



## MOTIVATING LOCAL ACTION ON POOL DROWNINGS: A BLACK SPOT APPROACH FOR NSW

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**T**his article reports the most recent available NSW data on drowning and near-drowning of toddlers (aged 0-4 years) by Local Government Area. The data identify "black spots" and are intended to assist local government in determining priorities for remedial action.

### BACKGROUND

#### NSW Health Goals and Targets for the prevention of drowning

The drowning of toddlers (aged 0-4 years) in private swimming pools raises emotive debate and community conflict<sup>1</sup>. The NSW Health Goals and Targets identify preventing toddlers from drowning and preventing near-drowning incidents as priorities<sup>2</sup>. They propose a 50 per cent reduction in toddler drowning and near-drowning incidents by 2000. Private swimming pools are the single most dangerous water environment for this age group. Drowning in swimming pools accounted for at least two-thirds of all drowning in the 0-4 age group during 1991-1993. The target would be achieved if all drownings in private swimming pools could be prevented.

The effective prevention of drowning requires monitoring of near-drowning incidents as well as deaths from drowning, but the causes of drowning and near-drowning may differ. Some toddlers involved in near-drowning incidents will have permission from adult supervisors to be in or around a pool, whereas most drownings occur after unintended access to a pool. Thus the major preventive actions available to reduce serious immersions are:

- appropriate supervision of children who have permission to be at the poolside; and
- pool fencing to protect toddlers who make their way unsupervised and without permission to a backyard pool.

#### Legislation and regulation

On August 1, 1992 the NSW Swimming Pools Act 1992 replaced legislation which had been passed in 1990. The new Act removed the retrospective requirement for all existing private pools to have isolation fencing. The legislation requires that any pool built after August 1, 1990 be surrounded by a child-resistant barrier that separates the pool from any residential building on the premises and from any place adjoining the premises. Pools built before that date must be surrounded by a child-resistant barrier that separates the pool from any adjoining premises.

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## Local action on pool drownings

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The Pool Fencing Advisory Committee was set up under the Swimming Pools Act 1992 within the Department of Local Government and Co-operatives. The committee is to consider data on drowning and near-drowning, both past and present, analyse the data and advise and make recommendations to the Minister on appropriate amendments to the Act regarding fencing legislation.

The committee has recommended that:

- a single, agreed minimum set of standard data be collected on all private pool drowning and near-drowning in NSW;
- a regular survey or inspection program of private pools be undertaken to collect information on the number of private pools, including data on fencing configuration, pool owner and frequency of child visitors to the residence; and
- a special study be supported to provide definitive answers concerning the protective value of pool fencing<sup>9</sup>.

Local councils are responsible for regulation and for the enforcement of the Act. There has been no statewide evaluation of the effectiveness of the legislation and no assessment of where the most serious immersions take place or where toddlers are at greatest risk.

### METHOD

Data sources for this study comprised:

- the NSW Inpatient Statistics Collection (ISC) for the 1986 calendar year and financial years 1988-89 – 1993-94; and
- Australian Bureau of Statistics (ABS) mortality data for 1979-1992.

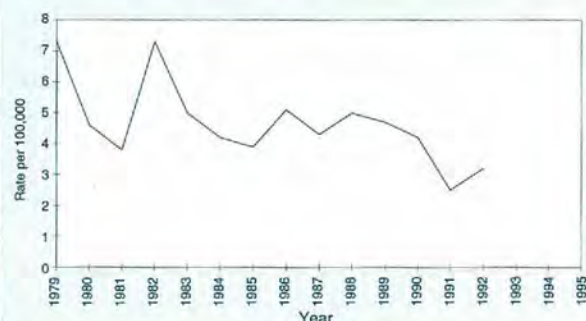
Only incidents classified as swimming pool immersions (E910.8 in the International Classification of Diseases and Causes of Death, version 9, Clinical Modification) were included. Indirect standardised rates were calculated to allow for changes in population structure over the period studied, with 1991-92 taken as the reference year for ISC data and 1991 for ABS mortality data.

Because pool immersion incidents in Local Government Areas (LGAs) are rare, it was necessary to combine data from several years to assess possible changes from a baseline. Deaths and hospital separations from 1986 and 1989-92 were combined to produce rates of serious immersions (i.e. near-drownings) of toddlers. To avoid double counting of a serious immersion, patients who subsequently died or were transferred from another hospital were removed from the ISC data. The remaining records from deaths and ISC data were considered a *serious immersion in a swimming pool (SI)*.

Indirectly standardised serious immersion ratios (SSIR) were calculated for each LGA. The standardisation of the data was adjusted for differences in the sex distribution (there was only one age group under examination) between the State population and the LGA population. Conventional 99 per cent confidence intervals were calculated for each

FIGURE 1

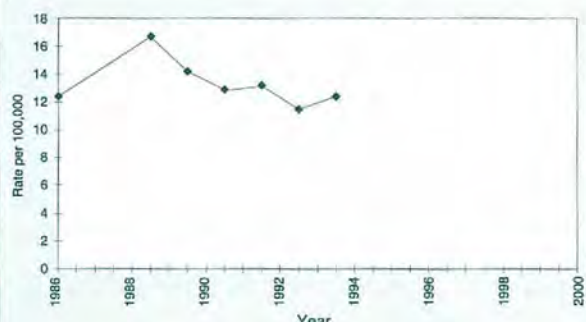
DEATHS BY IMMERSION IN SWIMMING POOLS BY 0-4 YEAR OLDS, NSW, 1979-1992



Source: Australian Bureau of Statistics: ICD9-CM E910.8

FIGURE 2

NSW HOSPITAL SEPARATIONS FOR IMMERSIONS IN SWIMMING POOLS FOR 0-4 YEAR OLDS, 1986 – 1993-94



Source: Inpatient Statistics Collection, ICD9-CM E910.8'

1. Separations as a result of death are also included.

SSIR based on the Normal Approximation Method, and the SSIR for the State as a whole was taken as 100 (thus an LGA with a SSIR of 300 would have a rate three times the State average).

### RESULTS

There was a marked reduction in mortality associated with drowning between 1979 and 1992. The numbers of deaths of toddlers from drowning in swimming pools declined from 29 (7.3/100,000) in 1979 to 14 (3.2/100,000) in 1992 (Figure 1).

By contrast, there was little change in the incidence of near-drowning among toddlers in swimming pools between 1986 and 1993-94, as indicated by hospital separations for immersion recorded in the ISC between 1986 and in 1993-94 (Figure 2).

Table 1 lists the cumulative SSIR for each LGA over the period 1986 and 1989-1992. In many LGAs no SI incidents

