



Technical Supplement

Measures of emergency department
activity and performance

Hospital Quarterly: July to September 2010

Summary

This supplement to the Bureau of Health Information's recurrent public hospital performance reports describes the methods and technical terms used to compute descriptive statistics and performance indicators reported in *Hospital Quarterly*. Due to the technical nature of this narrative, it is intended for audiences interested in the creation of health information.

The emergency department component of the *Hospital Quarterly* report is based on analyses of emergency department attendance data extracted from a centralised data warehouse administered by the NSW Department of Health called the Health Information Exchange (HIE). Further information on the data collection process can be found in the *Data quality assessment: information systems in NSW emergency departments* at www.bhi.nsw.gov.au

There are 189 emergency departments in NSW. The activity and performance measures reported in the *Hospital Quarterly* reports are currently based on 87 hospital emergency departments which have computerised patient information systems in place for two or more years. These 87 emergency departments comprise the NSW totals reported in *Hospital Quarterly* and account for approximately 85% of all emergency department attendances in NSW.

Progressively, emergency departments are replacing historic information systems with more contemporary systems. Records from hospitals implementing these new information systems have been excluded from the calculation of state level, hospital peer group level and area health service level performance statistics.

At a facility level, only the fields of all attendances and off stretcher time performance are presented for hospitals undergoing a system update in the current quarter. For the quarter following implementation, a cautionary note is displayed next to potentially affected results.

The Bureau provides individual performance profiles for 66 of the 87 emergency departments which have an electronic records system in place for two or more years. These 66 emergency departments are those located at principal referral, major acute and district peer group hospitals in NSW.

Prior to June 2010, the NSW Department of Health reported on the activity and performance of NSW public hospital emergency departments with a selection of indicators. The Bureau is now tasked with reporting these indicators for NSW public hospitals, which include:

- All attendances
- Emergency admissions
- Triage performance (for each triage category)
- Emergency admission performance
- Off stretcher time.

In addition to these historical measures, the Bureau reports additional information about emergency attendances. Emergency attendances are a subset of all attendances and include those with visit types classified as emergency or re-presentation for a continuing condition.

Emergency attendances comprise the bulk of all attendances to NSW public hospital emergency departments. The Bureau's *Hospital Quarterly* reports provide information about:

- How long patients wait to receive treatment after being triaged
- How long those patients who were admitted to hospital waited in the emergency department (from the time of triage) before arrival on a ward, an operating suite or critical care area
- How long non-admitted patients spent in the emergency department (from the time of triage) before being discharged or transferred to another hospital
- How patients conclude their emergency department journey before, during or after completing treatment.

The Bureau used SAS* V9.1.3™ for the statistical analysis of data for the *Hospital Quarterly* reports.

A data quality assessment of information systems in NSW emergency departments is available at www.bhi.nsw.gov.au

* SAS Institute. *The SAS System for Windows version 9.1.3*. Cary (NC): SAS Institute; 2005.

Activity and performance indicators

This section contains details about the definitions used for the calculations of measures of emergency department activity and performance reported in the Hospital Quarterly reports.

Numbers in brackets in the following definitions indicate the HIE database field code used to identify records by emergency department visit type or mode of separation (as appropriate).

Attendances / all attendances

All attendances is a count of all records in the emergency department visit database of the HIE. This count includes all records of attendances regardless of emergency department visit type and includes planned return visits, pre-arranged admissions, outpatient clinic visits, private referrals, persons pronounced dead on arrival and patients in transit in addition to emergency presentations. Records are not excluded based on any other fields with missing or invalid data.

Admissions from the emergency department

Admissions from the emergency department is a count of all records in the emergency department visit database of the HIE with a mode of separation recorded as admitted to a ward (1), admitted to a critical care ward (10) and admitted via an operating theatre (11). No records are excluded on the basis of any other fields with missing or invalid data.

Emergency attendances by triage category

Emergency attendances are the count of all records from the emergency department visit database of the HIE with an emergency department visit type of emergency (1) or re-presentation for a continuing condition (3). Emergency attendances in the *Hospital Quarterly* reports are reported by triage category. Records with missing or invalid information for emergency department visit type or triage category are excluded from this count. Patients coded as pre-arranged admissions (with ED workup) were included in this count in the April to June 2010 report but excluded from this cohort from the July to September 2010 report onwards.

