Background Paper

Approaches to reporting time measures of emergency department performance

Hospital Quarterly
December 2011
(Updated with Addendum June 2012)

Bureau of Health Information

Addendum: Background Paper

Introduction

This document is an addendum to the Bureau's *Background Paper: Approaches to reporting time measures of emergency department performance measures, December 2011*. It presents changes made to how the Bureau calculates key emergency department (ED) performance measures since the background paper was published in December 2011.

Reason for changes

In August 2011, the Commonwealth, state and territory governments finalised the National Health Reform Agreement[1]. The intent of this agreement is that the Commonwealth and states will introduce clear and transparent performance reporting of health and hospital services to provide Australians with nationally consistent and locally relevant information.

Under the National Health Reform Agreement, NSW will be assessed against a new National Emergency Access Target (NEAT). The target is that, by 2015, 90% of all patients presenting to a public hospital ED will physically leave the ED within four hours, regardless of whether they are admitted to hospital, transferred to another hospital or discharged. Interim targets have been set for intermediate years. The Bureau has changed the way some indicators of ED performance are defined to harmonise with the NEAT definitions, as described in the following paragraphs.

Changes to the Background Paper

Presentation time: Since *Hospital Quarterly, July to September 2011*, the Bureau has used the earliest of arrival, triage or treatment time to calculate time to treatment and time to leaving the ED for admitted patients. The Bureau has now decided to modify its definition of presentation time to be consistent with the NEAT definition. From *Hospital Quarterly, January to March 2012* onwards, the Bureau will use the earlier of arrival and triage time for calculation of measures of time to treatment and time to leaving the ED. In the small number of cases when treatment time is the earliest recorded time, time to treatment will be set to zero minutes. In NSW in the January to March 2012 quarter, 0.1% of records had a treatment time recorded that was earlier than both arrival time and triage time.

Time to leaving the ED for admitted patients: The primary measure of time until leaving the ED in previous Bureau reports only used patients who were recorded as admitted to the same hospital. The NEAT reports the time until leaving the ED for all patients presenting at an ED. The Bureau has now amended reporting of the time until leaving the ED to include all patients.

The five-year graph showing the median and 95th percentile time to leaving the ED of admitted patients has been replaced with a graph and table showing the median and 95th percentile time to leaving the ED for all patients for the past five years.

From *Hospital Quarterly, January to March 2012* onwards, the Bureau will also report the percentage of patients who leave the ED within four hours as defined for the NEAT.

References

1. Australian Government Department of Health and Ageing. National Health Reform. National Partnership Agreement on Improving Public Hospital Services. [online] [cited 28 May 2012]. Available from www.yourhealth.gov.au/internet/yourhealth/publishing.nsf/Content/npa-improvingpublichospitals-agreement-toc

Summary

In 2011, the Bureau reviewed its approach to reporting time measures of emergency department (ED) performance, including a detailed analysis of the data and consultation with a wide range of stakeholders with expertise in ED care and electronic information systems. The review was undertaken because, as part of ongoing monitoring, we observed differences in ED data between hospitals and over time that could affect performance measures.

The Bureau found that:

- Over the past few years there has been a progressive rollout of new information systems for EDs and this is now complete in the majority of hospitals
- This provides an opportunity to reconsider methods of reporting that best support fair comparisons and inform performance improvement
- It is now possible to measure the time patients spend in EDs in ways that more closely align with patients' understanding of their journey, and avoid some of the data limitations in the Bureau's previous use of triage* time as the starting point for measuring time in ED
- It is useful to have measures that increase understanding of the range of times patients spend in the ED, rather than focus on a single time point.

To address these issues and enable fairer comparisons between hospitals, the Bureau has established a new approach to reporting time measures of the performance of NSW EDs. This document contains details of this new approach, and the rationale for the change.

Based on its findings, the Bureau will:

- Report times that patients spend in EDs starting from presentation time, which is defined as the earliest time recorded for the patient
- Report the time within which treatment begins for half of patients (50% or the median) and most patients (95%)
- Report the time within which admitted patients depart from the ED for half of patients (50% or the median) and most patients (95%)
- Provide graphs that show these times as a trend over five years
- Show quarters affected by system changeover on time trend graphs for individual hospitals
- For triage 1 patients, continue to report the number of cases and the total time in ED, but not time to treatment.

The changes in reporting methods provide a richer picture of emergency department activity and times and enable fairer comparisons between hospitals.

(*) A qualified clinician assigns people to a **'triage category'** when they arrive in the ED depending on how urgently they require care. Triage is a five-point scale where category 1 is most urgent and category 5 is least urgent.

Introduction

The following pages summarise the results of the Bureau's extensive analysis of ED data measurement and recording during 2011. Based on preliminary analysis and consultations, the Bureau announced it would not report ED performance measures in the September edition of *Hospital Quarterly* and would review and revise the way it reports NSW ED performance.[1]

Table 1 on page 15 in this report describes proposed changes to the methods the Bureau uses to report on ED time to treatment performance and total time in ED for patients admitted from the ED, based on the results of the analysis. The changes provide a more comprehensive picture of the range of ED patients' journeys and enable fairer comparisons between hospitals.

Table 2 on page 16 also includes some recommendations on how the Ministry of Health might address some related aspects of ED data collection and reporting.

Background

In previous *Hospital Quarterly* reports, the Bureau based reporting of times spent in EDs on two key performance indicators (KPIs) widely used in NSW Health. These indicators provided continuity with reports issued by the NSW Ministry of Health. The indicators were:

- Percentage of ED patients who started treatment within the recommended time for their triage category
- Percentage of ED patients who were admitted and left the ED within eight hours.

For both these KPIs, the calculations use triage time as the starting time. To determine whether patients were seen or left the ED within the recommended time, time spent in the ED is calculated as treatment time or departure time minus triage time.

Most public hospitals across NSW use an electronic information system to record information about patients' visits to EDs. New systems, which operate differently from their predecessors, have been rolled out in the past few years.

For a patient who attends an ED, the information recorded in the electronic information system and relevant to this review includes (descriptions based on the NSW Health Emergency Data Dictionary):

- Arrival date and time: the date and time at which the person presents for the service
- Triage date and time: the date and time at which a qualified clinician sees the person to assess the urgency of their need for medical and nursing care
- Triage category (see Triage categories box on page 4)
- First seen by clinician date and time: the date and time at which a medical officer first sees the person and provides a physical examination or treatment relevant to their presenting problem(s)
- First seen by nurse date and time: the date and time at which a nurse first sees the person and provides an assessment or treatment relevant to their presenting problem(s).