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TABLE 1

STANDARDISED SERIOUS IMMERSION RATIOS BY  
LOCAL GOVERNMENT AREA, NSW, 1986, 1989-1992

LGA	SI	EXP SI	SSIR	SSIR SE	LCI99	UCI99
Albury	1	2.6802	37.311	37.311	0.0	133.57
Armidale	-	1.3035	-	-	-	-
Ashfield	-	1.9043	-	-	-	-
Auburn	2	3.2196	62.119	43.925	0.0	175.44
Ballina	1	1.5397	64.948	64.948	0.0	232.51
Balranald	-	0.2115	-	-	-	-
Bankstown	8	8.8485	90.411	31.965	7.94	172.88
Barraba	-	0.1502	-	-	-	-
Bathurst, Evans and Oberon	1	2.3839	41.950	41.950	0.0	150.18
Baulkham Hills	5	6.1680	81.063	36.253	0.0	174.60
Bega Valley	1	1.7942	55.734	55.734	0.0	199.53
Bellingen	-	0.8215	-	-	-	-
Berrigan	1	0.5244	190.707	190.707	0.0	682.73
Bingara	-	0.1280	-	-	-	-
Bland	1	0.4919	203.285	203.285	0.0	727.76
Blue Mountains	4	4.8361	82.712	41.356	0.0	189.41
Bogan	-	0.2414	-	-	-	-
Bombala	-	0.2085	-	-	-	-
Boorowa	-	0.1707	-	-	-	-
Botany	2	1.8212	109.816	77.651	0.0	310.16
Bourke	-	0.3966	-	-	-	-
Brewarrina	-	0.2337	-	-	-	-
Broken Hill	1	1.5136	66.067	66.067	0.0	236.52
Burwood	1	1.3756	72.694	72.694	0.0	260.24
Byron	1	1.4620	68.399	68.399	0.0	244.87
Camden	5	1.5203	328.883	147.081	0.0	708.35
Campbelltown	13	12.5347	103.712	28.765	29.50	177.92
Canterbury	2	8.1573	24.518	17.337	0.0	69.25
Carrathool	-	0.2541	-	-	-	-
Casino	-	0.7091	-	-	-	-
Central Darling	1	0.2561	390.459	390.459	0.0	1,397.84
Cessnock	3	2.9507	101.669	58.699	0.0	253.11
Cobar	-	0.4558	-	-	-	-
Coffs Harbour	4	3.1586	126.637	63.318	0.0	290.00
Conargo	-	0.1060	-	-	-	-
Concord	1	1.1636	85.940	85.940	0.0	307.67
Coolah	-	0.2663	-	-	-	-
Coolamon	-	0.2762	-	-	-	-
Cooma-Monaro	-	0.6380	-	-	-	-
Coonabarabran	2	0.4923	406.267	287.274	0.0	1,147.43
Coonamble	-	0.4236	-	-	-	-
Cootamundra	-	0.5467	-	-	-	-
Copmanhurst	-	0.2601	-	-	-	-
Corowa	-	0.4560	-	-	-	-
Cowra	1	0.7994	125.087	125.087	0.0	447.81
Crookwell	-	0.3106	-	-	-	-
Culcairn	-	0.2685	-	-	-	-
Deniliquin	-	0.5413	-	-	-	-
Drummoyne	-	1.4089	-	-	-	-
Dubbo	4	2.5029	159.817	79.908	0.0	365.98
Dumaresq	-	0.2376	-	-	-	-
Dungog	-	0.4732	-	-	-	-
Eurobodalla	-	1.5381	-	-	-	-
Fairfield	13	12.0454	107.925	29.933	30.70	185.15
Forbes	-	0.6796	-	-	-	-
Gilgandra	-	0.3443	-	-	-	-
Glen Innes	-	0.39624	-	-	-	-
Gloucester	1	0.29687	336.847	336.847	0.0	1,205.91
Gosford	9	8.22751	109.389	36.463	15.31	203.46
Goulburn	1	1.37627	72.660	72.660	0.0	260.12
Grafton	-	1.06051	-	-	-	-
Greater Lithgow	1	1.35315	73.902	73.902	0.0	264.57
Taree and Great Lakes	2	3.83812	52.109	36.847	0.0	147.17
Griffith	1	1.54382	64.774	64.774	0.0	231.89
Gundagai	-	0.27718	-	-	-	-
Gunnedah	1	0.95510	104.701	104.701	0.0	374.83



TABLE 1 (Continued)

STANDARDISED SERIOUS IMMERSION RATIOS BY  
LOCAL GOVERNMENT AREA, NSW, 1986, 1989-1992

LGA	SI	EXP SI	SSIR	SSIR SE	LCI99	UCI99
Gunning	-	0.15367	-	-	-	-
Guyra	-	0.35155	-	-	-	-
Harden	-	0.28235	-	-	-	-
Hastings	1	2.67231	37.421	37.421	0.0	133.97
Hawkesbury	5	4.09056	122.233	54.664	0.0	263.27
Hay	-	0.27803	-	-	-	-
Holbrook	-	0.18276	-	-	-	-
Holroyd	6	4.81057	124.725	50.919	0.0	256.10
Hornsby	10	7.49788	133.371	42.176	24.56	242.18
Hume	-	0.44031	-	-	-	-
Hunter's Hill	4	0.47912	834.872	417.436	0.0	1,911.86
Hurstville	2	3.22824	61.953	43.808	0.0	174.98
Inverell	-	1.06084	-	-	-	-
Jerilderie	-	0.13562	-	-	-	-
Junee	1	0.37276	268.270	268.270	0.0	960.41
Kempsey	3	1.68985	177.530	102.497	0.0	441.97
Kiama	-	1.03820	-	-	-	-
Kogarah	2	2.24460	89.103	63.005	0.0	251.66
Ku-ring-gai	19	4.22498	449.706	103.170	183.53	715.88
Lachlan	-	0.60387	-	-	-	-
Lake Macquarie	13	9.99383	130.080	36.078	37.000	223.16
Lane Cove	2	1.35376	147.737	104.466	0.0	417.26
Leeton	1	0.74351	134.496	134.496	0.0	481.50
Leichhardt	-	2.66002	-	-	-	-
Lismore and Kyogle	2	3.33978	59.884	42.345	0.0	169.13
Liverpool	15	6.95351	215.719	55.698	72.02	359.42
Lockhart	2	0.27016	740.301	523.472	0.0	2,090.86
Maclean	1	0.72687	137.576	137.576	0.0	492.52
Maitland	3	3.35932	89.304	51.560	0.0	222.33
Manilla	-	0.20894	-	-	-	-
Manly	3	1.65224	181.571	104.830	0.0	452.03
Marrickville	2	4.24056	47.164	33.350	0.0	133.21
Merriwa	-	0.16872	-	-	-	-
Moree Plains	1	1.39580	71.644	71.644	0.0	256.48
Mosman	-	1.10127	-	-	-	-
Mudgee	1	1.14282	87.503	87.503	0.0	313.26
Mulwaree	-	0.36092	-	-	-	-
Murray	-	0.31277	-	-	-	-
Murrumbidgee	-	0.17532	-	-	-	-
Murrurundi	-	0.15325	-	-	-	-
Muswellbrook	1	1.20935	82.689	82.689	0.0	296.03
Nambucca	2	1.04373	191.620	135.495	0.0	541.20
Narrabri	3	1.06330	282.139	162.893	0.0	702.40
Narrandera	-	0.49983	-	-	-	-
Narromine	-	0.50334	-	-	-	-
Newcastle	9	6.89363	130.555	43.518	18.28	242.83
North Sydney	1	1.4947	66.902	66.902	0.0	239.51
Nundle	-	0.0836	-	-	-	-
Nymboida	2	0.3033	659.404	466.269	0.0	1,862.38
Orange, Blayney and Cabonne	3	3.4488	86.987	50.222	0.0	216.56
Parkes	-	0.9773	-	-	-	-
Parramatta and Blacktown	20	24.1454	82.832	18.522	35.05	130.62
Parry	-	0.7708	-	-	-	-
Penrith	20	12.3338	162.156	36.259	68.61	255.70
Port Stephens	1	3.0208	33.104	33.104	0.0	118.51
Queanbeyan	2	1.7682	113.112	79.982	0.0	319.47
Quirindi	-	0.3502	-	-	-	-
Randwick	5	4.8066	104.024	46.521	0.0	224.05
Richmond River	-	0.5811	-	-	-	-
Rockdale	3	4.1492	72.304	41.745	0.0	180.00
Ryde	4	4.8262	82.881	41.440	0.0	189.80
Rylstone	-	0.2545	-	-	-	-
Scone	1	0.6700	149.265	149.265	0.0	534.37
Severn	-	0.1982	-	-	-	-
Shellharbour	7	3.3704	207.688	78.499	5.16	410.21
Shoalhaven	3	4.4998	66.670	38.492	0.0	165.98



**TABLE 1 (Continued)**
**STANDARDISED SERIOUS IMMERSION RATIOS BY  
LOCAL GOVERNMENT AREA, NSW, 1986, 1989-1992**

LGA	SI	EXP SI	SSIR	SSIR SE	LCI99	UCI99
Singleton	2	1.4171	141.137	99.799	0.0	398.62
Snowy River	-	0.3156	-	-	-	-
Strathfield	-	1.1850	-	-	-	-
Sutherland	10	11.3625	88.009	27.831	16.21	159.81
Tallaganda	-	0.1535	-	-	-	-
Tamworth	2	2.3210	86.170	60.931	0.0	243.37
Temora	1	0.4399	227.339	227.339	0.0	813.87
Tenterfield	1	0.4315	231.773	231.773	0.0	829.75
Tumbarumba	-	0.2636	-	-	-	-
Tumut	-	0.7766	-	-	-	-
Tweed	7	3.1256	223.957	84.647	5.57	442.35
Ulmarra	2	0.4230	472.850	334.356	0.0	1,335.49
Uralla	-	0.4113	-	-	-	-
Urana	-	0.1148	-	-	-	-
Wagga Wagga	3	3.7499	80.001	46.189	0.0	199.17
Wakool	-	0.3558	-	-	-	-
Walcha	-	0.2407	-	-	-	-
Walgett	1	0.5932	168.576	168.576	0.0	603.50
Warren	-	0.2735	-	-	-	-
Warrindah	10	8.8529	112.958	35.720	20.80	205.12
Waverley	-	2.4620	-	-	-	-
Weddin	-	0.2726	-	-	-	-
Wellington	2	0.6559	304.907	215.602	0.0	861.16
Wentworth	1	0.4731	211.378	211.378	0.0	756.73
Willoughby	1	2.5954	38.529	38.529	0.0	137.93
Windouran	-	0.0293	-	-	-	-
Wingecarribee	-	2.2409	-	-	-	-
Wollondilly	2	2.4368	82.074	58.035	0.0	231.80
Wollongong	11	10.5743	104.026	31.365	23.10	184.95
Woollahra	-	1.6555	-	-	-	-
Wyong	8	6.6564	120.185	42.492	10.56	229.81
Yallaroi	2	0.2434	821.585	580.948	0.0	2,320.43
Yarrowlumla	-	0.5386	-	-	-	-
Young	1	0.7152	139.829	139.829	0.0	500.59

