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# SUICIDE MORTALITY IN NSW LOCAL GOVERNMENT AREAS

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This is the fourth of a series of articles on the epidemiology of suicide in NSW by the Mental Health Epidemiology Group (MHEG). Our first report[1] presented Standardised Mortality Ratios (SMRs) for Area and District Health Services by pooling data across the 14-year period 1979-92. In this report we present the same analysis for Local Government Areas (LGAs). This is the finest level of geographic detail available in the Statewide death data.

We demonstrated in our first report that it is not feasible to use the suicide rate as a performance indicator for the success of suicide prevention programs in small populations, such as those of Area and (especially) District Health Services[1]. This applies also to LGAs. However, it is common for questions to be asked about the suicide rate for a particular LGA, and the data here may be useful to those who are called on to answer questions about local suicide rates. We have grouped LGAs under the relevant Area or District Health Service and repeated the previous data for those Areas and Districts. This helps to indicate ways in which the data may be used to inform local discussions of suicide and prevention activity.

## METHOD

Australian Bureau of Statistics suicide mortality data for Area and District Health Services and LGAs were pooled over the period 1979-92 and indirectly standardised relative to the pooled data for NSW during the same period. SMRs were scaled in the conventional way so SMR=100 for NSW as a whole. This standardisation adjusts for differences in the age-sex composition of the pooled population of the particular geographic area relative to the pooled NSW population. Thus an SMR of 120 means the particular area had a pooled suicide rate which was 20 per cent higher than that for NSW as a whole over the same period. Conventional 99 per cent confidence intervals were calculated for each SMR based on the usual assumption of Poisson-distributed events.

As some boundaries between LGAs have changed over time, we used aggregate data for LGAs where this was the case[2]. Data for the LGAs of Central Sydney and Southern Sydney, Blacktown and Parramatta, Warringah and Pittwater, and a number of rural LGAs are presented for these groups, rather than for individual LGAs.

Most health administrative boundaries in NSW follow LGA boundaries. In general, therefore, it is possible to add up the observed and expected deaths for the set of LGAs reported under an Area/District heading, and arrive at the total for that Area or District. The exceptions to this are the composite LGA of Sydney and Southern Sydney (which divides in the proportion 40:60 between Central Sydney AHS and Eastern Sydney AHS[3]) and the LGA of Blayney (which is part of the composite LGA of Orange/Blayney/Cabonne because of boundary changes among these LGAs over time). We have reported data for Orange/Blayney/Cabonne under the Central Western DHS, but part of it belongs to the Evans DHS. Thus the data

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for each of the Areas and Districts are correct, and the data for individual LGAs and composites are correct, but the individual LGAs for Eastern and Central Sydney have to be combined to match the total deaths in those two areas. The same applies to Central Western and Evans DHS.

Recent changes in NSW Health administrative boundaries are only partly reflected in these data. We have reported the data for Canterbury LGA under both Southern Sydney AHS (where it forms part of the total for the AHS), and under Central Sydney AHS (where it now belongs, but does not, in this data, contribute to the AHS total). We have grouped Districts according to the Public Health Units which serve them, as in the previous report.

## RESULTS

In each of Figures 1-6, the name of the Area or District or LGA is followed by the number of actual deaths by suicide over the 14-year period 1979-92, then the expected number of deaths for that locality if the NSW average age-specific death rates had applied to that population during the same period. The latter have been rounded to the nearest whole number.

Thus at the top of Figure 1 we show Central Sydney AHS with 737 actual deaths as against 570 which would have been expected for that population on State average rates. Immediately after the data for Central Sydney AHS are the data for the composite of Southern Sydney LGA and Central Sydney LGA: 328 actual deaths and 154 expected at State average rates. Of these, 40 per cent contribute to the totals for Central Sydney AHS. Data for LGAs are reported in descending order of SMRs within the Area or District.

For localities with at least five deaths, the graph shows the SMR and its 99 per cent confidence interval (CI). In the case of a few LGAs with very small populations, the value of the upper 99 per cent confidence limit exceeds SMR=300 and is not shown. The shaded area is the 'target' area of a 10 per cent reduction in the average suicide mortality for the State as a whole.

## DISCUSSION

The data for 151 individual LGAs demonstrate, as previously, that estimates of the rates of rare events are very imprecise in small populations. There are various technical issues associated with the interpretation of these results, some of which were addressed in our first paper[1], and in correspondence arising out of it[4]. One of the agreed conclusions from that debate is that there is a need to offer guidance in the analysis and interpretation of health data of this kind.

For those reasons, we have added an account of some of the issues that arise when a large body of data is explored to detect "unusual" variation. The technicalities have been placed in footnotes as far as possible, and the main focus of the discussion is on the practical usage of the results.

### Assessment of overall variation of LGAs relative to the NSW average

It is technically incorrect to compare indirectly standardised rates or SMRs with one another unless relatively sophisticated procedures are used[5,6] and we have therefore interpreted each SMR in relation to SMR=100 for NSW as a whole. As a practical decision rule, we used the 99 per cent CI surrounding the SMR estimate for an LGA to classify the LGA as "unusually" high or low relative to SMR=100[7]. Thus if SMR=100 lies below the lower 99 per cent CI bound for the SMR of the LGA, we consider that LGA as having an unusually high average suicide rate (for example, Marrickville, in Figure 1). Similarly, if SMR=100 lies above the upper 99 per cent CI bound for the SMR of the LGA, we consider that LGA as having an unusually low average suicide rate (for example, Hornsby, in Figure 1).

Using these definitions, there are eight LGAs with unusually high SMRs for suicide: Southern/Central Sydney, Leichhardt, Marrickville, Woollahra, Waverley, Randwick and North Sydney (Figure 1) and Broken Hill (Figure 4). There are also 10 LGAs with unusually low SMRs for suicide: Canterbury, Sutherland, Hornsby, Ku-ring-gai and Ryde (Figure 1), and Fairfield, Campbelltown, Baulkham Hills, Lake Macquarie and Port Stephens (Figure 2).

Clearly, there are other LGAs in Figures 1-6 which are "almost unusual", and not all the unusual LGAs are equally so. The confidence intervals shown in Figures 1-6 provide a much more informative view of these data than the simple classification based on an hypothesis-testing approach[8]. Nevertheless, in practice, confidence intervals tend to be used to classify groups of data, more or less as outlined above. It is therefore useful to estimate the probable errors involved in making decisions about geographical or administrative units in this way.

In classifying LGAs as unusually high or low, we concluded either that the result SMR=100 is within the range of likely values for the suicide rate in the LGA (negative decision – not "unusual"), or that it is not (positive decision – "unusual"). Because the test is based on a 99 per cent CI, we know there is a 1 per cent false positive rate for each individual decision. We made 151 individual decisions: one per LGA, and we can therefore expect that one or two "false positives" will result[9]. We can also calculate that the chance of obtaining a total of 18 "false positives" is essentially zero[10]. Taken together, these results mean we can safely conclude that there is some ***systematic*** variation in the standardised suicide mortality between LGAs in NSW, but we should not be preoccupied with the difference between the 18 "positives" (since one or two are likely to be ***false*** positives) and the remaining 133 LGAs.

Another useful way of looking at the data is to classify LGAs in relation to some meaningful SMR value other than SMR=100. We might, for example, accept as "less problematic" any LGA whose suicide rate can confidently be said to be no more than 20 per cent above the State average. These are the LGAs for which SMR=120 lies above the upper 99 per cent CI bound. This would add the LGAs of Botany, Hurstville, Kogarah, Warringah, Lane Cove (Figure 1), Bankstown, Camden, Wollondilly, Parramatta/Blacktown, Penrith, Hawkesbury, Newcastle, Wollongong, Shoalhaven (Figure 2), and Hastings (Figure 3) to the 10 LGAs with unusually low average suicide rates.

However, the most useful way of expressing the result for any particular LGA is in terms of its confidence interval. The most we can actually say is that, for example, the average suicide rate in Penrith LGA over the period 1979-92 was about 90 per cent of the State average, and there is a 99 per cent chance that the true value is between 75 per cent and 110 per cent of the State average. Data of this kind can be read off Figures 1-6 for every LGA in NSW.

**Assessment of variation within health administrative areas**

Most of the LGA data simply add detail to our previous conclusions about Area Health Services and Districts. The Central Sydney and Eastern Sydney Areas were classified as having unusually high SMRs in our previous analysis, and this is true of most (but not all) of the LGAs within them (Figure 1). The Far West District also has a high SMR, and this is clearly due to the LGA of Broken Hill (Figure 4). The Southern Sydney Area (Figure 1) and South Western Sydney Area (Figure 2) had unusually low SMRs in our previous analyses, and this is true of some of the LGAs within them.

The main value of the LGA-level analyses therefore lies in providing an indication to Area Health Services (and, to a lesser extent, District Health Services) of within-area variation. Looking at the variation in SMRs across LGAs in the same area gives an indication of whether the problem seems to be localised or uniform. For example, the Northern Sydney AHS as a whole is not different from the State average, but it contains an LGA (North Sydney) with one of the high rates and three LGAs (Hornsby, Ku-ring-gai, Ryde) with low rates.

The newly created South Eastern Sydney AHS will have an overall SMR closer to the State average than that of either of the original AHSs, because it will include four of the eight LGAs with high suicide rates (all from Eastern Sydney), and two of the 10 LGAs with low suicide rates (both from Southern Sydney). Clearly, the suicide problem is not solved by administrative mergers of this kind, but at the level of statistical summaries it might appear to be. For that reason alone it is useful to report data at a finer level of geographical detail. Similarly, the addition of Canterbury to Central Sydney AHS will reduce the suicide rate for the new AHS as a whole as the result of "immigration" of a lower-rate population, just as the "emigration" of that population from Southern Sydney AHS would have raised the average for the new area.

A practical way of looking at this is to consider the estimated SMRs for the LGAs within an Area or District against the 99 per cent CI for the Area or District as a whole. This violates the rule about not comparing indirectly standardised SMRs with one another[5], but is a reasonably valid way of assessing the uniformity of the suicide rate across geographical subdivisions of a larger area. For example, in the Northern Sydney AHS (Figure 1), there are four LGAs (Hunters Hill, Manly, North Sydney, Mosman) whose SMRs lie above the upper 99 per cent confidence limit for the AHS as a whole, and another four (Hornsby, Lane Cove, Ku-ring-gai, Ryde) whose SMRs lie below the lower limit. On this basis, those concerned with suicide prevention in the Northern Sydney AHS might choose to focus on the former group of LGAs. By contrast, the data for the Wentworth, Central Coast and Illawarra Area Health Services (Figure 2) show quite uniform SMRs across the relevant LGAs, and an Area-wide approach might be more suitable.

