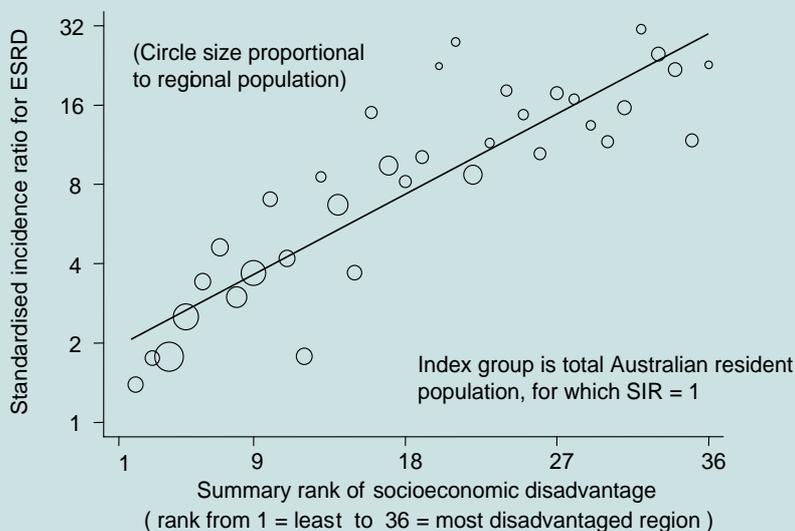
CORRELATION BETWEEN INDICATORS OF SOCIOECONOMIC DISADVANTAGE AND STANDARDISED INCIDENCE OF ESRD FOR INDIGENOUS AUSTRALIANS, 1993-98

Socioeconomic indicator (units)	Range	Correlation coefficient*	P value
Early school leavers (%)	12.5-52.4	0.68	<0.001
Unemployment rate (%)	20.2-74.8	0.72	<0.001
Household income (Aust\$ per household member per week)	\$80-194	-0.71	<0.001
House crowding (persons per bedroom)	1.1-3.2	0.84	<0.001
Low birthweight (%)	7.6-21.6	0.49	0.003
Summary rank of disadvantage	1-36	0.88	<0.001

* Spearman's rank correlation coefficients.
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FIGURE 1

SOCIOECONOMIC DISADVANTAGE AND INDIGENOUS ESRD INCIDENCE BY ATSI REGION, 1993-98



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TABLE 2

STANDARDISED INCIDENCE OF ESRD IN SYDNEY, 1993–98

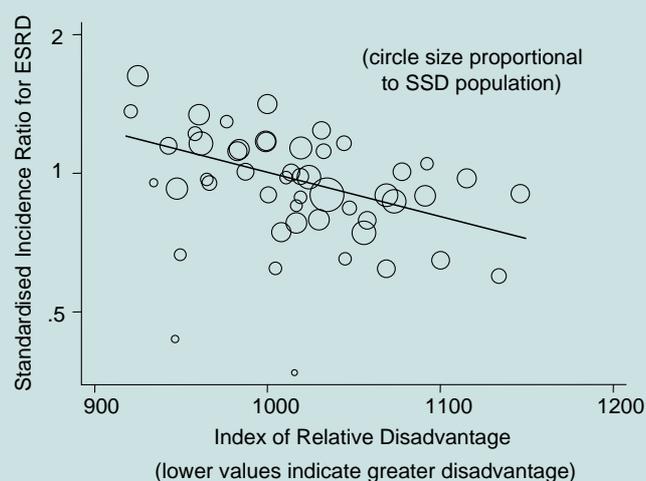
Area (map references)	Population	Cases	SIR* (95% CI)
Inner Sydney (1)	255,499	165	1.41 (1.21, 1.65)
Eastern Suburbs (2)	227,080	109	1.01 (0.83, 1.22)
St George–Sutherland (3)	393,497	142	0.74 (0.63, 0.87)
Canterbury–Bankstown (4)	290,138	188	1.34 (1.16, 1.55)
Fairfield–Liverpool (5)	302,046	197	1.63 (1.41, 1.87)
Outer South Western Sydney (6)	209,973	74	1.01 (0.79, 1.26)
Inner Western Sydney (7)	147,774	85	1.16 (0.93, 1.44)
Central Western Sydney (8)	268,683	137	1.13 (0.95, 1.33)
Outer Western Sydney (9)	293,242	90	0.79 (0.64, 0.98)
Blacktown–Baulkham Hills (10)	352,697	158	1.13 (0.96, 1.33)
Lower Northern Sydney (11)	264,779	123	0.97 (0.81, 1.16)
Hornsby–Ku-ring-gai (12)	236,562	102	0.90 (0.74, 1.10)
Northern Beaches (13)	212,387	68	0.65 (0.50, 0.82)
Gosford–Wyong (14)	263,055	152	1.12 (0.95, 1.31)

* Indirectly age and sex standardised to the rates for the total Australian resident population.

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FIGURE 2

SOCIOECONOMIC DISADVANTAGE AND CAPITAL CITY ESRD INCIDENCE BY STATISTICAL SUB-DIVISION (SSD), 1993–98



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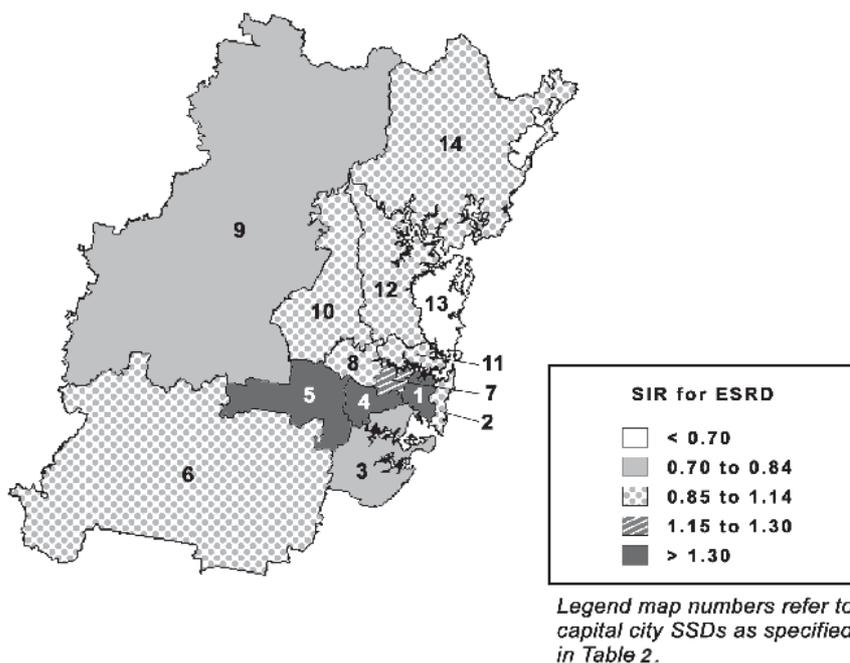
STUDY 2: TOTAL ESRD INCIDENCE BY SSD IN CAPITAL CITIES

The 5013 patients who started ESRD treatment during 1993–1998 were included in this analysis. We analysed SSDs, as defined in the Australian Standard Geographical Classification,¹⁵ as our geographical units. With the exception of Hobart, which is a single SSD, capital cities contain several SSDs. These aggregate to form Statistical Divisions (SDs), which, in turn, aggregate to form states and territories. The majority (97 per cent) of patients in capital cities were non-indigenous.

The ABS has developed indexes to describe the socioeconomic characteristics of an area. This study used the Index of Relative Socioeconomic Disadvantage

(IRSD). The IRSD, constructed using principal-component analysis, is derived from attributes such as income, educational attainment, employment status, and occupation.¹⁶ The higher an area's index value, the less disadvantaged the area. The index scores are standardised so that the national mean score is 1000.

There was a significant correlation ($r = -0.41, p = 0.003$) between the standardised incidence ratio for ESRD and the IRSD (Figure 2), which indicates a higher incidence of ESRD in areas of greater disadvantage. There was up to three-fold variation within capital cities. In Sydney, an east–west corridor containing Inner Sydney, Canterbury–Bankstown and Fairfield–Liverpool areas had the highest standardised incidence of ESRD (Figure 3 and Table 2).

FIGURE 3**SYDNEY STANDARDISED INCIDENCE RATIO (SIR) FOR ESRD 1993–98**

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DISCUSSION

These studies demonstrated a gradient in the incidence of ESRD among indigenous and non-indigenous Australians that is strongly associated with area-based markers of socioeconomic disadvantage. The gradient in the incidence of ESRD among indigenous Australians (at least 30-fold variation) is much steeper than the gradient in the general population (approximately three-fold variation), possibly indicating the relevance of both absolute poverty and relative disadvantage to ill-health. The findings of the few previous studies of the association between socioeconomic disadvantage and the incidence of ESRD have been inconsistent.^{17–20}

There are potential sources of bias in our studies. First, in the indigenous study, the propensity to identify as indigenous might differ between regions. ANZDATA relies on self-identification, as does the Australian Bureau of Statistics in its census collections. Because ESRD treatment requires frequent contact between patients and staff, and because renal staff have a strong awareness of ESRD among indigenous Australians, we believe that the quality of identification in this study is high. Problems in identification, which may lead to an imprecise estimate of the true incidence of ESRD among indigenous Australians living in urban areas, are unlikely to alter the large observed gradient in ESRD incidence. Second, in both studies, we have used area-based indicators of socioeconomic status, which measure the average level of disadvantage of all people in that area, to infer an association between disadvantage and the incidence of

ESRD. Factors operating at community level may directly affect health outcomes: people living in disadvantaged areas may have poorer access to preventive health services and may lack a community infrastructure that promotes healthy lifestyles. We do not exclude the possibility that other individual, area, or population level factors—not measured in this study—might explain our observed associations. Third, in both studies, we have described an association between current disadvantage and the incidence of ESRD. Typically renal disease progresses towards ESRD over at least several years. Therefore, the most relevant etiological data would be socioeconomic data from an earlier period.

What are the implications of our finding that populations in disadvantaged areas have a higher incidence of ESRD? First, clinicians understand renal disease from a biomedical perspective, with primary disease processes as the causes. The high ESRD incidence in indigenous populations has formerly been attributed to ‘racial’ differences in physiological and pathological responses, in turn regarded as being due to genetic factors,²¹ or to congenital factors such as low birthweight.²² Such a limited biomedical perspective cannot explain the strong association with socioeconomic disadvantage within the indigenous population. Access to treatment facilities for indigenous ESRD patients, particularly from remote areas, is known to be inequitable,⁷ and it is likely that the distribution of services within capital city areas does not accord with the need for these services. Equity in the provision of renal treatment facilities in disadvantaged

areas needs attention. A broader understanding of the etiology of ESRD, encompassing social, environmental, and cultural determinants of health, has implications for how and where to target prevention efforts. Public policy initiatives beyond the scope of the health care system will be required if we are to reduce the burden of chronic renal disease.

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THE NSW ABORIGINAL VASCULAR HEALTH PROGRAM

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The NSW Department of Health's Aboriginal Vascular Health Program is responsible for implementing those components of the NSW Aboriginal Health Strategic Plan that relate to cardiovascular disease, renal disease, diabetes, and stroke.¹ This article describes the Program and the strategies being implemented to prevent and manage vascular disease in indigenous people in NSW.