The time of the start of treatment is defined as the earlier of the times at which the person is first seen by a doctor or a nurse to provide assessment and or treatment relevant to their presenting problem(s).

Typically, a triage nurse assigns people to a **'triage category'** when they arrive in the ED, reflecting how urgently they require care. This aligns with the NSW Health policy directive that:

> *"Triage must be the first interaction a patient has in the ED. Its aim is to ensure that patients are treated in an appropriate stream of clinical urgency, which refers to the need for a time critical intervention."*[2]

Triage categories

Triage is categorised on a five-point scale where category 1 is most urgent and category 5 is least urgent. The Australasian Triage Scale was developed by the Australasian College for Emergency Medicine (ACEM) and endorsed by the Commonwealth Department of Health and Ageing in 2002 for use in all Australian EDs.

Triage level	Australasian Triage Scale	Recommended maximum waiting time (Target time)
Triage 1	Immediately life threatening	100% seen in 2 minutes
Triage 2	Imminently life threatening	80% seen in 10 minutes
Triage 3	Potentially life threatening	75% seen in 30 minutes
Triage 4	Potentially serious	70% seen in 60 minutes
Triage 5	Less urgent	70% seen in 120 minutes

For most presentations to the ED, the patient is registered, triaged and treated before being admitted, transferred to another hospital or discharged. The times recorded for these steps typically occur in this order. The NSW Health policy directive suggests:

> *"The process of triage involves the application of high-level patient assessment and theoretical knowledge in order to assess a patient and make a decision about the degree of urgency to see a treating clinician. There is a significant level of complexity of practice required to support the process of triage and to ensure that the level of urgency assigned is appropriate and reflective of the needs of individual presentations."*[2]

Reporting on the time until treatment starts or until admitted patients leave the ED measures just one aspect of a complex process. Not all visits to an ED should be short, since care can include, for example, diagnostic procedures, treatment or referral. A longer time in ED may be desirable, for example, for complex treatment, monitoring patient progress or to allow time to receive the results of diagnostic tests.

The way ED performance is reported is evolving throughout Australia. A number of states have added measures to the ED data they report to the public. For example, the median time to treatment is now reported by the departments of health in Queensland, South Australia, Victoria and Western Australia. In addition, the Council of Australian Governments has requested new indicators and the new National Health Performance Authority is likely to refine or add to these. The Bureau will continue to monitor these broader changes and their implications for future reporting.

Results of analysis

Recording of triage time

Why we looked at this:

Triage time has been a key item in the calculation of performance indicators for time spent in EDs in NSW: the time until treatment commences and the time until admitted patients leave the ED. Since triage is expected to be the first interaction a patient has with clinical staff in the ED and the stage at which urgency of treatment is determined, it would seem intuitive that triage time should be earlier than treatment time. This is not always the case. The Bureau observed that the proportion of records showing triage time as later than treatment time varies between hospitals and within a hospital over time. This was a key area for detailed investigation.

What we found:

During triage, detailed information about the patient and the patient's presenting problem(s) is recorded – this may take some minutes. If the triage nurse's initial assessment is that the patient should be seen immediately, treatment starts as soon as possible and recording of triage information sometimes occurs later. What is recorded in the information system may be the time of the initial assessment, the time when the electronic recording process starts, or the time when electronic recording is completed. So valid clinical pathways may result in a triage time being recorded as earlier or later than the treatment time.

Triage times that are later than treatment time happen more often among patients in triage categories 1 and 2, since they are most likely to require treatment immediately.

It is also more common at some hospitals than others. For example, in triage 1, the percentage of patient records showing triage time after treatment was 0% to 65% across 66 of the largest EDs in NSW. In triage 2, the percentage varied from 0% to 30% across these hospitals. In triage categories 3, 4 and 5, the percentages varied from 0% to 14%, 0% to 12% and 0% to 18% across these hospitals, respectively. All percentages were calculated using data from the July to September 2011 quarter; hospitals with fewer than 50 patients in the relevant triage category were not included in the ranges.

The percentage of patient records showing triage time after treatment time also varies among hospitals within a peer group. For example, the ranges for hospitals in the A1 peer group were:

triage 1 – 0% to 61%; triage 2 – 1% to 20%; triage 3 – 0.1% to 6%; triage 4 – 0.1 to 7%; and triage 5 – 0% to 5.

These ranges suggest there may be differences between hospitals in the way triage time is recorded, which can affect comparisons between hospitals. The time from triage to treatment will appear to be longer if the 'triage time' field contains the time of the initial assessment rather than the time triage is completed or the time triage information is electronically recorded. The effect is greater for the more urgent patients.

For records where triage was later than treatment time, the time lag was between 10 and 30 minutes in 17% of records, and more than 30 minutes in 8% of records, during the quarter July to September 2011. These proportions were similar for each triage category at the NSW level.

Some electronic recording systems used in EDs do not accept the entry of triage time later than treatment time while others do. Even for hospitals using the same system, implementation of the system may vary. The implications of system differences on comparisons over time for each hospital and across NSW are discussed in the next section.

Conclusion

There is considerable variation between hospitals in the recording of triage time. This variation reflects protocols that are clinically reasonable but differ between hospitals, and is also influenced by changes to electronic information systems. Such variation makes it difficult to make fair comparisons of hospital performance. Therefore, triage time alone is not reliable as a starting point for measuring time spent in EDs.

Information systems in NSW EDs

Why we looked at this:

Even when there are differences in how staff in different hospitals record patient times, fair comparisons across time remain possible for an individual hospital if it uses a consistent approach to recording data. However, the Bureau noted variations in the distribution of arrival, triage and treatment times in some hospitals between the quarters before and after changes to information systems.

What we found:

Since 2007, new electronic information systems have been rolled out in NSW EDs (Figure 1). An existing system was extended to more hospitals (System C shown in yellow) and a new system was installed at other hospitals (System B shown in orange). In the July to September 2011 quarter, these two systems provided data on about 85% of patient visits in NSW EDs.

