Bureau of Health Information

Data Quality Assessment

information systems in NSW emergency departments

Hospital Quarterly: July to September 2010

Summary

This *Data quality assessment* reviews the quality of electronic information systems in NSW emergency departments and the completeness of these data used in the production of the Bureau's *Hospital Quarterly* reports. It also identifies opportunities to use that data to better support those working in healthcare and the NSW Parliament, and enhance performance reporting for the public.

The Bureau focused on three issues related to the quality of electronic information systems in NSW emergency departments:

1) Relevance – whether the available data measures what matters to the public, healthcare professionals and the NSW Parliament;

2) Coverage - whether the data covers all of the emergency departments in NSW; and

3) Comprehensiveness - how complete the available data fields are (given that missing data has the potential to introduce measurement error).

In terms of publicly reporting what matters most to people, the Bureau recommends a review of current emergency department performance indicators with the objective of creating a suite of rigorous measures that can be made publicly available at regular intervals. One of the aims of publishing such indicators would be to improve the transparency and accountability of publicly-provided healthcare in NSW.

While there are opportunities to improve information systems in NSW, the Bureau acknowledges that many other jurisdictions in Australia and in comparable countries do not have information systems as comprehensive as those in NSW public hospital emergency departments.

Over time, the Bureau will continue to undertake and publish results of assessments of electronic emergency department information systems.

Information systems in NSW emergency departments as of 15 October 2010

Strengths

Electronic information systems from 87 of the 189 emergency departments in NSW contribute data on, for example, attendance numbers, triage categorisation, mode of separation and measured time periods to a central data warehouse in NSW called the Health Information Exchange (HIE). There are jurisdictions in Australia and overseas that do not have electronic information systems in public hospital emergency departments as comprehensive as those in NSW.

There are NSW Health policy directives and also quality assurance processes in place to provide a broad framework to support data quality.

Electronic systems support performance estimates at hospital, area health service and state level.

Opportunities

Electronic information systems are not available in all emergency departments in public hospitals across NSW. If they were, access to electronic data to better monitor and manage care could be simpler and faster. Also, the identification of patients to participate in patient surveys could be done centrally to allow for stratification and other complex methods to reduce survey bias. To ensure the most appropriate use of health funding, a cost-benefit analysis may inform the decision process.

Electronic record systems are used to create key public reporting performance indicators, such as triage performance and waiting periods. Other indicators of performance are calculated and used internally by NSW Health. The Bureau recommends a broader suite of publically released performance indicators which would improve the transparency of healthcare in NSW and provide the public and healthcare professionals with greater understanding of how NSW emergency departments perform.

Regular public reporting by the NSW Department of Health summarising the results of routine data quality assessments or ad hoc audits of the completeness and accuracy of information systems' data would inform public debate about the quality of information on waiting times in emergency departments and build consensus for areas of improvement.

The Bureau has published this data quality assessment to offer suggestions to improve the relevance of information systems on care in emergency departments and to enhance transparency regarding data quality of electronic information systems.