**Abbreviations**

LGA = Local Government Area

SI = Serious Immersions (includes deaths and hospital separations)

Exp SI = Expected number of serious immersions

SSIR = Standardised Serious Immersion Ratio

SSIR SE = Standardised Serious Immersion Ratio Standard Error

LCI99 = Lower 99% confidence interval

UCI99 = Upper 99% confidence interval

**TABLE 2**
**SERIOUS IMMERSIONS FOR 0-4 YEARS BY  
LOCAL GOVERNMENT AREA, NSW, 1986, 1989-1993**

Local Government	1986-92*				1993			
	SI	Exp SI	Total Pop	Rate <sup>‡</sup>	SI	Exp SI	Pop	Rate
Campbelltown	13	12.5	76,636	17	2	1.9	15,398	13
Canterbury	2	8.2	49,839	4	-	1.2	10,052	-
Gosford	9	8.2	49,895	18	1	1.3	10,684	9.4
Ku-ring-gai	19	4.2	25,984	73	-	0.6	4,941	-
Parramatta/Blacktown+	20	24.0	146,492	14	2	3.8	30,674	6.5
Lake Macquarie	13	10.0	61,160	21	4	1.5	12,330	32.4
Marrickville	2	4.2	26,075	8	-	0.6	5,054	-
Penrith	20	12.3	75,843	26	5	1.8	14,728	33.9
Sutherland	10	11.2	68,468	15	1	1.7	14,015	7.1
Tweed	7	3.1	18,246	38	2	0.5	4,049	49.4
Warrindah	10	8.9	54,293	18	4	1.3	10,711	37.3
Wyong	8	6.7	39,687	20	5	1.1	8,907	56.1
<b>State total</b>	<b>346</b>	<b>346</b>	<b>2,120,865</b>	<b>16</b>	<b>54</b>	<b>54</b>	<b>436,497</b>	<b>12.4</b>

SI = Serious Immersion (includes deaths and hospital separations), Exp SI = Expected number of serious immersions, Pop = Population

\* No data from 1987 and 1988 were used due to incomplete Inpatient Statistics Collection.

‡ Crude rate per 100,000 population.

+ Parramatta and Blacktown are combined because of boundary changes.



## Local action on pool drownings

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occurred during this period. Of those where at least one SI occurred, Canterbury had the lowest incidence in relation to the State average. Only Ku-ring-gai LGA had a significantly higher rate than the State average, with 15 more incidents than expected over five years.

SIs in 13 LGAs were examined in more detail (Table 2). These LGAs were selected because of the number of SIs that occurred in them, or because they had substantial populations aged 0-4 years. During 1986-1992 these LGAs accounted for 35 per cent of all SIs and 33 per cent of the State's population aged 0-4 years. Although death data for 1993 were possibly incomplete, there were higher numbers of SIs than expected in the Lake Macquarie, Penrith, Tweed, Wyong and Warringah LGAs.

The Ku-ring-gai area averaged about three SIs a year in 1986-1992 – similar to the number of SIs in Parramatta and Blacktown LGAs, which had a combined population 5-6 times larger. There were no SIs in the Ku-ring-gai LGA in 1993, while there were five SIs in the Wyong LGA – twice as many as in the Parramatta LGA but with less than one-third the population aged 0-4 years.

### DISCUSSION

The differences among LGAs in SI rates may have resulted from several factors, including differences in the numbers of pools among LGAs (and therefore the amount of exposure), and variations in fencing configurations or the degree to which the legislation was enforced. Unfortunately, we do not have sufficient information to confirm or refute these possibilities.

The objective of this report was to identify "black spots" – LGAs with an excess of serious immersions of toddlers – which could motivate local prevention efforts. These efforts could complement (not replace) Statewide campaigns aimed at increasing compliance with pool fencing legislation and parental education about cardiopulmonary resuscitation, the causes of serious immersions and the need for vigilance.

The concept of statistical significance with 99 per cent confidence may be inappropriate when the number of incidents in a local area is few. Lower levels of confidence may be more acceptable and appropriate to determine possible black spots.

Alternatively, if the State target of a 50 per cent reduction from a baseline rate is considered acceptable, an assessment of the number of events in excess of this rate may provide a practical approach. However, if there is a community demand to prevent all drownings or near-drowning incidents in swimming pools in the 0-4 age group, every event should be investigated at a local level.

The Mental Health Epidemiology Group has suggested this approach in relation to suicides. It involves local auditing of the events that led to each suicide death or attempt<sup>4</sup>, with an emphasis on immediate local action, rather than waiting for sufficient numbers of incidents to occur for statistical analysis. *Auditing* is defined as the collecting of information to promote or enforce positive change. Timeliness is an essential component of any audit process.

There is no adequate process of auditing serious immersions at a local level. As recommended by the Pool Fencing Advisory Committee<sup>3</sup>, the establishment of a drowning and near-drowning register that led to an immediate response, an assessment of the factors and events leading up to the incident and subsequent action at local and State levels in response to the contributing factors, would improve our understanding of the causes of serious immersions and increase the likelihood of reducing their number.

The information to be collected on private pools, also recommended by the Pool Fencing Advisory Committee<sup>3</sup>, would help determine the reasons for the variations in rates among LGAs. A review of local government approaches to the enforcement of pool fencing legislation could be related to population rates over time, and this could help to explain the varying temporal trends.

### ACKNOWLEDGMENT

We thank David Lyle for his advice and assistance.

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2. New South Wales Health Department. New South Wales Goals and Targets for Injury. March 1995.
3. Pool Fencing Advisory Committee. Monitoring of Serious Immersions in Private Pools in New South Wales. April 1994.
4. Chipps J, Stewart G, Sayer G. Suicide mortality in NSW: An introduction to the clinical audit. *NSW Public Health Bulletin* 1995; 7:68-70.

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# INCORPORATING EVIDENCE INTO CLINICAL GUIDELINES FOR THE MANAGEMENT OF DIABETES

Jeannine Liddle and Margaret Williamson  
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NSW Health Department

Developing and implementing clinical guidelines for the management of diabetes are important components of the NSW Health Department's health outcomes approach to improving diabetes care<sup>1</sup>. The purpose of guidelines is to improve standards and outcomes of care by promoting interventions for which there is evidence of effectiveness and benefit. Where possible this evidence should be based on rigorous research.

This article outlines an explicit approach to identify, evaluate and incorporate scientific evidence into guidelines in a form that enables the quality of the evidence to be assessed. The approach comprises eight steps, summarised as a flow chart in Figure 3.

Evidence may be incorporated into clinical management guidelines either as an intrinsic part of guideline development or following the development of consensus guidelines. The method outlined here was developed using existing consensus guidelines.

## THE EIGHT STEPS

### 1. Background survey of the topic

Reading general literature such as textbooks or overviews and consulting content experts provides important background information for developing the objective of the review of evidence. Important articles and keywords can be identified in this step and used when searching electronic databases.

Often the purpose for reviewing the evidence and the main issues are clear at the outset. If so, the process will begin at Step 2.

### 2. Specification of the objective of the review of evidence

Clear specification of the objective determines and limits the scope of the review of evidence. It thereby helps to ensure the volume of evidence is manageable and that irrelevant and unnecessary literature searches are avoided. Experts and intended guideline users may provide advice on what is important to know and what they would like to have clarified through the evidence.

Adverse consequences as well as benefits of an intervention are defined at this step. It is obviously important to identify adverse effects associated with any proposed recommendations in a guideline, and to modify the guidelines to prevent or minimise untoward effects. For example, in guidelines to improve blood glucose control in people with diabetes, a caution was included for older people who may experience unacceptable levels of hypoglycaemia with attempts to achieve optimal blood glucose control.

Exclusion criteria for studies should be considered at this step. Studies which do not include the guideline's target population or disease subgroup may be explicitly excluded.