It may also be noted that the LGAs with the highest SMRs in the Northern Sydney AHS would be regarded as "average" in Central Sydney AHS and are below the average in Eastern Sydney AHS, but issues of this kind are better dealt with by considering the Area or District Health Service as a whole in relation to the NSW average.

**Measures to set and monitor progress towards targets**

A number of useful measures may also be derived from the data to assist local discussions on suicide issues, and in planning how to set and monitor progress towards targets. These measures are of most value to District Health Services where populations are small, annual data are very variable and sophisticated statistical advice may be difficult to obtain. We will illustrate some uses of the reported data by referring to the Murrumbidgee DHS (Figure 5).

Next to each locality in Figures 1-6 we have presented the number of actual deaths, and the number of deaths expected if the NSW average age-specific suicide rates applied through the years 1979-92. The ratio of these (actual/expected), expressed as a percentage, is the SMR. Thus for the Murrumbidgee DHS the SMR can be calculated[11] as (SMR=actual deaths as percentage of expected deaths = 79/76 x 100 = 104). The plotted point scaled off Figure 5 is about 105.

It is also useful to present the same evidence as "excess mortality". For the Murrumbidgee DHS as a whole there would have been 76 deaths by suicide in 14 years if people in that District were at the same risk as others in the State as a whole. In fact there were 79 deaths, so the excess mortality of the District due to suicide amounted to three deaths in 14 years. This was not uniform across the District, however, since the individual LGA data show there were four excess deaths in Hay, five in Leeton and one in Narrandera, while Griffith had six fewer deaths than expected, Carrathool one fewer and Murrumbidgee had the same suicide mortality as the rest of the State. To avoid differences of this kind being over-emphasised, it should be noted that "excess mortality" is the difference between actual and expected deaths, while an SMR is the ratio of actual to expected deaths, expressed as a percentage, which is equal to 100 when actual deaths equals expected deaths. Therefore, since the SMRs for all the individual LGAs in the Murrumbidgee DHS, and for the DHS as a whole, have wide confidence intervals which include SMR=100, it follows that the corresponding confidence intervals for the excess mortality are wide, and include excess mortality=zero[12].

Similar calculations can be used to determine the expected number of deaths for other SMR values. Suppose the District administration chose to aim at a reduction to SMR=90, as indicated in the target range. What actual number of deaths would correspond to SMR=90? This can be determined in the following way. SMR=100 corresponds to the expected number of deaths (76). Therefore SMR=90 corresponds to 90 per cent of the expected number of deaths (90/100 x 76 = 68.4). This is the number of expected deaths over 14 years. This corresponds to a change from 79/14 = 5.6 per year to 68.4/14 = 4.9 per year. For the Murrumbidgee DHS, therefore, a target of SMR=90 relative to the NSW average rate between 1979-92 corresponds to 5.6 – 4.9 = 0.7 deaths a year. This target (one life saved a year) is easier to relate to than achieving a reduction in the SMR from 105 to 90. It also may help to consider the relative benefit of investments in this area of health care as against other life-saving interventions.

Calculations of this kind can readily be carried through for any SMR that is chosen as a target, for any of the data in Figures 1-6. It must be remembered, though, that these are 14-year data for the period 1979-92, so even though the data

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are more reliable, they are not very sensitive to recent population shifts or changes.

## Conclusions

The main value of the LGA-level analyses lies in providing indications to those concerned with suicide prevention in Area and District Health Services. This may help in explaining the issues at the local level, in targeting programs on smaller administrative areas which have higher SMRs than others, and perhaps in developing programs with local government. In addition, LGA-level data are useful in avoiding the possibility that health problems which are distributed unevenly in the population can become invisible when various sub-populations are merged and only aggregate data are reported. This is well illustrated by the recent merging of the former Eastern Sydney and Southern Sydney Area Health Services (less Canterbury LGA) to create the South-Eastern Sydney AHS. There is, therefore, a clear role for Public Health Units in addressing these issues of within-area variation in health status indicators.

There is also a value in understanding the statistical basis of interpreting observed data. The suicide risk for a population results from a multiplicity of factors – some chronic, some acute, some affecting the population as a whole, and some affecting only a few individuals within it. In a fairly typical LGA in NSW, with a population of 20,000 males, constant over the period 1979-92, there were four male deaths a year on average, but in some years as many as eight and in one year no deaths at all. The only "pattern" in the data which would allow the number in any particular year to be predicted is that it was consistent with a Poisson distribution with a mean of four deaths a year. If we take this as a model, we know there is only about one chance in 100 of 10 or more deaths occurring if the underlying risk has remained constant. Between the unobservable risk, and the observable data, lie all the unknown factors which affect the individuals in a population. The power of a statistical model is that it makes efficient use of all the available information to guide decisions and to provide indicators against which we can measure suicide prevention programs. In particular, it gives us an estimate of the extent to which the observed data will vary even when the underlying risk remains the same.

By contrast, if we do not take this into account when we assess the performance of suicide prevention programs against observable indicators, the decisions we make on programs may be as random as the year-to-year variation in suicide deaths in a typical LGA in NSW. The alternative is not to abandon the attempt to address these problems on a local level, but to choose appropriate indicators of performance. Programs which have a logical relationship to risk reduction in the population, and which are agreed by relevant expert opinion – including the opinion of community groups – to be of value, need to be implemented and sustained for long enough to have an effect which is detectable. Every reasonable effort must be made to establish a connection between program activity and its impact on risk, even if it is impossible to carry the argument through to a demonstrable impact on the suicide rate.

## Acknowledgments

We wish to thank Dr Tim Churches, Epidemiology Branch, NSW Health Department, for supplying the SAS routine which was adapted for the standardisation, and Kerrie Crawford and Margaret Riakos from the Centre for Mental Health for verifying the data in the figures.

## Note

Membership of MHEG is open to people with a professional interest and expertise in mental health epidemiology who are willing to contribute to the planning and production of a series of publications and reports on important mental health topics. The policy of MHEG is joint publication by the group as a whole in which authors are listed in order of their contribution to the particular report. The contact address for matters concerning this report is Mental Health Epidemiology Group, Centre for Clinical Policy & Practice, Public Health Division, NSW Health Department, Locked Bag 961 PO North Sydney 2059 (Fax: 391-9232, Internet e-mail gstew@gwsm.doh.health.nsw.gov.au).

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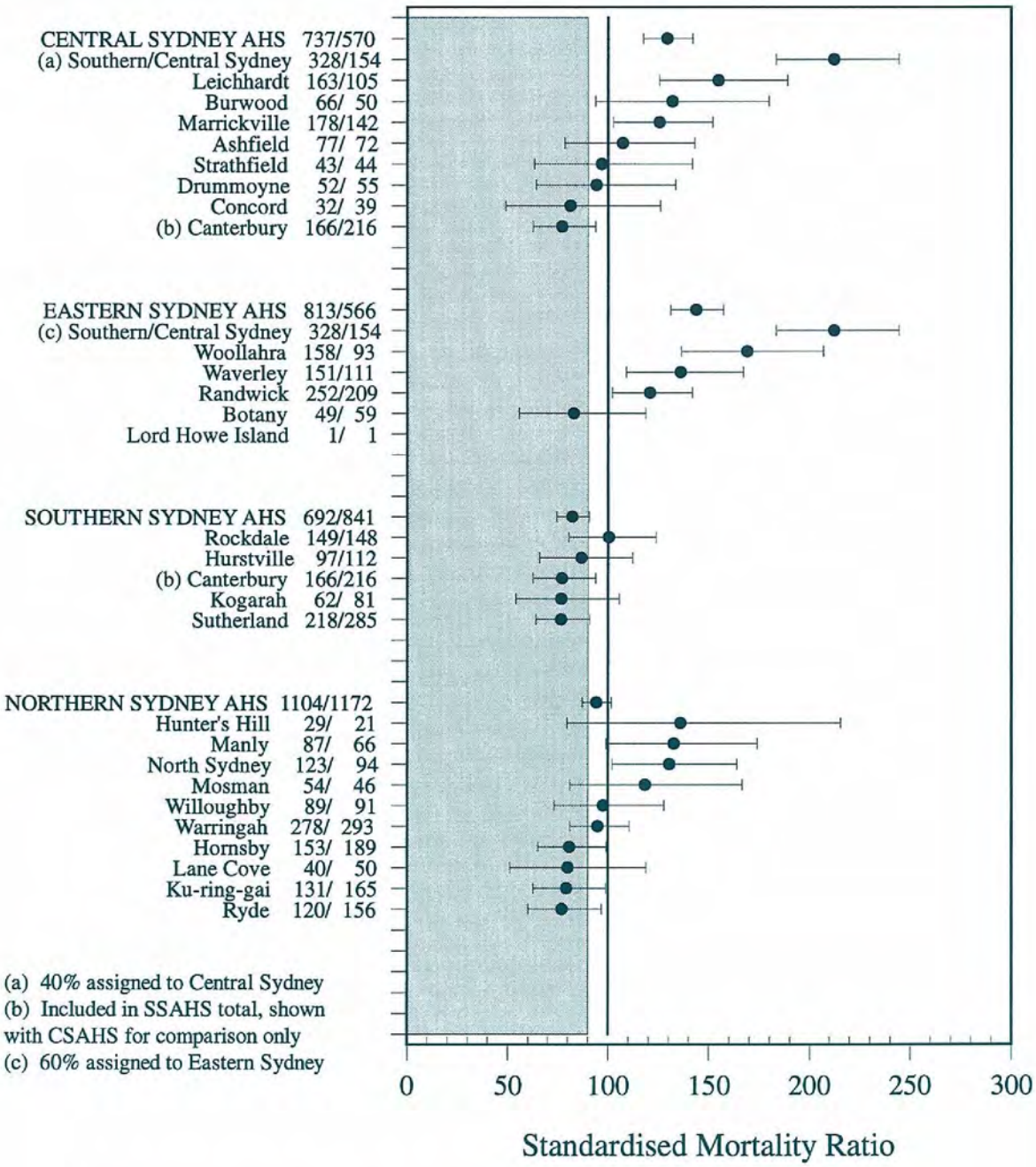
1. Stewart G, Chipps JA, Sayer G. Suicide mortality in NSW: geographic variations. *NSW Public Health Bulletin*, 1995; 6(6):49-52.
2. The mortality and population data used in this report contain codes for "continuous" LGAs. These are either individual LGAs whose boundaries have not changed over the period 1970-1995, or combinations of LGAs in cases where the inter-LGA boundary has changed, but the boundary for the aggregate has not. These data were prepared for the HOIST (Health Outcomes Information and Statistical Toolkit) system by Dr Tim Churches and his group, based on similar files developed by the NSW Central Cancer Registry.
3. This apportionment has been done by a particular randomised allocation of deaths in the mortality file in the HOIST data system, since the place of residence of the person at death is only classified to the LGA. On average the assignment is in the ratio 40:60, but in any year or group of years it will not be exactly 40:60 because of the randomisation. This problem arises only because of the arbitrary boundary chosen to divide these LGAs for NSW Health administrative purposes.
4. The discussion can be found in the *NSW Public Health Bulletin*, 1995; 6(9):92-94. The essential point is that our confidence intervals may, in some circumstances, be underestimates of the true width of the 99 per cent confidence intervals.
5. Carriere KC and Roos L. Comparing standardised rates of events. *Am J Epidemiol* 1994; 14:472-482.
6. Chan LY, Gibberd RW. Statistical properties of an index to measure systematic regional variation in mortality. Unpublished paper, October 15, 1991.
7. Technically, we are not classifying the result for the LGA as "high" or "low", but rather concluding either that the result SMR=100 was within the range of likely values for the suicide rate in the LGA, or it was not.
8. Gardner MJ, Altman DG (eds). Statistics with confidence. London: *British Medical Journal*, 1992.
9. If there is a 1 per cent chance of a false positive for each test, and 151 tests, the expected number of false postitives is 1.51, so "one or two" is a practical summary of this result. There is also a false negative rate, which would need to be based on some chosen level of SMR judged "important to detect". For example, if it were considered important to detect SMR=200 (that is, that the suicide rate in a geographical area was twice the State average), it would be possible to estimate the false negative rate for each area. This would be different for each, and depend on the population, but clearly the false negative rates will be high because the confidence intervals at the LGA level are so wide. Even when the true rate was equivalent to SMR=200, many of the confidence intervals would still include SMR=100.
10. If the chance of a single false positive is 0.01 (1 per cent), then the binomial probability of obtaining more than 12 false positives in a series of 151 tests is less than $10^{-8}$.
11. For those who may wish to report the SMR at the highest accuracy available, greater precision will be obtained by scaling off the point plotted in the relevant figure for small numbers of deaths (because the figure given for expected deaths has been rounded to the nearest whole number) and will be obtained by calculating from the actual and expected death data otherwise.
12. If we cannot conclude that the SMR for the District differs from SMR=100, then neither can we conclude that excess mortality differs from zero.

