

Emergency department performance reporting

Report 3 : 2014–15



Queensland Audit Office

Location Level 14, 53 Albert Street, Brisbane Qld 4000

PO Box 15396, City East Qld 4002

Telephone (07) 3149 6000

Email qao@qao.qld.gov.au

Online www.qao.qld.gov.au

© The State of Queensland. Queensland Audit Office (2014)

Copyright protects this publication except for purposes permitted by the *Copyright Act 1968*. Reproduction by whatever means is prohibited without the prior written permission of the Auditor-General of Queensland. Reference to this document is permitted only with appropriate acknowledgement.



Front cover image is an edited photograph of Queensland Parliament, taken by QAO.

ISSN 1834-1128

Your ref:
Our ref: 00-9915



October 2014

The Honourable F Simpson MP
Speaker of the Legislative Assembly
Parliament House
BRISBANE QLD 4000

Dear Madam Speaker

Report to Parliament

This report is prepared under Part 3 Division 3 of the *Auditor-General Act 2009*, and is titled *Emergency department performance reporting (Report 3: 2014–15)*.

In accordance with s.67 of the Act, would you please arrange for the report to be tabled in the Legislative Assembly.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Anthony Close', is written over a light blue horizontal line.

Anthony Close
Acting Auditor-General

Contents

Summary	1
Conclusions	1
Key findings	2
Recommendations	5
Reference to comments	5
1 Context	7
1.1 Emergency department targets	7
1.2 Funding for achieving targets	9
1.3 Changing models of care	10
1.4 Emergency Department Information System	11
1.5 Queensland's performance	11
1.6 Growth in presentations	13
1.7 Previous time based target experiences	15
1.8 Queensland Health data integrity review	16
1.9 Audit objective, method and cost	16
1.10 Report structure	18
2 Recording information	19
2.1 Background	20
2.2 Conclusions	23
2.3 Testing records	23
2.4 Unplanned re-attendances	33
2.5 Reporting inconsistencies	33
2.6 Recommendations	38
3 Controls to assure data integrity	39
3.1 Background	40
3.2 Conclusions	40
3.3 Controls over data integrity	41
3.4 Data validation	42
3.5 Recommendations	43
4 Admissions achieving the four-hour target	45
4.1 Background	46
4.2 Conclusions	46
4.3 Admissions achieving the four-hour target	47
4.4 Recommendations	52
Appendix A— Comments	54
Appendix B— Audit methodology	73
Appendix C— Queensland reporting hospitals	77
Appendix D— HHS performance against the four-hour target	78
Appendix E— Inter-jurisdictional comparison	79
Appendix F— Clinical care commencement	80

Summary

Emergency departments (EDs) fulfil a critical role in the community, saving many lives each year, providing frontline care, preventing the escalation of potentially critical ailments and directing flows of patients to targeted and continuing treatment. Delivering this role requires a significant investment of health funding; sound management of public funds demands comprehensive monitoring and reporting processes that define outcomes, record data and measure success in the performance of emergency health care.

In July 2011, the Australian states and territories signed the *National Health Reform Agreement—National Partnership Agreement on Improving Public Hospital Services* (the NPA). The NPA tied \$3.35 billion in capital, facilitation and reward funding, from 2011–12 to 2016–17, to improving public hospital access across Australia. At least \$750 million of that funding is tied to improving emergency department access.

Under the NPA, states and territories must achieve a series of targets—their progress is publicly reported. One of these targets is the National Emergency Access Target (the NEAT). The NEAT is an incrementally increasing target that, by 2015, aims to have 90 per cent of people presenting to an ED leave within four hours of their arrival. Queensland's Department of Health (the DoH) has incorporated the incremental four-hour target into its service agreements with the state's Hospital and Health Services (HHSs).

More broadly, increasing emphasis and importance is being placed on ED data and other similar, publicly reported performance information; both as a part of funding agreements and to demonstrate whether changes to systems and processes have achieved their intended effects of reducing waiting and treatment times.

The DoH has sponsored a series of projects to improve patient management and flow and increase the percentage of patients who leave EDs within four hours. While Queensland did not achieve the NEAT in 2012 and 2013, it has reported improvements in the percentage of patients who depart EDs within four hours of arrival.

This type of target is used in other jurisdictions. It has attracted criticism for leading to data manipulation and reduced services. A consistent cause of problems with the target and reporting of actual results against it is the lack of a robust governance framework, supported by effective controls and managerial oversight.