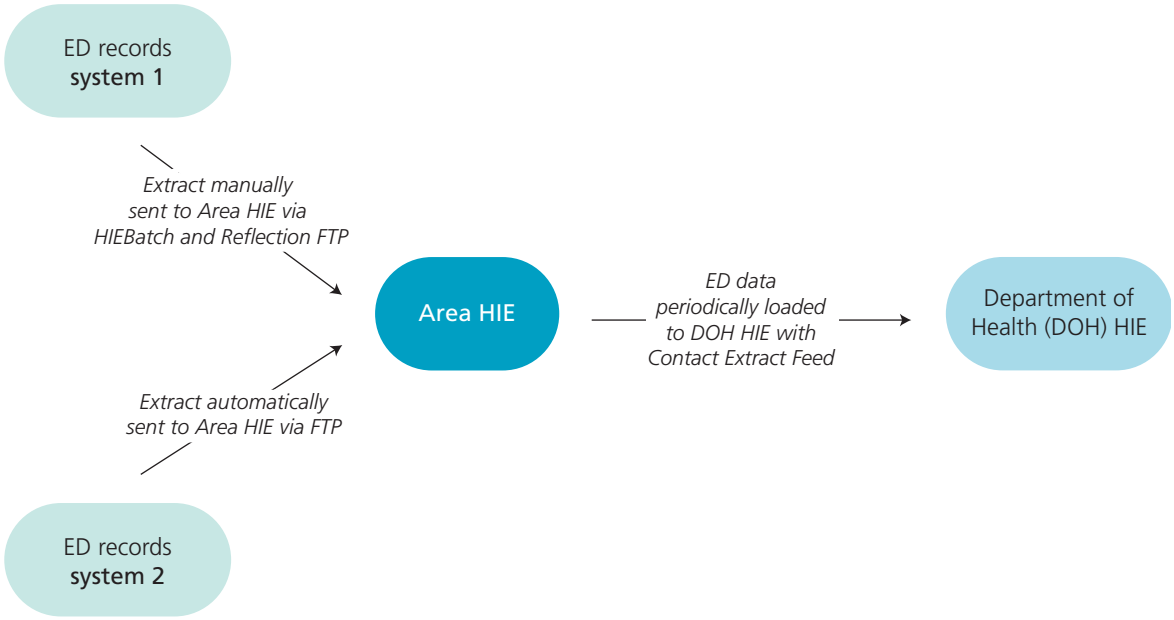
Introduction

The reporting and use of performance information about emergency departments aligns with NSW initiatives to strengthen the public health system by measuring, monitoring and improving the experiences patient have of care. For the purposes of the *Hospital Quarterly* reports, the Bureau uses data submitted from one of three electronic information systems currently used in NSW emergency departments to the Health Information Exchange (HIE).

While there are opportunities to improve information systems in NSW, the Bureau acknowledges that many other jurisdictions in Australia and in comparable countries do not have information systems as comprehensive as those in NSW public hospital emergency departments. In addition, many of these jurisdictions do not ask patients about their care experiences such as with the NSW Health Patient Survey which the Bureau uses to complement it's reporting of care provided in NSW emergency departments, when appropriate.

The Bureau's staff did not conduct a full assessment of the data collection and quality assurance processes which take place in NSW public hospitals regarding the electronic information systems in emergency departments. Instead, we focused our attention on two issues. First, we convened an advisory committee of health professionals who work in emergency departments across the state to assess relevance of the data relative to needs for information. Second, we assessed the coverage and completeness of electronic information system fields relevant to the *Hospital Quarterly* reports in order to gauge the degree to which incomplete data fields might contribute to error in our estimates of attendances, admissions and waiting times.

Figure 1: Populating HIE emergency department data from hospital emergency department record systems



The Health Information Exchange

Emergency department attendance data is extracted from the HIE, a centralised data warehouse administered by the NSW Department of Health. Public hospitals with emergency departments upload records of emergency department presentations to this data warehouse regularly, via centralised area health service information systems (Figure 1). Public hospitals in the greater metropolitan area submit emergency department records on a weekly basis while most other hospitals submit records monthly.

NSW Health requires data quality checks to be conducted at local, area and state levels.* Emergency department performance and activity measures rely on patient-level information from the 87 hospital emergency departments which currently have computerised information systems and have contained patient-level information for two or more years.

Measuring emergency department care: what matters most?

There are three main electronic information systems used in emergency departments throughout NSW although there are also a number of additional electronic information sources that can provide activity or performance measure data on NSW emergency departments. The deliberations of the advisory committee and their recommendations assisted the Bureau in identifying which electronic systems should be used for this report and what data should be presented.

Historically, three measures of emergency department performance have been publicly reported in NSW; off stretcher time, triage until treatment performance by urgency category and emergency admission performance. These performance indicators are all time related and do little to inform the public or healthcare

* New South Wales Health. *Emergency Department Collection (EDC) – Reporting requirements* [Internet] [cited 2010 Aug 19]. Available from www.health.nsw.gov.au/policies/PD/2005/pdf/PD2005_198.pdf

workers about care processes, equity of care or the outcomes of care in NSW emergency departments.