FIGURE 1

LOCALITY, OBSERVED DEATHS/NSW AVERAGE AND SMRS FOR SUICIDE PERSONS NSW 1979-92



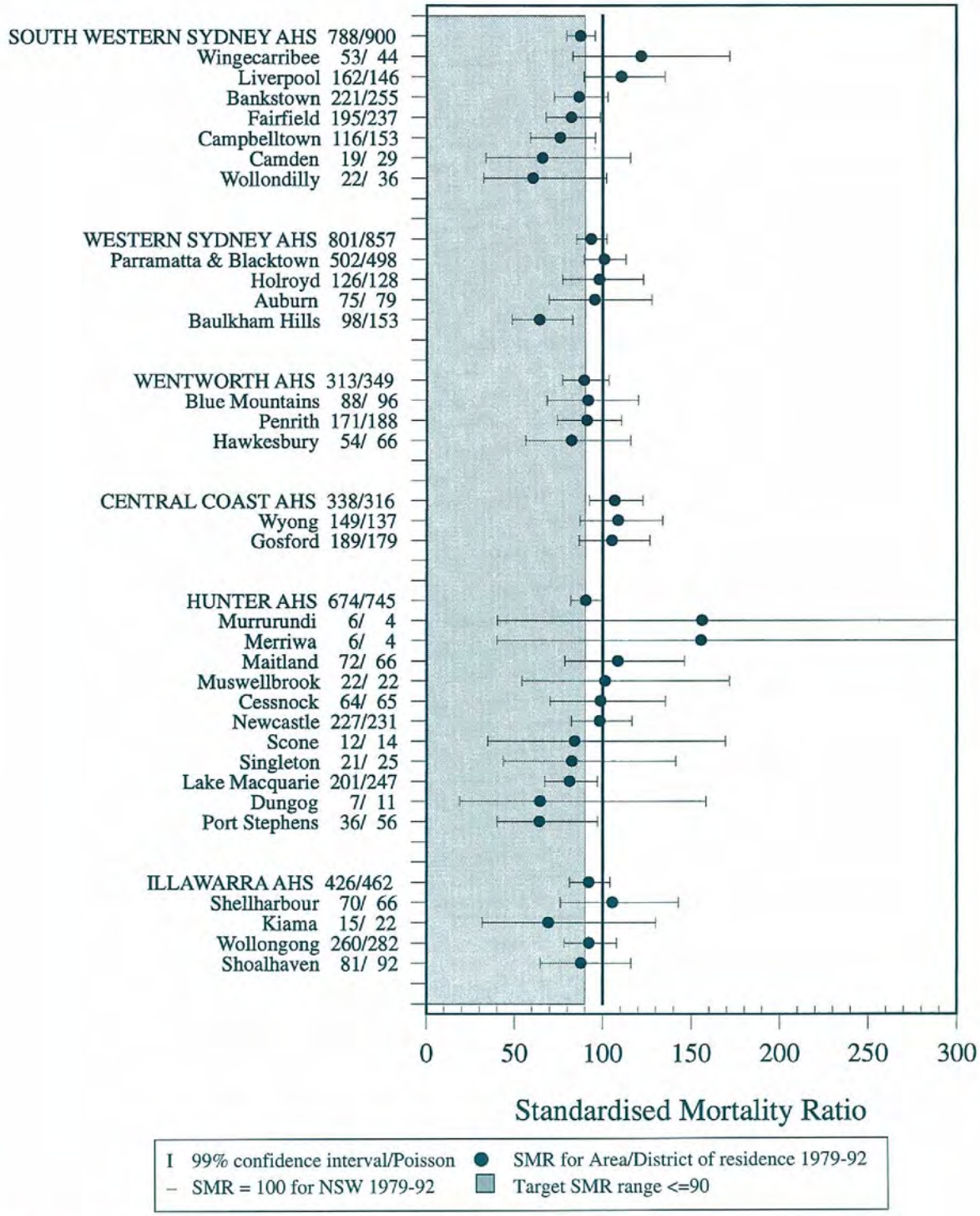

(a) 40% assigned to Central Sydney
(b) Included in SSAHS total, shown with CSAHS for comparison only
(c) 60% assigned to Eastern Sydney

I 99% confidence interval/Poisson
– SMR = 100 for NSW 1979-92
● SMR for Area/District of residence 1979-92
Target SMR range <=90