### 3. Specific literature searches

The Cochrane Collaboration, an international network that systematically reviews the evidence for a wide range of interventions, should be contacted at an early stage to identify existing reviews or current reviews.

Evidence will be identified from electronic databases such as MEDLINE and CINAHL. A variety of search strategies should be used, including a focus on terms such as *meta-analysis*, *randomised*, *clinical trial* and keywords relating to the content area. Evidence can also be identified by content experts (especially on unpublished results or work in progress) and articles referred to in the sources mentioned or in other bibliographies. Negative studies – those which show non-significant effects – and studies showing adverse effects should be included.

This step may generate a large list of abstracts needing further classification in Step 4 before retrieving the full articles in Step 5.

### 4. Classification of the literature

The literature identified in Step 3 is classified according to its general purpose and according to study type. Does the study measure the effects of interventions, or examine causes of a disease, or assess the accuracy of diagnostic tests?

The focus here should be on the methods section of the abstract rather than the results, because a knowledge of the results might bias the assessor in deciding whether to retrieve the full article in Step 5. The finding that no clinical studies are available in the topic under consideration should point to directions for future research.

### 5. Retrieval of full articles

This step entails deciding which articles to retrieve in full. It is important to record these decisions. Where many studies exist, only systematic reviews of randomised controlled trials (RCTs) or multicentre, randomised controlled trials should be pursued. Generally these studies provide the best evidence for assessing effects of interventions.

If no systematic reviews of RCTs or multicentre RCTs exist, a hierarchy of study types should be pursued, starting with single centre RCTs. If these are not available, observational studies should be assessed. Studies on adverse effects and studies done in Australia can be included as evidence even when they may not be as high in the hierarchy of study types as studies which show beneficial effects or studies done overseas. For example, evidence for beneficial effects of near-normal glycaemic control was derived from a systematic review of 16 randomised controlled trials<sup>2</sup> and a large, multicentre RCT<sup>3</sup> published after the systematic review. Australian information on hypoglycaemia as an adverse effect came from an observational study, as this was the best local evidence available.

### 6. Assessment of the quality of the evidence

This takes into account the extent to which systematic errors (bias) have been prevented in study design and execution. Bias may lead to an over- or under-estimation of the "true" effectiveness of an intervention.

A specially developed checklist was used for evaluating the evidence relating to the diabetes guidelines<sup>4</sup>. Other checklists are also available<sup>5</sup>.

### 7. Quantification of the strength of the evidence

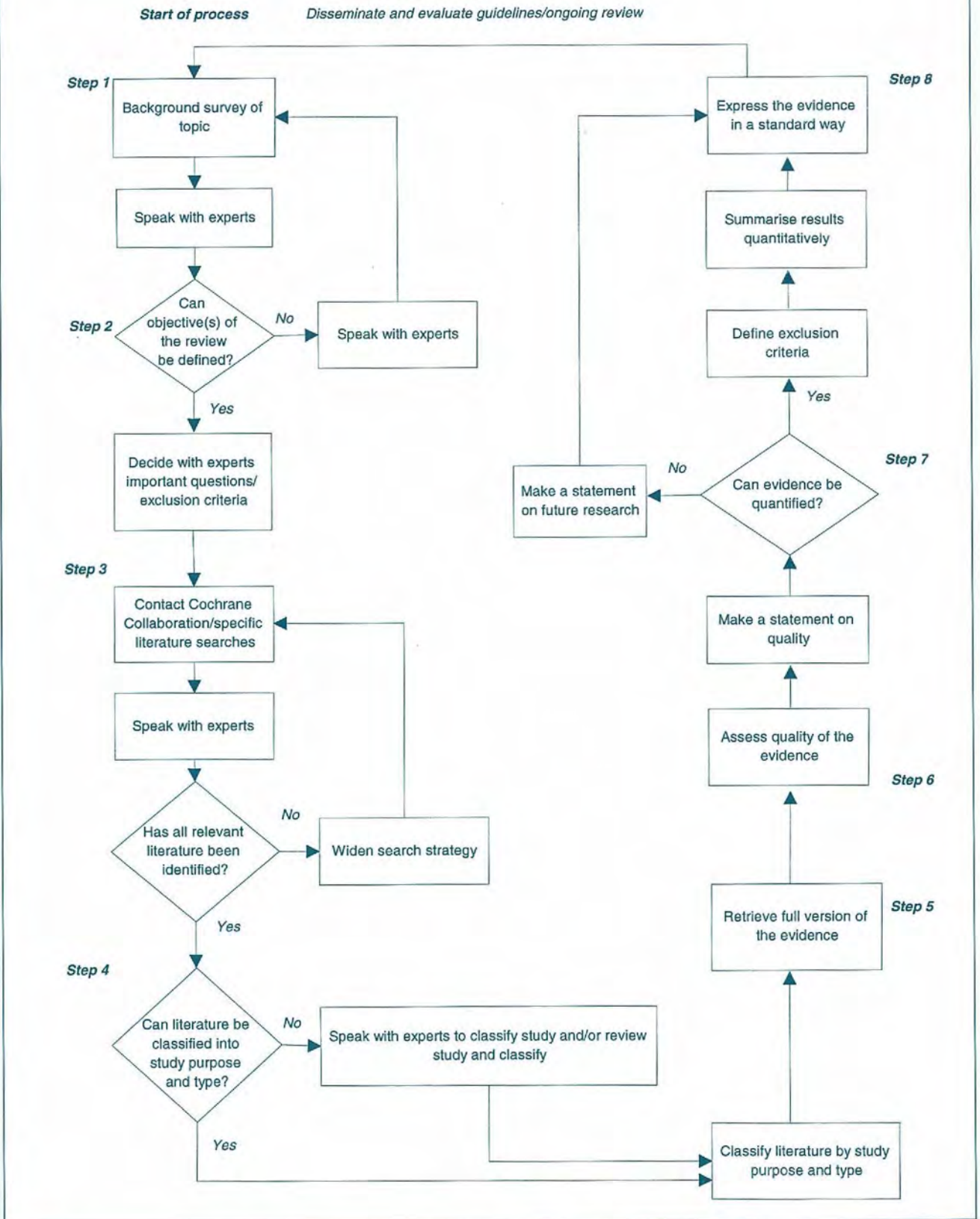
Where possible the strength of evidence should be quantified through meta-analysis techniques, summarising

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**FIGURE 3**

**METHOD FOR INCORPORATING EVIDENCE INTO GUIDELINES**





## Guidelines for diabetes management

► Continued from page 145

the results into a single point estimate with confidence intervals for both beneficial and adverse effects.

For example, the meta-analysis of 16 RCTs<sup>2</sup> on glycaemic control showed a significant reduction in progression of retinopathy with near normal glycaemic control over 2-5 years. This finding was summarised as an odds ratio of 0.49 with 95 per cent confidence interval of 0.28-0.85 ( $p=0.011$ )<sup>2</sup>.

Where results cannot be combined to quantify the strength of the evidence, the reason for this should be explained and the results of each study should be presented separately.

### 8. Standardised expression of the evidence

Evidence should be incorporated in guidelines in a standardised form. For example, the evidence for the diabetes guidelines includes:

- a summary statement of the results of studies which contributed evidence;
- a brief description of the search strategy used in identifying the relevant literature;
- a statement on the quality of the evidence, both from epidemiological and content-based perspectives;
- the assessed benefits and adverse effects;
- a conclusion, with recommendations for future research if needed; and
- references.

### CONCLUSION

The eight steps described above make up a systematic method for incorporating evidence into guidelines for the clinical management of diabetes. This method can be applied to other content areas. By making the method explicit, the quality of evidence for diabetes guidelines can be assessed. For the guidelines to reflect current evidence, ongoing review is necessary.

### ACKNOWLEDGMENTS

The contributions of Les Irwig, Lyn March, Anne Chamberlain, Stephen Colagiuri, Steven Boyages, Dennis Yue, Lesley Campbell, Robert Moses and Ruth Colagiuri are greatly appreciated.

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# WAITING LIST REDUCTION PROGRAM: RESULTS TO NOVEMBER 1995

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The October and November 1995 issues of the *NSW Public Health Bulletin* contained progress reports on the Waiting List Reduction Program<sup>1,2</sup>. This article describes the current status of the Program with results to the end of November 1995.

The Program was introduced to improve access to elective surgery in NSW public hospitals. The aim is to reduce the March 31, 1995 elective surgery waiting lists by 50 per cent within 12 months, concentrating on people who have been waiting more than six months for admission.