RATIONALE FOR A VASCULAR HEALTH PROGRAM

Both diabetes and cardiovascular disease are national health priorities. It is well recognised that indigenous people suffer an excessive burden of vascular disease.^{2,3,4,5,6,7} Vascular disease is the primary cause of preventable mortality and morbidity in indigenous Australians, who have a far higher prevalence of cardiovascular disease, renal disease, diabetes, and stroke, compared with non-indigenous populations.²⁻⁸

Further, indigenous Australians have higher rates of preventable risk factors such as:

- central obesity;
- poor diet and nutrition;
- low levels of physical activity;
- smoking;
- high-risk alcohol use.³

There is increasing evidence that social determinants are as important as physiological risk factors in the aetiology of vascular disease.^{9,10,11} Historical precursors, cultural circumstances, and the socioeconomic and environmental contexts in which indigenous people live, create risk conditions and predispose to behaviours that lead to increased risk of vascular diseases (Figure 1). These factors also militate against people managing established disease in ways that improve health outcomes. In addition, excess mortality in people with diabetes increases with social disadvantage.¹² Recent work in the Northern Territory—which is reported elsewhere in this issue of the Bulletin—is describing the causal pathway between socioeconomic disadvantage and end stage renal failure.¹³

Common behavioural and physiological risk factors for vascular disease

Diabetes and heart disease share common aetiological risk behaviours and physiological risk factors. The 'metabolic syndrome', whereby a cluster of metabolic risk factors increases the likelihood of developing cardiovascular disease, is particularly significant in indigenous populations.^{14,15,16,17} Cardiovascular risk is multiplied by the coexistence of several factors. Also diabetes is an independent risk factor for heart disease and the risk of

developing heart disease is 2–3 times higher for people with diabetes.²

Advantages of a vascular health approach

Primary prevention messages relating to health and lifestyle are the same for diabetes and heart disease. Common lifestyle adjustments and some common medical treatments are necessary to manage and prevent progression of these vascular diseases. Programs that integrate clinical risk reduction and primary prevention strategies have the potential to delay the onset of vascular disease in indigenous populations and to minimise adverse health outcomes for those with established disease. An integrated health and lifestyle approach is consistent with the strategic direction of national and state policies for other populations, and is in keeping with holistic indigenous conceptions of health and illness.^{18,19}

The evidence base for management of vascular disease

There is well-established evidence for the efficacy of clinical interventions in improving health outcomes in vascular disease,^{20,21} but there is limited understanding of how these can be successfully implemented within indigenous populations.

Studies from communities in the Tiwi and Torres Strait Islands have demonstrated vascular health gains through multifaceted community-based interventions focused on primary health care services.^{22,23} Common elements of these programs have included:

- education and support for local indigenous health workers working in multi-disciplinary care teams;
- implementation of registration and recall systems and standardised clinical protocols;
- customised support for people to manage their disease.

These studies confirm similar findings with comparable populations overseas.²⁴

ABORIGINAL VASCULAR HEALTH PROGRAM

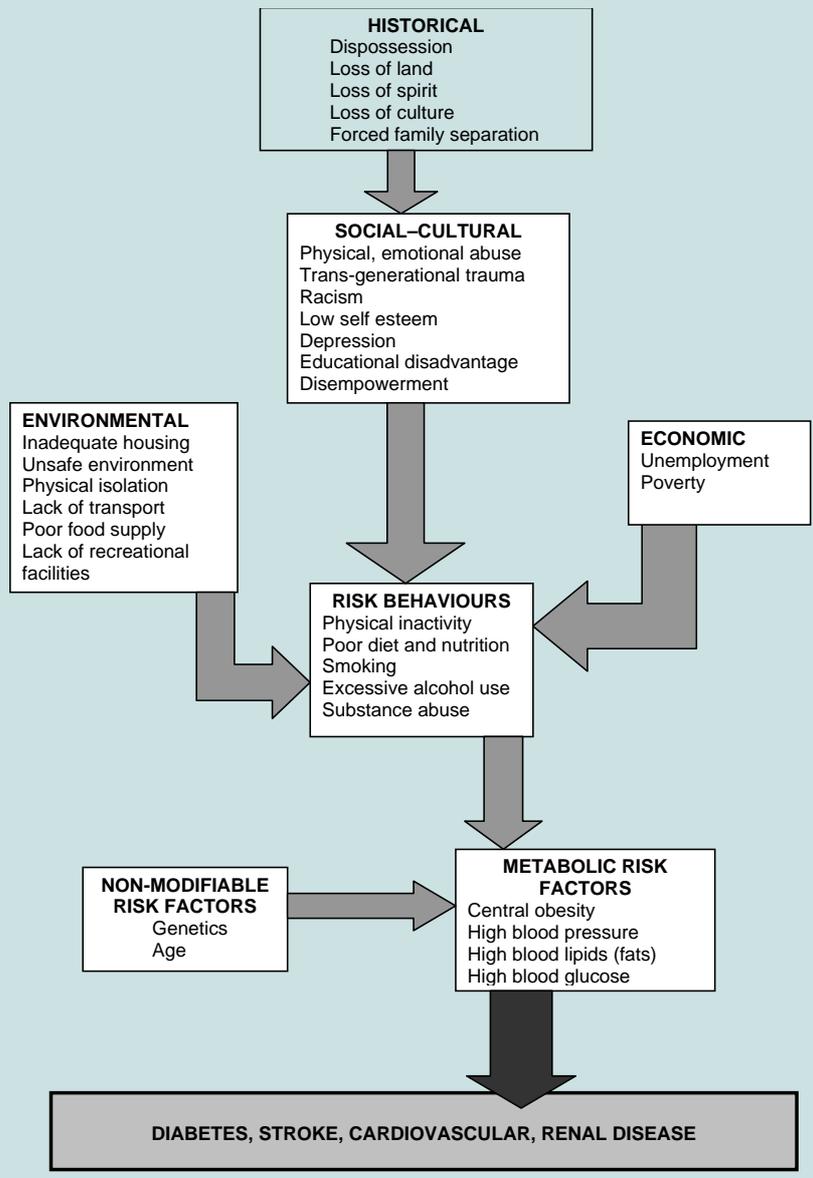
The aim of the Aboriginal Vascular Health Program is to work in collaboration with relevant organisations and service providers to improve the provision of high-quality prevention and care services and programs, which promote the vascular health of Aboriginal and Torres Strait Islander people in New South Wales.

The strategic foci of the Program include :

- research and development;
- workforce development;
- service development;
- resource development;
- monitoring and evaluation;
- coalition building;
- communication and information dissemination.

FIGURE 1

FACTORS CONTRIBUTING TO DIABETES AND CARDIOVASCULAR DISEASE IN ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE



Current activities of the Program include:

Demonstration site projects

In consultation with local Aboriginal Health Partnerships, 14 demonstration site projects are implementing models of service delivery tailored to local resources and identified needs and priorities. Projects are based in the area health services across NSW and run over 1–2 years. Ongoing funding will be available for projects with demonstrated effectiveness.

Aboriginal Vascular Health Network

An Aboriginal Vascular Health Network has been established to promote information exchange and resource dissemination and to foster professional development opportunities for workers involved in

vascular health. A quarterly bulletin *Vascular Health Matters* is produced and distributed to more than 200 network members.

Aboriginal Vascular Health Resource Catalogue

The *Aboriginal Vascular Health Resource Catalogue* is an annotated list of available vascular health resources for Australian health professionals,²⁵ including training and patient education manuals, Web sites, and useful contact information.

Chronic and Complex Care Program

The Program is working with cardiovascular projects within the area health services sponsored by the NSW Chronic and Complex Care Program, to enhance their

appropriateness and accessibility for indigenous communities.

Other activities

The Program is undertaking collaborative ventures with area health services, Aboriginal health services, and non-government organisations, to develop resources and clinical guidelines, provide training opportunities, and to provide advice and technical support for regional initiatives.

CONCLUSION

Important opportunities for the Program lie in building the capacity of local service providers and ensuring optimal utilisation of local resources through harnessing the expertise of health professionals, organisations, and community members. A major challenge lies in building the evidence base of what works in improving vascular health outcomes for indigenous people. A longer-term outlook and commitment of resources is essential as changes in health status are likely to be slow. However, in the short and medium term, improvements in service delivery and workforce capacity through Program activities are expected; monitoring and evaluation will assess the outcomes and effectiveness. An Aboriginal Vascular Health Indicators Framework is being developed to track progress in improving Aboriginal vascular health across NSW. This will incorporate a new set of indicators of local capacity and intervention to monitor changes that are likely to affect longer term improved health outcomes. A future issue of the Bulletin will report on this framework.

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HEALTH INEQUALITIES AND THE HEALTH NEEDS OF PEOPLE WITH MENTAL ILLNESS

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This article describes a study that used the Western Australian Linked Database (WALD)— which links together major sources of health data for the population of Western Australia (WA)—to examine rates of hospitalisation and death due to physical illnesses for users of mental health services. The aim of the study was to compare the physical health of people with mental illness with that of the general population, in order to provide information that can be used in designing health promotion and disease control activities that can be tailored for people with mental illness. The results showed high mortality from all causes, both natural and unnatural. Significant morbidity associated with all main conditions was not accompanied by correspondingly high hospital use. For example, for ischaemic heart disease (IHD), while mortality was two-and-a-half times higher in people with mental illness, coronary revascularisation procedure rates were significantly lower than in the general community. These results highlight significant health inequalities, commensurate to health care needs, in this vulnerable population.

The WALD is unique in Australia and is one of a small number of combined record linkage systems in the world. While mortality in people with mental illness has been extensively studied,¹ there has only been one other major study of hospitalisation rates, which dates from the 1960s.²

METHODS

The study used data from the WALD,³ which links together major sources of health data for the population of WA. The main sources of data contained in the WALD are:

- Hospital Morbidity Data System (HMDS);
- Mental Health Information System (MHIS);
- WA Cancer Registry;
- WA birth and death records.

The HMDS records all separations from WA private and public hospitals since 1980. The MHIS records all contacts with inpatient mental health services (private and public), public outpatient and community clinics, and licensed psychiatric hostels since 1966. The MHIS does not include people only seen by general practitioners or by private psychiatrists in their consulting rooms. The various databases in WALD have been linked, using probabilistic record linkage techniques, which achieve a high degree of accuracy. The resulting linked files are de-identified for research purposes. The WALD allows tracking of a person's health experience over their lifetime.

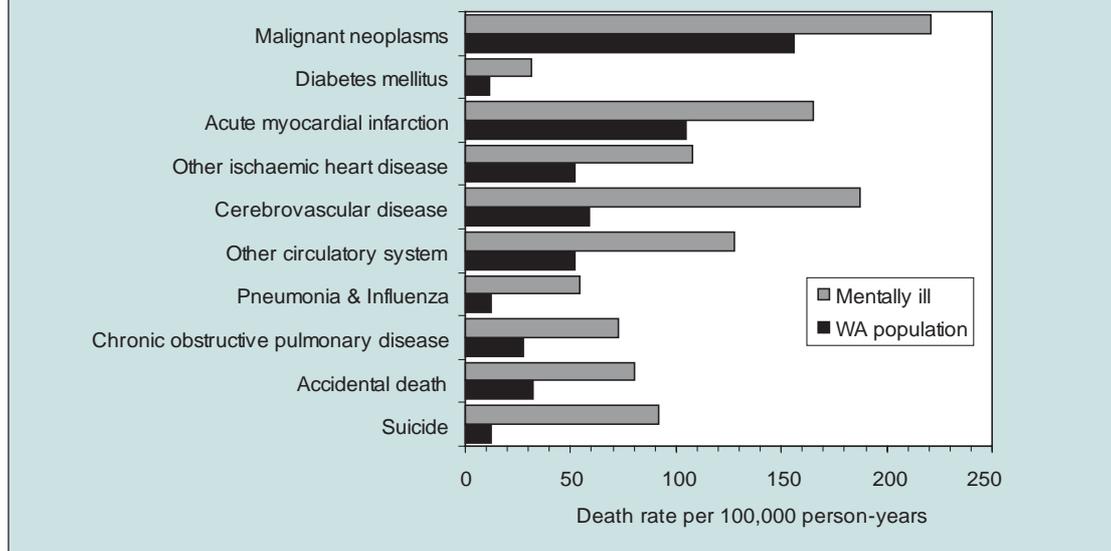
The study used data covering the 19-year period 1980–1998, and examined the health records of 231,311 users of mental health services, representing about eight per cent of the WA population at any time. For this group, rates of admission to hospital, diagnosis of cancer, and death were calculated and compared to the corresponding rate in the total population. Mental disorders were classified using ICD-9, as were deaths. Although all ICD-9 Chapter 5 diagnoses were included on the MHIS, this study concentrates on the following conditions (with ICD-9 codes shown in brackets): dementia (290), alcohol and drug disorders (291–292, 303–305), schizophrenia (295), affective psychosis (296), other psychoses (293–294, 297–299), neurotic disorder (300), personality disorder (301), adjustment reaction (309) and depressive disorder (311). Diagnoses and procedures from hospitalisations in WA were coded using ICD-9 until 1987, and thereafter using ICD-9-CM.