Source: Epidemiology Branch, ABS deaths 1979-92, registered by 1993

FIGURE 2

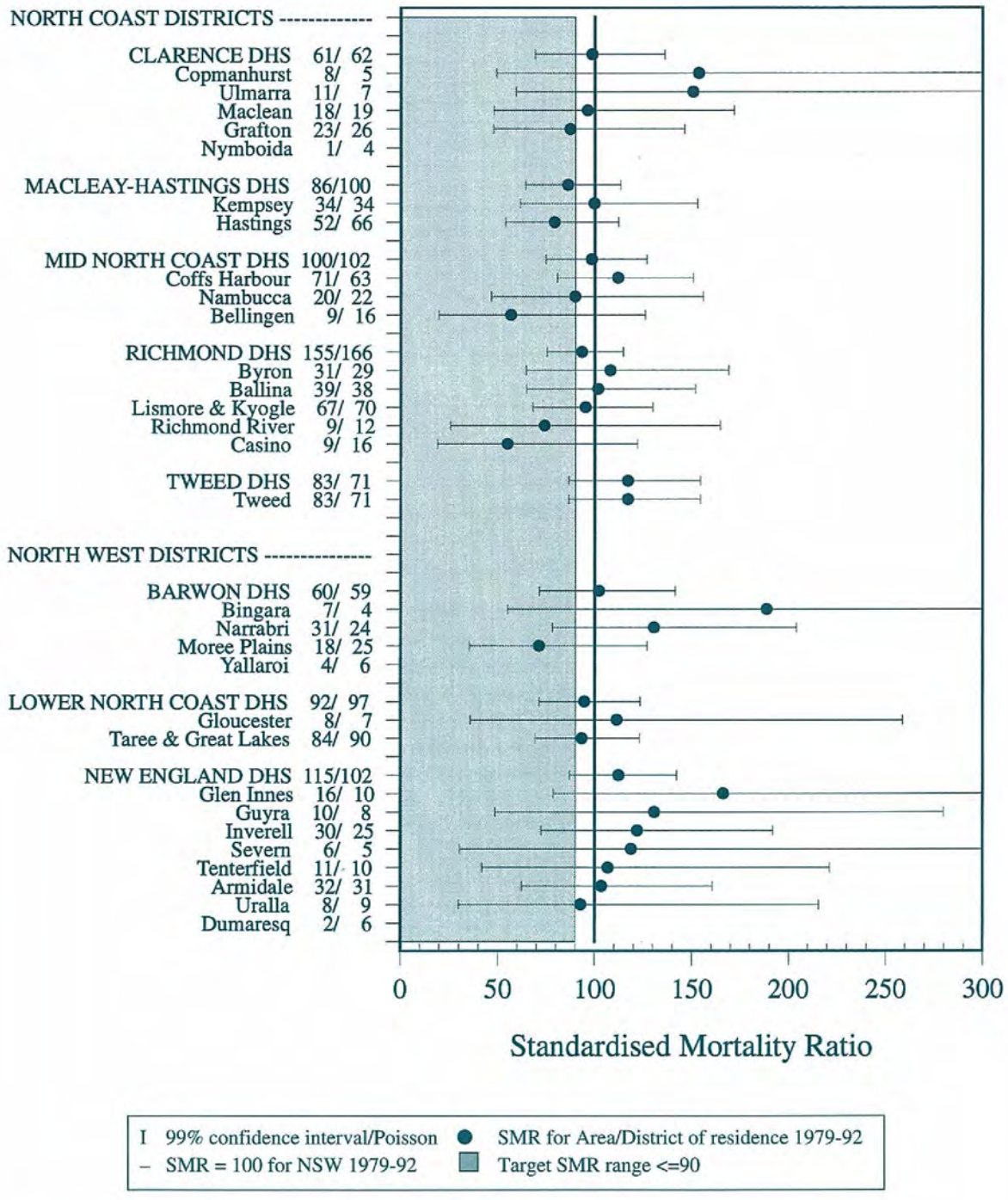
LOCALITY, OBSERVED DEATHS/NSW AVERAGE AND SMRS FOR SUICIDE PERSONS NSW 1979-92




Source: Epidemiology Branch, ABS deaths 1979-92, registered by 1993

FIGURE 3

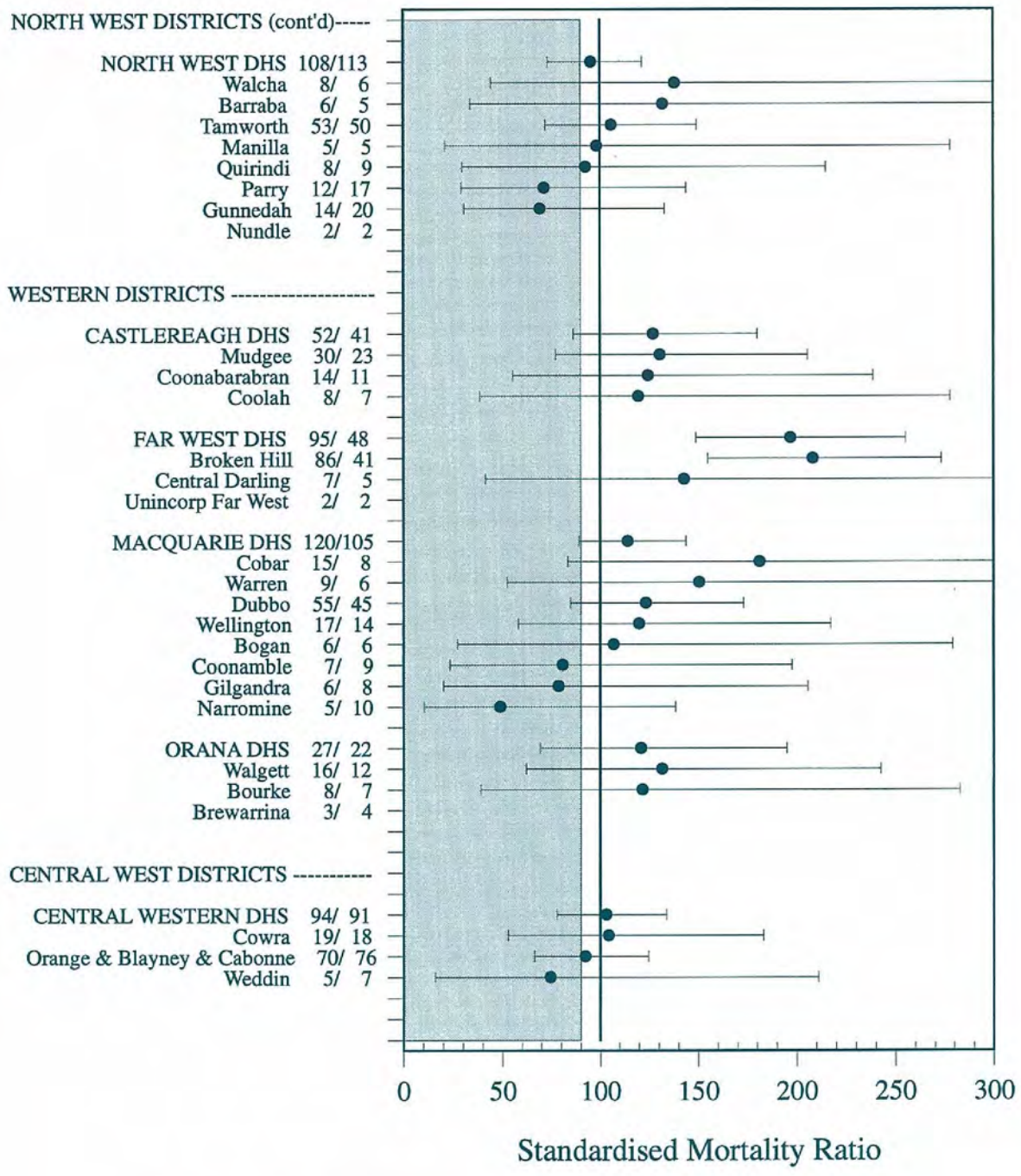
LOCALITY, OBSERVED DEATHS/NSW AVERAGE AND SMRS FOR SUICIDE PERSONS NSW 1979-92




Source: Epidemiology Branch, ABS deaths 1979-92, registered by 1993

FIGURE 4

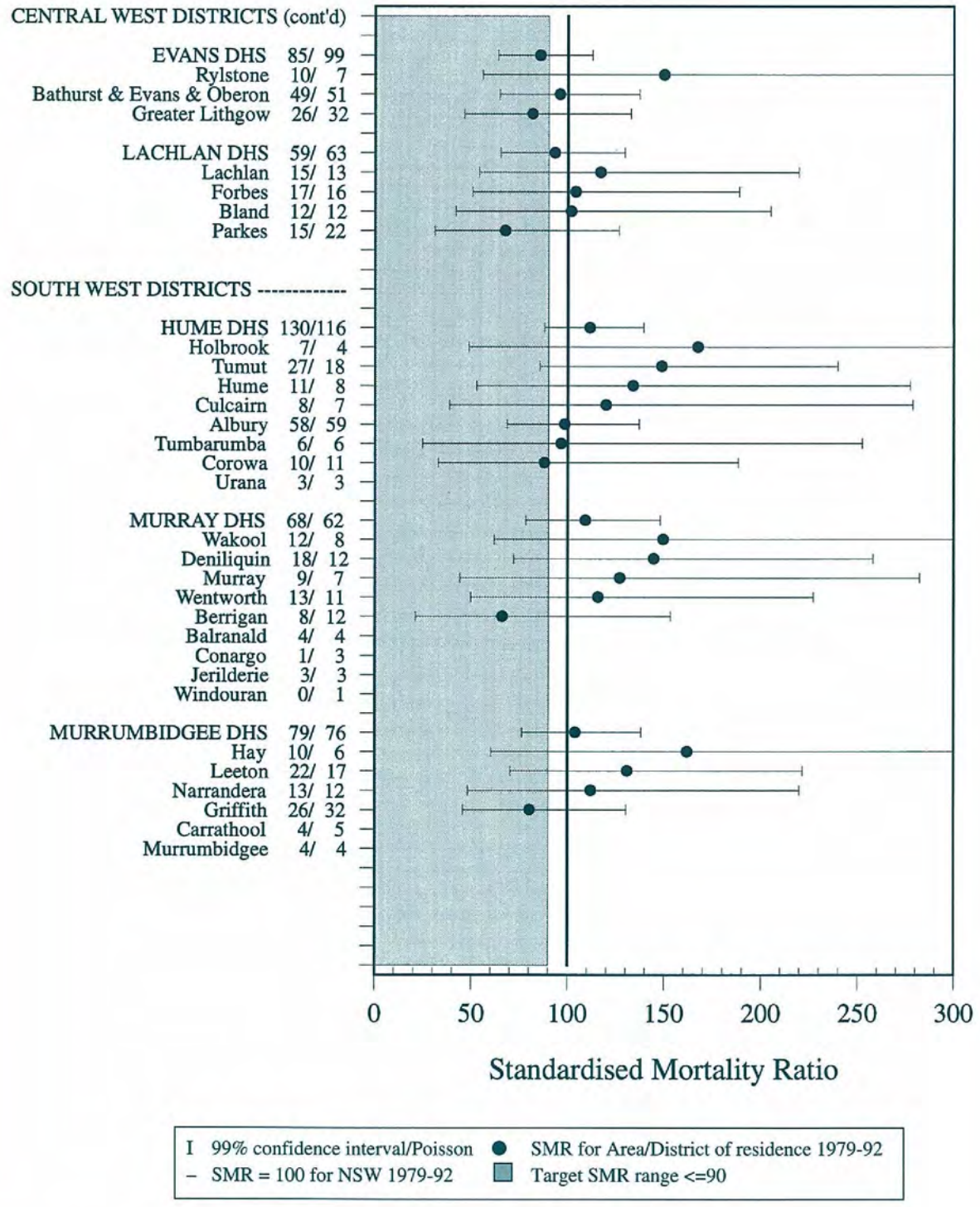
**LOCALITY, OBSERVED DEATHS/NSW AVERAGE AND SMRS FOR SUICIDE PERSONS NSW 1979-92**