Triage (or arrival) to treatment performance indicator

Triage performance is computed as the percentage of patients in a triage category for whom treatment commenced within the recommended waiting time for that triage category. The denominator is defined as all emergency department attendances in a triage category, excluding patients with a mode of separation of 6, 8 and 9 (Departed: Did not wait, Dead on arrival and Departed: for other clinical service location, respectively). The numerator is the number of emergency attendances in a triage category (excluding patients with a mode of separation of 6, 8 and 9) with a waiting time less than or equal to the recommended waiting time for that triage category. Triage to start of treatment is measured from arrival time if triage time is missing. Records with missing or invalid information for triage category, triage time, or treatment time fields are excluded from both the numerator and denominator. For additional detail see [Appendix 1](#), pages 8 to 12.

Emergency admission performance indicator

Emergency Admission Performance (EAP) is computed as the percentage of all admissions from the emergency department who were admitted to hospital within eight hours. The denominator is the count of all records that were an emergency attendance (visit type 1 or 3) and were admitted to hospital. The numerator is a count of emergency attendance records who were admitted (patients with a mode of separation = 1, 2, 3, 10 or 11) and had a difference between arrival in the emergency department and actual departure time of less than or equal to eight hours. For the purposes of EAP, triage time is used for arrival time in the emergency department or, if triage time is missing, arrival time is used. Records with missing or invalid information in arrival time (triage or arrival time), mode of separation, or actual departure time are excluded from both the numerator and denominator. For additional detail see [Appendix 1](#), pages 13 to 16.

Off stretcher time performance indicator

Off Stretcher Time (OST) is the time in minutes between the time of arrival of an emergency patient by ambulance and the time they are transferred to the care of the emergency department. The denominator is all off stretcher cases, which include all emergency and priority medical patients transported by ambulance and delivered to an emergency department. The numerator is all off stretcher cases transferred to the care of an emergency department within 30 minutes of arrival at the emergency department.

Data for this measure is provided by the NSW Ambulance Service and records the time of transfer as entered by ambulance officers using a dashboard console.

Emergency attendances by triage category and mode of separation

Counts of emergency department attendances are reported by triage category for three cohorts, defined by how they leave the emergency department. The reported total count is the sum of these three cohorts (listed below). The reported percentages are the count of records in a cohort in a triage category divided by the total count for that cohort. Records with missing information for triage category or mode of separation are excluded for all cohorts.

- The treated and admitted to hospital cohort includes emergency department records with a mode of separation of admitted to a ward (1), admitted to a critical care ward (10) and admitted via an operating theatre (11)
- The treated and discharged or transferred cohort includes emergency attendances with modes of separation of departed with treatment complete (4), treated then transferred to another hospital without admission (5) and treated and transferred for admission at another facility (12)
- Patients who left without, or before completing treatment include attendances with modes of separation of departed, did not wait (6) and departed, left at their own risk (7). Attendances that 'did not wait' were triaged but left the emergency department before treatment was commenced. Attendances that 'left at their own risk' were triaged and treatment was begun by a clinician, but the patient left prior to completion of their treatment.

Cumulative distribution: time from triage to treatment

This type of graph presents the percentage of patients who received treatment by time and triage category. It shows the cumulative distribution of triaged emergency attendances by the number of minutes that elapse between triage time and the start of treatment by a healthcare professional. The cumulative percentage is computed by taking the number of patients treated by each minute since triage to a triage category and dividing by the total number of patients triaged into that triage category. This cohort only includes patients who had a recorded triage category, triage time and treatment time.

A cumulative distribution that does not reach 100% by 180 minutes indicates that there were some patients in a triage category that waited longer than 180 minutes for treatment to commence.

Cumulative distribution: time from triage to admission

This type of graph presents the percentage of patients who were treated and admitted, by time and by triage category. It shows the cumulative distribution of emergency admissions by the number of hours that elapse between the triage of the patient and actual departure time of the patient. The cumulative percentage is computed by taking the number of patients admitted (patients with a mode of separation = 1, 2, 3, 10 or 11) from a triage category in six minute intervals of time elapsed since triage and dividing by the total number of patients admitted from that triage category. This cohort only includes patients who had a recorded triage category, triage (or arrival) time and actual departure time.