All rates were directly standardised using, as the population standard, the average population distribution of WA during 1980–1998, as supplied by the Australian Bureau of Statistics.⁴ For people with mental illness, hospitalisations were only included if they occurred after first contact with mental health services (defined as any contact with inpatient psychiatric services in a private or public hospital, or contact with public outpatient or community clinics, or residence in a psychiatric hostel, as recorded on the MHIS). Rates were calculated for people with mental illness and the population as a whole. Rate ratios were then used to compare the two. Although not shown in the figures, standard errors and 95 per cent confidence intervals were calculated for all results. All differences commented on were significant at the 95 per cent level of confidence. Although a large number of physical illnesses were considered in this study, in this short article we concentrate on ischaemic heart disease.

RESULTS

Figure 1 shows mortality rates from major causes of death for people with mental illness compared to the WA population overall. The results show excess mortality from all causes of death, both natural and unnatural. Overall, people with mental illness have a 2.5 times higher mortality than the general population, which is equivalent to a life expectancy in the 50–59 age group.

The highest increased risk of death was for suicide. People with mental illness were more than seven times as likely to commit suicide, and users of mental health services made up 45 per cent of suicides in WA in 1980–1998. However, the greatest number of excess deaths was due to IHD (16 per cent of all excess deaths in people with mental illness), double the number of excess deaths due to suicide (eight per cent). The expected number of deaths in people with mental illness was calculated by applying the general

FIGURE 1**DEATH RATES IN PEOPLE WITH MENTAL ILLNESS COMPARED TO THE REST OF THE POPULATION, WESTERN AUSTRALIA, 1980–1998**

population death rate to the population of people with mental illness. Deaths above this number were called excess deaths.

Figure 2 shows rate ratios for hospitalisation, revascularisation procedures, and death rates from IHD (ICD-9 410–414), for each principal psychiatric diagnosis. Note that the mortality rate ratio (RR) for people with dementia goes beyond the scale of the graph. The RR is 3.8. People with dementia, other psychoses and depressive disorder had the highest mortality rate ratios. IHD mortality has been declining in the general population over the past 20 years.⁵ We found that people with mental illness have not participated in this trend. The IHD mortality rate has remained roughly constant in men with mental illness, and has been increasing among women with mental illness.

By comparison, however, the rate of admission to hospital with a principal diagnosis of IHD was very similar in people with mental illness and the general population. Only people with a neurosis or depressive disorder were more likely to be hospitalised for IHD than the general population. People with schizophrenia were 40 per cent less likely to be hospitalised for IHD.

In addition, we calculated the rate of performing coronary revascularisation procedures (including removal of coronary artery obstructions and coronary artery bypass grafts and arterial implants). People with dementia almost never underwent these procedures, and people with schizophrenia underwent them at only one-third of the rate in the general population. For most disorders, revascularisation procedure rates were low compared to the general community. Only people with neurotic disorders had an elevated rate of revascularisation

procedures, while among people with adjustment reaction (ICD-9 code 309) revascularisation procedure rates were about the same as in the general population.

We also examined the most serious and commonly occurring physical health problems including cancer, stroke and other circulatory disorders, respiratory disorders, communicable diseases, and injuries. We found consistently that the excess in mortality rates was not matched by a corresponding increase in hospitalisation rates. Also, cancer incidence was almost identical in people with mental illness as the general population, but cancer mortality was 40 per cent higher in people with mental illness.⁶

DISCUSSION

Users of mental health services account for eight per cent of the WA population at any time. However, the ABS Survey of Mental Health and Wellbeing estimated that 19 per cent of the WA population has a diagnosable mental illness,⁷ but that over 60 per cent of people receive no treatment for their disorder.⁷ As the MHIS does not include people who are only seen by general practitioners or by private psychiatrists in their consulting rooms, the people on the MHIS most likely represent the more serious cases of mental illness.

The poor mortality results for people with mental illness are similar to general populations living in developing countries,⁸ and suggest serious health inequalities compared to Australians without mental illness. There is no doubt that lifestyle and behavioural factors associated with mental illness affect physical illness. Smoking is common. According to ABS data, 43 per cent of Western Australians with a mental disorder are current smokers

compared to 24 per cent of those without a mental disorder.⁷ In people with psychotic disorders smoking rates are even higher—73 per cent of men and 56 per cent of women were current smokers in a recent study.⁹ Similarly alcohol and drug use problems are more common in people with mental illness. Poor diets and lack of exercise are also significant problems. Public health campaigns have been instrumental in the lowering of cardiovascular mortality in the general Australian population; however, these campaigns appear to have had little effect on people with mental illness. For example, there are few programs aimed at reducing smoking in people with mental illness.

There is more to the issue than lifestyle factors. The comparison of procedure rates, hospitalisation rates, and death rates, strongly suggests that health services have not met the physical health needs of people with mental illness. This could be due to issues of access, stigma, lack of appropriate services, and communication difficulties.¹⁰ Mental health services are often provided by separate groups of practitioners to physical health services. It is unclear if all psychiatrists see their role as including management of the physical wellbeing of people with mental illness. Mental health services may miss physical illnesses as they focus on psychiatric symptoms and may regard complaints of physical symptoms as psychosomatic.^{11,12,13} At the same time, do people with mental illness receive an appropriate level of medical care

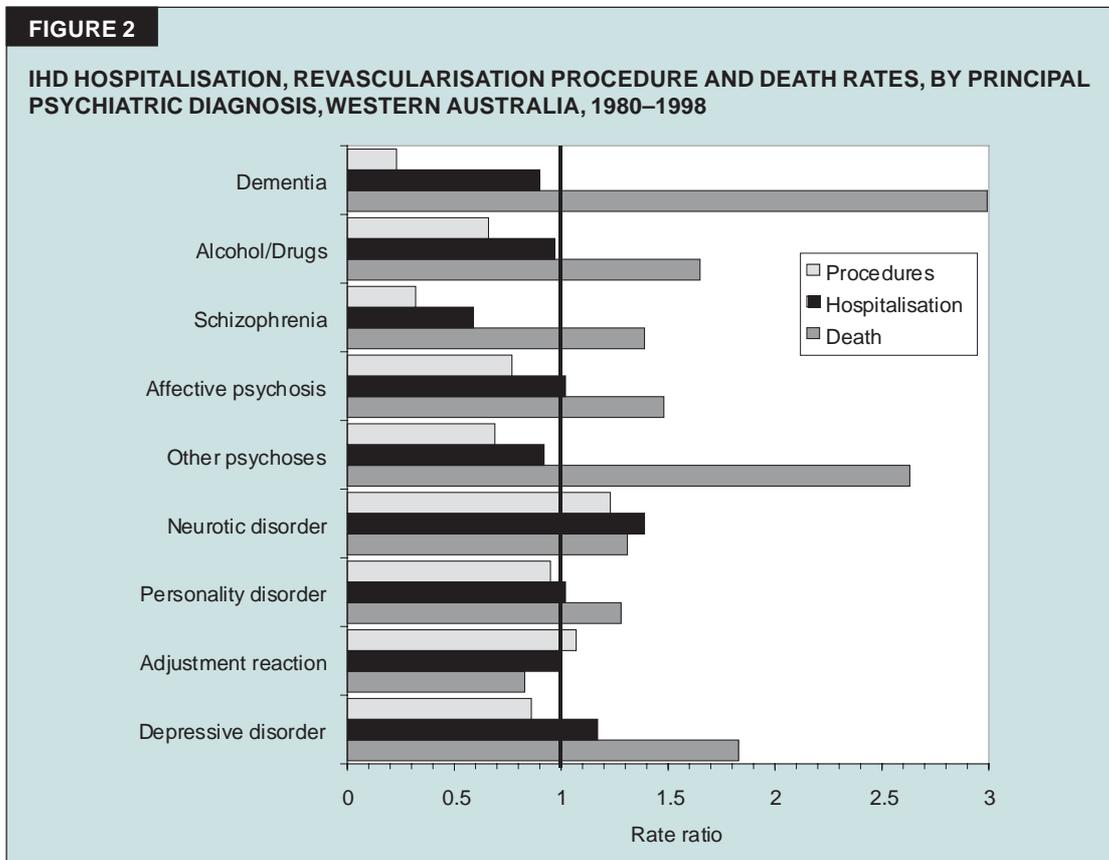
from general practitioners and other health services? People under psychiatric care may not be seen concurrently by general practitioners and some people with a mental illness may not have a regular general practitioner.^{14,15}

WA is uniquely privileged to have the infrastructure for medical record linkage of data for the whole state population. The size and the stability of the population have made this possible. However, there is no reason to believe that there are major differences in mental health care and service delivery in WA compared to other states and territories, and there is no reason to believe these results would not be reproduced in other states were the data available.

People with mental illness are a marginalised and stigmatised group with extremely poor health outcomes. This group deserves a higher level of care of their physical health than the general community, in proportion to their greater health needs, but they may actually be receiving less. This suggests inequality in health service access and provision that deserves to be investigated and resolved.

ACKNOWLEDGEMENTS

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Further information regarding this study can be downloaded from the Web site www.dph.uwa.edu.au by following the links: Research Programs → Centre for Health Services Research → Duty to Care.

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COURT DIVERSION IN NSW FOR PEOPLE WITH MENTAL HEALTH PROBLEMS AND DISORDERS

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There are significantly higher prevalence rates of complex and severe mental health problems and disorders in correctional centres, both Australia-wide and internationally, compared to the general population. Recent evidence from the literature suggest that, in the United States, 6–15 per cent of people in remand prisons and 10–15 per cent in state prisons have a serious mental disorder.¹ Comparable figures are reported for the United Kingdom, with prevalence rates of 5–10 per cent among those on remand,² and up to 14 per cent among those who have been sentenced.³ Similar prevalence estimates have been quoted in studies in Australia and New Zealand.⁴

During 1996–97, the Corrections Health Service and the NSW Department of Health undertook a detailed study of the health status of inmates in NSW correctional centres. Among inmates, it was reported that approximately one third of males and half of females had a history of mental health assessment and/or treatment by a psychiatrist or a psychologist.