Source: Epidemiology Branch, ABS deaths 1979-92, registered by 1993

FIGURE 5

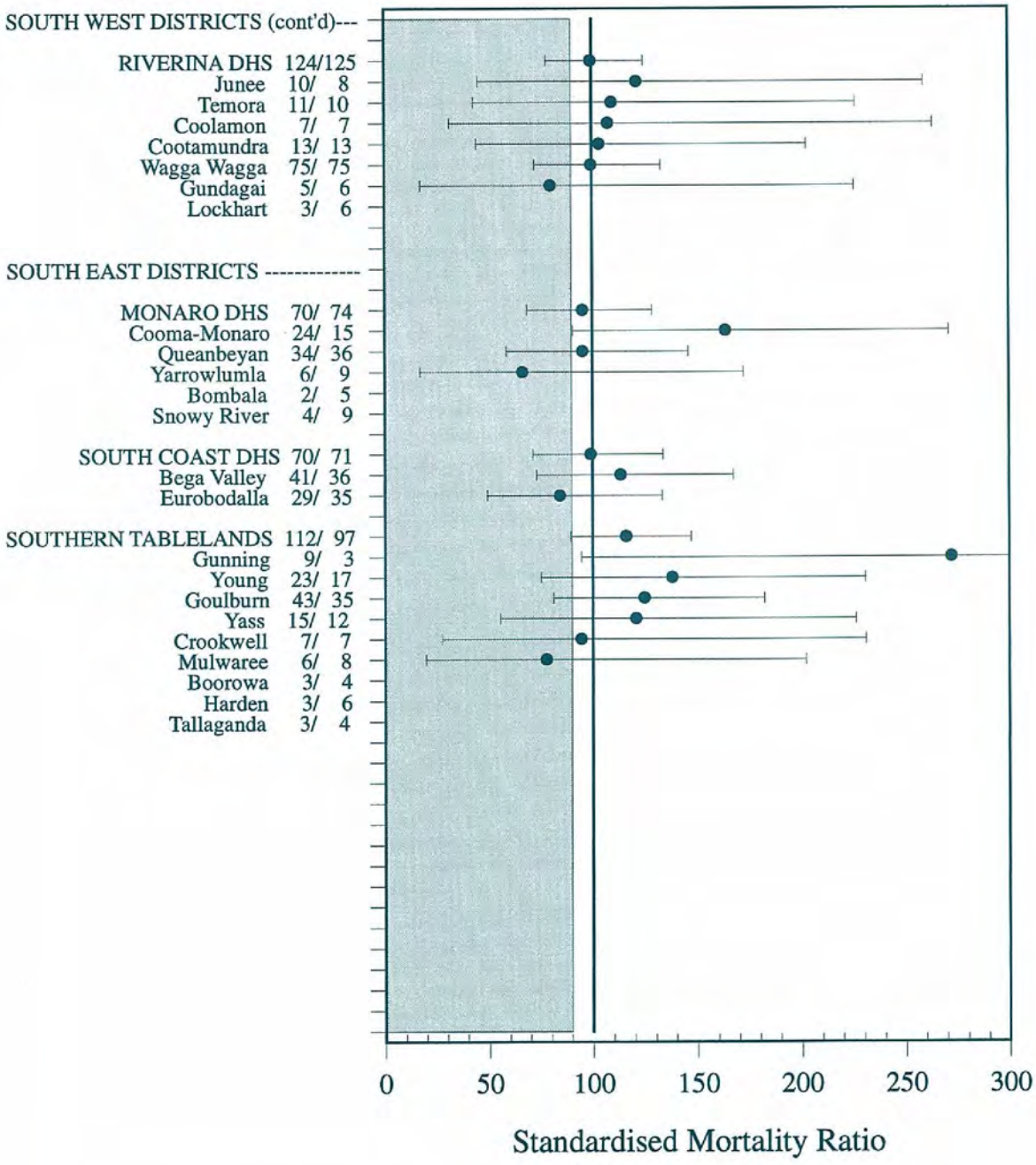
LOCALITY, OBSERVED DEATHS/NSW AVERAGE AND SMRS FOR SUICIDE PERSONS NSW 1979-92




Source: Epidemiology Branch, ABS deaths 1979-92, registered by 1993

FIGURE 6

LOCALITY, OBSERVED DEATHS/NSW AVERAGE AND SMRS FOR SUICIDE PERSONS NSW 1979-92




Source: Epidemiology Branch, ABS deaths 1979-92, registered by 1993

# WAITING LIST REDUCTION PROGRAM
## MARCH TO DECEMBER 1995

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The Waiting List Reduction Program was introduced as an initiative to improve access to elective surgery services in public hospitals throughout NSW. The main aim was to halve elective surgery waiting lists within 12 months. Particular emphasis was to be placed on those people who had been waiting more than six months for surgery.

The Minister for Health held meetings with a range of health professionals who indicated their support for the program. A State task force was formed, including representatives of the health professions, to oversee and advise on the program. The role of the task force was to monitor and guide progress towards achieving the principal targets of the program, in particular the establishment of best practice principles. It also dealt with clinical and workforce issues.

The success of the Waiting List Reduction Program would not have been possible without the partnership developed between NSW Health, the health professions and unions.

At the inception of the program, each Area and District Health Service developed an implementation plan. Local areas of greatest need were identified and priorities set. Specialists, general practitioners, nurses, allied health professionals, support staff and managers were involved in consultation at hospital, Area, District and State levels, and they formed Area and District steering committees.

There was extensive liaison with Areas and Districts over the development of their plans, with support provided by the NSW Health Department.

The program was an ambitious undertaking involving enormous commitment from health professionals. As far as is known, no program of this kind has been successfully undertaken anywhere in Australia or overseas.

### RESULTS

Between March 31 and December 31, 1995 the elective surgery waiting list in NSW decreased by 25,118 patients, or 56.2 per cent – down to 19,589 – thus attaining the 50 per cent reduction target of the Waiting List Reduction Program launched in May 1995 (Table 1). All Areas and Districts, except four, exceeded their 50 per cent target (Table 2).

The combined medical and surgical list was reduced by 50.0 per cent – from 52,740 in March (44,707 surgical and 8,033 medical) to 26,365 (19,589 surgical and 6,776 medical) at the end of December.

By December, all Areas and Districts except four reduced their surgical lists by more than 50 per cent. Areas and the larger Districts with relatively big waiting list reductions were Western Sydney (68.5 per cent), Northern Sydney (62.9 per cent), South Eastern Sydney (59.8 per cent), Hume (76.3 per cent), New England (73.3 per cent), North West (60.9 per cent) and Central Western, despite shortage of operating theatres until September, (59.0 per cent). The Greater West (Western, South Western Sydney and Wentworth Areas) reduced its lists by 6,605 – or 58.5 per cent.

- The number of patients waiting more than 12 months fell by 78 per cent from 2,265 to 497. The number of patients waiting between six and 12 months fell by 71 per cent, from 6,379 to 1,850. This amounted to a reduction of 6,297 – or 73 per cent – (down from 8,644 to 2,347) of all patients waiting longer than six months.
- Expected waiting time shortened by half a month to 40 days.
- The average time on list declined by one month to 2.5 months. The average waiting time for those admitted during December dropped by nine days to 36 days.

Waiting lists, expected waiting times and average waiting times decreased in each specialty.

There were major reductions in the number of people waiting more than six months for the following key procedures: cataract extraction (80 per cent), coronary artery bypass graft (95 per cent), myringotomy (80 per cent), tonsillectomy (75 per cent), total hip replacement (50 per cent), total knee replacement (35 per cent) and varicose vein stripping and ligation (90 per cent).

Elective surgery admissions increased by 26,019 – or 14.4 per cent – over the corresponding period last year.

### NEW EMPHASIS

The Waiting List Reduction Program to date has achieved a substantial reduction in the number of patients on surgical waiting lists and it is now appropriate to be directing the focus of attention towards waiting times. The NSW Health Department, in consultation with the NSW Branch of the Royal Australasian College of Surgeons and Area and District Health Services, is developing benchmarks for the length of time patients should wait for their surgery.

Benchmarks will reflect the priorities of the new waiting list focus. They will cover the wait of both urgent and long-wait patients.

Benchmarks will also be developed with an aim of reducing disruptions to patients which occur as a result of rescheduling admissions following unforeseen demand. The emergency workload of a hospital is difficult to predict. When this is under-estimated, elective patients may need to be rescheduled. The aim is to minimise the number of delays through improved scheduling systems. In this area, performance indicators would cover the number of delays relative to the number of admissions.

The program has resulted in longer-term improvements such as increases in peri-operative and early discharge programs. These programs enable improvements in service, such as patients being admitted on the day of their operation.

Other benchmarks are being proposed to improve patient management. These include:

- development of benchmarks for same day surgery;
- reduction of unplanned returns to theatre;

*Continued on page 13 ▶*

## TABLE 1

**ELECTIVE SURGERY WAITING LISTS MARCH TO DECEMBER, 1995**

| Month | Number on list (excl. list transfers) | % Reduction | Number waiting 6-12 months | % Reduction | Number waiting >12 months | % Reduction |
|---|---|---|---|---|---|---|
| March | 44,707 | | 6,379 | | 2,265 | |
| June | 42,163 | 6 | 5,689 | 11 | 2,074 | 8 |
| July | 39,628 | 11 | 4,785 | 25 | 2,059 | 9 |
| August | 37,341 | 17 | 4,235 | 34 | 1,783 | 21 |
| September | 34,299 | 23 | 3,762 | 41 | 1,428 | 37 |
| October | 29,780 | 33 | 2,705 | 58 | 922 | 59 |
| November | 24,701 | 45 | 2,132 | 67 | 637 | 72 |
| December | 19,589 | 56 | 1,850 | 71 | 497 | 78 |

## TABLE 2

**REDUCTIONS IN WAITING LISTS BY AREA AND DISTRICT HEALTH SERVICE, MARCH TO DECEMBER, 1995**

**Elective Surgery Waiting List Reduction Program, NSW Health Department**

| AREA/DISTRICT | NUMBER WAITING | | | | TOTAL REDUCTION March to December | |
|---|---|---|---|---|---|---|
| | Mar 31, 95 Original list | Dec 31, 95 Including transfers* | Transfers* April-December | Dec 31, 95 Excluding transfers* | Number | % |
| Central Sydney | 2,779 | 1,668 | 327 | 1,341 | –1,438 | –51.7 |
| Northern Sydney | 2,708 | 1,150 | 144 | 1,006 | –1,702 | –62.9 |
| Western Sydney | 4,650 | 2,165 | 698 | 1,467 | –3,183 | –68.5 |
| Wentworth | 2,122 | 1,075 | 18 | 1,057 | –1,065 | –50.2 |
| South West Sydney | 4,514 | 2,392 | 235 | 2,157 | –2,357 | –52.2 |
| Central Coast | 2,317 | 1,646 | 516 | 1,130 | –1,187 | –51.2 |
| Hunter | 4,178 | 2,547 | 101 | 2,446 | –1,732 | –41.5 |
| Illawarra | 2,778 | 1,324 | – | 1,324 | –1,454 | –52.3 |
| South Eastern Sydney | 7,190 | 3,288 | 395 | 2,893 | –4,297 | –59.8 |
| Royal Alexandra Hospital | 792 | 485 | 66 | 419 | –373 | –47.1 |
| Barwon | 43 | 3 | – | 3 | –40 | –93.0 |
| Castlereagh | 51 | 9 | 9 | – | –51 | –100.0 |
| Central Western | 588 | 321 | 80 | 241 | –347 | –59.0 |
| Clarence | 199 | 15 | – | 15 | –184 | –92.5 |
| Evans | 330 | 92 | 19 | 73 | –257 | –77.9 |
| Far West | 204 | 88 | – | 88 | –116 | –56.9 |
| Hume | 413 | 160 | 62 | 98 | –315 | –76.3 |
| Lachlan | 111 | 48 | – | 48 | –63 | –56.8 |
| Lower North Coast | 1,071 | 555 | 52 | 503 | –568 | –53.0 |
| Macleay-Hastings | 385 | 138 | 40 | 98 | –287 | –74.5 |
| Macquarie | 813 | 484 | 47 | 437 | –376 | –46.2 |
| Mid North Coast | 887 | 422 | 28 | 394 | –493 | –55.6 |
| Monaro | 59 | 27 | – | 27 | –32 | –54.2 |
| Murray | 16 | – | – | – | –16 | –100.0 |
| Murrumbidgee | – | 105 | 105 | – | – | 0.0 |
| New England | 404 | 108 | – | 108 | –296 | –73.3 |
| North West | 1,213 | 589 | 115 | 474 | –739 | –60.9 |
| Orana | 33 | 1 | – | 1 | –32 | –97.0 |
| Richmond | 681 | 395 | 71 | 324 | –357 | –52.4 |
| Riverina | 1,276 | 620 | – | 620 | –656 | –51.4 |
| South Coast | 89 | 172 | 172 | – | –89 | –100.0 |
| Southern Tablelands | 187 | 66 | 43 | 23 | –164 | –87.7 |
| Tweed Valley | 824 | 456 | 95 | 361 | –463 | –56.2 |
| Port Macquarie Base Hospital | 802 | 413 | – | 413 | –389 | –48.5 |
| **New South Wales** | **44,707** | **23,027** | **3,438** | **19,589** | **–25,118** | **–56.2** |

Source: DOHRS, January 11, 1996

* List transfers, in general, are an administrative change and not a change in local demand, and are therefore not taken into account when estimating the CHANGES in the number of patients on a list.

## Waiting List Reduction Program

► Continued from page 11

- development of benchmarks for theatre utilisation; and
- reduction of unplanned readmissions.