It has been a long-term practice of the NSW Health Department to categorise medical and surgical patients by clinical urgency. This helps to ensure they receive the best care in the most timely manner.

The clinical categories are:

- Emergency: emergency patients, who are treated immediately;
- Urgency 1: patients who need hospitalisation within one week;
- Urgency 2: patients who need hospitalisation within one month;
- Urgency 3: other patients who are ready for care; and
- Urgency 4: patients who are not ready for care, either for medical reasons (staged patients) or social or personal reasons (deferred patients), and who are therefore not an immediate demand on the public hospital system. (This classification of patients does not mean they lose their place on the hospital queue.)

Unless otherwise stated, the results outlined below refer to Urgency 1, 2 and 3 patients.

### RESULTS

By November 30, 1995 the elective surgery waiting list had decreased from the March 31 figure of 44,707 to 24,701 patients (a reduction of 20,006 patients or 45 per cent).

Three Area and 10 District Health Services had achieved at least a 50 per cent reduction in the number of patients on elective surgery waiting lists (Table 3).

The vascular surgery list declined by 69 per cent. Urology declined by 55 per cent. Other notable reductions were obtained in ear, nose and throat surgery (down 41 per cent), general surgery (down 47 per cent), gynaecology (down 43 per cent), ophthalmology (down 46 per cent) and other surgery (down 75 per cent). Major decreases in list numbers were recorded for all clinical specialties. Expected waiting times were more than halved for ophthalmology and vascular surgery.

Particularly significant were reductions in numbers of people waiting longer than six months for procedures such

Continued on page 148 ►



TABLE 3

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

Area/District/Institution	Number on list		Total reduction	
	March 31, 1995	November 30, 1995	Number	%
Central Sydney	2,779	1,389	-1,390	-50.0
Northern Sydney	2,708	1,491	-1,217	-44.9
Western Sydney	4,650	1,925	-2,725	-58.6
Wentworth	2,122	1,257	-865	-40.8
South West Sydney	4,514	2,690	-1,824	-40.4
Central Coast	2,317	1,366	-951	-41.0
Hunter	4,178	2,867	-1,311	-31.4
Illawarra	2,778	1,786	-992	-35.7
South Eastern Sydney	7,190	3,620	-3,570	-49.7
Royal Alexandra Hospital	792	591	-201	-25.4
Barwon	43	5	-38	-88.4
Castlereagh	51	-	-51	-100.0
Central Western	588	394	-194	-33.0
Clarence	199	19	-180	-90.5
Evans	330	191	-139	-42.1
Far West	204	136	-68	-33.3
Hume	413	159	-254	-61.5
Lachlan	111	53	-58	-52.3
Lower North Coast	1,071	603	-468	-43.7
Macleay-Hastings	385	129	-256	-66.5
Macquarie	813	497	-316	-38.9
Mid North Coast	887	485	-402	-45.3
Monaro	59	40	-19	-32.2
Murray	16	12	-4	-25.0
Murrumbidgee	-	-	-	0.0
New England	404	207	-197	-48.8
North West	1,213	527	-686	-56.6
Orana	33	10	-23	-69.7
Richmond	681	346	-335	-49.2
Riverina	1,276	681	-595	-46.6
South Coast	89	7	-82	-92.1
Southern Tablelands	187	74	-113	-60.4
Tweed Valley	824	452	-372	-45.1
Port Macquarie Base Hospital	802	692	-110	-13.7
<b>New South Wales</b>	<b>44,707</b>	<b>24,701</b>	<b>-20,006</b>	<b>-44.7</b>

Source: Department of Health Reporting System, December 12, 1995

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

### Waiting lists: results to November

#### ► Continued from page 147

as cholecystectomy (down by 224 or 76 per cent), cataract extraction (down by 864 or 71 per cent), tonsillectomy (down by 476 or 76 per cent), varicose vein stripping and ligation (down by 357 or 85 per cent), arthroscopy (down by 336 or 54 per cent), and total hip replacement (down by 93 or 52 per cent).

The total number of patients waiting more than 12 months fell by 72 per cent to 637. The number of patients waiting 6-12 months fell by 67 per cent to 2,132. The reduction by about 6,000 patients waiting longer than six months has been one of the most significant effects of the Program (Table 4).

Expected waiting time has diminished by three weeks to 33 days. This is a reduction of more than 60 per cent on the March figure, and is the lowest expected waiting time for elective surgery since record collection began in 1989. The average time on list has declined by more than five weeks to 2.3 months (Table 5).

Elective surgery admissions between April and November 1995 increased by almost 20,000 or 11.6 per cent over the corresponding period in 1994. This is likely to be an underestimate because, in mid-1994, a large number of medical procedures, such as endoscopies and chemotherapy, were erroneously being coded as surgery.

The number of Urgency 4 patients increased consistently from the quarter ending on September 30, 1994 to the quarter ending on September 30, 1995 (five quarters). In the quarter ending on September 30, 1995 there were 9,527 Urgency 4 elective surgery patients, an increase of almost 1,400 over the quarter ending on June 30, 1995. This was an increase of almost 1,900 over the quarter ending on March 31, 1995 (Table 6).

#### COMMENTS

The number of Urgency 4 patients (medical and surgical) has been rising over the period waiting list records have been kept. The current increase reflects improvements in the quality of clinical information supplied to hospitals, with improved implementation of waiting list audit policy and a greater understanding by clinicians and administrators of



TABLE 4

REDUCTIONS IN PATIENTS ON AREA AND DISTRICT WAITING LISTS, NOVEMBER, 1995  
PATIENTS WAITING LONGER THAN SIX MONTHS

Area/District/Institution	NUMBER ON LIST							
	Waiting 6-12 months				Waiting > 12 months			
	Reduction				Reduction			
	Mar 31, 1995	Nov 30, 1995	Number	%	Mar 31, 1995	Nov 30, 1995	Number	%
Central Sydney	116	10	-106	-91	15	-	-15	-100
Northern Sydney	404	102	-302	-75	173	94	-79	-46
Western Sydney	836	143	-693	-83	295	56	-239	-81
Wentworth	340	86	-254	-75	293	55	-238	-81
South West Sydney	555	229	-326	-59	191	85	-106	-55
Central Coast	398	230	-168	-42	107	20	-87	-81
Hunter	768	343	-425	-55	179	68	-111	-62
Illawarra	463	170	-293	-63	173	70	-103	-60
South Eastern Sydney	1,150	320	-830	-72	559	124	-435	-78
Royal Alexandra Hospital	25	12	-13	-52	11	-	-11	-100
Barwon	-	-	-	-	-	-	-	-
Castlereagh	-	8	8	-	-	-	-	-
Central Western	80	35	-45	-56	8	1	-7	-88
Clarence	1	-	-1	-100	-	-	-	-
Evans	2	-	-2	-100	-	-	-	-
Far West	1	-	-1	-100	-	-	-	-
Hume	25	1	-24	-96	4	-	-4	-100
Lachlan	13	-	-13	-100	-	-	-	-
Lower North Coast	207	95	-112	-54	52	-	-52	-100
Macleay-Hastings	101	4	-97	-96	46	-	-46	-100
Macquarie	164	49	-115	-70	41	24	17	-41
Mid North Coast	150	26	-124	-83	4	-	-4	-100
Monaro	-	-	-	-	-	-	-	-
Murray	-	-	-	-	-	-	-	-
Murrumbidgee	-	1	1	-	-	-	-	-
New England	26	-	-26	-100	1	-	-1	-100
North West	169	41	-128	-76	16	1	-15	-94
Orana	4	-	-4	-100	-	-	-	-
Richmond	95	41	-54	-57	1	3	2	200
Riverina	199	46	-153	-77	77	1	-76	-99
South Coast	4	35	31	775	-	-	-	-
Southern Tablelands	1	1	-	-	-	-	-	-
Tweed Valley	79	11	-68	-86	19	-	-19	-100
Port Macquarie Base Hosp	3	93	90	3,000	-	35	35	-
<b>New South Wales</b>	<b>6,379</b>	<b>2,132</b>	<b>-4,247</b>	<b>-67</b>	<b>2,265</b>	<b>637</b>	<b>-1,628</b>	<b>-72</b>

Source: Department of Health Reporting System, December 12, 1995

the management of hospital waiting lists. The Waiting List Reduction Program has provided an impetus for this.

As the Program nears its target of a 50 per cent reduction in elective surgery waiting lists, planning is being directed towards policy on the management of waiting lists and associated incentives. Best practice in the management of elective patients is a key issue for consideration. Future directions will include development and application of appropriate benchmarks to enable monitoring of the management of elective patients (both medical and surgical) and to provide incentives for continuous improvement in this management.