A cumulative distribution that does not reach 100% by 12 hours indicates that there were some patients in a triage category that waited longer than 12 hours to be admitted.

Cumulative distribution: time from triage to discharge or transfer

This type of graph presents the percentage of patients who were treated and discharged or treated and transferred by time and triage category without being admitted. It shows the cumulative distribution of non-admitted emergency attendances (patients with a mode of separation = 4, 5 or 12) with completed treatment by the number of hours that elapse between the triage of the patient and the actual departure time of the patient. The cumulative percentage is computed by taking the number of patients admitted from a triage category in six minute intervals of time elapsed since triage and dividing by the total number of patients discharged or transferred from that triage category. This cohort only includes patients who had a recorded triage category, triage (or arrival) time and actual departure time.

A cumulative distribution that does not reach 100% by 12 hours indicates that some patients in a triage category waited longer than 12 hours for their treatment to be completed and to leave the emergency department.

Time series: number of attendances by triage category

The time series graph presents the number of emergency attendances to an emergency department during each quarter for the past five years. Please refer to *Emergency attendances by triage category* definition above for a description of this cohort.

Appendix 1: Changes in measurement of two performance indicators during the 2010/11 financial year

The definitions for two performance indicators of emergency department care changed between publication of the first and second issues of *Hospital Quarterly*; time from triage to treatment and emergency admission performance (EAP).

In August 2010, the Demand and Performance Evaluation (DPE) Branch of the NSW Department of Health released an update of performance indicators¹ used as part of NSW Health's Performance Management Framework for the 2010/11 financial year. The historic definitions used by NSW Health were described in 2008² and all references in this supplement to 2008 measures refer to these definitions described in that document.

The Department of Health advised that the changes to definitions were made as part of the ongoing commitment to align definitions used in NSW with the corresponding national definitions. Signing of the National Health and Hospital Network Agreement provided further impetus for consistent indicator definitions across

jurisdictions, especially in relation to emergency department services where a new, 'total time spent in the emergency department' indicator is being progressively introduced from January 2011.

After consideration of these changes and analyses of how these would affect performance indicators, the Bureau decided to adopt all changes and implemented these for the reporting of data for *Hospital Quarterly*, July to September 2010 onwards.

For each measure which has changed, this appendix compares the methods used in the calculation of the previous (2008) and current (2010) measure, provides data for the July to September 2010 quarter using both the previous and current definitions and summarises the net effect of the change.

1 New South Wales Health. *Key Performance Indicator Dictionary for the 2010/11 Area Health Service Performance Agreements*. Sydney (NSW) [Internet] [cited 2010 Oct 15]. Available from www.internal.health.nsw.gov.au/data/collections/edc/H10%2058765%20%20Definitions%20-%20Key%20Performance%20Indicator%20Dictionary%20for%20the%202010-11%20AHS%20Performance%20Agreements.pdf

2 New South Wales Health. *Definitions for NSW State Health Plan Indicators; version 1*. 2008. Sydney (NSW).

Triage (or arrival) to treatment performance indicator

2008 definition:

Triage performance is computed as the percentage of patients in a triage category that were treated within the recommended waiting time for that triage category. The denominator is defined as all emergency attendances in a triage category, excluding patients with a mode of separation of 8 and 9 (Dead on arrival and Departed: for other clinical service location, respectively). The numerator is the number of emergency attendances in a triage category (excluding patients with a mode of separation of 8 and 9).

The numerator is the number of emergency attendances in a triage category with a waiting time less than or equal to the recommended waiting time for that triage category. Records with missing or invalid information for triage category, triage time, or treatment time fields are excluded from both the numerator and denominator.

2010 definition:

The new definition for triage performance is identical to the 2008 definition with the exceptions that triage to treatment time is measured from arrival time if triage time is missing and now excludes patients who did not wait for treatment (mode of separation = 6).