The new emphasis on waiting times will not only involve inpatient care, but also outpatients and community-based health services. Although much is known about waiting times for inpatient treatment, information on how long people wait for services in outpatient clinics or community health services is limited. It is clear, however, that some people are waiting unacceptably long periods for services such as podiatry, physiotherapy and speech therapy. The Department is undertaking a survey to provide information in this area.

### AUDITS

Between March and December 1995, Area and District Health Service compliance with Departmental policy on waiting lists was continually audited by the State Waiting List Auditor.

In addition, an audit and review of NSW public hospital waiting lists conducted by Coopers and Lybrand found, inter alia:

> "... no evidence of any material errors or direct manipulation of data ... The figures, results and qualitative statements included in the report were arrived at in accordance with the methodology outlined in the survey and are consistent with previous reports" and "... have been recorded in accordance with the Health Department policies and procedures on waiting lists ..."
>
> "The source data used for reporting purposes was consistent with information contained in DOHRS and WLCOS (Departmental Information Systems). This data was also consistent with unit record information maintained at Area/District Health Service level."


### PUBLIC HEALTH EDITORIAL STAFF

The editor of the Public Health Bulletin is Dr Michael Frommer, Director, Research and Development, NSW Health Department. Dr Lynne Madden is production manager.

The *Bulletin* aims to provide its readers with population health data and information to motivate effective public health action. Articles, news and comments should be 1,000 words or less in length and include a summary of the key points to be made in the first paragraph. References should be set out using the Vancouver style, the full text of which can be found in *British Medical Journal* 1988; 296:401-5.

Please submit items in hard copy and on diskette, preferably using WordPerfect, to the editor, NSW Public Health Bulletin, Locked Mail Bag 961, North Sydney 2059. Facsimile (02) 391 9029.

Please contact your local Public Health Unit to obtain copies of the *NSW Public Health Bulletin*.


# INFECTIOUS DISEASES

This issue of the *NSW Public Health Bulletin* contains information on infectious disease notifications for December 1995 and January 1996, as well as cumulative notifications for the 1995 year received to January 31, 1996.

### NOTIFICATION TRENDS

In December 1995 notification levels were higher than historical levels for hepatitis A and rubella (Figure 7). Notification trends for rubella were discussed in the August, September and October issues of the *NSW Public Health Bulletin*.

Notification rates were lower than historical levels in December 1995 for foodborne illness (not otherwise specified), gastroenteritis, *Haemophilus influenzae* type b (Hib) infection, measles, meningococcal disease, pertussis and Q fever (Figure 7).

### HEPATITIS A

There has been a steady increase in hepatitis A notifications from the inner Sydney area since October 1995 (Figure 8). Of the 162 notifications for hepatitis A received for the period December 1995-January 1996, 82 were residents of Eastern Sydney. Central Sydney Public Health Unit reported a similar but less marked increase.

### COMMITTEES OF THE AIDS/INFECTIOUS DISEASES BRANCH

The AIDS/Infectious Diseases Branch provides the secretariat for several key advisory committees on communicable disease issues. The committees bring together a wide range of expertise and their deliberations guide the Department in the development of policy and legislative change. This section of the *Bulletin* will report from time to time on their recommendations. The committees include:

| | |
|---|---|
| CAS | Ministerial Advisory Committee on AIDS Strategy |
| HAC | Hepatitis Advisory Committee |
| ICAG | Infection Control Advisory Group |
| IDAC | Infectious Diseases Advisory Committee |
| IAC | Immunisation Advisory Committee |
| SHAC | Sexual Health Advisory Committee |
| TBAC | Tuberculosis Advisory Committee |
| LSAC | Laboratory Surveillance Advisory Committee |

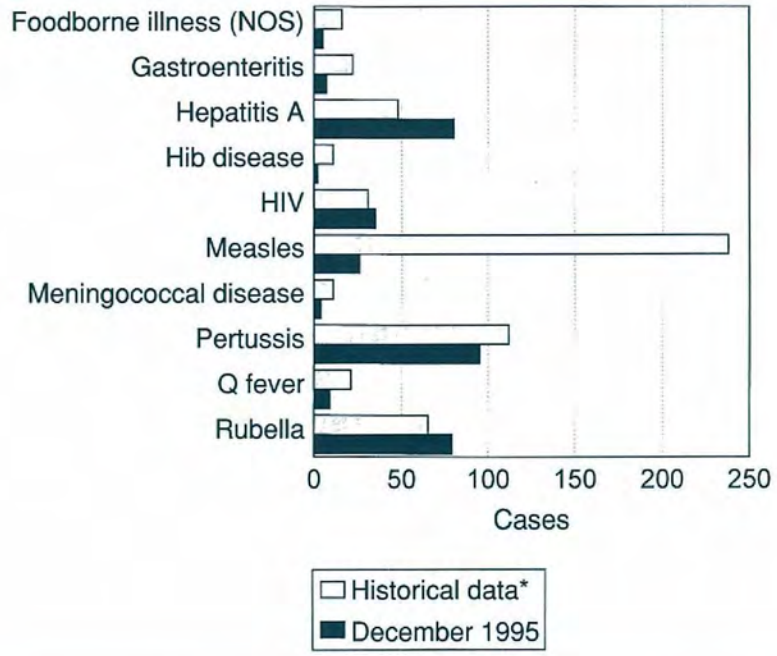
IDAC met for the first time in 1996 on January 31. One of its main roles is to review the Infectious Diseases Notification Schedule and to advise the Department on proposed changes. When the current schedule was introduced in 1991, the main criterion for inclusion of a condition on the list of notifiable diseases was that notification should lead to immediate public health action. For conditions such as meningococcal meningitis, measles and pertussis this has led to consistent action guided by clear protocols. For conditions such as syphilis and hepatitis C the difficulty in distinguishing prevalent and incident cases has made response more difficult. A further consequence of the more limited NSW schedule introduced in 1991 is that data for conditions such as chlamydia and campylobacter are no longer available to complement that of other States.

IDAC has recommended that the criteria for inclusion on the Notification Schedule be reviewed and that the

Continued on page 15 ►

FIGURE 7

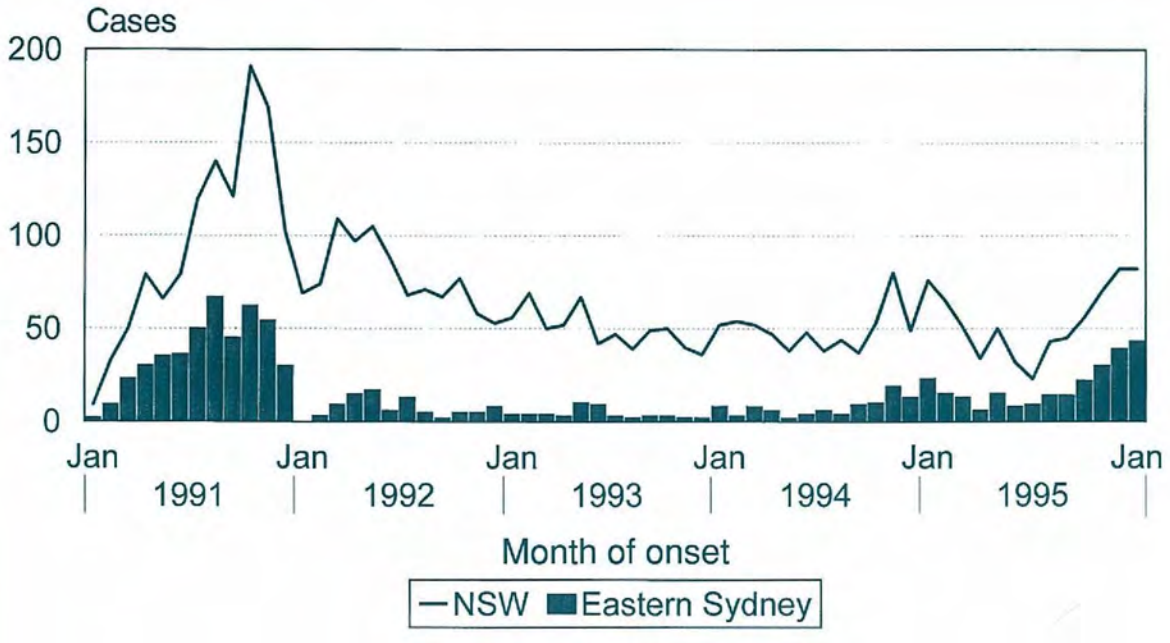
SELECTED INFECTIOUS DISEASES: NSW DECEMBER NOTIFICATIONS, 1995 COMPARED WITH HISTORICAL DATA




*Historical data: the average number of notifications diagnosed in the same month in the previous three years. Source: IDSS

FIGURE 8

HEPATITIS A NOTIFICATIONS FOR NSW 1991-1996, BY DATE OF ONSET




Source: IDSS

## Infectious diseases

► *Continued from page 13*

Infectious Diseases Manual used by Public Health Units clearly distinguish between conditions for which an immediate response is required and those being notified to provide surveillance data to inform longer-term public health planning. The committee also recommended that the revision of the NSW schedule be carried out in consultation with the other States and Territories in support of a National Communicable Disease Surveillance Strategy.

Feedback by readers of the *Public Health Bulletin* to IDAC's recommendations would be welcome. Comments, criticisms and suggestions should be relayed to John Rooney, Specialist Medical Adviser, AIDS/Infectious Diseases Branch (e-mail jrooe@doh.health.nsw.gov.au, or fax (02) 391 9189).