The Bureau's staff reviewed international literature to find the results of initiatives to identify performance indicators deemed a high priority and to provide comparison with publicly-reported performance indicators in NSW. More specifically, we focused on initiatives that included rigorous consensus processes informed by experts, users of health services and scientific evidence to decide upon performance indicators. Evidence shows that appropriate and publicly-reported performance indicators can result in better healthcare outcomes for future patients. Specifically, we identified initiatives in the United Kingdom, USA and Canada (examples provided in Table 1).[1, 2, 3, 4, 5]

The Bureau's staff found evidence that the priorities for performance indicators vary between stakeholders and that evaluations of performance from any single stakeholder group will result in unbalanced assessments. As an example, emergency department stakeholders are primarily interested in their role and capacity to provide high-quality care. Community-based stakeholders tend to be more interested in how performance information relates to the broader continuum of care.[6] Other stakeholders are interested in performance indicators that relate to structural or contextual information. This supports the need to conduct a rigorous and inclusive consensus process to identify performance indicators used for routine public reporting. Interestingly, the stakeholder engagement processes in the United Kingdom and Canada included experts from hospital administration, emergency medicine, health information, government and quality councils or commissions but neither country engaged consumer representatives.

Opportunities to improve

The Bureau of Health Information and the emergency department advisory committee recommends that a rigorous consensus and evidence-informed processes is undertaken to identify meaningful performance indicators that provide information on aspects of care other than waiting times and times spent in the emergency department. These indicators should be made publicly available and released regularly. They should be comprehensive and cover issues such as the structure or context of care, care processes, equity and outcomes. The identification of these high priority indicators has potential to focus and streamline efforts to measure, monitor and improve care and achieve better outcomes for patients.

Indicators need to be relevant to the group that is to be measured. As an example, for paediatric patients or those with mental health issues, a specific subset of appropriate indicators should be developed for use.

A consensus and evidence-informed process in NSW could build on the international developments, but it should be more inclusive of community stakeholders to better support performance reporting important to patients, the public and the NSW Parliament.

Table 1: Examples of meaningful performance indicators that have emerged from rigorous consensus and evidence-informed process in the United Kingdom and Canada in 2010

Strengths
Hospital emergency admission rates for acute exacerbations of urgent conditions that could be managed out of hospital or in other settings without admission to an inpatient bed.[1]
Processes of care
Time to first dose of analgesic in all painful conditions requiring analgesic.[3]
Emergency readmissions for non-admitted patients within seven days for serious, emergency or urgent conditions (as a proportion of all live discharges).[1]
Median time from emergency department arrival until time of discharge for non-admitted patients.[5]
Median time from initial chest x-ray order to the time of chest x-ray examination.[5]
Equity
Variations in time from first call to any emergency and urgent care service for serious emergency or urgent conditions, and clinical assessment, by defined comparators.[1]
Variations in time from first call to any emergency and urgent care service for serious emergency or urgent conditions, and admission, by defined comparators.[1]
Outcomes of care
Mortality rates for serious, emergency conditions for which a well-performing emergency and urgent care service should improve chances of survival.[1]
Percent of patients with unplanned return visit to the emergency department resulting in admission within 48 hours (or 72 hours) of being seen and discharged from the ED, stratified by adult/ paediatric patients.[3]

Measuring emergency department care: coverage of data

For a number of years, NSW Health and area health services (AHS) have invested in electronic information systems which can be used to measure, monitor and provide information to report on key performance indicators. Electronic information systems collecting unit record data are available in all large and medium size emergency departments but are not universally available in smaller emergency departments.*

There are currently 87 public hospital emergency departments with electronic information systems in place for two or more years. According to the NSW Department of Health, these hospitals represent approximately 85% of the emergency department activity. The remaining 102 emergency departments tend to be small with low patient numbers.

Appendix 1 lists emergency departments in NSW and identifies those that have this information system. The relevant NSW Department of Health Policy Directive covering the collection and submission of records of emergency department presentations is available at www.health.nsw.gov.au/policies/PD/2005/pdf/PD2005_198.pdf

Emergency departments that do not have one of the three main electronic information systems do not have another electronic information system capable of providing data centrally. Some electronic record systems can also be used to sample patient records centrally allowing complex sampling and stratification to be conducted. Research from the United Kingdom provides examples of the difficulty that can occur when paper records are used to supplement electronic records in a patient survey[7] and the high rate of errors when hospitals conduct the survey sampling rather than a central body.[8, 9] For these reasons, having an electronic record system in place increases the accuracy and flexibility when sampling, thereby improving the quality of the survey data.