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TABLE 5

VARIATIONS IN WAITING TIMES BY AREA AND DISTRICT HEALTH SERVICE,  
MARCH TO NOVEMBER, 1995

Area/District/Institution	WAITING TIMES (months)								
	Expected waiting time			Average waiting time			Average time on list		
	Mar 31, 95	Nov 30, 95	Variation*	Mar 31, 95	Nov 30, 95	Variation*	Mar 31, 95	Nov 30, 95	Variation*
Central Sydney	1.1	0.6	-0.6	1.0	0.9	-0.1	1.5	1.0	-0.5
Northern Sydney	1.3	0.8	-0.4	0.9	0.9	0.0	3.5	2.7	-0.8
Western Sydney	1.9	1.3	-0.6	1.6	1.1	-0.5	4.1	2.1	-1.9
Wentworth	2.6	1.4	-1.2	2.1	2.4	0.3	5.9	2.8	-3.0
South West Sydney	1.7	1.1	-0.6	1.4	1.5	0.1	3.3	2.3	-1.0
Central Coast	2.5	1.8	-0.8	1.9	2.0	0.1	4.0	3.0	-1.0
Hunter	2.0	1.3	-0.7	1.6	1.7	0.1	3.7	2.8	-0.9
Illawarra	2.4	1.3	-1.1	2.3	1.5	-0.8	3.9	2.8	-1.1
South Eastern Sydney	1.7	1.1	-0.6	1.2	1.2	0.0	4.2	2.5	-1.8
Royal Alexandra Hospital	1.3	1.2	-0.2	1.3	1.1	-0.2	1.6	1.1	-0.5
Barwon	0.6	0.1	-0.5	0.5	0.2	-0.3	0.7	0.1	-0.7
Castlereagh	0.6	0.4	-0.2	0.5	0.3	-0.2	0.5	2.4	1.9
Central Western	1.4	1.0	-0.4	1.1	1.5	0.4	2.6	2.0	-0.6
Clarence	1.6	0.9	-0.7	0.4	0.4	0.0	1.9	0.6	-1.3
Evans	0.9	0.6	-0.3	0.8	0.6	-0.2	1.1	0.9	-0.2
Far West	1.4	0.9	-0.5	0.9	1.0	0.1	1.4	1.0	-0.4
Hume	0.8	0.6	-0.3	0.9	0.6	-0.3	2.0	1.0	-1.0
Lachlan	0.9	0.4	-0.5	0.3	0.8	0.5	2.1	0.7	-1.4
Lower North Coast	5.4	1.8	-3.6	3.8	3.2	-0.6	3.8	2.6	-1.2
Macleay-Hastings	2.2	0.8	-1.4	2.1	1.4	-0.7	4.8	1.3	-3.6
Macquarie	2.6	1.5	-1.1	1.5	2.2	0.7	4.0	3.0	-1.0
Mid North Coast	3.5	1.5	-2.0	2.4	1.8	-0.6	2.9	2.0	-0.9
Monaro	0.7	0.5	-0.1	0.9	0.5	-0.4	1.0	0.6	-0.4
Murray	0.6	0.3	-0.3	0.4	0.4	0.0	0.5	0.5	-0.1
Murrumbidgee	0.0	0.9	0.9	0.0	0.5	0.5	0.0	1.2	1.2
New England	1.5	0.7	-0.8	1.6	1.0	-0.6	1.9	0.7	-1.1
North West	2.4	1.1	-1.2	2.0	1.7	-0.3	3.0	2.1	-0.9
Orana	1.6	0.5	-1.1	1.6	2.0	0.4	2.9	2.7	-0.2
Richmond	1.1	0.7	-0.5	1.0	0.8	-0.2	2.2	1.9	-0.4
Riverina	3.0	1.6	-1.4	2.9	2.4	-0.5	3.9	2.1	-1.8
South Coast	0.6	0.9	0.3	0.5	0.5	0.0	1.3	2.2	0.9
Southern Tablelands	1.1	0.9	-0.2	0.9	0.9	0.1	3.3	0.7	-2.6
Tweed Valley	2.9	1.1	-1.8	1.9	1.7	-0.2	3.0	1.4	-1.5
Port Macquarie Base Hosp	3.0	1.7	-1.3	2.0	3.5	1.5	3.0	3.4	0.3
<b>New South Wales</b>	<b>1.8</b>	<b>1.1</b>	<b>-0.7</b>	<b>1.4</b>	<b>1.4</b>	<b>-0.1</b>	<b>3.6</b>	<b>2.3</b>	<b>-1.2</b>

Source: Department of Health Reporting System, December 12, 1995

\* Columns may not add because of rounding.

TABLE 6

TOTAL STAGED AND DEFERRED (URGENCY 4) PATIENTS

	Sep 94	Dec 94	Mar 95	June 95	Sep 95
Surgical	5,056	5,775	6,260	8,150	9,527
Medical	1,583	1,956	2,509	2,620	3,032
<b>Total</b>	<b>6,639</b>	<b>7,731</b>	<b>8,769</b>	<b>10,770</b>	<b>12,559</b>

Source: Department of Health Reporting System

### NORTHERN SYDNEY PHU ON THE WEB

The Northern Sydney Public Health Unit has just launched its World Wide Web (WWW) page on the Internet. The PHU's WWW page includes information about the PHU, its functions, research projects and staff areas of expertise, and offers access to abstracts from recent publications including *Health from the Harbour to the Hawkesbury: Update 1994*. It also enables the reader to access other public health-related WWW pages around the world. The address (URL) for the PHU's WWW page is <http://www.nsaphu.nsw.gov.au/~jskinner>

The creation of the PHU WWW page has been funded from a Northern Sydney Area Health Service research grant. The WWW page is part of the Health Information Provision Project (HIPP) which seeks to provide health planning and service information in a variety of electronic forms including: the Wide Area Network (WAN), a facsimile service (Faxback 477 9404), and the WWW page. If you would like to receive a bulletin describing the information available as part of HIPP, telephone John Skinner or Terry Black on (02) 477 9186 or 477 9187.



# REPORT OF THE NSW MIDWIVES DATA COLLECTION 1994

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The NSW Midwives Data Collection (MDC) report for 1994, the seventh annual report on the MDC, was released in November 1995. In response to the demand for information on birth centre deliveries, the 1994 report includes information on birth centre deliveries in addition to regular features.

The MDC is a population-based surveillance system covering all births in NSW public and private hospitals, as well as homebirths. It encompasses all livebirths and stillbirths of at least 20 weeks gestation or at least 400 grams birthweight.

The MDC relies on the attending midwife to complete a notification form when a birth occurs. The form includes demographic items and items on maternal health, the pregnancy, labour, delivery and perinatal outcomes. Completed forms are sent to the Data Collections Unit in the Information and Data Services Branch of the NSW Health Department, where they are compiled into the MDC database.

The following is a summary of the main points from the 1994 report.

## DEMOGRAPHIC INFORMATION

A total of 87,984 births to 86,738 women was reported to the MDC for 1994. The number of reported births increased by 5.9 per cent from 83,098 in 1987. More than one-quarter of the State's births were to women resident in South Western Sydney and Western Sydney Areas.

Overall, 73.5 per cent of all reported confinements were to Australian-born women, including 1.8 per cent who were Aboriginal. Following recent trends, the proportion of confinements to women born in Asia continued to rise and comprised 9.2 per cent of all confinements in 1994, while confinements among European-born women continued to decrease and comprised 3.1 per cent in 1994.

Aboriginal mothers and mothers born in the Middle East tended to be younger than NSW mothers as a whole. One in five births among Aboriginal women was to teenagers.

## PREGNANCY PROFILE

More than half (56.9 per cent) of the women who gave birth in 1994 reported having had their first antenatal check in the first trimester of pregnancy, about one-third (34.1 per cent) in the second trimester and about 5 per cent in the third trimester.

Of the 86,738 confinements, 85,453 were singleton, 1,185 were twin and 30 were triplet.

At least one obstetric complication was reported in 14.0 per cent of confinements. The most common complication was pregnancy-induced hypertension, which was reported in 5.8 per cent.

## PLACE OF DELIVERY

Only 1.6 per cent of women who gave birth in 1994 had not booked into an obstetric facility before the onset of labour. The vast majority of births (96.5 per cent) took place in hospital. Almost 3 per cent of births took place in a birth centre and 0.2 per cent took place at home.