**TABLE 3**

**SUMMARY OF NSW INFECTIOUS DISEASE NOTIFICATIONS DECEMBER 1995**

| Condition | Number of cases notified | | | |
|---|---|---|---|---|
| | Period | | Cumulative | |
| | Dec 1994 | Dec 1995 | Dec 1994 | Dec 1995 |
| Adverse reaction | 6 | 2 | 43 | 34 |
| AIDS | 46 | 20 | 598 | 413 |
| Arboviral infection | 9 | 15 | 384 | 542 |
| Brucellosis | – | – | 4 | 2 |
| Cholera | – | – | – | 1 |
| Diphtheria | – | – | – | – |
| Foodborne illness (NOS) | 14 | 5 | 232 | 389 |
| Gastroenteritis (instit.) | 35 | 7 | 310 | 1,374 |
| Gonorrhoea | 30 | 37 | 364 | 431 |
| H influenzae epiglottitis | – | – | 21 | 6 |
| H influenzae B – meningitis | 1 | – | 17 | 11 |
| H influenzae B – septicaemia | 1 | 1 | 12 | 9 |
| H influenzae infection (NOS) | 2 | 1 | 11 | 4 |
| Hepatitis A | 49 | 80 | 598 | 623 |
| Hepatitis B | 383 | 298 | 4,726 | 4,941 |
| Hepatitis C | 650 | 624 | 9,412 | 8,334 |
| Hepatitis D | 1 | 2 | 20 | 21 |
| Hepatitis, acute viral (NOS) | – | – | 2 | 2 |
| HIV infection | 20 | 35 | 428 | 452 |
| Hydatid disease | 1 | 2 | 20 | 18 |
| Legionnaires' disease | 4 | 7 | 61 | 74 |
| Leprosy | – | – | 3 | 2 |
| Leptospirosis | 1 | 1 | 14 | 6 |
| Listeriosis | 2 | 2 | 9 | 13 |
| Malaria | 14 | 4 | 187 | 96 |
| Measles | 266 | 26 | 1,505 | 599 |
| Meningococcal meningitis | 6 | 4 | 81 | 73 |
| Meningococcal septicaemia | 3 | – | 41 | 23 |
| Meningococcal infection (NOS) | 2 | – | 21 | 18 |
| Mumps | 1 | 1 | 11 | 14 |
| Mycobacterial tuberculosis | 28 | 19 | 415 | 427 |
| Mycobacterial – atypical | 45 | 3 | 523 | 395 |
| Mycobacterial infection (NOS) | 2 | 8 | 39 | 88 |
| Pertussis | 81 | 95 | 1,423 | 1,358 |
| Plague | – | – | – | – |
| Poliomyelitis | – | – | – | – |
| Q fever | 25 | 9 | 268 | 202 |
| Rubella | 27 | 79 | 234 | 1,103 |
| Salmonella infection (NOS) | 107 | 93 | 1,086 | 1,275 |
| Syphilis | 64 | 40 | 1,072 | 902 |
| Tetanus | – | – | 4 | – |
| Typhoid and paratyphoid | 5 | 5 | 36 | 39 |
| Typhus | – | – | – | – |
| Viral haemorrhagic fevers | – | – | – | – |
| Yellow fever | – | – | – | – |

## TABLE 4

**INFECTIOUS DISEASE CUMULATIVE NOTIFICATIONS FOR NSW, 1995 BY PUBLIC HEALTH UNIT, RECEIVED BY JANUARY 31, 1996**

| Condition | CCA | CSA | CW | ESA | HUN | ILL | NC | ND | NSA | SE | SSA | SW | SWS | WEN | WN | WSA | U/K | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AIDS | 6 | 97 | 1 | 152 | 14 | 6 | 32 | 2 | 37 | – | 23 | – | 15 | 9 | 4 | 15 | – | 413 |
| Arboviral infection | 8 | 5 | 1 | 8 | 14 | 25 | 215 | 47 | 6 | 156 | 5 | 17 | 3 | 2 | 26 | 4 | – | 542 |
| Brucellosis | 1 | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | 2 |
| Cholera | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 |
| Gonorrhoea infection | 5 | 71 | 14 | 179 | 7 | 17 | 19 | 12 | 20 | 8 | 23 | 1 | 17 | 4 | 23 | 11 | – | 431 |
| Hepatitis B – acute viral | 1 | 7 | 1 | 16 | – | – | 7 | 2 | – | 1 | 3 | 1 | 4 | – | 16 | 6 | – | 65 |
| Hepatitis B – chronic/carrier | 20 | 1 | 20 | 301 | – | – | 12 | 10 | 4 | – | 23 | 4 | – | 10 | 9 | 117 | – | 531 |
| Hepatitis B – unspecified | 32 | 539 | 12 | 58 | 102 | 101 | 61 | 17 | 547 | 34 | 681 | 16 | 1,439 | 45 | 13 | 648 | – | 4,345 |
| Hepatitis C – acute viral | 1 | – | 1 | 7 | – | – | – | – | – | 1 | – | – | – | 2 | 48 | 3 | – | 63 |
| Hepatitis C – unspecified | 211 | 918 | 340 | 1,186 | 505 | 494 | 842 | 237 | 590 | 276 | 530 | 237 | 930 | 195 | 38 | 739 | – | 8,271 |
| Hepatitis D – unspecified | – | – | – | 2 | 2 | – | 5 | 1 | 1 | – | 3 | 1 | 3 | – | – | 3 | – | 21 |
| Hepatitis, acute viral (NOS) | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 1 | – | 2 |
| HIV infection | 12 | 81 | 3 | 177 | 18 | 11 | 7 | 2 | 26 | 1 | 12 | 5 | 30 | 7 | 1 | 20 | 39 | 452 |
| Hydatid disease | – | 1 | 1 | 1 | 1 | 1 | 1 | – | 1 | 2 | 3 | 2 | 3 | – | – | 1 | – | 18 |
| Legionnaires' disease | 2 | 3 | – | 6 | 15 | 6 | 1 | 3 | 9 | – | 2 | – | 3 | 3 | 2 | 19 | – | 74 |
| Leprosy | – | 1 | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | 2 |
| Leptospirosis | – | – | – | – | 1 | – | 2 | 2 | – | – | – | 1 | – | – | – | – | – | 6 |
| Malaria | 4 | 7 | – | 9 | 10 | 4 | 9 | 1 | 24 | 3 | 3 | 3 | 4 | 4 | – | 11 | – | 96 |
| Meningococcal infection (NOS) | 1 | – | – | 3 | 1 | – | 3 | – | – | – | 4 | 2 | 2 | – | 2 | – | – | 18 |
| Meningococcal meningitis | 8 | 1 | 5 | 5 | 11 | 11 | 4 | 4 | 8 | 4 | 3 | – | 5 | 1 | – | 3 | – | 73 |
| Meningococcal septicaemia | – | 4 | – | – | 5 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | – | – | – | 23 |
| Mycobacterial atypical | 13 | 56 | 4 | 80 | 24 | 6 | 19 | 9 | 46 | 4 | 38 | 3 | 47 | 13 | 6 | 26 | – | 395 |
| Mycobacterial infection (NOS) | 7 | 14 | – | 3 | 2 | – | 4 | – | 11 | 1 | 17 | – | 19 | 2 | – | 8 | – | 88 |
| Mycobacterial tuberculosis | 6 | 42 | 1 | 27 | 8 | 6 | 5 | 3 | 49 | 2 | 54 | 4 | 113 | 6 | 5 | 96 | – | 427 |
| Q fever | – | 1 | 12 | – | 15 | 6 | 49 | 32 | – | 28 | – | 4 | 1 | – | 53 | 1 | – | 202 |
| Syphilis infection | 6 | 131 | 11 | 179 | 19 | 18 | 62 | 47 | 41 | 8 | 60 | 6 | 129 | 17 | 108 | 60 | – | 902 |
| Vibrio infection (non cholera) | – | – | – | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 2 |

## TABLE 5

**VACCINE PREVENTABLE AND RELATED CONDITIONS, CUMULATIVE NOTIFICATIONS FOR NSW, 1995 BY PUBLIC HEALTH UNIT, RECEIVED BY JANUARY 31, 1996**

| Condition | CCA | CSA | CW | ESA | HUN | ILL | NC | ND | NSA | SE | SSA | SW | SWS | WEN | WN | WSA | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adverse event after immunisation | – | 1 | – | 1 | 1 | – | 7 | 2 | – | 6 | 4 | 4 | – | 4 | – | 4 | 34 |
| H. influenzae epiglottitis | – | – | 1 | 1 | – | – | 1 | – | – | – | 2 | – | – | – | 1 | – | 6 |
| H. influenzae infection (NOS) | 1 | – | – | – | 1 | – | 1 | – | – | – | – | – | – | – | 1 | – | 4 |
| H. influenzae meningitis | – | 1 | – | – | – | – | 4 | 1 | – | – | – | – | 1 | 1 | – | 3 | 11 |
| H. influenzae septicaemia | – | – | 2 | – | 1 | – | 1 | – | 1 | 1 | 1 | – | 1 | – | – | 1 | 9 |
| Measles | 14 | 29 | 14 | 61 | 65 | 78 | 52 | 47 | 16 | 8 | 48 | 18 | 46 | 40 | 7 | 56 | 599 |
| Mumps | – | – | – | 2 | – | 2 | 3 | – | 2 | 1 | 2 | – | – | – | – | 2 | 14 |
| Pertussis | 39 | 26 | 23 | 35 | 77 | 100 | 342 | 18 | 114 | 46 | 70 | 123 | 88 | 119 | 12 | 126 | 1,358 |
| Rubella | 33 | 123 | 114 | 29 | 104 | 63 | 130 | 22 | 55 | 8 | 60 | 4 | 20 | 58 | 59 | 221 | 1,103 |

## TABLE 6

**FOODBORNE INFECTIOUS DISEASE CUMULATIVE NOTIFICATIONS FOR NSW, 1995 BY PUBLIC HEALTH UNIT, RECEIVED BY JANUARY 31, 1996**

| Condition | CCA | CSA | CW | ESA | HUN | ILL | NC | ND | NSA | SE | SSA | SW | SWS | WEN | WN | WSA | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Foodborne illness (NOS) | 16 | 9 | 3 | 3 | 188 | 1 | 3 | 3 | 4 | – | 1 | 8 | 101 | – | 26 | 23 | 389 |
| Gastroenteritis (instit) | 40 | 155 | 61 | 77 | 213 | – | 47 | – | 132 | 15 | 141 | 36 | 68 | 206 | 2 | 181 | 1,374 |
| Hepatitis A – acute viral | 15 | 93 | 39 | 207 | 26 | 10 | 32 | 4 | 53 | 2 | 43 | 11 | 44 | 5 | 3 | 38 | 625 |
| Listeriosis | – | 1 | 1 | 3 | – | – | – | 1 | 1 | 1 | 2 | 1 | 1 | – | – | 1 | 13 |
| Salmonella (NOS) | 29 | 69 | 32 | 94 | 93 | 63 | 132 | 77 | 139 | 43 | 127 | 28 | 110 | 70 | 44 | 125 | 1,275 |
| Typhoid & paratyphoid | – | 3 | – | 8 | – | – | 3 | – | 4 | 1 | 7 | – | 7 | 1 | – | 5 | 39 |

*Abbreviations used in this Bulletin:*
CSA Central Sydney Health Area, SSA Southern Sydney Health Area, ESA Eastern Sydney Health Area, SWS South Western Sydney Health Area, WSA Western Sydney Health Area, WEN Wentworth Health Area, NSA Northern Sydney Health Area, CCA Central Coast Health Area, ILL Illawarra Health Area, HUN Hunter Health Area, NC North Coast Public Health Unit, ND Northern District Public Health Unit, WN Western New South Wales Public Health Unit, CW Central West Public Health Unit, SW South West Public Health Unit, SE South East Public Health Unit, OTH Interstate/Overseas, U/K Unknown, NOS Not Otherwise Stated.

Please note that the data contained in this Bulletin are provisional and subject to change because of late reports or changes in case classification. Data are tabulated where possible by area of residence and by the disease onset date and not simply the date of notification or receipt of such notification.