Table 1: Comparison of the two definitions of triage performance for July to September 2010 data

Triage to treatment performance indicators, by triage category

	T1 2008	T1 2010	T1 diff	T2 2008	T2 2010	T2 diff	T3 2008	T3 2010	T3 diff	T4 2008	T4 2010	T4 diff	T5 2008	T5 2010	T5 diff
New South Wales															
Total New South Wales	100%	100%	0%	82%	82%	0%	69%	69%	0%	72%	72%	0%	87%	87%	0%
Children's Hospital at Westmead															
Total Children's Hospital at Westmead	100%	100%	0%	100%	100%	0%	63%	63%	0%	68%	66%	-2%	75%	71%	-4%
Greater Southern															
Goulburn Base Hospital	100%	100%	0%	48%	48%	0%	57%	57%	0%	70%	71%	1%	89%	89%	0%
Griffith Base Hospital	100%	100%	0%	76%	76%	0%	59%	59%	0%	67%	68%	1%	83%	86%	3%
Wagga Wagga Base Hospital	100%	100%	0%	83%	83%	0%	75%	75%	0%	73%	74%	1%	88%	90%	2%
Total Greater Southern	100%	100%	0%	81%	81%	0%	69%	70%	1%	71%	72%	1%	87%	89%	2%

Triage to treatment performance indicators, by triage category

	T1 2008	T1 2010	T1 diff	T2 2008	T2 2010	T2 diff	T3 2008	T3 2010	T3 diff	T4 2008	T4 2010	T4 diff	T5 2008	T5 2010	T5 diff
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Greater Western															
Bathurst Base Hospital	93%	93%	0%	57%	57%	0%	59%	59%	0%	65%	66%	1%	81%	84%	3%
Broken Hill Base Hospital	100%	100%	0%	78%	78%	0%	72%	72%	0%	81%	75%	-6%	96%	92%	-4%
Dubbo Base Hospital	100%	100%	0%	66%	66%	0%	59%	59%	0%	64%	64%	0%	85%	88%	3%
Orange Base Hospital	100%	100%	0%	56%	56%	0%	65%	65%	0%	66%	67%	1%	85%	86%	1%
Total Greater Western	100%	100%	0%	78%	78%	0%	72%	72%	0%	81%	75%	-6%	96%	92%	-4%

Hunter New England															
Armidale and New England Hospital	100%	100%	0%	73%	74%	1%	76%	76%	0%	81%	81%	0%	93%	94%	1%
Belmont Hospital	100%	100%	0%	87%	87%	0%	77%	77%	0%	77%	76%	-1%	87%	87%	0%
Calvary Mater Newcastle	100%	100%	0%	59%	58%	-1%	51%	50%	-1%	53%	52%	-1%	78%	78%	0%
Cessnock District Hospital	100%	100%	0%	95%	95%	0%	83%	83%	0%	87%	86%	-1%	99%	99%	0%
Gunnedah District Hospital	100%	100%	0%	100%	100%	0%	100%	100%	0%	100%	100%	0%	100%	100%	0%
Inverell District Hospital	83%	83%	0%	88%	89%	1%	71%	71%	0%	77%	76%	-1%	94%	94%	0%
John Hunter Hospital	100%	100%	0%	86%	86%	0%	72%	72%	0%	73%	71%	-2%	87%	86%	-1%
Kurri Kurri District Hospital	100%	100%	0%	87%	91%	4%	83%	81%	-2%	90%	89%	-1%	98%	97%	-1%
Maitland Hospital	100%	100%	0%	75%	75%	0%	66%	66%	0%	67%	67%	0%	88%	88%	0%
Manning Base Hospital	100%	100%	0%	86%	85%	-1%	57%	57%	0%	56%	56%	0%	85%	85%	0%
Moree District Hospital	100%	100%	0%	91%	91%	0%	94%	94%	0%	98%	98%	0%	100%	100%	0%
Muswellbrook District Hospital	100%	100%	0%	69%	67%	-2%	78%	76%	-2%	81%	79%	-2%	94%	94%	0%
Narrabri District Hospital	100%	100%	0%	100%	100%	0%	92%	92%	0%	93%	93%	0%	99%	99%	0%
Singleton District Hospital	100%	100%	0%	84%	84%	0%	77%	76%	-1%	80%	79%	-1%	99%	98%	-1%
Tamworth Base Hospital	100%	100%	0%	76%	76%	0%	62%	62%	0%	53%	53%	0%	78%	78%	0%
Other Hunter New England	100%	100%	0%	83%	82%	-1%	86%	86%	0%	91%	91%	0%	98%	98%	0%
Total Hunter New England	100%	100%	0%	80%	80%	0%	71%	71%	0%	74%	73%	-1%	91%	91%	0%