Opportunities to improve

Transparency and accountability of publicly provided healthcare in NSW may be improved by routine, public reporting of performance indicators that align with community needs and desire for information. Other jurisdictions provide a role model for how rigorous, inclusive and evidence-informed processes can be undertaken to identify high priority performance indicators for care in emergency departments.[1, 2, 3, 4, 5] Following on from such a process in NSW, should it be undertaken, would be the need to determine the extent to which these indicators could be measured using current electronic record systems or via expansion of the functions of existing electronic record systems in order to streamline efforts to measure, monitor and improve care and achieve better outcomes for patients.

* With the exception of Hunter New England Area Health Service which has made investments to ensure an electronic information system is available in 100% of its facilities. Unlike all other AHS, this has ensured that all emergency departments in this AHS can contribute performance data electronically.

Measuring emergency departments care: accuracy and completeness of data

Public hospitals and the NSW Department of Health regularly perform quality assurance on the data entered into the emergency department electronic information systems. Daily error reporting is carried out by emergency department data managers, with corrections made as appropriate after patient record reviews. The NSW Department of Health runs weekly and monthly error checks on all records uploaded to the HIE by emergency departments and sends error reports to the AHS for review and appropriate action. Once amended, two of the three emergency department electronic systems automatically re-extract records into the HIE each month, correcting the data held there. The remaining information system re-extracts the data annually.

The accuracy of measures of patient attendances and measured time periods in emergency departments with an electronic information system is dependent on the data fields being both complete and correct. In particular, triage performance information in the Bureau's *Hospital Quarterly* report is dependent on the completeness of data regarding triage categories. While all emergency patients are assigned to a triage category, for various reasons the full array of information for each patient (for example, the patient's triage category, mode of separation, triage time, treatment time or departure time) might not be entered into an electronic records system. In some cases, an emergency department might not have completed the required data fields in time for it to be sent correctly to the central data warehouse (the HIE), from where the Bureau of Health Information uploads its data. Importantly, the extent to which electronic information is incomplete may reflect healthcare workers' commitment or capacity to enter electronic data information.

The Bureau's staff undertook work to assess the completeness of the data fields used in the calculation of measures for each of the 87 hospitals included in the emergency department chapter of the *Hospital Quarterly*. Table 2 presents the percentage of missing data and the number of records affected for each field used to compute the counts and statistics for the *Hospital Quarterly*. As some fields are used more than once in the calculation of measures, they are listed by the cohorts they apply to and only include those modes of separation appropriate to each group. More information on the patients which comprise each measure can be found in the *Technical supplement: measures of emergency department performance and activity*, available at www.bhi.nsw.gov.au

Table 2: Missing data by cohort for fields used in production of the emergency department measures contained in the first and second *Hospital Quarterly* reports

		Missing data (Hospital Quarterly, April to June 2010)				Missing data (Hospital Quarterly, July to September 2010)			
Cohort	Fields	Missing records	Eligible records	NSW %	Hospital ranges	Missing records	Eligible records	NSW %	Hospital ranges
All attendances	ED Visit Type	115	495,863	0.03%	0.00% - 0.28%	116	507,955	0.02%	0.00% - 0.61%
Emergency attendances by triage category	Triage Category	607	495,863	0.14%	0.00% - 1.23%	859	496,758	0.17%	0.00% - 1.54%
	Mode of Separation	91	484,212	0.02%	0.00% - 0.38%	137	495,895	0.03%	0.00% - 0.18%
Triaged and treated emergency attendances	Triage Time	45	484,212	0.01%	0.00% - 0.10%	0	424,105	0.00%	0.00% - 0.00%
	Treatment Time	2339	442,401	0.58%	0.00% - 4.90%*	2,796	424,029	0.66%	0.00% - 4.17%**
Departure from the emergency department	Actual Departure Time	39	442,401	0.01%	0.00% - 0.36%	7	424,105	0.00%	0.00% - 0.05%

(*) This range excludes one small emergency department which had 52% of records missing treatment time of 46 emergency admissions.

(**) This range excludes two small emergency departments which had 56% and 21% of records missing treatment time for 52 and 24 emergency admissions respectively.

Note: Data for the April to June 2010 quarter is presented for 79 of the 189 emergency departments. The six hospitals transitioning to a new electronic information system have been excluded due to the level of missing information. Two other emergency departments which have had an electronic information system for less than two years are excluded to maintain data comparability with previous reports. The remaining 102 emergency departments are excluded as they do not have electronic systems and cannot be assessed for missing information.