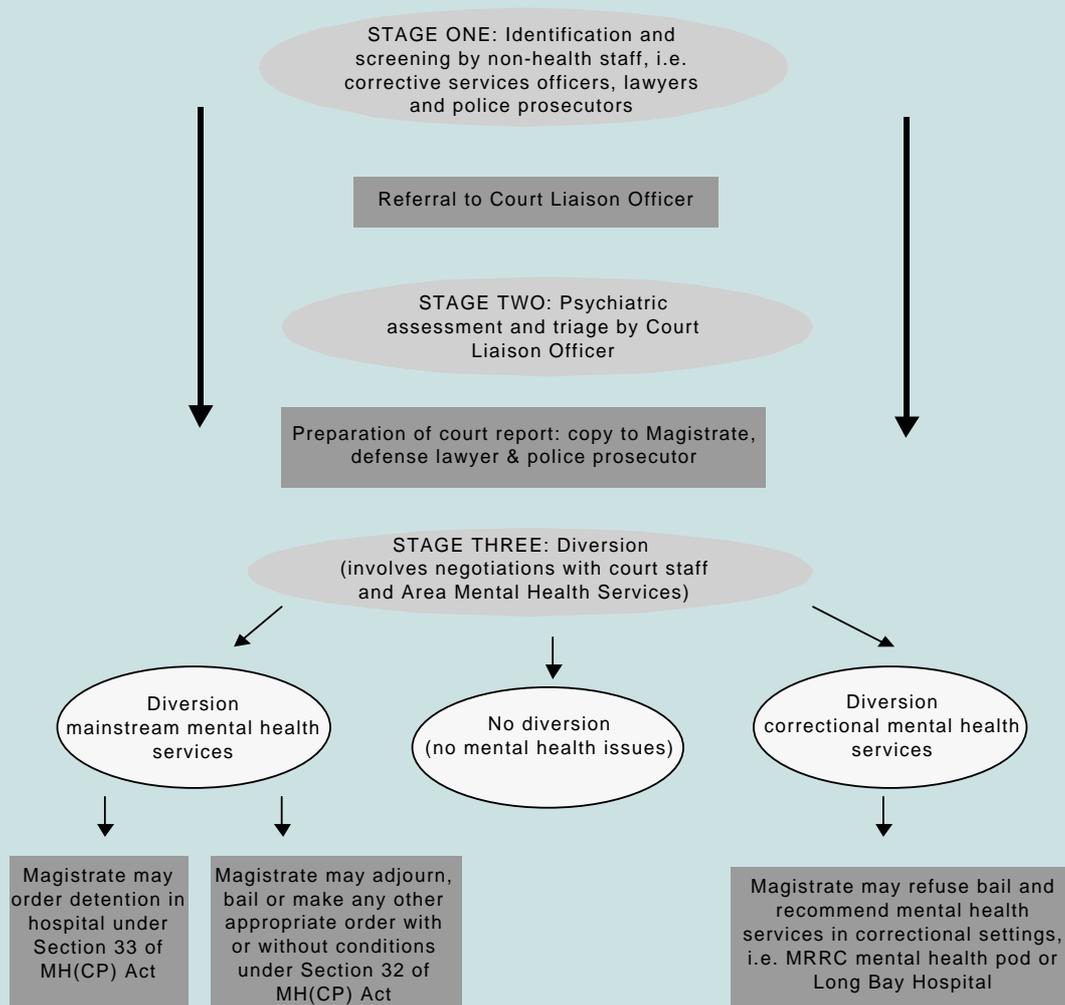
Difficulties in delivering mental health services in a prison environment have lead to calls for improved solutions to the delivery of psychiatric services. One possible alternative comes from an international trend to develop court-based liaison programs for individuals with psychiatric disorders. These programs divert individuals with mental health problems and disorders from court settings. This article describes the NSW Statewide Community and Court Liaison Service (SCCS), which is a new initiative in court liaison and diversion based on international trends in the development of forensic psychiatric services.

NSW STATEWIDE COMMUNITY AND COURT LIAISON SERVICE

The SCCS is available to those who are charged with minor offences, where the process of prosecution has begun (that is, pre-trial), and who appear at the local Magistrate's Courts. Currently, the SCCS operates in seven metropolitan and rural courts in NSW; it is envisaged that the service will expand to include a further five courts at the end of 2002.

FIGURE 1

MECHANISMS AND PROCESSES FOR COURT DIVERSION



Source: Greenberg and Davies.⁶

The SCCS is under the jurisdiction of Corrections Health Service; it is centrally managed by a clinical director, a senior project officer, and an administrative assistant. A steering committee with broad representation oversees the service. Mental health services within some local areas also operate court liaison services in Newcastle, Wollongong, and Port Macquarie–Kempsey.

DEFINING COURT DIVERSION

Court diversion means diversion from the criminal justice system towards treatment in mental health facilities. Although diversion can occur at any stage of a court process, most cases are dealt with before conviction. To assist the courts in making better-informed decisions about mental health matters, the SCCS provides mental health assessment and psychiatric triage in the courts and in holding cells.

By referring clients to appropriate mental health services, out of custody, and towards community and hospital

settings, clinical nurse consultants assist magistrates, solicitors, police prosecutors, and other court staff, with the diversion of people with mental health problems and disorders. Where diversion is not possible, clients will be referred to mental health services within the prison system.

Contrary to the belief of many, court diversion does not equate with discontinuation of criminal prosecution; it allows for the two systems of diversion and prosecution to co-exist in a collaborative manner. Court diversion to mental health services allows the judiciary to get on with the job of processing individuals through the courts.

In keeping with the *National Mental Health Strategy*, which is the key commonwealth policy framework for the delivery of mental health services in Australia, and *Towards a National Mental Health Approach to Forensic Mental Health*,⁵ court diversion forms a key component in the development of a model ‘forensic mental health’ system.

THE MECHANISMS AND PROCESSES FOR COURT DIVERSION

The characteristics of diversion in NSW are:

- the identification or screening of detainees with suspected severe mental health problems and disorders, usually by 'non-health' staff such as police, solicitors, and corrective services officers;
- psychiatric assessment and triage by a mental health professional, who is either a mental health nurse or psychiatrist;
- diversion ordered by the magistrate to mental health services, which involves negotiation with the courts and the integration of the individual into the care by appropriate mental health services that can deliver an alternative to prisons. Where this is not possible, the court liaison officer will ensure continuity of care through the correctional system.

The process of diversion may involve relevant sections of the *NSW Mental Health (Criminal Procedures) Act 1990*. A request for psychiatric assessment is made under sections 32 and 33 of the Act. The court cannot mandate psychiatric treatment under the Act, but the court can order the individual either to be detained in a hospital, or to be placed under condition to attend a hospital-mental health clinic or care of responsible persons.

All decisions about psychiatric treatment are mandated under the *NSW Mental Health Act 1990*. The primary advantage of the presence of the clinical nurse consultant in the courts is to provide psychiatric assessment and triage so that inappropriate or unnecessary requests made under section 33—for hospital admission to the area mental health services—are minimised. The area mental health services remain the 'gatekeepers' for the provision of local mental health services for detainees. Figure 1 is a diagrammatical illustration of the evidence-based framework for the provision of court liaison services.⁶

EFFECTIVENESS OF MENTAL HEALTH—COURT DIVERSION PROGRAMS

There is some evidence to support the effectiveness of court diversion programs for mentally disordered detainees. A number of studies have identified positive health outcomes on a range of indicators, such as changes in mental state, response to treatment, compliance, and contact with community clinics after discharge.^{7,8} Reduction of different stages of court processing time with court diversion schemes has also been reported.^{9,10} There are also studies that have indicated that court diversion has been successful in getting mentally ill individuals admitted into hospital, where this is appropriate.¹¹ However, there is conflicting research on whether court diversion schemes reduce re-arrest or re-conviction rates.^{11,12}

FUTURE DIRECTIONS

Mental health consumers who have had contact with the judicial system need to be integrated into general health and psychiatric services. The vast majority of individuals with mental health problems are seen in local courts; and, therefore, are not charged with serious offences. Linking them to existing general and mental health services better serves their health needs. While court diversion services have attracted increasing attention, resources, and funding, little has been done to fully evaluate the effectiveness of these services in terms of longer-term outcomes such as recidivism and re-hospitalisation. Future research needs to be promoted to ensure evidence-based best practice methods for efficient and effective court diversion programs.

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PROBLEMS REFUGEES FACE WHEN ACCESSING HEALTH SERVICES

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Refugees settling in western countries face many difficulties in accessing effective health care. These have been widely documented by health service providers,^{1,2,3,4} and in studies of resettled refugee populations.^{5,6,7} This article describes the particular problems that refugees face in accessing effective health care and some of the ways in which health services can respond.

BACKGROUND

Some 600,000 refugees have settled in Australia since the end of World War II.⁸ Of the 12,000 people who receive humanitarian visas each year to migrate to or stay in Australia, 40 per cent settle in NSW. NSW is also home to over 2000 people released from immigration detention centres on Temporary Protection Visas, and to an uncertain number of asylum seekers who are living in the community while their applications for protection are processed.

Refugees, and people of refugee-like background, are recognised as one of the most vulnerable groups in NSW society.⁹ They have specific health care needs—which arise from the adverse effects of conflict and forced exile—with experiences of persecution, psychological trauma, deprivation, unhealthy environmental conditions, and disrupted access to health care.

Some specialised services exist to meet the health needs of those of refugee background: counselling services for survivors of torture and refugee trauma exist in every state and territory in Australia. However, the majority of health care for refugees occurs within mainstream services. Many of the barriers to refugees accessing adequate care are similar to those experienced by the broader migrant community and other marginalised groups. These include: barriers to attending existing services, such as language, cultural and financial barriers; reduced ability to trust service providers and to negotiate the health system; and, at times, the unavailability of effective health care. However, for refugees these barriers are accentuated by their prior experiences and manner of coming to Australia.

BARRIERS TO ATTENDANCE

Unlike other migrants from non-English speaking countries, English language proficiency does not play a part in the selection of humanitarian entrants. They are likely to have a greater reliance on bilingual health care providers and interpreters for communication during health care. These resources are often lacking within (or for) small and emerging refugee communities—for example, among the Dinka people from southern Sudan. While a free telephone interpreter service exists for private medical practitioners, many doctors are reluctant to use it.

Studies with refugee populations in Australia,¹⁰ and in the United States,¹¹ have found language to be a significant barrier to refugees accessing health services. Language difficulties in general practitioner surgeries in the United Kingdom have led to refugees being turned away.¹² Language barriers can also result in miscommunication, misdiagnosis, and lack of appropriate follow up.^{13,14}

Financial constraints are almost universal for people who arrive as humanitarian entrants and who have yet to find employment. Few will own a car and the cost of public transport can influence decisions about accessing care. Cost can prevent referral to services not covered by Medicare, such as allied health providers, or to private specialists who charge a fee above the Medicare rebate. These patients have to attempt to access these types of care through hospital outpatient services. Limited finances also make the use of private dentists prohibitive. Most newly-arrived refugee groups have significant oral health care needs and their reliance on public dental services is problematic.

Limited trust of health service providers can inhibit some refugees from accessing health care.^{11,14} Such mistrust may arise from experiences of human rights abuses at the hands of government authorities,¹⁵ and cultural and language barriers between a refugee and health professional.^{16,17} Fear is accentuated for those refugees who have experienced torture in which health professionals have participated.¹⁸

People of refugee background often come from countries with vastly different health systems. Access to care for some refugees is therefore hindered by a lack of familiarity with available services.¹⁹ Community consultations with refugee populations living in NSW have confirmed this, and others, as significant issues for recent arrivals (NSW Refugee Health Service and the NSW Service for the Treatment and Rehabilitation of Torture and Trauma Survivors [STARTTS] unpublished reports).

NON-AVAILABILITY OF EFFECTIVE HEALTH CARE

Gaps in health service provision

Newly arrived refugee patients can have complex or multiple health problems. Inadequate reimbursement—to general practitioners for the additional time required to provide medical care for patients with special needs—can provide a disincentive for providing comprehensive care.²⁰

Specialised services targeting refugees are located in major metropolitan areas. Despite outreach and training strategies, these services are less available to those humanitarian entrants who settle in rural and regional areas of NSW.

There are specific groups within the refugee population with particular health issues for whom health service provision is yet to be developed. Examples include young

refugee people,²¹ and the aged and second-generation refugees.²²

A proportion of asylum seekers living in the community are not eligible for Medicare.²³ This is a significant gap in service provision that affects, in particular, pregnant women and others needing hospitalisation.¹⁷ Holders of Temporary Protection Visas (that is, people released from immigration detention centres) are not eligible for certain Commonwealth-funded health services such as free interpreting in private doctors' surgeries and limb prostheses.