There are differences in how the various information systems operate in relation to recording times in ED. In the previously predominant System A, the first input screen opened could be for entering registration, triage or treatment information. Hence the earliest time recorded could be in the arrival time, triage time or treatment time field. In most EDs with this system, arrival time is nearly always equal to triage time, and arrival, triage and treatment time are often all equal.

In 2011, in the now predominant System B, the first input screen opened is a quick registration screen and the time is recorded in the arrival time field. Triage and treatment times are entered when the relevant screens are opened. Arrival time is therefore usually the earliest time recorded and triage time can be after treatment time.

The rollout of systems B and C has implications for the recording of presentation time, triage time and treatment time. Although the time fields recorded are nominally the same in all systems, there are now fewer records where the arrival time field is equal to the triage time field.

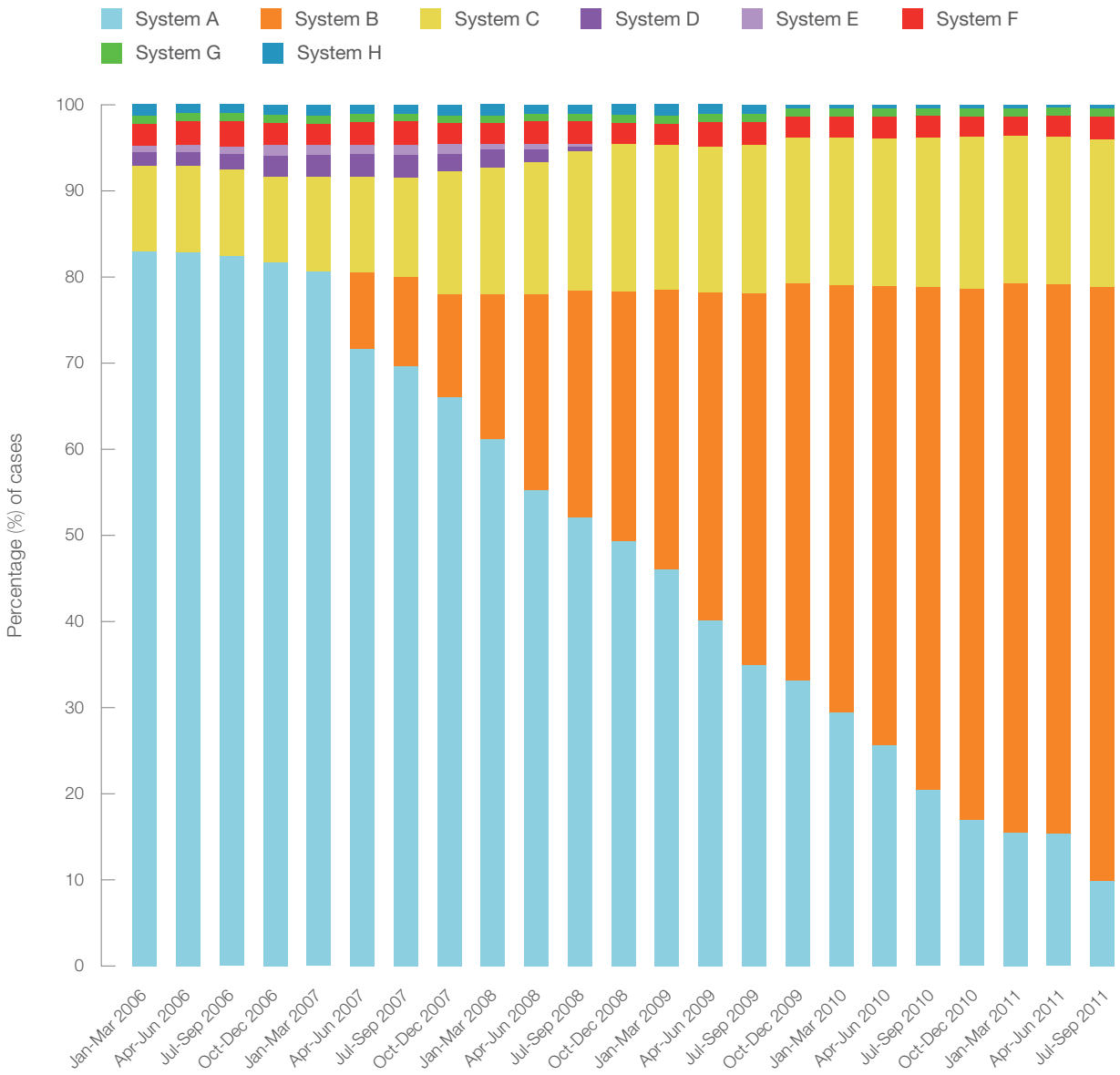
Between the July to September 2006 and the July to September 2011 quarters there has been:

- A decrease in records with arrival time equal to triage time, from 73% to 31%
- An increase in records with arrival time recorded earlier than triage and treatment time, from 26% to 68%
- An increase in records with triage time later than treatment time, from 1% to 3% overall, including an increase from 3% to 24% for Triage 1 and from 2% to 7% for Triage 2.

In the past, the most consistent way to make comparisons between hospitals and over time was to base reporting on triage time and to calculate data from other information systems to match the way times were recorded in the predominant system during that period (System A). The new systems, which record the actual values of arrival, triage and treatment times, provide increased information about the total time patients spend in the ED, and this should be incorporated in reporting.

As at September 2011, EDs in six facilities continue to use electronic information systems other than the two predominant systems (Systems B and C). Because of the different ways in which these other systems are programmed, their data may be less comparable to other NSW EDs. Two of these EDs are scheduled to change to one of the predominant systems next quarter.

Figure 1: Summary of conclusions and recommendations



Conclusion

With the majority of hospitals across the state now using one of two comparable information systems, it is timely to revisit definitions and performance measures, to take advantage of the capabilities of updated systems and to more closely reflect patients' journeys through EDs when reporting to the public on the timeliness of care.

There will be ongoing challenges to comparability for the small number of hospitals that continue to use one of the older systems that do not support separate reporting of arrival, triage and treatment time.

Identifying the start time

Why we looked at this:

From a patient's point of view, and from the point of view of timeliness of treatment, a patient's time in the ED starts when they arrive and extends throughout all aspects of their visit. The predominant ED information systems today allow us to measure and report in ways that relate more closely to patient's experiences.