Note: Data for the July to September 2010 quarter is presented for 83 of the 189 emergency departments. The four hospitals transitioning to a new electronic information system have been excluded due to the level of missing information. The remaining 102 emergency departments are excluded as they do not have electronic systems and cannot be assessed for missing information.

Transition to the new emergency department information system

Emergency departments across NSW have been transitioning to a new electronic information system since 2007 and this process is scheduled for completion in 2012. Transitioning between data systems is inherently difficult with people needing to learn to use new systems. Within a busy emergency department, this may lead to prioritisation of patient care over data completeness. In addition, information management staff need to learn the new system and the intricacies of uploading the data into HIE. These barriers lead to less complete data which may present an incorrect summary of emergency department activity and performance.

After careful review, the Bureau is not satisfied with the completeness of the data during the quarter when the transition takes place and our analysis suggests this issue might propagate into subsequent quarters. Therefore, the Bureau excludes most hospital emergency department data during the quarter that they undergo transition and includes a cautionary note on the hospital's data for the next quarter. All hospitals have been included in calculations of collated attendance counts at an AHS and NSW level but excluded from the AHS and state performance data as this indicator simply requires healthcare workers to submit a record.

Opportunities to improve

The completeness of data for the 87 emergency departments the Bureau has reported on is high. The remaining 102 emergency departments, which account for approximately 15% of emergency department patients, do not have an electronic system in place and transparency of performance in these units is low. If more information systems were in place in NSW emergency departments, a more comprehensive picture of performance throughout the state would be available.

As most emergency departments without an electronic information systems are rural units, this would correct the current bias of public reporting in which large urban emergency departments are over-represented in the publicly-reported performance indicators. While provision of electronic medical records systems has been shown to improve productivity and decrease costs,[10, 11] a cost-benefit analysis would be required to assess whether an electronic system is most appropriate for these small units.

NSW Health is well-placed to improve the completeness and timeliness of emergency department data with the current upgrade to a new information system and improvements to that system to ensure that electronic records updated in AHS are updated in the state-wide HIE. Whether these initiatives alone will resolve the issue of completeness of data at the smaller or more rural emergency departments is not clear.

Conclusion

As of 15 October 2010, and with the above exception around transitioning hospitals, data from the electronic information systems have been deemed by the Bureau of Health Information to be sufficiently complete to accurately calculate attendances and time periods by triage categories. Accuracy of data from electronic information systems has not been audited to determine the degree to which it reflects actual patient experiences nor has the data been assessed by the Bureau for data entry errors.

Appendix 1: **Availability of electronic information systems in NSW emergency departments***

	Peer group	Area health service	Attendances April–June 2010	Electronic information system
Principal referral hospitals (A1)				
Concord Hospital	A1	SSWAHS	7870	Y
Gosford Hospital	A1	NSCCAHS	13395	Y
John Hunter Hospital	A1	HNEAHS	15983	Y
Liverpool Hospital	A1	SSWAHS	15222	Y
Nepean Hospital	A1	SWAHS	12581	Y
Prince of Wales Hospital	A1	SESIAHS	10365	Y
Royal North Shore Hospital	A1	NSCCAHS	13743	Y
Royal Prince Alfred Hospital	A1	SSWAHS	15255	Y
St George Hospital	A1	SESIAHS	14660	Y
St Vincent's Hospital	A1	SESIAHS	9873	Y
Westmead Hospital	A1	SWAHS	13294	Y
Wollongong Hospital	A1	SESIAHS	12764	Y
Paediatric specialist hospitals (A2)				
Sydney Children's Hospital	A2	SESIAHS	9005	Y
The Children's Hospital at Westmead	A2	CHW	12442	Y
Ungrouped acute – tertiary referral hospitals (A3)				
Calvary Mater Hospital - Newcastle	A3	HNEAHS	7257	Y
Sydney Eye Hospital	A3	SESIAHS	4631	Y
Sydney Hospital	A3	SESIAHS	4237	Y
Major metropolitan (BM)				
Auburn Hospital	BM	SWAHS	5895	Y
Bankstown - Lidcombe Hospital	BM	SSWAHS	10380	Y
Blacktown Hospital	BM	SWAHS	8282	Y
Campbelltown Hospital	BM	SSWAHS	12547	Y
Canterbury Hospital	BM	SSWAHS	8066	Y
Fairfield Hospital	BM	SSWAHS	7735	Y
Hornsby and Ku-Ring-Gai Hospital	BM	NSCCAHS	7669	Y
Manly District Hospital	BM	NSCCAHS	5226	Y
Mona Vale and District Hospital	BM	NSCCAHS	6451	Y
Sutherland Hospital	BM	SESIAHS	10447	Y
Wyong Hospital	BM	NSCCAHS	13379	Y