## BIRTH CENTRE BIRTHS

The number of women planning to give birth in a birth centre increased from 723 in 1990 (0.8 per cent of confinements) to 3,252 (3.7 per cent) in 1994. Of the women who planned a birth centre delivery, 2,502 – about three-quarters – had a birth centre delivery (2.9 per cent of all confinements). Women having their first baby were more likely to be transferred to a labour ward for delivery than those having their second or subsequent child. About one-fifth of women who were transferred had an epidural anaesthetic, suggesting that the need for pain relief may be an important reason for transfer.

As expected, planned birth centre deliveries were characterised by lower rates of obstetric intervention, such as episiotomy and instrumental delivery, compared with all NSW deliveries. However, mothers planning a birth centre delivery had higher rates of postpartum haemorrhage compared with all NSW mothers.

## LABOUR AND DELIVERY

Onset of labour was spontaneous for 70.3 per cent of all births, 23.3 per cent of labours were augmented, and labour was induced in about one in five births. The rate of spontaneous onset of labour has remained relatively stable at about 70 per cent since 1987. However, the rate of augmentation of labour increased from 17.3 per cent in 1987 to 23.3 per cent in 1994.

The rate of spontaneous cephalic vaginal delivery was 70.6 per cent in 1994, while the rate of vaginally delivered breech presentations was 1.1 per cent. The caesarean section rate for 1994 was 17.3 per cent; the rate was 15.9 per cent in 1987 and 17.1 per cent in 1993. The rate of instrumental delivery declined from 13.9 per cent in 1987 to 10.8 per cent in 1994.

## BABY CHARACTERISTICS

Overall 5.8 per cent of newborns were of low birthweight (less than 2,500 grams) and 6.4 per cent were born prematurely (less than 37 weeks gestation). The proportion of low birthweight infants born to Aboriginal women was 11.7 per cent – more than twice that of non-Aboriginal mothers – while the rate of prematurity among Aboriginal infants was also 11.7 per cent.

About one in six infants had a one-minute Apgar score of less than 7 and 2.5 per cent had a five-minute Apgar score of less than 7. Low Apgar scores (<7) at five minutes were most common among infants born by vaginal breech delivery (18.4 per cent) and emergency caesarean section (5.1 per cent).

The reported perinatal mortality rate, using the World Health Organisation definition<sup>1</sup> was 7.7/1,000 total births. The reported perinatal mortality rate has continued to decrease from the 1987 figure of 8.8/1,000 births and has remained less than 8.0/1,000 in both 1993 and 1994.

## FURTHER INFORMATION

Copies of the full report and further information are available from Ms Margaret Pym (phone 02 391 9199) or Dr Lee Taylor (391 9223).

1. Birthweight of 500 grams or more, or (when birthweight is unavailable) gestational age of 22 weeks or more.



# INFECTIOUS DISEASES

## NOTIFICATION TRENDS

In October 1995 notification rates were higher than historical levels for gastroenteritis and rubella (Figure 4). Notification trends for these conditions were described in the August, September and October issues of the *NSW Public Health Bulletin*.

Notification rates were lower than historical levels in October 1995 for measles, pertussis and Q fever (Figure 4).

Relatively large numbers of November 1995 notifications have been received for the following conditions: arboviral disease, gastroenteritis and *Salmonella* infections, HIV infection and rubella (Tables 7 & 8).

## ARBOVIRAL DISEASE

Increased notifications for arboviral disease were recorded for the period January 1 to November 30, 1995 compared with the same period in 1994 (Table 7). Twenty notifications for November 1995 had been received at the time of writing, compared with seven for the preceding month (Table 8).

The largest numbers of notifications for the year to November 30, 1995 were from the North Coast Public Health Unit (PHU) (207 notifications) and South East PHU (156). These numbers were largely the result of an outbreak of Barmah Forest Virus (BFV) with 130 cases in the South East districts, peaking in March. A smaller outbreak of BFV occurred in the North Coast at the same time, peaking in April. This was reported in the May 1995 *Bulletin*. The numbers of notifications from the South East PHU have been low since July (0 or 1 per month). Of the 20 notifications for November, most (11) were reported by the North Coast PHU.

## HIV INFECTION

Month-to-month variations in HIV infection notification rates were discussed in recent issues of the *Bulletin* in the context of a possible increase in HIV infection rates in 1995. Between January 1 and November 30, 1995, 450 notifications had been received for HIV infection, compared with 410 for the corresponding period in 1994 (Table 7). Forty-nine notifications were received in November, compared with 37 the previous month (Table 8).

## RUBELLA

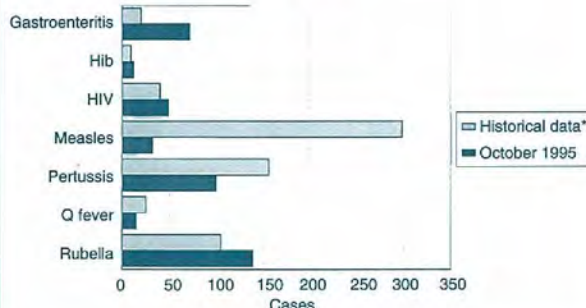
High notification rates of rubella reported in the November issue of the *Bulletin* appear to have peaked in September. Figure 5 shows the pattern of notifications since the inception of new infectious disease notification procedures under the Public Health Act 1991. Notifications were high in the late spring and early summer of 1992 and 1993, especially 1993. This pattern was not evident in 1994 but has occurred again in 1995. One hundred and thirty-nine rubella notifications had been received for November at the time of writing, compared with 248 and 196 respectively for September and October (Table 8).

## GASTROENTERITIS IN AN INSTITUTION

Notification rates for gastroenteritis in an institution (Figure 6) showed a marked peak starting in July 1995. Notifications appear to have peaked in August and fallen in September and October. Notifications for November were still being received at the time of writing.

FIGURE 4

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

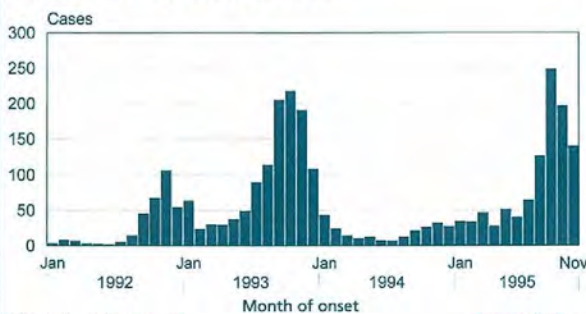


\* Historical data: the average number of notifications diagnosed in the same month in the previous three years.

Source: IDSS

FIGURE 5

RUBELLA NOTIFICATIONS NSW 1992-1995, BY DATE OF ONSET

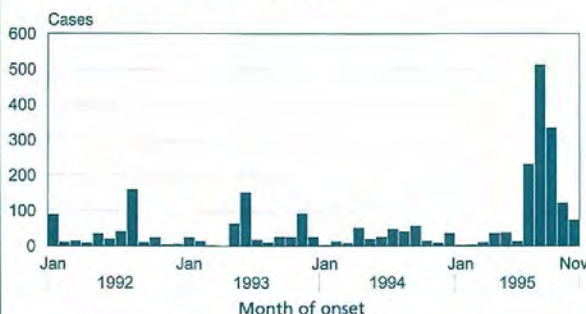


Lab confirmed cases only.

Source: IDSS

FIGURE 6

GASTROENTERITIS IN AN INSTITUTION NOTIFICATIONS NSW 1992-1995, BY DATE ON ONSET



Source: IDSS



TABLE 7

SUMMARY OF NSW INFECTIOUS DISEASE NOTIFICATIONS  
NOVEMBER 1995

Condition	Number of cases notified			
	Period		Cumulative	
	Nov 1994	Nov 1995	Nov 1994	Nov 1995
Adverse reaction	5	-	37	31
AIDS	42	24	545	377
Arboviral infection	9	20	375	524
Brucellosis	-	-	4	2
Cholera	-	-	-	1
Diphtheria	-	-	-	-
Foodborne illness (NOS)	61	9	218	384
Gastroenteritis (instit.)	8	72	275	1,365
Gonorrhoea	28	33	334	388
H influenzae epiglottitis	-	-	21	6
H influenzae B - meningitis	2	2	16	11
H influenzae B - septicaemia	-	2	11	8
H influenzae infection (NOS)	-	1	9	3
Hepatitis A	80	58	544	533
Hepatitis B	481	367	4,349	4,603
Hepatitis C	969	595	8,773	7,624
Hepatitis D	-	1	19	19
Hepatitis, acute viral (NOS)	-	-	2	2
HIV infection	38	49	410	450
Hydatid disease	4	2	19	15
Legionnaires' disease	-	3	57	67
Leprosy	-	-	3	2
Leptospirosis	-	1	13	5
Listeriosis	1	1	7	11
Malaria	7	4	173	93
Measles	348	32	1,239	567
Meningococcal meningitis	5	8	75	69
Meningococcal septicaemia	3	1	38	23
Meningococcal infection (NOS)	2	-	19	18
Mumps	-	4	10	13
Mycobacterial tuberculosis	28	11	387	383
Mycobacterial - atypical	44	1	478	365
Mycobacterial infection (NOS)	3	11	37	81
Pertussis	100	100	1,342	1,230
Plague	-	-	-	-
Poliomyelitis	-	-	-	-
Q fever	24	15	243	191
Rubella	32	139	207	1,003
Salmonella infection (NOS)	72	120	979	1,173
Syphilis	89	64	1,008	856
Tetanus	1	-	4	-
Typhoid and paratyphoid	2	-	31	33
Typhus	-	-	-	-
Viral haemorrhagic fevers	-	-	-	-
Yellow fever	-	-	-	-