What we found:

Before progressive implementation of new information systems in NSW, the time from triage to treatment was the most consistent measure of time spent in the ED, both over time and between systems. In many cases, triage time was effectively the only estimate available of the time the patient arrived in the ED. In typical implementations of the information system most frequently used at that time, triage time and arrival time were nearly always equal, and triage time could not be recorded as later than treatment time.

The definitions of waiting times vary between jurisdictions and professional bodies. For example, the Australasian College for Emergency Medicine (ACEM) defines arrival time in the ED as the first recorded time of contact between the patient and the ED staff[3]; AIHW (Meteor) defines presentation time as the earlier of triage and arrival times[4]; the Expert Panel Review of Elective Surgery and Emergency Access Targets, in its *Report to the Council of Australian Governments (30 June 2011)*[5], defines presentation time as the earliest time recorded out of arrival, triage and treatment times.

In NSW EDs, there is little difference between these definitions in practice since treatment time is very rarely the first time recorded in current electronic systems. In the July to September 2011 quarter, the first time recorded was: arrival time 67.9%; triage time 0.3%; treatment time 0.1%; arrival and triage time equal 29.3%; arrival and treatment time equal 0.6%; and arrival, triage and treatment time all equal 1.8%.

Conclusion

Historically, time spent in the ED was measured from triage time. This may not provide a full picture of how long a patient has waited. Presentation time, defined as the earliest of arrival time, triage time and treatment time, is the best estimate of the start of the time that a patient spends in the ED that is available in current electronic information systems for NSW EDs.

Reporting the time patients spend in EDs

Why we looked at this:

While reviewing the calculation of times from arrival to treatment and from arrival to departure, the Bureau also looked at how these key time periods should be reported in the *Hospital Quarterly*.

What we found:

Historically, times in ED have been reported as the percentage of times recorded within the benchmark time.

For reporting time to treatment, for example, patients categorised as triage 2 are regarded as being seen on-time if their treatment starts no more than 10 minutes after triage. A patient who is seen 11 minutes after triage is not ***'on-time'***. The triage process itself can take up a good part of the 10 minutes.

Similarly, time spent in the ED has been reported as the percentage of emergency admissions where the patient left the ED within eight hours. Again, a patient whose time is within the benchmark by any amount is ***'on-time'***, but any longer than that is not considered **'on-time'**.

Reporting performance in this way provides only limited information on timeliness. There is information about whether patients can expect to be treated or admitted within the benchmark time, but there is little information on the actual time patients can expect to wait for treatment, or how long patients can expect to spend in the ED before admission. Small changes in performance may have a disproportionate impact on the proportion of times within benchmark, particularly when the change affects the number of patients seen just before or just after the benchmark time. Conversely, waiting times within the benchmark can get shorter, or waiting times over the benchmark can get longer without any apparent change in performance. Small differences in coding practices, timepieces used and electronic information systems in EDs can also have a significant impact on the comparability of EDs.

A more comprehensive description of how long patients spend in the ED is obtained by describing the range of times that patients experience:

- The time within which treatment begins for half of patients (50% or the median) and most patients (95%)
- The time within which admitted patients depart from the ED for half of patients (50% or the median) and most patients (95%).

Graphs of the time within which half of patients (50% or median) and most patients (95%) started treatment or left the ED for admission by quarter show trends in performance. Trends in the proportion meeting benchmarks may hide some changes in performance and over-emphasise others, whereas trends in median and 95% times show whether there has been change, and the extent of change over time.

The examples in Figures 2a and 2b show trends for two NSW EDs for time from presentation to departure from the ED for admitted patients. In both hospitals, the change between quarters is small. However, the graphs show noticeable trends in performance over longer periods. Performance at **hospital a** is improving over time, with a trend for shorter time to departure for admitted patients, but **hospital b** shows a trend to longer time to departure.

Figure 2a: **Hospital a** - Decreasing time from presentation until departure among admitted patients, July 2006 to September 2011

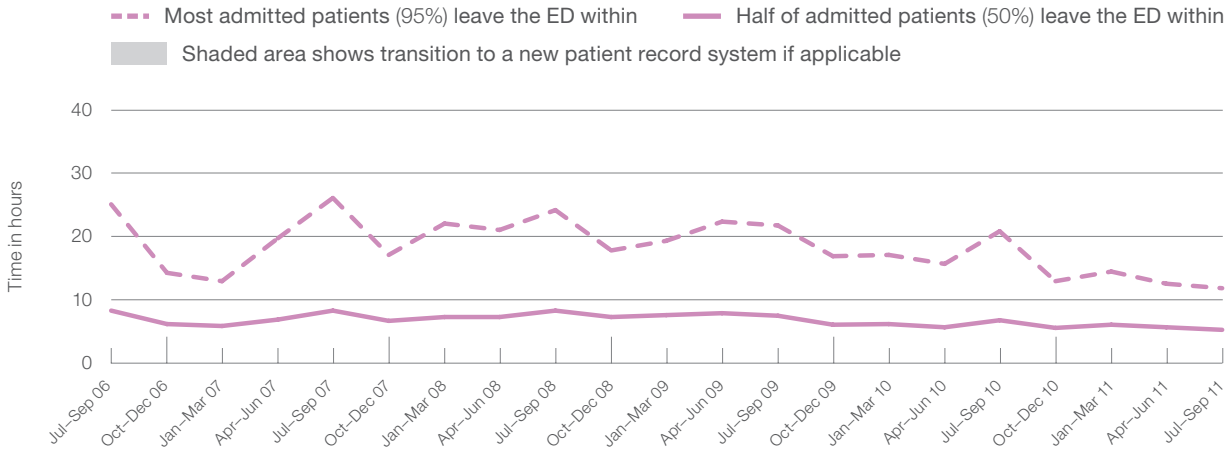
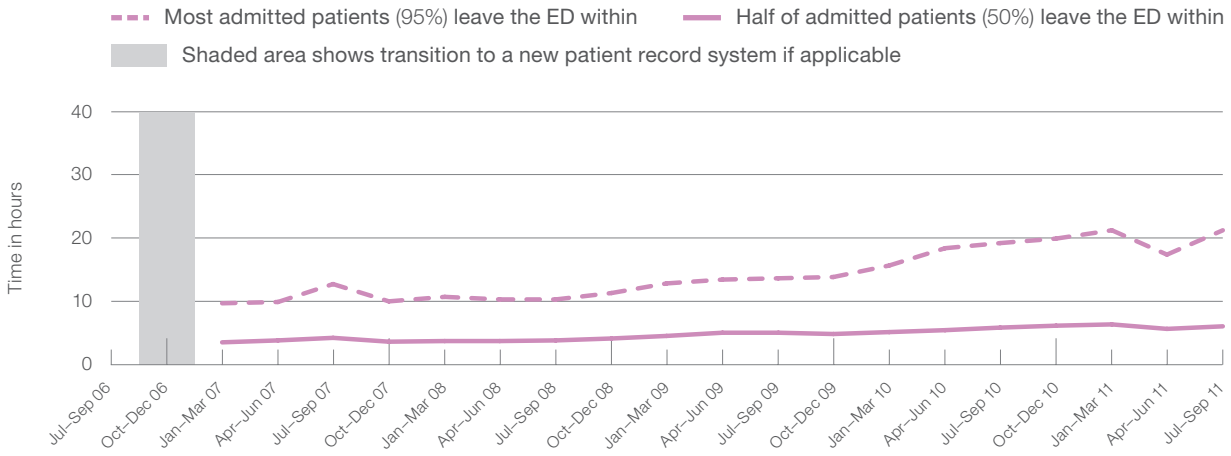