* Information system availability data source: Health Information Exchange; Hospital name and peer group updated for 2010/11 revision.

	Peer group	Area health service	Attendances April–June 2010	Electronic information system
Major non-metropolitan hospitals (BMN)				
Coffs Harbour Base Hospital	BNM	NCAHS	8154	Y
Dubbo Base Hospital	BNM	GWAHS	6891	Y
Lismore Base Hospital	BNM	NCAHS	7350	Y
Maitland Hospital	BNM	HNEAHS	9885	Y
Manning Hospital	BNM	HNEAHS	5421	Y
Orange Base Hospital	BNM	GWAHS	6614	Y
Port Macquarie Base Hospital	BNM	NCAHS	7575	Y
Shoalhaven and District Memorial Hospital	BNM	SESIAHS	7859	Y
Tamworth Hospital	BNM	HNEAHS	10533	Y
The Tweed Hospital	BNM	NCAHS	10185	Y
Wagga Wagga Base Hospital	BNM	GSAHS	8251	Y
District group 1 hospitals (C1)				
Armidale Hospital	C1	HNEAHS	3661	Y
Bathurst Base Hospital	C1	GWAHS	5865	Y
Bega District Hospital	C1	GSAHS	-	-
Belmont District Health Service	C1	HNEAHS	5569	Y
Bowral and District Hospital	C1	SSWAHS	4239	Y
Broken Hill Health Service	C1	GWAHS	4987	Y
Goulburn Base Hospital	C1	GSAHS	4318	Y
Grafton Base Hospital	C1	NCAHS	5418	Y
Griffith Base Hospital	C1	GSAHS	4945	Y
Hawkesbury District Health Service	C1	SWAHS	4787	Y
Mount Druitt Hospital	C1	SWAHS	7668	Y
Ryde Hospital	C1	NSCCAHS	6005	Y
Shellharbour Hospital	C1	SESIAHS	6290	Y
District group 2 hospitals (C2)				
Ballina District Hospital	C2	NCAHS	-	-
Bateman's Bay District Hospital	C2	GSAHS	-	-
Blue Mountains District Anzac Memorial Hospital	C2	SWAHS	4149	Y
Bulli District Hospital	C2	SESIAHS	2137	Y
Camden Hospital	C2	SSWAHS	2875	Y
Casino and District Memorial Hospital	C2	NCAHS	-	-
Cessnock District Health Service	C2	HNEAHS	4163	Y
Cooma Health Service	C2	GSAHS	-	-
Cowra District Hospital	C2	GWAHS	-	-
Forbes District Hospital	C2	GWAHS	-	-
Gunnedah District Health Service	C2	HNEAHS	2386	Y
Inverell District Health Service	C2	HNEAHS	2327	Y
Kempsey District Hospital	C2	NCAHS	4866	Y