Triage to treatment performance indicators, by triage category

	T1 2008	T1 2010	T1 diff	T2 2008	T2 2010	T2 diff	T3 2008	T3 2010	T3 diff	T4 2008	T4 2010	T4 diff	T5 2008	T5 2010	T5 diff
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North Coast															
Coffs Harbour Base Hospital**	100%	100%	0%	75%	75%	0%	43%	44%	1%	49%	50%	1%	69%	72%	3%
Grafton Base Hospital	100%	100%	0%	82%	82%	0%	56%	56%	0%	59%	60%	1%	80%	80%	0%
Kempsey Hospital	100%	100%	0%	60%	60%	0%	77%	77%	0%	84%	85%	1%	96%	96%	0%
Lismore Base Hospital	98%	98%	0%	83%	83%	0%	62%	63%	1%	64%	64%	0%	85%	85%	0%
Murwillumbah District Hospital	100%	100%	0%	100%	100%	0%	74%	74%	0%	77%	78%	1%	91%	92%	1%
Port Macquarie Base Hospital	100%	100%	0%	63%	63%	0%	53%	53%	0%	65%	65%	0%	86%	86%	0%
The Tweed Hospital	100%	100%	0%	63%	63%	0%	70%	70%	0%	80%	80%	0%	95%	95%	0%
Total North Coast	100%	100%	0%	72%	72%	0%	61%	61%	0%	69%	69%	0%	86%	87%	1%

Northern Sydney Central Coast															
Gosford Hospital	100%	100%	0%	67%	67%	0%	61%	61%	0%	59%	59%	0%	77%	78%	1%
Hornsby and Ku-Ring-Gai Hospital	100%	100%	0%	93%	93%	0%	81%	81%	0%	81%	81%	0%	90%	90%	0%
Manly District Hospital	100%	100%	0%	96%	96%	0%	94%	95%	1%	88%	89%	1%	94%	95%	1%
Mona Vale and District Hospital	100%	100%	0%	99%	99%	0%	85%	85%	0%	84%	84%	0%	95%	95%	0%
Royal North Shore Hospital	100%	100%	0%	91%	91%	0%	78%	78%	0%	85%	85%	0%	94%	94%	0%
Ryde Hospital	100%	100%	0%	93%	93%	0%	78%	79%	1%	73%	75%	2%	84%	87%	3%
Wyong Hospital	100%	100%	0%	67%	67%	0%	63%	63%	0%	64%	64%	0%	77%	77%	0%
Total Northern Sydney Central Coast	100%	100%	0%	84%	84%	0%	75%	75%	0%	74%	74%	0%	84%	85%	1%

South Eastern Sydney Illawarra															
Bulli District Hospital	.	.	.	100%	100%	0%	98%	98%	0%	98%	98%	0%	98%	99%	1%
Milton and Ulladulla Hospital	100%	100%	0%	97%	97%	0%	96%	96%	0%	92%	92%	0%	93%	94%	1%
Prince of Wales Hospital	100%	100%	0%	62%	62%	0%	36%	37%	1%	48%	49%	1%	70%	72%	2%
Shellharbour Hospital	100%	100%	0%	91%	91%	0%	77%	77%	0%	70%	71%	1%	90%	93%	3%
Shoalhaven and District Memorial Hospital	100%	100%	0%	94%	94%	0%	73%	74%	1%	70%	71%	1%	86%	88%	2%
St George Hospital	100%	100%	0%	79%	79%	0%	61%	61%	0%	66%	66%	0%	82%	82%	0%
St Vincent's Hospital, Darlinghurst	100%	100%	0%	100%	100%	0%	71%	71%	0%	75%	76%	1%	88%	92%	4%
Sutherland Hospital	100%	100%	0%	88%	88%	0%	74%	74%	0%	81%	81%	0%	92%	93%	1%