## TABLE 7

**SUMMARY OF NSW INFECTIOUS DISEASE NOTIFICATIONS JANUARY 1996**

| Condition | Number of cases notified | |
|---|---|---|
| | Period | |
| | Jan 1995 | Jan 1996 |
| Adverse reaction | 3 | 5 |
| AIDS | 45 | 17 |
| Arboviral infection | 21 | 22 |
| Brucellosis | – | – |
| Cholera | – | – |
| Diphtheria | – | – |
| Foodborne illness (NOS) | 17 | 12 |
| Gastroenteritis (instit.) | 2 | – |
| Gonorrhoea | 34 | 33 |
| H influenzae epiglottitis | – | – |
| H influenzae B – meningitis | 2 | – |
| H influenzae B – septicaemia | – | – |
| H influenzae infection (NOS) | – | 1 |
| Hepatitis A | 76 | 82 |
| Hepatitis B | 411 | 171 |
| Hepatitis C | 789 | 325 |
| Hepatitis D | 2 | – |
| Hepatitis, acute viral (NOS) | – | 3 |
| HIV infection | 50 | 40 |
| Hydatid disease | – | 1 |
| Legionnaires' disease | 16 | 2 |
| Leprosy | 1 | – |
| Leptospirosis | 1 | 2 |
| Listeriosis | – | 2 |
| Malaria | 22 | 18 |
| Measles | 98 | 18 |
| Meningococcal meningitis | 2 | 4 |
| Meningococcal septicaemia | 1 | – |
| Meningococcal infection (NOS) | 3 | 1 |
| Mumps | 2 | 3 |
| Mycobacterial tuberculosis | 50 | 6 |
| Mycobacterial – atypical | 47 | 1 |
| Mycobacterial infection (NOS) | 6 | 7 |
| Pertussis | 84 | 45 |
| Plague | – | – |
| Poliomyelitis | – | – |
| Q fever | 21 | 9 |
| Rubella | 34 | 21 |
| Salmonella infection (NOS) | 150 | 67 |
| Syphilis | 91 | 29 |
| Tetanus | – | – |
| Typhoid and paratyphoid | 6 | 6 |
| Typhus | – | – |
| Viral haemorrhagic fevers | – | – |
| Yellow fever | – | – |

## TABLE 8

**INFECTIOUS DISEASE NOTIFICATIONS FOR NSW, 1996 BY SELECTED MONTH OF ONSET FOR NOTIFICATIONS RECEIVED BY JANUARY 31, 1996**

| Condition | Oct | Nov | Dec | Jan | Total |
|---|---|---|---|---|---|
| Adverse event after immunisation | 3 | 1 | 2 | 5 | 11 |
| AIDS | 41 | 28 | 20 | 17 | 106 |
| Arboviral infection | 7 | 22 | 15 | 22 | 66 |
| Foodborne illness (NOS) | 61 | 9 | 5 | 12 | 87 |
| Gastroenteritis (instit.) | 120 | 74 | 7 | – | 201 |
| Gonorrhoea infection | 37 | 37 | 37 | 33 | 144 |
| H. influenzae infection (NOS) | – | 1 | 1 | 1 | 3 |
| H. influenzae meningitis | 1 | 2 | – | – | 3 |
| H. influenzae septicaemia | – | 2 | 1 | – | 3 |
| Hepatitis A – acute viral | 56 | 70 | 80 | 82 | 288 |
| Hepatitis B – acute viral | 2 | 5 | 11 | 4 | 22 |
| Hepatitis B – chronic/carrier | 46 | 38 | 30 | 18 | 132 |
| Hepatitis B – unspecified | 396 | 363 | 257 | 149 | 1,165 |
| Hepatitis C – acute viral | 1 | 4 | 5 | – | 10 |
| Hepatitis C – unspecified | 678 | 666 | 619 | 325 | 2,288 |
| Hepatitis D – unspecified | 3 | 1 | 2 | – | 6 |
| Hepatitis, acute viral (NOS) | 1 | – | – | 3 | 4 |
| HIV infection | 29 | 37 | 35 | 40 | 131 |
| Hydatid disease | 2 | 2 | 2 | 1 | 7 |
| Legionnaires' disease | 3 | 3 | 7 | 2 | 15 |
| Leptospirosis | 0 | 1 | 1 | 2 | 4 |
| Listeriosis | 1 | 1 | 2 | 2 | 6 |
| Malaria | 2 | 4 | 3 | 18 | 27 |
| Measles | 52 | 36 | 26 | 18 | 132 |
| Meningococcal infection (NOS) | 3 | – | – | 1 | 4 |
| Meningococcal meningitis | 5 | 8 | 4 | 4 | 21 |
| Meningococcal septicaemia | – | 1 | – | – | 1 |
| Mumps | – | 4 | 1 | 3 | 8 |
| Mycobacterial atypical | 26 | 10 | 3 | 1 | 40 |
| Mycobacterial infection (NOS) | 9 | 13 | 8 | 7 | 37 |
| Mycobacterial tuberculosis | 39 | 22 | 19 | 6 | 86 |
| Pertussis | 146 | 122 | 95 | 45 | 408 |
| Q fever | 14 | 16 | 9 | 9 | 48 |
| Rubella | 199 | 157 | 79 | 21 | 456 |
| Salmonella (NOS) | 100 | 130 | 93 | 67 | 390 |
| Syphilis infection | 85 | 69 | 40 | 29 | 223 |
| Typhoid and partyphoid | 2 | 1 | 5 | 6 | 14 |
| Vibrio infection (non cholera) | – | – | 1 | – | 1 |

## TABLE 9

**INFECTIOUS DISEASE CUMULATIVE NOTIFICATIONS FOR NSW, 1996 BY PUBLIC HEALTH UNIT, RECEIVED BY JANUARY 31, 1996**

| Condition | CCA | CSA | CW | ESA | HUN | ILL | NC | ND | NSA | SE | SSA | SW | SWS | WEN | WN | WSA | U/K | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AIDS | 1 | – | – | 2 | 1 | – | 1 | – | 11 | – | – | – | 1 | – | – | – | – | 17 |
| Arboviral infection | 1 | – | – | – | 2 | – | 13 | – | – | 1 | – | 4 | – | – | 1 | – | – | 22 |
| Gonorrhoea infection | – | 7 | – | 15 | – | – | 2 | – | – | – | 1 | – | – | 1 | 6 | 1 | – | 33 |
| Hepatitis B – acute viral | – | – | – | 3 | – | – | – | – | – | – | – | – | – | – | – | 1 | – | 4 |
| Hepatitis B – chronic/carrier | 5 | – | – | 8 | – | – | 1 | – | – | – | – | – | – | – | 1 | 3 | – | 18 |
| Hepatitis B – unspecified | 1 | 31 | – | 14 | 3 | – | 3 | – | 27 | – | 16 | – | 26 | 4 | – | 24 | – | 149 |
| Hepatitis C – unspecified | 6 | 44 | 2 | 52 | 21 | 3 | 44 | 1 | 39 | 6 | 12 | 17 | 17 | 25 | 2 | 34 | – | 325 |
| Hepatitis, acute viral (NOS) | – | – | 1 | 1 | – | – | 1 | – | – | – | – | – | – | – | – | – | – | 3 |
| HIV infection | – | 1 | – | 3 | – | – | – | – | – | – | 2 | – | 3 | 1 | – | 1 | 29 | 40 |
| Hydatid disease | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 1 |
| Legionnaires' disease | – | – | – | – | – | – | – | – | – | – | – | – | 1 | 1 | – | – | – | 2 |
| Leptospirosis | – | – | 1 | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | 2 |
| Malaria | – | 1 | – | 2 | 3 | 1 | – | – | 6 | 1 | 1 | – | – | – | 1 | 2 | – | 18 |
| Meningococcal infection (NOS) | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | 1 |
| Meningococcal meningitis | – | – | – | – | 1 | 1 | – | – | – | – | 1 | – | – | – | – | 1 | – | 4 |
| Mycobacterial atypical | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | 1 |
| Mycobacterial infection (NOS) | 2 | – | – | – | 2 | – | 1 | – | – | – | – | – | – | – | – | 2 | – | 7 |
| Mycobacterial tuberculosis | – | – | – | 1 | – | – | – | – | 2 | – | 1 | – | – | – | – | 2 | – | 6 |
| Q fever | – | – | 2 | – | – | – | 1 | – | – | – | – | – | – | – | 6 | – | – | 9 |
| Syphilis infection | – | 4 | 3 | 4 | 1 | 1 | 1 | – | 6 | 2 | 1 | – | – | – | 2 | 4 | – | 29 |

## TABLE 10

**VACCINE PREVENTABLE AND RELATED CONDITIONS, CUMULATIVE NOTIFICATIONS FOR NSW, 1996 BY PUBLIC HEALTH UNIT, RECEIVED BY JANUARY 31, 1996**

| Condition | CCA | CSA | CW | ESA | HUN | ILL | NC | ND | NSA | SE | SSA | SW | SWS | WEN | WN | WSA | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adverse event after immunisation | – | – | 2 | – | – | – | – | – | – | 2 | – | – | – | 1 | – | – | 5 |
| H. influenzae infection (NOS) | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 |
| Measles | – | – | – | – | – | 4 | – | – | – | 1 | 1 | 3 | – | 1 | 1 | 7 | 18 |
| Mumps | – | – | – | – | – | – | – | – | 3 | – | – | – | – | – | – | – | 3 |
| Pertussis | – | – | – | 2 | 8 | – | 9 | – | 4 | 3 | – | 12 | – | 1 | 3 | 3 | 45 |
| Rubella | – | 7 | – | – | – | – | 1 | – | – | – | 1 | – | – | 1 | – | 11 | 21 |

## TABLE 11

**FOODBORNE INFECTIOUS DISEASE CUMULATIVE NOTIFICATIONS FOR NSW, 1996 BY PUBLIC HEALTH UNIT, RECEIVED BY JANUARY 31, 1996**

| Condition | CCA | CSA | CW | ESA | HUN | ILL | NC | ND | NSA | SE | SSA | SW | SWS | WEN | WN | WSA | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Foodborne illness (NOS) | – | – | – | – | – | – | – | – | – | – | – | 2 | 7 | – | 3 | – | 12 |
| Hepatitis A – acute viral | – | 15 | – | 43 | 4 | 1 | 2 | – | 6 | 1 | 2 | – | – | – | – | 8 | 82 |
| Listeriosis | – | – | – | – | – | – | – | – | – | 1 | – | – | 1 | – | – | – | 2 |
| Salmonella (NOS) | 3 | 4 | 1 | 1 | 10 | 1 | 10 | – | 10 | 1 | 4 | 5 | 7 | 1 | 7 | 2 | 67 |
| Typhoid and paratyphoid | – | 2 | – | – | 1 | – | – | – | – | – | – | – | 2 | – | – | 1 | 6 |