Figure 2b: **Hospital b** - Increasing time from presentation until departure among admitted patients, July 2006 to September 2011



While meeting with ED experts, statisticians and experts on public reporting during the review of methods for *Hospital Quarterly*, the Bureau found strong support for providing this greater depth of information about times from presentation to treatment and to departure.

Conclusion

Reporting on time measures in EDs as a percentage of times that fall within or outside a benchmark does not tell patients what they can expect either side of that benchmark. Nor does it accurately reflect the impact of performance changes - especially when there are small changes close to the benchmark, or large changes within or outside the benchmark times.

The Bureau will report the length of time within which half of patients (50%) and most patients (95%) start treatment or depart the ED for admission. These measures correspond to patients' journeys more closely and better reflect the variation in time patients spend in ED. The Bureau will also provide graphs that show these times as a trend over five years.

Comparing performance over time

Why we looked at this:

To provide a clearer picture of changes over time in the time patients spend in EDs, the Bureau will be reporting time measures data by quarter for the previous five years. We reviewed these graphs to assess the ease of interpretation by readers.

What we found:

Bureau staff noticed that, when an information system changes, there is sometimes an abrupt change in measures of time from presentation spent in the ED. Figure 3a and Figure 3b shows examples for two EDs where there is a shift in the trends; the shift for hospital a (Figure 3a) shows is smaller than the shift for hospital b (Figure 3b). This effect is seen in only some EDs, since it depends on how times were recorded in the old and new systems. A difference before and after system change will result if:

- In the initial system, the arrival time field is automatically set equal to the earlier of triage time and treatment time, and
- In the updated system, the arrival time field is the time the registration screen is opened and so is earlier than triage or treatment time for most patients.

When a hospital ED changes to its new system, the time from opening the quick registration screen to triage time is now included in measures of time spent in the ED. This will cause an apparent increase in the reported time patients spend in the ED. The data do not tell us whether any shift in performance measures before and after the system change is caused only by the change to presentation time, or whether there are other simultaneous changes, such as a change in reporting protocols or an actual change in performance.

Because data presented for NSW is an aggregation of results for all hospital EDs, it is not possible to show the effect of system changeover on graphs of NSW results in the same way as for individual hospitals. The rollout of new systems occurred over a number of years so most quarters in the past five years were affected. However, only some hospitals were affected each quarter.

Over the past five years an increasing proportion of records that contribute to overall NSW results have come from EDs that have updated their electronic information systems (Figure 1). Therefore, NSW totals include an increasing proportion of records where presentation time is earlier than triage and treatment time. The percentage of records in NSW where presentation time is earlier than triage or treatment time has increased from 26% in July to September 2006 to 68% in July to September 2011 (See Figure 1 in the Appendix).
The effect on measures of the time spent in the ED is illustrated in Figure 2 in the Appendix, which shows the median and 95% time to treatment over time for NSW patients for triage 2 and 3, using presentation time or triage time as the starting time for calculations. Trends are similar using both methods. The difference between the two measures increases over time, and show the effect of system rollouts and of using presentation time rather than triage time in calculations.

Figure 3a: **Hospital a** - Examples of trends in time from presentation until treatment before and after change of electronic information system