Triage to treatment performance indicators, by triage category

	T1 2008	T1 2010	T1 diff	T2 2008	T2 2010	T2 diff	T3 2008	T3 2010	T3 diff	T4 2008	T4 2010	T4 diff	T5 2008	T5 2010	T5 diff
Sydney Children's Hospital	100%	100%	0%	77%	77%	0%	70%	70%	0%	61%	61%	0%	86%	87%	1%
Sydney Eye Hospital	.	.	.	80%	80%	0%	98%	98%	0%	99%	99%	0%	99%	100%	1%
Sydney Hospital	100%	100%	0%	97%	97%	0%	87%	87%	0%	85%	85%	0%	95%	96%	1%
Wollongong Hospital	100%	100%	0%	91%	91%	0%	72%	72%	0%	67%	69%	2%	80%	83%	3%
Total South Eastern Sydney Illawarra	100%	100%	0%	86%	86%	0%	66%	66%	0%	70%	71%	1%	90%	92%	2%

Sydney South West

Bankstown / Lidcombe Hospital	100%	100%	0%	100%	100%	0%	79%	79%	0%	87%	87%	0%	96%	96%	0%
Bowral and District Hospital	100%	100%	0%	74%	74%	0%	65%	65%	0%	73%	73%	0%	94%	94%	0%
Camden Hospital	100%	100%	0%	94%	94%	0%	93%	93%	0%	91%	91%	0%	98%	98%	0%
Campbelltown Hospital	100%	100%	0%	91%	91%	0%	80%	80%	0%	70%	71%	1%	91%	92%	1%
Canterbury Hospital	100%	100%	0%	89%	89%	0%	75%	76%	1%	69%	71%	2%	89%	93%	4%
Concord Hospital	100%	100%	0%	98%	98%	0%	77%	77%	0%	79%	79%	0%	97%	97%	0%
Fairfield Hospital	100%	100%	0%	76%	76%	0%	72%	72%	0%	73%	73%	0%	92%	93%	1%
Liverpool Hospital	100%	100%	0%	85%	85%	0%	81%	81%	0%	77%	77%	0%	92%	92%	0%
Royal Prince Alfred Hospital	100%	100%	0%	81%	81%	0%	69%	70%	1%	76%	76%	0%	89%	91%	2%
Total Sydney South West	100%	100%	0%	88%	88%	0%	76%	77%	1%	76%	77%	1%	92%	93%	1%

Sydney West

Auburn Hospital	100%	100%	0%	63%	63%	0%	58%	58%	0%	51%	53%	2%	80%	82%	2%
Blacktown Hospital	100%	100%	0%	88%	88%	0%	69%	69%	0%	71%	71%	0%	82%	82%	0%
Blue Mountains District Anzac Memorial Hospital	100%	100%	0%	72%	72%	0%	70%	70%	0%	72%	73%	1%	90%	91%	1%
Hawkesbury District Health Service	100%	100%	0%	85%	85%	0%	90%	90%	0%	88%	88%	0%	95%	95%	0%
Lithgow Health Service	100%	100%	0%	79%	79%	0%	76%	77%	1%	83%	84%	1%	95%	94%	-1%
Mount Druitt Hospital	100%	100%	0%	78%	78%	0%	68%	69%	1%	60%	61%	1%	76%	78%	2%
Nepean Hospital	100%	100%	0%	83%	83%	0%	48%	48%	0%	59%	59%	0%	77%	78%	1%
Westmead Hospital (all units)	100%	100%	0%	74%	74%	0%	41%	41%	0%	48%	47%	-1%	71%	69%	-2%
Total Sydney West	100%	100%	0%	78%	78%	0%	62%	62%	0%	62%	63%	1%	80%	80%	0%

Table 2: Comparison of the two definitions of triage performance for July to September 2010 data for NSW, by quarter

	Jul-Sep 2008	Oct-Dec 2008	Jan-Mar 2009	Apr-Jun 2009	Jul-Sep 2009	Oct-Dec 2009	Jan-Mar 2010	Apr-Jun 2010	Jul-Sep 2010
Triage 1 2008	100%	100%	97%	100%	99%	99%	100%	100%	100%
Triage 1 2010	100%	100%	97%	100%	99%	99%	100%	100%	100%
T1 difference	0%	0%	0%	0%	0%	0%	0%	0%	0%
Triage 2 2008	82%	84%	81%	79%	79%	84%	84%	84%	82%
Triage 2 2010	82%	84%	81%	79%	79%	84%	84%	84%	82%
T2 difference	0%	0%	0%	0%	0%	0%	0%	0%	0%
Triage 3 2008	67%	69%	69%	68%	66%	73%	73%	74%	69%
Triage 3 2010	67%	69%	69%	68%	66%	73%	73%	74%	69%
T3 difference	0%	0%	0%	0%	0%	0%	0%	0%	0%
Triage 4 2008	72%	75%	74%	72%	69%	75%	74%	75%	72%
Triage 4 2010	72%	75%	74%	72%	70%	75%	75%	76%	72%
T4 difference	0%	0%	0%	0%	+1%	0%	+1%	+1%	0%
Triage 5 2008	89%	91%	90%	88%	87%	89%	89%	89%	87%
Triage 5 2010	89%	91%	90%	89%	87%	90%	89%	89%	87%
T5 difference	0%	0%	0%	+1%	0%	+1%	0%	0%	0%