	Peer group	Area health service	Attendances April–June 2010	Electronic information system
Kurri Kurri District Health Service	C2	HNEAHS	1758	Y
Lithgow Health Service	C2	SWAHS	3123	Y
Macksville District Hospital	C2	NCAHS	-	-
Maclean District Hospital	C2	NCAHS	-	-
Milton and Ulladulla Hospital	C2	SESIAHS	3321	Y
Moree District Health Service	C2	HNEAHS	2385	Y
Moruya District Hospital	C2	GSAHS	-	-
Mudgee District Hospital	C2	GWAHS	-	-
Murwillumbah District Hospital	C2	NCAHS	3730	Y
Muswellbrook District Health Service	C2	HNEAHS	1811	Y
Narrabri District Health Service	C2	HNEAHS	1461	Y
Parkes District Hospital	C2	GWAHS	-	-
Queanbeyan Health Service	C2	GSAHS	-	-
Singleton District Health Service	C2	HNEAHS	2972	Y
Community acute – surgery hospitals (D1a)				
Bellinger River District Hospital	D1a	NCAHS	-	-
Byron Bay District Hospital	D1a	NCAHS	-	-
Cootamundra Health Service	D1a	GSAHS	-	-
Glen Innes District Health Service	D1a	HNEAHS	1092	Y
Gloucester District Health Service	D1a	HNEAHS	644	Y
Narrandera Health Service	D1a	GSAHS	-	-
Pambula District Hospital	D1a	GSAHS	-	-
Quirindi District Health Service	D1a	HNEAHS	756	Y
Scone District Health Service	D1a	HNEAHS	1040	Y
Temora Health Service	D1a	GSAHS	-	-
Tumut Health Service	D1a	GSAHS	-	-
Wauchope District Memorial Hospital	D1a	NCAHS	-	-
Yass Health Service	D1a	GSAHS	-	-
Young Health Service	D1a	GSAHS	-	-
Community acute – non-surgery hospitals (D1b)				
Bonalbo Hospital	D1b	NCAHS	-	-
Buladelah Community Hospital	D1b	HNEAHS	383	Y
Campbell Hospital, Coraki	D1b	NCAHS	-	-
Cobar District Hospital	D1b	GWAHS	-	-
Condobolin District Hospital	D1b	GWAHS	-	-
Coonabarabran District Hospital	D1b	GWAHS	-	-
Finley Health Service	D1b	GSAHS	-	-
Gulgong District Hospital	D1b	GWAHS	-	-
Holbrook Health Service	D1b	GSAHS	-	-
Mullumbimby & District War Memorial Hospital	D1b	NCAHS	-	-
Murrumburrah-Harden Health Service	D1b	GSAHS	-	-

	Peer group	Area health service	Attendances April–June 2010	Electronic information system
Tenterfield Community Hospital	D1b	HNEAHS	463	Y
Tomaree Community Hospital	D1b	HNEAHS	2820	Y
Walgett District Hospital	D1b	GWAHS	-	-
Wee Waa Community Hospital	D1b	HNEAHS	664	Y
Wellington Hospital, Bindawalla	D1b	GWAHS	-	-
Wyalong Health Service	D1b	GSAHS	-	-
Community non-acute hospitals (D2)				
Balranald Health Service	D2	GWAHS	-	-
Barham Health Service	D2	GSAHS	-	-
Batlow Health Service	D2	GSAHS	-	-
Berrigan Health Service	D2	GSAHS	-	-
Bingara Community Hospital	D2	HNEAHS	211	Y
Bombala Health Service	D2	GSAHS	-	-
Boorowa Health Service	D2	GSAHS	-	-
Canowindra Soldiers' Memorial Hospital	D2	GWAHS	-	-
Coonamble District Hospital	D2	GWAHS	-	-
Crookwell Health Service	D2	GSAHS	-	-
Cudal War Memorial Hospital	D2	GWAHS	-	-
Dunedoo War Memorial Hospital	D2	GWAHS	-	-
Dungog Community Hospital	D2	HNEAHS	567	Y
Eugowra Memorial Hospital	D2	GWAHS	-	-
Gundagai Health Service	D2	GSAHS	-	-
Guyra Community Hospital	D2	HNEAHS	413	Y
Hay Health Service	D2	GSAHS	-	-
Henty Health Service	D2	GSAHS	-	-
Hillston Health Service	D2	GSAHS	-	-
Lockhart Health Service	D2	GSAHS	-	-
Manilla District Health Service	D2	HNEAHS	672	Y
Merriwa Community Hospital	D2	HNEAHS	260	Y
Molong District Hospital	D2	GWAHS	-	-
Narromine District Hospital	D2	GWAHS	-	-
Nyngan District Hospital	D2	GWAHS	-	-
Peak Hill Hospital	D2	GWAHS	-	-
Tingha Community Hospital	D2	HNEAHS	35	Y
Tocumwal Health Service	D2	GSAHS	-	-
Tottenham Hospital	D2	GWAHS	-	-
Tullamore District Hospital	D2	GWAHS	-	-
Walcha Community Hospital	D2	HNEAHS	340	Y
Warialda Community Hospital	D2	HNEAHS	193	Y
Wentworth Health Service	D2	GWAHS	-	-
Werris Creek Community Hospital	D2	HNEAHS	60	Y
Wilson Memorial Community Hospital	D2	HNEAHS	230	Y