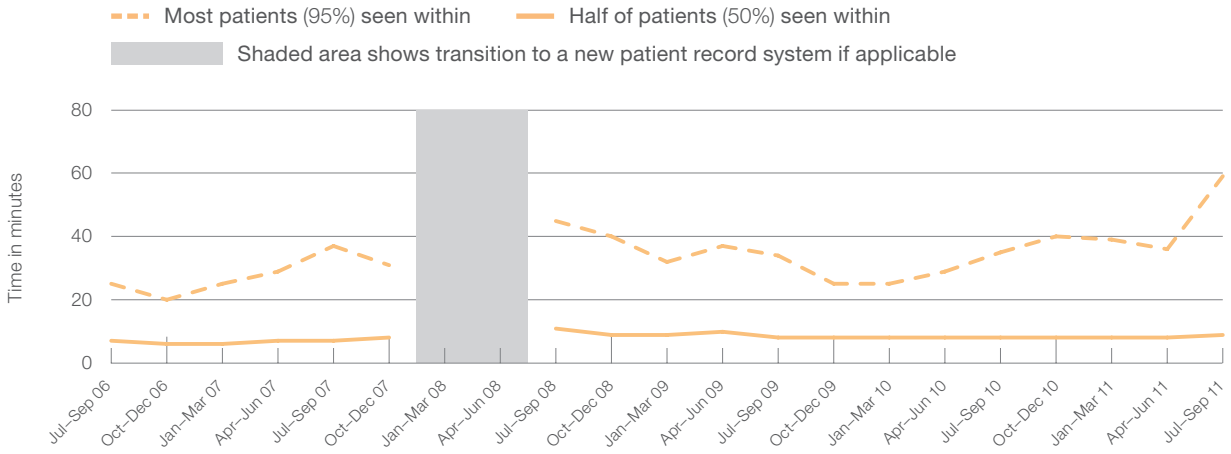
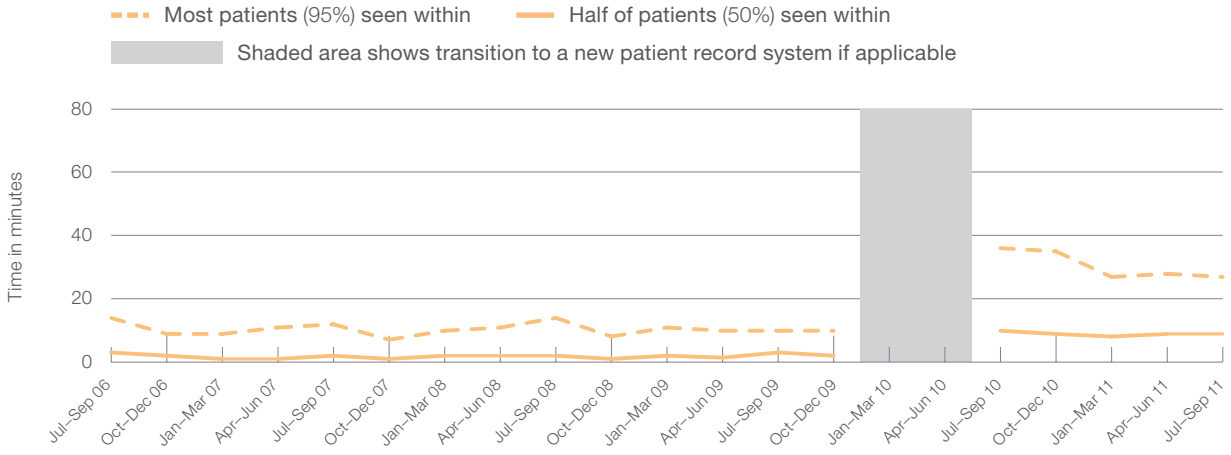


Figure 3b: **Hospital b** - Examples of trends in time from presentation until treatment before and after change of electronic information system



Conclusion

Changes in information systems may contribute to a shift in time measures, and affect whether they are comparable between quarters. Results for NSW include the aggregate effect of system changes on individual hospitals. It is important for readers to be aware of these issues when interpreting trend graphs.

Quarters affected by system changeover will be shown on time trend graphs graphs for individual hospitals, to help readers of Bureau reports be aware of specific quarters when information system change is likely to be a contributor to any change in time measures between quarters.

Triage 1 measurement

Why we looked at this:

Clinicians consulted in this review expressed concern about the meaningfulness of reporting time to treatment for triage category 1.

What we found:

Patients categorised as triage 1 require immediate treatment. The Australasian College for Emergency Medicine recommends that the maximum time from arrival to the start of treatment for triage 1 patients should be two minutes, and that 100% of triage 1 patients should meet this benchmark.[6] Although times are recorded to the nearest minute in ED information systems, they are unlikely to be recorded precisely enough to report against a two-minute benchmark. Clinicians will be focused on providing immediate and life-saving treatment rather than recording times, and individual clocks in the ED may vary by more than this amount.

Conclusion:

Recording of presentation, triage and treatment time for patients who should be assessed or treated within two minutes (triage 1) is unlikely to be accurate when clinicians are focused on providing immediate and essential care.

The Bureau considers that reporting time from presentation to treatment is not informative for patients in triage category 1.

Recommendations

The statutory functions of the Bureau require it to take actions to improve reporting to the community, and offer advice to the NSW Ministry of Health in relation to enhanced information analysis to support performance reporting to clinicians, the community and Parliament.[7]

On the basis of the analysis described in this report, the Bureau proposes a series of changes to how it reports on ED performance. The Bureau also offers some specific recommendations to the NSW Ministry for Health. The following table summarises the main conclusions and recommendations.

Table 1: Summary of conclusions

	Conclusions
Recording of triage time:	There is considerable variation between hospitals in the recording of triage time. This variation reflects protocols that are clinically reasonable but differ between hospitals, and is also influenced by changes to electronic information systems. Such variation makes it difficult to make fair comparisons of hospital performance. Therefore, triage time alone is not reliable as a starting point for measuring time spent in EDs.
Information systems in NSW EDs:	With the majority of hospitals across the state now using one of two comparable information systems, it is timely to revisit definitions and performance measures that take advantage of the capabilities of these systems and more closely reflect the patient's journey through an ED. There will be ongoing challenges to comparability for the small number of hospitals that continue to use one of the older systems that do not support separate reporting of arrival, triage and treatment time.
Identifying the start time:	Historically, time spent in the ED was measured from triage time. This may not provide a full picture of how long a patient has waited. Presentation time, defined as the earliest of arrival time, triage time and treatment time, is the best estimate of the start of the time that a patient spends in the ED that is available in current electronic information systems for NSW EDs.
Reporting the time patients spend in EDs:	Time measures in ED have been reported in the past as the percentage of times recorded within a benchmark time, but this does not tell patients what they can expect either side of that benchmark. Nor does it accurately reflect the impact of performances changes - especially when there are small changes close to the benchmark, or large changes within or outside the benchmark times.
Comparing performance over time:	Changes in information systems may contribute to a shift in time measures, and affect whether they are comparable between quarters. Results for NSW include the aggregate effect of system changes on individual hospitals. It is important for readers to be aware of these issues when interpreting trend graphs.
Triage 1 measurement:	The Bureau considers that reporting time from presentation to treatment is not informative for patients in triage category 1. Recording of presentation, triage and treatment time for patients who should be assessed or treated within two minutes is unlikely to be accurate when clinicians are focused on providing immediate and essential care.

Table 2: Summary of recommendations

Recommendations	
Bureau of Health Information Actions:	Advice for the Ministry of Health:
The Bureau will report times that patients spend in EDs from presentation time, which is defined as the earliest time recorded in the ED electronic information system. The Bureau will change its ED performance reporting from percent achieved benchmark times to the length of time within which half of patients (50%) and most patients (95%) start treatment or are admitted. The Bureau will also provide graphs that show these times as a trend over five years. Quarters affected by system changeover will be shown on time trend graphs for individual hospitals. The Bureau will not report time from presentation to treatment for patients in triage category 1.	Consider ways of improving consistency between hospitals in recording key times in ED information systems, including the feasibility of transitioning remaining hospitals to comparable systems. Consider reviewing its approach to measuring ED time performance with reference to analyses in this report and in consultation with other jurisdictions.