Summary of effect:

The net effect of changing the definition for triage performance had only a slight effect on the figures at the state level from the July to September 2008 quarter to the July to September 2010 quarter. There was no change measured for triage groups 1 and 2 at a NSW level and small changes of 1% for triage groups 3, 4 and 5 in some quarters. The effect was more noticeable at a hospital level but only for the three least urgent triage categories.

Importantly, while the figures reported for each hospital may be different from those we have reported in the previous quarterly report, the Bureau has determined that this change in method has had only a small effect on total measurement and does not affect the care that

patients received. The new definition is also more in line with the national definition and method of calculation recommended by the Australian Institute for Health and Welfare.

Action:

The new definition is accepted by the Bureau and will be applied from *Hospital Quarterly, July to September 2010* report onwards.

Emergency admission performance (EAP)

2008 definition:

EAP is computed as the percentage of all admissions from the emergency department who were admitted to hospital within eight hours. The denominator is the count of all records that were an emergency admission (visit type 1, 3 or 8). The numerator is a count of emergency admission records (patients with a mode of separation = 1, 10 or 11) with a difference between treatment time and actual departure time of less than or equal to eight hours. Records with missing or invalid information in triage category, mode of separation, treatment time or actual departure time are excluded from both the numerator and denominator.

2010 definition:

EAP is computed as the percentage of all admissions from the emergency department who were admitted to hospital within eight hours. The denominator is the count of all records that were an emergency attendance (visit type 1 or 3) and were admitted to hospital. The numerator is a count of emergency attendance records who were admitted (patients with a mode of separation = 1, 2, 3, 10 or 11) and had a difference between arrival in the emergency department and actual departure time of less than or equal to eight hours. For the purposes of EAP, triage time is used for arrival time in the emergency department or, if triage time is missing, arrival time is used.

For both definitions, any records with missing or invalid information in, mode of separation, triage (or arrival) time or actual departure time are excluded from both the numerator and denominator.

The target for NSW of 80% of patients admitted within 8 hours remains unchanged despite the definition being modified for the cohort and the time period under review.

Table 3: Comparison of the two definitions of emergency admission performance for July to September 2010 data, by hospital and area health service

	2008 definition	2010 definition	Difference
New South Wales			
Total New South Wales	66%	61%	-5%
Children's Hospital at Westmead			
Total Children's Hospital at Westmead	71%	65%	-6%
Greater Southern			
Goulburn Base Hospital	90%	87%	-3%
Griffith Base Hospital	90%	87%	-3%
Wagga Wagga Base Hospital	66%	65%	-1%
Total Greater Southern	72%	71%	-1%
Greater Western			
Bathurst Base Hospital	60%	57%	-3%
Broken Hill Base Hospital	87%	80%	-7%
Dubbo Base Hospital	65%	58%	-7%
Orange Base Hospital	71%	63%	-8%
Total Greater Western	87%	80%	-7%
Hunter New England			
Armidale and New England Hospital	96%	97%	1%
Belmont Hospital	86%	81%	-5%
Calvary Mater Newcastle	61%	47%	-14%
Cessnock District Hospital	90%	85%	-5%
Gunnedah District Hospital	98%	99%	1%
Inverell District Hospital	94%	97%	3%
John Hunter Hospital	69%	62%	-7%
Kurri Kurri District Hospital	94%	91%	-3%
Maitland Hospital	68%	64%	-4%
Manning Base Hospital	82%	70%	-12%
Moree District Hospital	100%	100%	0%
Muswellbrook District Hospital	91%	95%	4%
Narrabri District Hospital	99%	99%	0%
Singleton District Hospital	98%	98%	0%
Tamworth Base Hospital	78%	70%	-8%
Other Hunter New England	93%	94%	1%
Total Hunter New England	77%	71%	-6%