Appropriate health care

Effective care may be impeded through health professionals having incomplete skills to detect and manage unfamiliar diseases among refugees.^{14,24} This can also occur through staff failing to adopt health care techniques that accommodate past trauma and human rights violations.^{14,25} Hospitalisation or other health service interaction that is not conducted in a sensitive manner, or that utilises clinical procedures reminiscent of abuse (for example, electrocardiography) may retraumatise those under care.¹⁵ Racism and discrimination have been shown to reduce access to care in some marginalised groups,²⁶ and is likely to affect refugee groups as well.

HEALTH SERVICE RESPONSES

Health services have attempted to increase refugees' service utilisation through community education and outreach;^{13,27} employing bicultural workers to act as service brokers;²⁷ adopting strategies to increase referrals from peers,² the community,²⁷ and social welfare agencies;¹³ and collocating health services with other frequently used services for refugees.²

Multicultural health services in NSW use many of the above strategies to promote access and appropriate health care for refugees. The NSW Refugee Health Service collaborates with STARTTS on education and support around refugee health issues for the staff of area health services and general practitioners. The potential role of primary care in reducing inequity of access and quality of care has recently been described.²⁸ Other strategies used include advocacy regarding service gaps, informing relevant agencies about referral pathways, nurse advocates to assist individual access, and community education about the health system in NSW.

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THE HEALTH CARE DISADVANTAGES OF BEING OBESE

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People who are obese are disadvantaged socially—in public places, in employment, and in health care.^{1–2} Many obese people are afraid of approaching health professionals and attending health facilities. Problems of access and lack of suitable facilities for obese people are a problem; however, the greatest impediment is the fear of encountering judgmental and discriminatory attitudes from health professionals about a patient's obesity.

Because of an increased risk of medical illnesses such as type 2 diabetes mellitus, hypertension, cardiovascular disease, stroke, sleep apnoea, gallbladder disease, and osteoarthritis,³ the need of obese people for medical care is great. However, the recommendation of weight loss as a primary therapy may compromise and delay the management of significant medical problems. This article describes the attitude of some health professionals towards obese patients, obese patients' views about health care, myths and realities about obesity, and suggests how health care for obese patients can be improved.

ATTITUDES OF HEALTH PROFESSIONALS TOWARD OBESE PATIENTS

Many studies have described how health care professionals may adopt a negative attitude towards obese patients.^{4–5} Medical practitioners and students often regard obese patients as ugly, sad, lacking in self-control, and difficult to manage.^{6–8} Nurses may be uncomfortable with obese patients and prefer not to care for them.^{9–10} Most health care professionals believe that obese patients are responsible for their obesity.¹¹ These negative attitudes are readily perceived by obese patients.¹²

Health care professionals are often aware of poor health outcomes in the treatment of obesity; but, generally, they do not hold themselves responsible for the failure of positive health outcomes. While some health care professionals recognise the intrinsic difficulty of treating an obese patient, there is still a tendency to blame the patient for their failure to be slim.^{13–17}

OBESE PATIENTS' VIEWS ABOUT HEALTHCARE

Medical publications have given little attention to the personal experiences of obese people with health care

services. Internet sites dedicated to acceptance and support for obese people often display messages from individuals who have experienced discriminatory treatment in health care settings. A selection of messages posted on the *Big Beautiful Women Downunder* Internet site at www.dksc.ws/bbw, or on linked sites, are quoted here to give an indication of some expressed concerns.

Consultations with general practitioners, specialists, or clinics

'Without knowing my background, eating or exercise habits [the doctor] assumed me to be both slothful and a compulsive eater. [The doctor] showed no willingness to believe me when I explained I was neither. Like most fat people I have an almost encyclopaedic knowledge of the carbohydrate, fat, and caloric content of food.'

'I was perched half naked, legs dangling unsupported on your high narrow examination couch, trying to hold a tiny gown modestly over my large unfettered breast. I was far too embarrassed to be anything but hypertensive.'

'Over the past seven months I have been to two obesity specialists ... and neither of the waiting rooms had seating suitable for larger people.'

'All we really need are chairs without arms! Whenever I go for medical appointments, every single chair has arms.'

Hospital admission

'Gowns that cover one half of my body, beds so narrow you want to be careful not to roll over, thin mattresses that squish to almost nothing under my weight, and the best part of all, those damned bed pans.'

'Many [health professionals] can't help absorbing the prevailing attitudes of our society, which basically assume that if you are fat you are necessarily unhealthy and that you obviously haven't tried to do anything about it—which is generally incorrect.'

'Women's magazines are the cheapest and most convenient form of waiting room literature, and these are generally mildly size-negative at best, and positively feral about [body size] at worst.'

'I haven't seen a doctor for a general check up at any time in my life. I have a strong dislike of being lectured and hectoring and harassed and heckled about weight or treated like a particularly naughty three-year old with a penchant for sweets. I am so afraid [of health professionals] that I

don't want to take steps to look after my health because of them.'

MYTHS AND REALITIES ABOUT OBESITY

Prejudicial attitudes about obesity commonly arise from popular myths.¹⁸

Myth 1: Obese people are usually lazy and/or gluttonous

Although lifestyle factors, including overeating and lack of exercise, can contribute significantly to weight gain, many factors determine a person's size. Genetic, metabolic, and other minimally-modifiable factors are involved. Two people can eat the same amount of food with different results in body weight and body composition;¹⁹ obese people do not necessarily eat more than lean people. In fact, obese people may need to eat considerably less to maintain their body weight.²⁰

Myth 2: Dieting is an effective way to reduce weight

Only five per cent of patients dieting to achieve permanent weight loss will be successful and reap the associated health benefits. The health implications of failed attempts at dieting are numerous and include negative effects on both physical and psychological wellbeing.²¹ Relapse occurs in many subjects after 3–5 years.²²

Myth 3: Health for the obese is best achieved through weight loss

People who lose and regain weight (weight cycling) have a greater risk of dying, particularly from coronary heart disease, than those who maintain a relatively stable weight.²³ Therefore, for most people, weight stability is likely to be more important than weight loss.²⁰ The process of weight loss can produce a number of adverse effects such as tiredness, irritability, and mood swings; uncontrolled weight loss can cause serious metabolic disturbances, and very occasionally death. Experts advise that a healthy diet with adequate physical activity can produce immediate health benefits,^{23–24} which may be more beneficial than weight loss.

HOW HEALTH CARE FOR OBESE PEOPLE CAN BE IMPROVED

Health care professionals and students may need to reassess their attitude towards the obese; it is important to recognise that the medical needs of the patient take priority over the issue of weight.

Discreet enquiry regarding weight issues may open the door to a patient who wishes to discuss their weight but is afraid to do so. However, a patient's prior knowledge and experience in this area should first be explored and acknowledged. Their rights to accept or decline intervention or counselling must be respected. Anyone recommending weight loss treatments must be aware of the likely outcomes and unwanted effects of the treatment. As for any other major intervention, an obese patient should be able to give informed consent to any weight loss treatment.

For many obese patients, weight loss may not be the healthiest option. It may be preferable to facilitate self-acceptance by encouraging self-esteem, an active social life, a moderate exercise program, and healthy eating habits. Results are best measured in terms of health gains rather than kilograms lost. Obese patients should also be protected from exploitation by the diet industry.

In providing health care facilities, planners should consider designated size-friendly clinics with the same accessibility as that provided for mobility-impaired patients, including large restrooms wherever possible. It may be necessary to design some radiological and other diagnostic equipment to accommodate obese patients. Even small and inexpensive concessions could be made to ease the stress on obese people in health care facilities. The first may be to provide one or two sturdy, armless chairs or a well-supported couch in the waiting room. Health-positive, size-neutral literature in waiting rooms—and a large sphygmomanometer cuff to ensure accurate blood-pressure readings—are other simple but potentially helpful measures.

CONCLUSIONS

It has been said that 'To treat disease in the obese is obviously good. To treat simple obesity as a disease may be another matter entirely'.²⁵ We need to focus on the medical and emotional needs of the obese patient rather than on the size of the patient. This may help to improve the uncomfortable and potentially harmful relationships between the obese patient and the health care provider. Perhaps then the obese person may be less fearful of seeking health care.

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CONSUMERS FIRST: PARTICIPATING IN THE SYSTEM

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As a retired social worker, and a person with a severe physical disability, I have had the opportunity to view the health system from both points of view. This article gives a personal reflection on the contribution that consumers might make to address the inequalities evident in health services.

A PERSONAL ENCOUNTER

It seems to me that, as in most organisations, health services are 'compartmentalised'. Each section, department, ward, or service, has its own brief; if the individual does not fit into that particular brief then they can have difficulty in accessing the assistance they need. My own quest to be weighed falls into this category of problems. I must say that this has not become an obsession, and that I may well have succeeded in being weighed if I had persevered.

To explain, I use an electric wheelchair and am not able to transfer without a lifter. Some years ago I was able to be weighed at a facility by a friend—of one of the health professionals I was seeing at the time—during her lunch hour. This solved the problem at the time. However, I was conscious that, had there been an accident of some sort, I was not a 'patient' of the facility and this could have caused difficulties for the person concerned. At the time I had to have some dietary advice and, as I had private health cover for extras, I began to attend a private clinic that also did not have the facility to weigh me. The dietician and I tried the hospital kitchen with the plan to weigh me in the wheelchair and then subtract the weight of the chair. Unfortunately, the new kitchen scales were not suitable.

My next attempt, a couple of years later, was when I had a short inpatient admission that I knew would involve a transfer from chair to bed. Armed with a request from my doctor I requested that, when I was being transferred, I might be weighed on a weighing chair. No luck again. There was no weighing chair on the ward and the staff were too busy to borrow one. My latest attempt has been to enquire of another community health professional if there was some way I could be weighed by someone in her community health service. Well no. I would have to see the dietician for that service.

I present this experience as an illustration of the difficulties faced by a person with a disability in accessing a simple service—to be weighed. Such a problem would be even greater if I did not speak English and/or had no knowledge of the health system. Although the service would be simple to provide, the complexity of the 'system' has prevented access.

THE INTERFACE WITH THE CONSUMER IN THE COMMUNITY

This same topic of compartmentalised responsibilities is evident in the interface between health and other community services. This interface was described in a 1996 report for the Consumers First Project.¹ The report examined the problems associated with the different areas of care, including health services (both hospital and community based), home and community care services, Department of Community Services, and non-governmental service providers. Twenty-six case studies cover a wide range of situations, ages, ethnicity, and disability. They show how differing services, responsibilities, and lack of communication between and within services can affect the outcome for consumers.

Examples of the problems encountered include lack of coordination of services, poor discharge planning, and lack of knowledge about services. In several cases, lack of knowledge on the part of general practitioners was a factor in the delay in accessing services, to both services in the community and services associated with the health system. Given that the general practitioner is the point of access in many cases, this can cause situations to become exacerbated before a remedy is found. In my own experience, I have been aware of services and have been able to track down what I needed. But I can understand the frustration of those without the knowledge of 'where to start' and those who give up the search for help.

THE PLACE OF THE CONSUMER

Complaints

The complaints procedure can play a part in improving services by drawing attention to individual problems; no doubt complaints might bring about some improvements in individual areas. However, one cannot know with certainty whether the situation has improved until the same situation occurs again. I had occasion to complain at the lack of a lifter in an emergency department when I had to be lifted manually by four people. I have been told that a note that I require this equipment has been put on my records at the hospital but what of others in a similar situation? I do not know whether, after my complaint, there is now a patient lifter available in that emergency department. Fortunately, I have not had the occasion to find out.

Apart from rectifying the situation that led to the original complaint, administrators might well look at the total situation regarding that complaint—in this case: Are there other areas where a lifter could—should be used? Are there any Occupational Health and Safety Issues? What of the dignity or preference of the patient? And so on.