Appendix: Effects of system change over time

For discussion of these graphs, see **'Comparing performance over time'** (page 12).

Figure 1: Earliest recorded time field for patients' presentation to the ED, January 2006 to September 2011

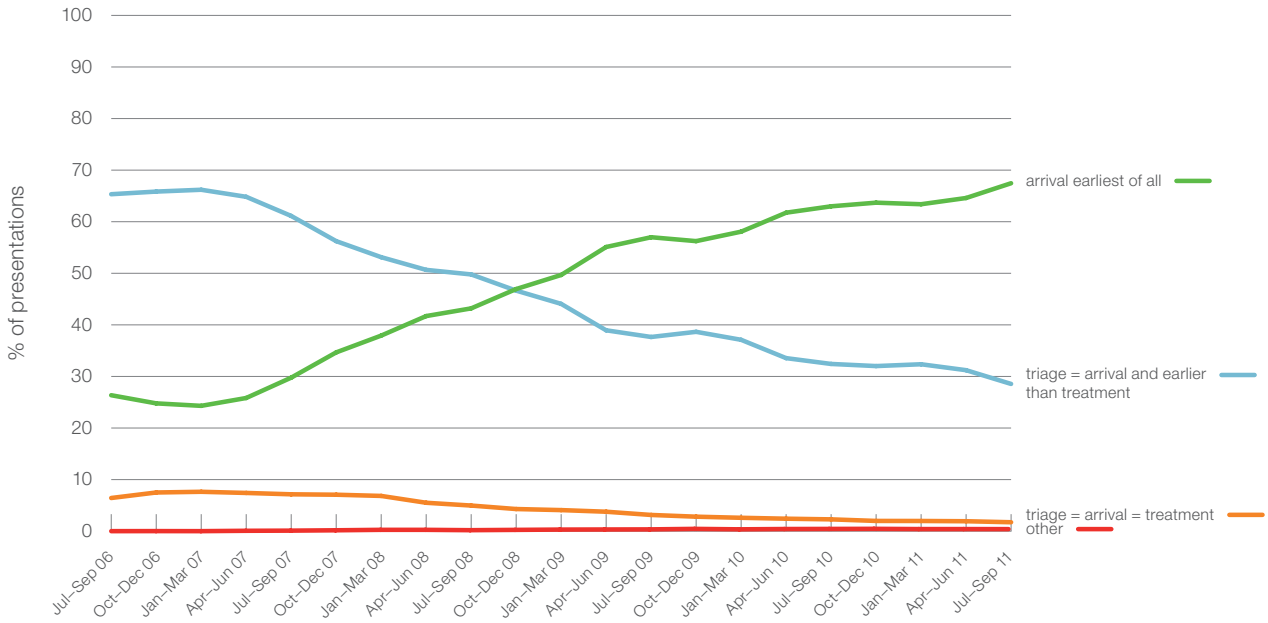


Figure 2a: **Triage 2 -** Median (50%) and 95% times from presentation to treatment and from triage to treatment, July to September 2011

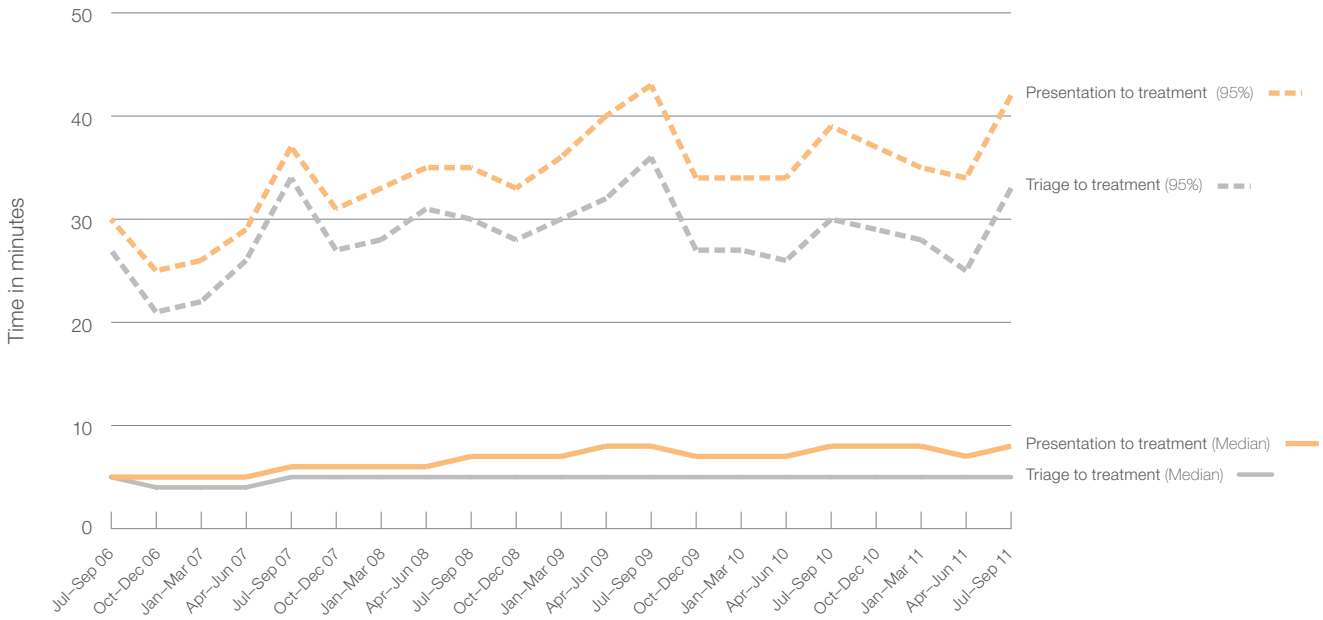
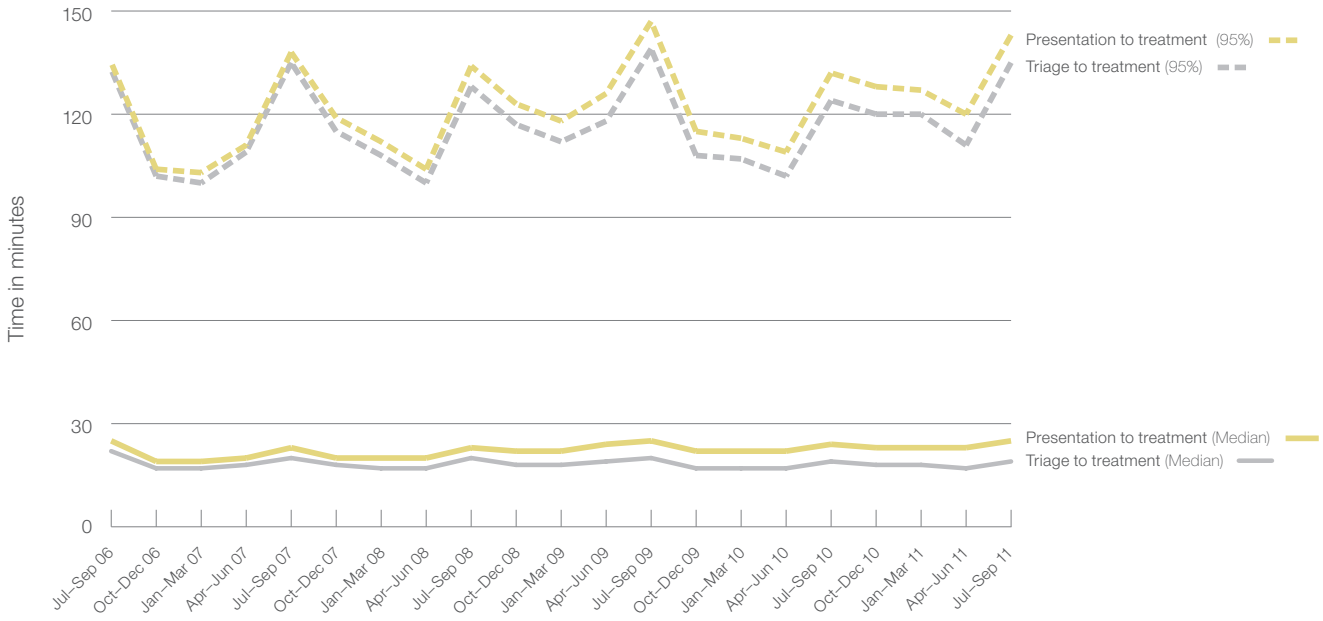