2008 definition 2010 definition Difference

North Coast			
Coffs Harbour Base Hospital	47%	38%	-9%
Grafton Base Hospital	82%	78%	-4%
Kempsey Hospital	86%	84%	-2%
Lismore Base Hospital	54%	49%	-5%
Murwillumbah District Hospital	91%	88%	-3%
Port Macquarie Base Hospital	60%	55%	-5%
The Tweed Hospital	64%	60%	-4%
Total North Coast	62%	58%	-4%

Northern Sydney Central Coast			
Gosford Hospital	68%	60%	-8%
Hornsby and Ku-Ring-Gai Hospital	73%	70%	-3%
Manly District Hospital	76%	73%	-3%
Mona Vale and District Hospital	68%	69%	1%
Royal North Shore Hospital	67%	67%	0%
Ryde Hospital	69%	63%	-6%
Wyong Hospital	59%	52%	-7%
Total Northern Sydney Central Coast	68%	64%	-4%

South Eastern Sydney Illawarra			
Bulli District Hospital	94%	90%	-4%
Milton and Ulladulla Hospital	68%	58%	-10%
Prince of Wales Hospital	70%	58%	-12%
Shellharbour Hospital	66%	56%	-10%
Shoalhaven and District Memorial Hospital	59%	53%	-6%
St George Hospital	61%	57%	-4%
St Vincent's Hospital, Darlinghurst	60%	54%	-6%
Sutherland Hospital	84%	74%	-10%
Sydney Children's Hospital	99%	100%	1%
Sydney Eye Hospital	95%	93%	-2%
Sydney Hospital	61%	58%	-3%
Wollongong Hospital	65%	59%	-6%
Total South Eastern Sydney Illawarra	100%	100%	0%

Sydney South West			
Bankstown / Lidcombe Hospital	66%	62%	-4%
Bowral and District Hospital	80%	77%	-3%
Camden Hospital	*	89%	*
Campbelltown Hospital	62%	59%	-3%
Canterbury Hospital	80%	64%	-16%
Concord Hospital	73%	66%	-7%
Fairfield Hospital	86%	71%	-15%
Liverpool Hospital	53%	50%	-3%
Royal Prince Alfred Hospital	65%	59%	-6%
Total Sydney South West	65%	60%	-5%

2008
definition 2010
definition Difference

Sydney West			
Auburn Hospital	69%	72%	3%
Blacktown Hospital	41%	37%	-4%
Blue Mountains District Anzac Memorial Hospital	95%	94%	-1%
Hawkesbury District Health Service	83%	82%	-1%
Lithgow Health Service	91%	88%	-3%
Mount Druitt Hospital	79%	68%	-11%
Nepean Hospital	53%	45%	-8%
Westmead Hospital (all units)	47%	42%	-5%
Total Sydney West	57%	52%	-5%

Table 4: Comparison of the two definitions of emergency admission performance for July to September 2010 data for NSW, by quarter

	Jul-Sep 2008	Oct-Dec 2008	Jan-Mar 2009	Apr-Jun 2009	Jul-Sep 2009	Oct-Dec 2009	Jan-Mar 2010	Apr-Jun 2010	Jul-Sep 2010
2008 definition	71%	77%	75%	73%	70%	76%	74%	72%	66%
2010 definition	66%	72%	70%	68%	65%	70%	68%	67%	61%
Difference	-5%	-5%	-5%	-5%	-5%	-6%	-6%	-5%	-5%

Summary of effect:

The net effect of changing the definition for EAP is a decrease at the state level of approximately six percentage points. The effect at a hospital level is more varied, ranging from a 16 percentage point decrease in reported values to a 1 percentage point increase.

EAP now represents a more complete measure of the total time a patient spent in the emergency department before being admitted and is more in line with the AIHW method of calculation.

Action:

The new definition has been accepted by the Bureau and will be applied from *Hospital Quarterly, July to September 2010* report onwards.

* Camden Hospital had no admissions when calculated using the 2008 definition and 19 using the new definition. All 19 admissions were either patients who died in the emergency department or were admitted but discharged before they left the emergency department.

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 wellbeing of people in NSW.

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