Advisory Committees

A more proactive approach is to attempt to anticipate problems that may occur. As a person with a disability, I have participated in a number of advisory and planning committees such as Local Council Access Committees, the above mentioned Consumers First Project, Home and Community Care Planning Committees, and Disability Area Planning Committees. I see such committees, made up of representatives of consumers and other stakeholders, as playing an important part in improving services, particularly to special groups within the community.

Such advisory committees are particularly advantageous when planning facilities. A successful recent example of such a committee has been the Olympic Games Access Committee. Made up of representatives from all disability groups, this committee advised on all aspects of access to the Olympic site. There have been many comments, both at the time and since, about the ease of access to the facilities. The advice given in such planning situations can not only provide easier access to any facility but can also have potentially positive results in that it removes the need for costly changes afterwards and the possibility of legal action under the Disability Discrimination Act.

The Consumers First Project involved consumers, health professionals, and other stakeholders in discussions about the interface between health systems and community services. Though this project has ceased, much was learned by those participating, which no doubt had some influence on the ways in which the problems were approached.

CONCLUSION

Consumer and community participation has a value in various ways. On one level, participation can influence decision-making, especially the planning stages for new projects, whether in physical aspects such as disability access or access to the system itself. On another level the participation of the health professional, along with the consumers, hopefully will enable those within the system to see with new eyes, the inequalities, gaps, and difficulties in the ways in which services are delivered. Similarly, consumers can gain a fresh appreciation of the challenges of working within the health system.

While long-term committees can provide a reservoir of knowledge and expertise, it is important that there be a focus and task for such a group. Inequality in health may be the result of poverty, disability, ignorance, language, custom, and even low self-esteem on the part of the consumer. The health system itself is complex and can be difficult to negotiate. It has been likened to 'jumping through hoops'. Consumer groups and individuals can help to remove these hoops by working with members of the health professions to identify barriers and seek to remove them.

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COMMUNITY AND CONSUMER PARTICIPATION IN HEALTH: THE HEALTH PARTICIPATION COUNCIL

The Government Action Plan for health emphasised the importance of consumer and community participation in decisions about the public health system, and made a number of recommendations to strengthen this.

The recommendations included the establishment of a Health Participation Council, a ministerial advisory council appointed for two years, to provide input into policy decisions made at a state level. In addition, a new unit of the NSW Department of Health was established in the Consumer and Community Development Branch.

For more information on consumer and community participation in health visit the Web site at www.health.nsw.gov.au/policy.participate.

A future issue of the *NSW Public Health Bulletin* will highlight some of the consumer and community participation initiatives that are currently underway in New South Wales.

CURRENT THINKING AND ISSUES IN THE DEVELOPMENT OF HEALTH IMPACT ASSESSMENT IN AUSTRALIA

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Health Impact Assessment (HIA) offers a prospective method of:

- ensuring that government health policies improve the position of disadvantaged people;
- assessing the differential impact of health policies across the whole population;
- identifying potential impacts of health policies on specific groups within a population.

Despite there being no agreement on the significance of this process—and the process still needs to be evaluated—HIA is being extensively trialled in many other countries as a way of informing the policy-making processes of government. This article describes some of the discussion around these three applications of HIA. It draws on the findings of a recently-completed study for the Commonwealth Department of Health and Ageing on the potential application of HIA to population health and to the reduction of health inequalities in Australia.¹

THE AUSTRALIAN HIA STUDY

The Australian HIA study sought to understand HIA as a tool for the development of healthy public policy—its strengths and weaknesses, obstacles and limitations, the lessons learned from overseas, appropriate applications, and the training and capacity building needs of health professionals. It involved extensive overseas consultations with key informants working with HIA, a review of the literature, an appraisal of the institutionalisation of HIA in selected countries, and a consultation process within Australia.

THE 'WHY', 'WHO', 'WHEN', 'WHAT', AND 'HOW' OF HIA

HIA has its origins in Environmental Impact Assessment (EIA), which has been used to varying degrees of effectiveness around the world to determine the effects of developments on the environment and specifically on the health of people. In recent years there has been considerable international interest in the specialist application of HIA to policies and programs as they affect health. This application is more akin to Strategic Environment Assessment, which is the policy arm of EIA. Given Australia's extensive history of HIA within EIA processes,² it is important to consider this new application of HIA as a means of increasing population health gains through more evidence-based and healthier public policies.

Impetus can be linked to a number of initiatives including: the WHO European Centre for Health Policy, especially the Gothenburg Consensus Document on HIA;³ the European Union commitment to monitoring the impacts

of integration and the effects of policies on population health; commitment to HIA through policy initiatives in each of the individual countries of the United Kingdom; activities in the Republic of Ireland, New Zealand, and some provinces of Canada; and, the ongoing commitment to HIA in Scandinavian countries and the Netherlands.

HIA is defined as 'a combination of procedures, methods, and tools by which a policy, program, or project may be assessed and judged for its potential, and often unanticipated, effects on the health of the population, and the distribution of those effects within the population'.^{3,4} It builds on the notion that a community's health is not only determined by its health services but is also governed by a range of economic, social, psychological, and environmental influences. Health impacts refer to both positive and negative changes that occur to individual and community health, which are attributable to a development or policy. HIA can provide knowledge about the potential impact of a policy or program, inform decision-makers and affected people, and facilitate adjustment of the policy or program in order to mitigate the negative and maximize the positive impacts.³ The term 'policy' is very broad; it can exist at a range of levels and in a range of settings both inside and outside government. 'Policy' also includes actions (such as service plans and advice),⁵ and is often described using alternative titles such as 'strategy', 'plan', 'program', or 'project'.

HIA is underpinned by the desire to create a more inclusive and evidence-based approach to the formation of public policy. Conventionally, policy-makers draw on policy analysis and evaluation to determine whether policies are meeting their objectives. HIA complements this process by applying tools that provide information on the unintended consequences and side effects of a policy on health, before and after a policy's implementation. Additionally, the application of HIA to the policies of other related sectors such as transport, housing, education, or immigration, provide a mechanism to legitimise health outcomes as important goals for governments alongside other social and economic outcomes.

Macintyre acknowledges that most of the major drivers of population health and of the distribution of health lie outside formal national health services and health structures. When describing the United Kingdom, she states: 'Health ministers have acknowledged the importance of air pollution, unemployment, crime and disorder, poor housing, poverty, limited educational achievement, the general environment, and other forms of social exclusion. These influences on health are only rarely under the control of the doctors, nurses, or managers who are described as being the key architects in drawing up the plan for a new National Health Service'.⁶

Policy directly affects people's lives; it is a value-driven activity. These values include the desire for democracy, equity, sustainable development, and ethical use of evidence.³ In addition, the goal of HIA is to add value to the decision-making process so the procedures used must display how HIA will lead to better decisions than would otherwise have been made. HIA may add value through, for instance, quantifying the magnitude of effects, clarifying the nature of trade-offs, increasing transparency of decision-making, and changing organisational culture towards health across government.⁷

Process is crucial to outcome in HIA,^{7,11} so aspects such as rigour, inclusivity, thoroughness, and predictive accuracy, are essential features. Another perceived benefit of HIA is through the opportunities it creates to build alliances both across sectors of government and with the community. Consequently, HIA can be used to improve the quality and openness of public policy decision-making.⁸

The review of overseas case studies shows two main types of HIA being used:

- full or comprehensive HIAs;
- rapid appraisals of health impacts.

Full HIAs are based on traditional impact assessment methods including screening, scoping, impact appraisal, decision-making, monitoring, and evaluation. Rapid appraisal uses an audit or checklist method of determining impacts such as an equity audit, or an inequalities impact assessment. Generally, but not exclusively, rapid appraisals are based on expert consultation and are commonly used in situations where evidence is available but has not been applied to a specific context or proposal for action.

WHAT IS HEALTH INEQUALITIES IMPACT ASSESSMENT (HIIA)?

For HIA to help tackle health inequalities, it is essential that the different impacts borne by different groups are made explicit. Recommendations can then be made that seek to reduce any health inequalities. Acheson, in the *Independent inquiry into inequalities in health* (1998), recommended the application of specialist Health Inequality Impact Assessment (HIIA).⁹ He argued that specific attention is required within HIA to inequalities, citing immunisation and cervical screening as two policies that have widened inequalities.¹⁰ A well-intended policy that improves average health in a population may have no effect on inequalities; therefore, HIIA is a specific application of HIA. It seeks to make explicit not only the ways that a proposal will affect health but also the ways in which groups in the population will bear these health impacts.

Scott-Samuel defines HIIA as a decision-making tool that can be used for 'the estimation of the effects of a specified action on the health of a defined population'.¹¹ However,

many practitioners argue on the relative merits of two different approaches: should HIA always include an assessment of the impact on inequalities, or should two discrete types of impact assessment be retained—HIA and HIIA? Additionally, regardless of the answer to this question, should an assessment of the impact on inequalities focus on the most disadvantaged groups or should it look at all groups? Essentially this second question focuses on whether the policy has an effect only on the most disadvantaged group(s) or on inequalities in the whole population.

At the *Equity and HIA Conference* in 2000,¹² participants concluded that all HIAs (and the methods and procedures adopted within each such as screening, community profiling, and consultation processes) should focus on health inequalities, explicitly considering both impacts on disadvantaged groups and the distribution of impacts across the population. The advantages were seen to be: that there would be an increased awareness of inequalities in health and of their causes; that an improvement in decision-making that sought to prevent inequalities would occur; and that decision-making would be more transparent and accountable. However, there is still no widespread agreement on which is the best option.

IMPORTANT LESSONS

There is potential within HIA that the process itself might inadvertently compound health problems. As the appraisal process involves identification and characterisation of impacts on specific population groups, it is possible that trade-offs will occur when impacts are mapped and weighted. This may compound existing health problems—there may be trade offs between improving average health, improving the health of the most disadvantaged people, and reducing inequalities in health.¹³

Barnes, who has worked extensively on the application of HIA to regeneration programs in the UK, states that issues about equity and inequalities are similar, whatever the level of HIA.¹⁴ She identifies three important considerations arising from her work. First, disadvantage does not equal inequality and there are inequalities and inequities within other social groups rather than just in the most disadvantaged. In defining the scope of the HIA it is important to consider the question: inequalities between whom?¹⁴ Second, despite the focus of the HIA in a disadvantaged area being on inequalities, and despite equity being a core value of HIA, the HIA undertaken may not explicitly focus on equity. Third, in an HIA focused on a disadvantaged area, it is important to understand whether the focus is on the impacts of a proposal on the current population of the area or on the area itself and its future residents. Unless this is clear, the HIA can potentially compound inequalities by making recommendations to introduce schemes that result in residents moving away. This compounds the disadvantage in the area or drives residents away because of the

increasing cost of living that is a direct consequence of the development. The result is that the disadvantage is simply moved elsewhere.

HIA itself can assist in addressing inequalities through community participation. If HIA is truly participatory—allowing people who have little opportunity to express their views—then self-esteem can be raised. Social exclusion infers exclusion from power structures; HIA and HIIA can reduce this. Finally, transparency of the process is essential if the community is to believe that they have an active and long-term role in the development of policies that affect their health and wellbeing.

CONCLUSION

With the increased understanding of the influence of 'upstream factors', such as social or fiscal policies, on population health and inequalities in health outcomes, Australia needs to be actively engaged in processes that will change these factors. HIA is one of the many important mechanisms available to policy-makers and will enable Australia to be part of an international development about the factors that impact on population health. There is indeed considerable scope for this to occur; it is heartening to see incorporation of HIA in the NSW Health and Equity Statement.