TABLE 8

INFECTIOUS DISEASE NOTIFICATIONS FOR NSW, 1995  
BY SELECTED MONTH OF ONSET FOR NOTIFICATIONS  
RECEIVED BY NOVEMBER 30, 1995

Condition	Aug	Sep	Oct	Nov	Total
Adverse event after immunisation	4	5	3	-	12
AIDS	34	23	38	24	119
Arboviral infection	15	10	7	20	52
Foodborne illness (NOS)	8	15	61	9	93
Gastroenteritis (instit.)	510	334	120	72	1,036
Gonorrhoea infection	42	39	36	33	150
H. influenzae epiglottitis	2	1	-	-	3
H. influenzae infection (NOS)	-	-	-	1	1
H. influenzae meningitis	-	1	1	2	4
H. influenzae septicaemia	2	-	-	2	4
Hepatitis A - acute viral	43	45	56	58	202
Hepatitis B - acute viral	6	3	1	4	14
Hepatitis B - chronic/carrier	52	46	45	28	171
Hepatitis B - unspecified	343	413	396	335	1,487
Hepatitis C - acute viral	7	1	1	3	12
Hepatitis C - unspecified	663	654	663	592	2,572
Hepatitis D - unspecified	-	2	3	1	6
Hepatitis, acute viral (NOS)	-	-	1	-	1
HIV infection	34	40	37	49	160
Hydatid disease	1	1	1	2	5
Legionnaires' disease	2	3	3	3	11
Leprosy	-	1	-	-	1
Leptospirosis	-	-	-	1	1
Listeriosis	-	2	1	1	4
Malaria	4	3	2	4	13
Measles	54	40	50	32	176
Meningococcal infection (NOS)	1	3	3	-	7
Meningococcal meningitis	8	6	5	8	27
Meningococcal septicaemia	6	3	-	1	10
Mumps	1	1	-	4	6
Mycobacterial atypical	31	23	17	1	72
Mycobacterial infection (NOS)	4	5	11	11	31
Mycobacterial tuberculosis	36	31	32	11	110
Pertussis	167	130	146	100	543
Q fever	33	11	13	15	72
Rubella	125	248	196	139	708
Salmonella (NOS)	83	70	99	120	372
Syphilis infection	80	80	85	64	309
Typhoid and paratyphoid	-	2	2	-	4



TABLE 9

INFECTIOUS DISEASE CUMULATIVE NOTIFICATIONS FOR NSW, 1995  
RECEIVED BY NOVEMBER 30, 1995

Condition	CCA	CSA	CW	ESA	HUN	ILL	NC	ND	NSA	SE	SSA	SW	SWS	WEN	WN	WSA	U/K	Total
AIDS	5	90	1	137	11	6	30	2	36	-	21	-	14	10	-	14	-	377
Arboviral infection	8	5	1	7	14	25	207	47	6	156	4	15	2	2	21	4	-	524
Brucellosis	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2
Cholera	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Gonorrhoea infection	5	61	12	163	7	15	18	11	17	8	20	1	16	4	20	10	-	388
Hepatitis B - acute viral	1	6	1	14	-	-	4	2	-	1	2	1	4	-	11	5	-	52
Hepatitis B - chronic/carrier	20	1	19	271	-	-	9	10	3	-	23	4	-	9	9	110	-	488
Hepatitis B - unspecified	26	508	9	63	93	95	58	12	506	31	622	15	1,376	44	12	593	-	4,063
Hepatitis C - acute viral	1	-	1	5	-	-	-	-	-	1	-	-	-	2	44	3	-	57
Hepatitis C - unspecified	195	851	308	1,099	451	457	766	224	544	251	490	216	871	158	34	649	-	7,567
Hepatitis D - unspecified	-	-	-	2	1	-	5	1	1	-	2	1	3	-	-	3	-	19
Hepatitis, acute viral (NOS)	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
HIV infection	11	73	3	-	16	10	6	2	25	-	-	6	29	6	1	18	69	450
Hydatid disease	-	1	1	1	-	1	1	-	1	1	2	2	3	-	-	1	-	15
Legionnaires' disease	2	3	-	6	12	6	1	3	9	-	-	-	3	2	2	18	-	67
Leprosy	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2
Leptospirosis	-	-	-	-	1	-	1	2	-	-	-	1	-	-	-	-	-	5
Malaria	4	7	-	9	9	4	8	1	23	3	3	3	4	4	-	11	-	93
Meningococcal infection (NOS)	1	-	-	3	1	-	3	-	-	-	4	2	2	-	2	-	-	18
Meningococcal meningitis	8	1	5	5	11	10	4	3	7	4	3	-	5	1	-	2	-	69
Meningococcal septicaemia	-	4	-	-	5	1	2	1	2	1	1	1	3	2	-	-	-	23
Mycobacterial atypical	11	49	2	75	24	6	17	9	43	4	33	3	45	12	6	25	-	365
Mycobacterial infection (NOS)	6	16	-	3	2	-	4	-	10	-	11	-	19	2	-	8	-	81
Mycobacterial tuberculosis	6	36	1	21	8	6	5	3	44	2	49	4	106	6	5	81	-	383
Q fever	-	1	12	-	15	4	45	31	-	27	-	4	1	-	50	1	-	191
Syphilis infection	5	121	11	168	18	16	62	44	39	8	58	6	127	15	104	54	-	856

TABLE 10

VACCINE PREVENTABLE AND RELATED CONDITIONS, CUMULATIVE NOTIFICATIONS FOR NSW, 1995  
BY PUBLIC HEALTH UNIT, RECEIVED BY NOVEMBER 30, 1995

Condition	CCA	CSA	CW	ESA	HUN	ILL	NC	ND	NSA	SE	SSA	SW	SWS	WEN	WN	WSA	Total
Adverse event after immunisation	-	-	-	1	1	-	6	2	-	6	3	4	-	4	-	4	31
H. influenzae epiglottitis	-	-	1	1	-	-	1	-	-	-	2	-	-	-	-	1	6
H. influenzae infection (NOS)	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	3
H. influenzae meningitis	-	1	-	-	-	-	4	1	-	-	-	-	1	1	-	3	11
H. influenzae septicaemia	-	-	2	-	1	-	1	-	1	-	1	-	1	-	-	-	8
Measles	14	29	13	55	63	72	52	46	15	8	48	11	44	38	7	52	567
Mumps	-	-	-	2	-	2	3	-	2	1	1	-	-	-	-	-	13
Pertussis	39	24	23	29	67	87	322	15	103	41	63	91	80	116	11	119	1,230
Rubella	32	106	114	29	100	50	125	21	55	8	56	4	20	50	48	185	1,003

TABLE 11

FOODBORNE INFECTIOUS DISEASE CUMULATIVE NOTIFICATIONS FOR NSW, 1995  
BY PUBLIC HEALTH UNIT, RECEIVED BY NOVEMBER 30, 1995

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	-	3	3	4	-	1	8	99	-	24	23	384
Gastroenteritis (instit.)	40	155	61	77	211	-	47	-	132	15	141	29	68	206	2	181	1,365
Hepatitis A - acute viral	11	82	38	161	24	9	32	4	46	2	35	10	42	3	3	31	533
Listeriosis	-	1	1	3	-	-	-	1	1	1	1	1	-	-	-	-	11
Salmonella (NOS)	28	66	22	82	89	56	123	69	129	42	115	27	109	63	39	114	1,173
Typhoid and paratyphoid	-	2	-	8	-	-	3	-	4	-	5	-	5	1	-	5	33
Vibrio infection (non cholera)	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1

*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.