Figure 2b: **Triage 3 -** Median (50%) and 95% times from presentation to treatment and from triage to treatment, July to September 2011



References

1. Bureau of Health Information. Media Release: Upcoming Bureau of Health Information reports. BHI. [online] 13 July 2011 [cited 7 December 2011]. Available from www.bhi.nsw.gov.au/__data/assets/pdf_file/0007/154384/BHI_HQ5ED_MediaRelease.13July2011.pdf

2. NSW Department of Health. Policy Directive: Triage of Patients in NSW Emergency Departments. [online] 24 January 2008 [cited 7 December 2011]. Available from www.health.nsw.gov.au/policies/pd/2008/pdf/PD2008_009.pdf

3. Australasian College for Emergency Medicine. Guidelines on the implementation of the Australasian Triage Scale in Emergency Departments. ACEM. [online] Revised 05 August 2005 [cited 7 December 2011]. Available from www.acem.org.au/media/policies_and_guidelines/G24_Implementation__ATS.pdf

4. Australian Institute of Health and Welfare 2010. National health data dictionary. Version 15. National health data dictionary series. Cat. No. HWI 107. Canberra: AIHW. [online] 23 August 2010 [cited 7 December 2011]. Available from www.aihw.gov.au/publication-detail/?id=6442468385

5. Expert Panel Review of Elective Surgery and Emergency Access Targets under the National Partnership Agreement on Improving Public Hospital Services. Report to the Council of Australian Governments. COAG. [online] 30 June 2011 [cited 7 December 2011]. Available from www.coag.gov.au/docs/Expert_Panel_Report D0490.pdf

6. Australasian College for Emergency Medicine. Policy on the Australasian Triage Scale. ACEM. [online] Reviewed March 2006 [cited 7 December 2011]. Available from www.acem.org.au/media/policies_and_guidelines/P06_Aust_Triage_Scale_-_Nov_2000.pdf

7. Bureau of Health Information. Strategic Plan: Vision, values and future directions 2009-2014. BHI. [online] [cited 7 December 2011]. Available from www.bhi.nsw.gov.au/__data/assets/pdf_file/0020/144632/Strategic-Plan_2009-2014.pdf

Download the report

The report, *Hospital Quarterly: Performance of NSW public hospitals, July to September 2011* and related reports are available at www.bhi.nsw.gov.au

The suite of products includes:

- *At a Glance* summarising the three core modules
- Three core modules titled *Admitted Patients*, *Elective Surgery* and *Emergency Departments*
- *Performance Profiles:* Elective surgery (activity and performance reports for more than 80 hospitals and NSW as a whole)
- *Performance Profiles:* Emergency department care (activity and performance reports for EDs in more than 60 hospitals and NSW as a whole)
- *Technical Supplements*

About the Bureau

The Bureau of Health Information provides the community, healthcare professionals and the NSW Parliament with timely, accurate and comparable information on 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 the people of NSW.

The Bureau is an independent, board-governed statutory health corporation. The conclusions in this report are those of the Bureau and no official endorsement by the NSW Minister for Health, the NSW Ministry of Health or any other NSW public health organisation is intended or should be inferred.

To contact the Bureau

Telephone: +61 2 8644 2100
Fax: +61 2 8644 2119
Email: enquiries@bhi.nsw.gov.au
Postal address:
PO Box 1770
Chatswood
New South Wales 2057
Australia
Web: www.bhi.nsw.gov.au

State Health Publication Number: (BHI) 110253
ISSN 1838-3238

Suggested citation: Bureau of Health Information. *Hospital Quarterly Background Paper: Approaches to reporting time measures of emergency department performance, Addendum June 2012.* Sydney (NSW); 2011.

First published December 2011

Please note that there is the potential for minor revisions of data in this report. Please check the online version at www.bhi.nsw.gov.au for any amendments.