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USEFUL WEB SITES

European Centre for Health Policy at www.who.dk/eprise/main/WHO/Progs/HPA/Home; International Health Impact Assessment Consortium (IMPACT) at www.ihia.org.uk/links.html; London's Health at www.londonhealth.gov.uk; Netherlands School of Public Health, Health Impact Assessment Database at www.hiadatabase.net; and Deakin University HIA at www.hbs.deakin.edu.au/HealthSci/Research/HIA.

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B A R M A H F O R E S T V I R U S I N F E C T I O N

WHAT IS BARMAH FOREST VIRUS?

- Barmah Forest virus is a germ that can infect people through mosquito bites.
- Past infection with Barmah Forest virus may have a protective effect against future infection.
- Barmah Forest virus is related to Ross River virus.

HOW IS BARMAH FOREST VIRUS SPREAD?

- The virus is spread by certain types of female mosquitoes.
- Female mosquitoes feed on animals and people. If they feed on the blood of an infected animal, the mosquito may become infected. The virus may then be passed to other animals or to people when the infected mosquito bites them while it is feeding again.
- Native animals, such as kangaroos and wallabies, are thought to be the main animals involved in the cycle of infection.
- The virus is not spread from one person to another.

WHAT ARE THE SYMPTOMS OF BARMAH FOREST VIRUS INFECTION?

- Many people infected with the virus will not develop symptoms.
- Symptoms of Barmah Forest virus infection are similar to that of Ross River virus infection.
- Flu-like symptoms may occur, with fever, chills, headache, and aches in the muscles and joints.
- Some people may develop joint swelling and stiffness, which is particularly noticeable in the mornings.
- A rash sometimes develops, usually on the trunk or limbs. This rash usually disappears after 7–10 days.
- A feeling of tiredness or weakness can occur at times during the illness, which can affect both lifestyle and work performance.

HOW SOON DO SYMPTOMS DEVELOP AFTER BEING BITTEN BY AN INFECTED MOSQUITO?

- Symptoms develop between 5–21 days, but usually between 7–10 days after being bitten by an infected mosquito.

HOW LONG DOES THE ILLNESS LAST?

- The majority of people will recover completely within a few weeks. Others may experience symptoms on and off for more than three months. In very rare cases, people may experience symptoms for over a year.

- A full recovery can be expected.

WHAT IS THE TREATMENT FOR BARMAH FOREST VIRUS INFECTION?

- There is no specific treatment for Barmah Forest virus infection.
- Your doctor will be able to assist you in easing the discomfort of symptoms.
- Plenty of rest, along with moderate exercise and healthy eating, may help in your recovery.

HOW DO I KNOW IF I HAVE BARMAH FOREST VIRUS INFECTION?

- If you have symptoms, see your doctor, who can order a blood test to diagnose Barmah Forest virus infection.

CAN BARMAH FOREST VIRUS INFECTION BE PREVENTED?

- The key to prevention is to avoid being bitten by mosquitoes, especially in the summer and autumn months.
- Avoid being outside in the late afternoon and dusk. Mosquitoes are usually most active from 1–3 hours after sunset and again around dawn.
- When outside wear loose fitting, light coloured clothing that covers your arms and legs, and use an insect repellent that contains the chemical diethyl toluamide (DEET) or Picaridin.
- Fit fly screens to all windows, doors, and chimneys, and keep them in good repair.
- Use an insecticide in sleeping areas, according to instructions.
- Ensure open containers of water are removed from around the home to prevent mosquitoes breeding. Cover the openings to water tanks with fine steel mesh to prevent mosquitoes from laying eggs in the tank.
- When camping, take precautions such as using flyscreens on caravans and tents, and by sleeping under mosquito proof nets.
- Take particular care while fishing, ensuring that you follow personal precautions to avoid being bitten by mosquitos.

For further information please contact your local public health unit, community health centre, or doctor.

July 2002 ☒

COMMUNICABLE DISEASES REPORT, NSW: JULY 2002

TRENDS

The seasonal variation in **arbovirus infections** (which peak in autumn), **invasive pneumococcal disease** and **meningococcal disease** (both of which peak in winter) are reflected in Figure 1. In contrast to previous years when **Ross River virus** has predominated, most of the mosquito-borne arbovirus infections notified this year have been **Barmah Forest virus**, which has been most common in the coastal areas to the north of Sydney (Table 5).

QUARTERLY REPORT: AUSTRALIAN CHILDHOOD IMMUNISATION REGISTER

Table 1 details the percentage of fully immunised children aged 12 months to less than 15 months in each Area Health Service, reported by all service providers.

These data refer to five different cohorts of children whose age has been calculated 90 days before data extraction. The information contained in each of the reports has been extracted from the Australian Childhood Immunisation Register (ACIR) and may not reflect actual coverage due to under-reporting.

Table 2 details the percentage of fully immunised Aboriginal and Torres Strait Islander children in New South Wales for the same cohort and is reported for the first time.

INFLUENZA SEASON BEGINS

Influenza epidemics occur each winter in NSW. Rates of illness can be around 30 per cent of the population in some communities. People with underlying chest, heart, or metabolic diseases—and the elderly—are at risk of the potentially fatal complications of influenza.

The two main types of influenza are A and B. Type A tends to cause more widespread outbreaks and has been the dominant strain in recent years. Immunisation is available for anyone who wants to avoid infection, and is encouraged in people at risk of complications as well as in health care workers. The vaccine provides protection against three strains of influenza for up to a year.

The NSW Department of Health monitors influenza through weekly surveys of sentinel general practitioners and the major laboratories. In 2001 the epidemic peaked in late July and August. In 2002, laboratory diagnoses of influenza began to increase in May and have increased through June. The majority of influenza strains have been type B. Some of these have been shown to be the strain known as B/Hong Kong. While the current vaccine is likely to protect against other strains of influenza circulating in Australia, it is likely to provide reduced protection against B/Hong Kong.

TABLE 1

PERCENTAGE OF FULLY IMMUNISED CHILDREN AGED 12 TO LESS THAN 15 MONTHS BY AREA HEALTH SERVICE

Area Health Service	30 June 01	30 Sept 01	31 Dec 01	31 Mar 02	30 June 02
Central Coast	94	93	94	92	90
Central Sydney	91	89	87	88	89
Hunter	94	96	93	94	94
Illawarra	92	93	91	93	89
Northern Sydney	90	89	89	90	89
South Eastern Sydney	89	89	89	90	89
South Western Sydney	92	90	89	90	90
Wentworth	92	92	91	92	90
Western Sydney	89	90	89	90	90
Far West	87	92	94	92	90
Greater Murray	93	93	93	93	92
Macquarie	93	92	95	92	93
Mid North Coast	91	91	88	90	90
Mid Western	90	92	92	92	91
New England	92	92	94	94	92
Northern Rivers	86	86	84	80	84
Southern	91	91	89	93	90
NSW	91	91	90	91	90
Australia	92	91	90	91	90

TABLE 2

PERCENTAGE OF FULLY IMMUNISED ABORIGINAL & TORRES STRAIT ISLANDER CHILDREN AGED 12 TO LESS THAN 15 MONTHS

	30 June 02
NSW	87
Australia	85

In early June, an outbreak of influenza was reported, which involved an estimated 150 students at a 900-student boarding school in Northern Sydney. Some students tested positive for influenza B. It is not yet known if these cases are due to the Hong Kong strain. This pattern of influenza is not unusual for NSW. The NSW Department of Health will continue to monitor influenza throughout the winter.

PNEUMONIA OUTBREAK IN THE BLUE MOUNTAINS

A team including the Wentworth Public Health Unit and the Communicable Diseases Branch of the NSW Department of Health is investigating an apparent outbreak of psittacosis in the Blue Mountains, west of Sydney.

A review of the medical records of patients presenting to local hospitals has shown that, compared with previous years, there has been a substantial increase in cases of pneumonia among the local residents since mid-March 2002. Approximately 80 cases of pneumonia have been identified in people aged 15–75 years, who live in the Blue Mountains and who are without underlying chronic lung disease or heart failure, through active surveillance of physician and hospital records from 1 March to 18 June 2002. These people have been asked to provide convalescent serology for testing for a range of infections, including psittacosis.

Preliminary serological testing on 21 cases using Chlamydia genus IgG and IgA enzyme-linked immune assay (EIA) followed by micro immunofluorescence shows presumptive evidence of psittacosis in 16 cases. Testing for other pathogens is ongoing but none have been detected to date. Further laboratory tests have been arranged for the other cases identified.

Many of the individuals who are cases have reported spending time gardening. Further epidemiological and environmental studies are underway. A case-control study is being performed to better identify risk factors and inform prevention strategies.

In the meantime, the local public health unit has issued precautionary warnings that people in the area should avoid contact with birds, and use face masks when working with materials that may be contaminated with bird droppings—especially when pruning or clipping plants, lawn mowing, or handling garden mulch.

QUARTERLY REPORT: HIV NOTIFICATIONS TO END OF MARCH 2002

To the end of March 2002, the cumulative total for the number of NSW residents diagnosed with HIV infection was 12,484 (Table 3). The number of new diagnoses of HIV in NSW has plateaued over the past few years; as of 30 June 2002, the number of HIV diagnoses in NSW for 2001 was 348, compared with 358 in 2000. On 31 December 2001, the estimated number of people living with HIV infection in NSW was 9073; of these, an estimated 1563 people have been diagnosed with AIDS.

There were 81 new diagnoses of HIV for the first quarter (Jan–Mar) of 2002. However, the most recent HIV data may contain duplications. Of the 81 cases diagnosed between 1 January and 31 March 2002, 75 (93 per cent) were males, three (four per cent) were females, two (one per cent) were transgender, and the gender of one (<1%) was unknown (Table 4). All cases notified were aged 20 years or more at the time of diagnosis; 30 per cent were aged between 20–29 years; and 44 per cent were aged between 30–39 years. An analysis of associated risk factors shows that male-to-male sexual contact (with or without a history of injecting drug use) was reported for over three-quarters of cases and heterosexual contact (as the only risk factor) was reported for 12 per cent. Only two (two per cent) cases reported injecting drug use (one of these individuals also reported male-to-male sexual contact). Exposure to risk factors remains undetermined or unknown for 10 per cent of cases notified in the first quarter of 2002. This is considerably lower than the proportion of notifications (15 per cent) with undetermined or unknown information about risk factors for the period 1991–2000, which reflects improved HIV surveillance in NSW.