	Peer group	Area health service	Attendances April–June 2010	Electronic information system
Multi-purpose service hospitals (F3)				
Baradine Multi-Purpose Service	F3	GWAHS	-	-
Barraba Multi-Purpose Service	F3	HNEAHS	552	Y
Blayney Multi-Purpose Service	F3	GWAHS	-	-
Boggabri Multi-Purpose Service	F3	HNEAHS	241	Y
Bourke District Hospital	F3	GWAHS	-	-
Braidwood Multi-Purpose Service	F3	GSAHS	-	-
Brewarrina Multi-Purpose Service	F3	GWAHS	-	-
Collarenebri Multi-Purpose Service	F3	GWAHS	-	-
Coolah Multi-Purpose Service	F3	GWAHS	-	-
Coolamon Multi-Purpose Service	F3	GSAHS	-	-
Corowa Health Service	F3	GSAHS	-	-
Culcairn Multi-Purpose Service	F3	GSAHS	-	-
Delegate Multi-Purpose Service	F3	GSAHS	-	-
Denman Multi-Purpose Service	F3	HNEAHS	87	Y
Dorrigo Multi-Purpose Service	F3	NCAHS	-	-
Gilgandra Multi-Purpose Service	F3	GWAHS	-	-
Grenfell Multi-Purpose Service	F3	GWAHS	-	-
Gulargambone Multi-Purpose Service	F3	GWAHS	-	-
Jerilderie Multi-Purpose Service	F3	GSAHS	-	-
Junee Health Service	F3	GSAHS	-	-
Kyogle Multi-Purpose Service	F3	NCAHS	-	-
Lake Cargelligo Multi-Purpose Service	F3	GWAHS	-	-
Leeton Health Service	F3	GSAHS	-	-
Lightning Ridge Multi-Purpose Service	F3	GWAHS	-	-
Nimbin Multi-Purpose Service	F3	NCAHS	-	-
Oberon Multi-Purpose Service	F3	GWAHS	-	-
Rylstone Multi-Purpose Service	F3	GWAHS	-	-
Trangie Multi-Purpose Service	F3	GWAHS	-	-
Trundle Multi-Purpose Service	F3	GWAHS	-	-
Tumbarumba Multi-Purpose Service	F3	GSAHS	-	-
Urana Multi-Purpose Service	F3	GSAHS	-	-
Urbenville and District Multi-Purpose Service	F3	NCAHS	-	-
Warren Multi-Purpose Service	F3	GWAHS	-	-
Wilcannia Health Service	F3	GWAHS	-	-
Other ungrouped hospitals (F8)				
Goodooga District Hospital	F8	GWAHS	-	-
Goulburn Community Health	F8	GSAHS	-	-
Ivanhoe Health Service	F8	GWAHS	-	-
Menindee Health Service	F8	GWAHS	-	-
Tibooburra Health Service	F8	GWAHS	-	-

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About the Bureau

The Bureau of Health Information was established by the NSW Government in 2009 as an independent, board-governed organisation. The Bureau aims to be the leading source of information on the performance of the public health system in NSW.

The Bureau's Board

- Professor Bruce Armstrong AM (Chair)
- Professor Jane Hall
- Mrs Liz Rummery AM
- Dr Don Weatherburn
- Ms Sue West
- Dr Diane Watson (Chief Executive)

The Bureau's Mission

The Bureau provides the community, healthcare professionals and the NSW Parliament with timely, accurate and comparable information about the performance of the NSW public health system in ways that enhance the system's accountability and inform efforts to increase its beneficial impact on the health and well being of people in NSW.

To contact the Bureau of Health Information

Telephone: +61 2 8644 2100
Fax: +61 2 8644 2119
Email: enquiries@bhi.nsw.gov.au
Web: www.bhi.nsw.gov.au

Postal address:
PO Box 1770
Chatswood
New South Wales 2057
Australia

Business address:
Zenith Centre Tower A
821 Pacific Highway
Chatswood
New South Wales 2067
Australia

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