AIDS diagnoses and AIDS deaths

The cumulative total for the number of AIDS diagnoses and AIDS deaths in NSW to 31 March 2002 was 4898 and 3335 respectively (Table 3). The number of diagnoses of AIDS and AIDS deaths continues to decline significantly in NSW, with only 10 AIDS diagnoses and five AIDS deaths in the first quarter of 2002. ☒

TABLE 3

NOTIFICATION OF HIV, AIDS, AND AIDS DEATHS REPORTED BY YEAR, NSW, 1981–MARCH 2002

Year	HIV	AIDS	AIDS Deaths
1981	1	1	1
1982	1	1	0
1983	1	3	1
1984	202	30	6
1985	988	91	46
1986	1107	160	108
1987	1637	250	143
1988	1143	312	138
1989	982	346	235
1990	815	417	313
1991	807	435	334
1992	705	415	304
1993	596	464	363
1994	504	520	405
1995	536	454	339
1996	455	348	255
1997	423	194	108
1998	410	165	68
1999	384	105	61
2000	358	115	69
2001	348	62	33
Jan–Mar 2002	81	10	5
Total	12484	4898	3335

TABLE 4

CHARACTERISTICS OF NSW RESIDENTS REPORTED WITH HIV INFECTION, AIDS, OR WHO HAVE DIED FROM AIDS, 1981 TO 31 MARCH 2002

Characteristic	All cases 1981-2001			1991-2000			Jan-Mar 2002			AIDS deaths				
	N	%	AIDS	N	%	AIDS	N	%	AIDS	N	%	AIDS	N	%
Gender														
Male	11540	92.4	4680	95.5	3212	96.3	5072	92.0	3108	94.8	2249	96.2	75	92.6
Female	654	5.3	206	4.2	116	3.5	367	6.6	160	4.9	84	3.6	3	3.7
Other	290	2.3	12	0.3	7	0.2	87	1.5	9	0.3	6	0.3	3	3.7
Age														
0-2	8	0.1	8	0.2	4	0.1	4	0.1	8	0.2	4	0.2	0	0.0
3-12	36	0.3	12	0.3	9	0.3	9	0.2	6	0.2	5	0.2	0	0.0
13-19	201	1.6	15	0.3	11	0.3	63	1.1	5	0.2	6	0.3	0	0.0
20-29	3945	31.6	815	16.7	579	17.4	1571	28.4	485	14.8	395	16.9	24	29.6
30-39	4783	38.3	2035	41.6	1359	40.8	2167	39.2	1375	42.0	957	40.9	36	44.4
40-49	2361	18.9	1381	28.2	953	28.6	1086	19.7	954	29.1	680	29.1	13	16.1
50-59	759	6.1	475	9.7	305	9.2	396	7.1	341	10.4	215	9.2	6	7.4
60+	266	2.1	157	3.2	115	3.5	136	2.5	103	3.1	77	3.3	1	1.2
Not reported	125	1.0	0	0.0	0	0.0	93	1.7	0	0.0	0	0.0	1	1.2
Exposure														
Male homosexual-bisexual	7340	58.8	3963	81.0	2768	83.0	3567	64.6	2569	78.4	1904	81.4	61	75.3
Male homosexual-bisexual & IDU	279	2.2	182	3.7	128	3.8	180	3.3	129	3.9	100	4.3	1	1.2
Injecting drug use (IDU)	419	3.4	46	0.9	20	0.6	213	3.9	40	1.2	19	0.8	1	1.2
Heterosexual	887	7.1	354	7.2	182	5.5	686	12.4	308	9.4	162	6.9	10	12.4
Haemophilia-Coagulation disorders	112	0.9	51	1.0	45	1.4	7	0.1	24	0.7	28	1.2	0	0.0
Blood-tissue recipient/ NSI*	117	0.9	106	2.2	91	2.7	28	0.5	44	1.3	44	1.9	0	0.0
Vertical	14	0.1	15	0.3	8	0.2	12	0.2	13	0.4	7	0.3	0	0.0
Not stated-Unknown	3316	26.6	181	3.7	93	2.8	833	15.1	150	4.6	75	3.2	8	9.9
Residence														
Greater Sydney **	7066	56.7	4087	83.4	2787	83.6	4263	77.2	2746	83.8	1965	84.0	78	96.3
Rest of New South Wales	797	6.4	657	13.4	418	12.5	549	9.9	502	15.3	346	14.8	3	3.7
Unknown	4621	36.9	154	3.2	130	3.9	714	12.9	29	0.9	28	1.2	0	0.0
Total	12484	100.0	4898	100.0	3335	100.0	5526	100.0	3277	100.0	2339	100.0	81	100.0

HIV data to 31 March, 2002 source: NSW HIV database, CDB, NSW Department of Health, Recent HIV data may contain incomplete risk factor information and duplicates
AIDS data to 31 March, 2002 source: National Centre for HIV Epidemiology and Clinical Research

* Needle-stick injury

** Greater Sydney area health services include Central Sydney, North Sydney, Western Sydney, Wentworth, South West Sydney, and South East Sydney

FIGURE 1

REPORTS OF SELECTED COMMUNICABLE DISEASES, NSW, JAN 1997 TO MAY 2002, BY MONTH OF ONSET

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

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

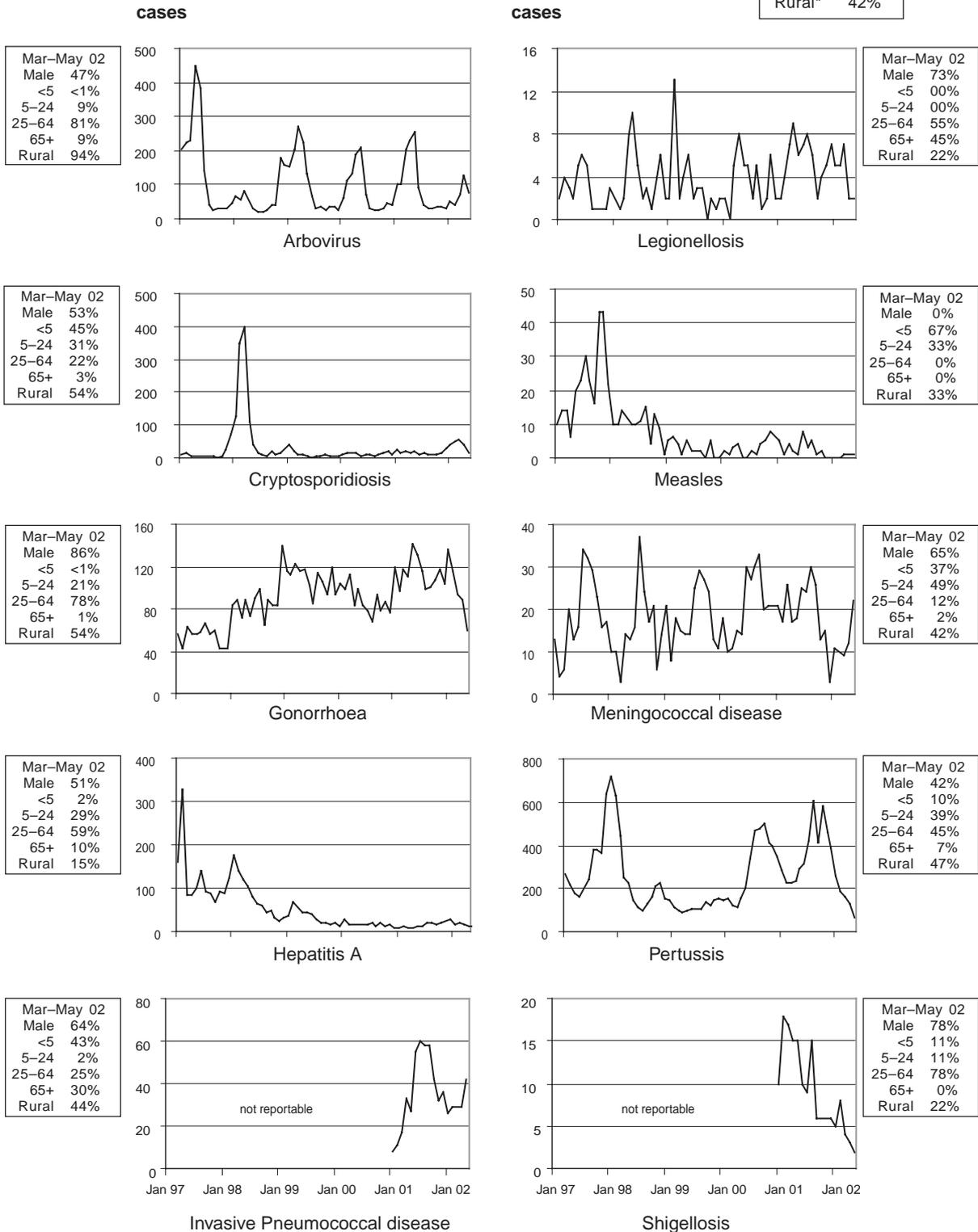


TABLE 5 REPORTS OF NOTIFIABLE CONDITIONS RECEIVED IN MAY 2002 BY AREA HEALTH SERVICES

Condition	Area Health Service														Total for May [†]	To date [†]				
	CSA	NSA	WSA	WEN	SWS	CCA	HUN	ILL	SES	NRA	MNC	NEA	MAC	MWA			FWA	GMA	SA	CHS
Blood-borne and sexually transmitted																				
Chancroid*	11	48	40	18	-	17	38	10	93	22	9	19	7	16	5	12	10	-	380	2,025
Chlamydia (genital)*	-	4	9	-	-	1	1	3	50	2	1	5	2	1	-	-	1	-	82	536
Gonorrhoea*	-	-	-	-	-	-	-	1	1	1	1	1	1	1	-	-	-	-	4	31
Hepatitis B - acute viral*	50	33	76	3	2	8	9	5	58	3	2	4	-	2	4	3	3	-	266	1,526
Hepatitis B - other*	-	-	-	-	-	-	1	-	-	-	1	-	-	1	-	-	-	-	3	51
Hepatitis C - acute viral*	91	35	46	35	2	41	57	26	113	28	33	11	10	20	1	21	13	4	590	3,067
Hepatitis C - other*	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4
Hepatitis D - unspecified*	14	2	7	1	1	1	1	-	21	3	4	4	1	-	-	-	-	-	61	322
Vector-borne																				
Barmah Forest virus*	-	1	-	1	-	8	32	1	-	4	35	1	-	-	-	-	2	-	85	224
Ross River virus*	-	-	-	-	-	-	3	3	1	4	5	6	5	-	5	4	7	-	43	121
Arboviral infection (Other)*	1	2	-	-	-	-	2	-	1	2	-	-	-	-	-	-	1	-	10	40
Malaria*	-	3	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	5	62
Zoonoses																				
Anthrax*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brucellosis*	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Leptospirosis*	-	-	-	-	-	-	1	1	-	1	1	-	1	-	-	-	1	-	6	20
Lyssavirus*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psittacosis*	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2	8
Q fever*	-	-	-	-	-	-	2	-	-	5	3	2	3	1	-	-	7	-	23	98
Respiratory and other																				
Blood lead level [†]	-	-	-	-	-	-	3	14	2	-	-	-	2	1	-	-	-	-	22	132
Influenza*	-	4	3	-	-	-	-	17	-	-	-	-	-	-	-	-	-	-	24	48
Invasive pneumococcal infection*	3	9	6	4	-	7	6	3	10	-	-	-	1	3	-	1	-	-	53	167
<i>Legionella longbeachae</i> infection*	-	-	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	4	11
<i>Legionella pneumophila</i> infection*	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	14
Legionnaires' disease (Other)*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leprosy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal infection (invasive)	-	1	4	2	3	-	4	2	2	-	-	2	1	-	-	-	1	-	22	62
Tuberculosis	6	-	-	1	1	1	1	1	6	1	1	-	-	-	-	-	-	-	19	169
Vaccine-preventable																				
Adverse event after immunisation	2	-	1	-	-	3	1	1	6	-	-	-	-	1	-	-	-	-	16	72
H.influenzae b infection (invasive)*	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	6
Measles	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	3	3
Mumps*	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	3	12
Pertussis	15	20	14	3	17	5	16	5	19	5	7	3	7	-	1	12	3	-	152	1,134
Rubella*	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	13
Tetanus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Faecal-oral																				
Botulism	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cholera*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cryptosporidiosis*	3	1	4	1	-	-	1	4	7	4	1	4	-	-	-	2	1	-	33	221
Food borne illness (not otherwise specified)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
Gastroenteritis (in an institution)	38	-	-	30	-	-	7	-	-	-	-	-	-	-	-	-	-	-	75	331
Giardiasis*	-	14	11	7	3	1	2	5	7	1	1	8	6	1	1	7	1	-	76	409
Haemolytic uraemic syndrome	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	2
Hepatitis A*	2	4	-	1	1	-	-	-	7	-	2	1	-	-	-	-	-	-	18	92
Hepatitis E*	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1
Listeriosis*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5
Salmonellosis (not otherwise specified)*	21	22	16	16	54	5	22	3	23	29	12	4	1	1	8	5	5	-	249	1,220
Shigellosis*	-	1	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	4	27
Typhoid and paratyphoid*	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	19
Verotoxin producing <i>E. coli</i> *	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2

* lab-confirmed cases only + includes cases with unknown postcode * HIV and AIDS data are reported separately in the Public Health Bulletin quarterly

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

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