The objective of the audit was to assess the performance of Queensland's public EDs in achieving targets under the NEAT, with a particular focus on the reliability of the data being reported.

Conclusions

Since the introduction of the four-hour target, Queensland Health (comprising the DoH and Queensland's 17 HHSs) has publicly reported improved ED performance.

We found efforts made to achieve the target have not compromised patient safety or quality of care; however, controls over ED data have been and remain, weak or absent. They do not provide sufficient assurance that the reported performance adequately reflects actual performance. The quality of the data reported relies primarily on the integrity and diligence of individuals—in both entering and validating data in a system without audit logs and which allows a large degree of anonymity.

The time pressures involved in providing emergency care mean that users of the Emergency Department Information System (EDIS) need to, and have, ready access to the system. Nonetheless, the introduction of data integrity controls to reduce errors that require re-work and to prevent deliberate data manipulation has not been addressed satisfactorily.

The resulting lack of accountability for accurate and reliable EDIS data leaves the system open to manipulation. Whether deliberate manipulation has actually occurred becomes secondary; that data could be systemically manipulated—and this go undetected—in itself acts to reduce the users' confidence in its integrity.

The data are used in a variety of important contexts; by hospital administrators to understand and manage patient flows and as part of funding and accountability arrangements between the Queensland and Australian governments. Data collection, checking and reporting performance involves enormous cost, time and efforts. For these reasons—and for the community to be confident about how health care decisions are made and public funds are invested—it is unsatisfactory that the integrity of data informing health care decision making may be questioned.

The results of this audit challenge whether other publicly reported performance data are reliable. It is important that each entity involved in generating and reporting on its non-financial performance establishes appropriate controls commensurate with the importance of the reported data, gauged by who uses the data, how it is used and how much it costs to produce.

Key findings

Public hospitals are reporting more people leaving EDs within four hours (240 minutes). Our testing across the state indicates efforts to achieve the four-hour target have not resulted in adverse patient outcomes. The number of patients who return to the ED for follow up treatment has not risen since the four-hour target was introduced.

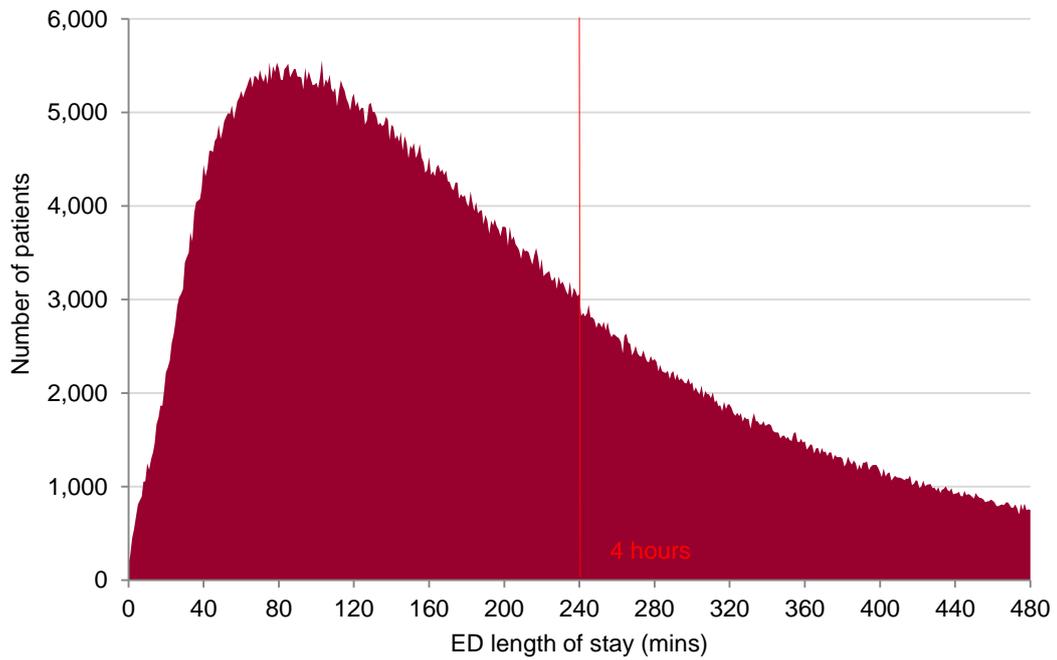
Figures 1 and 2 show, from October 2012, a large and abrupt change in the length of stay distribution of patients who depart the ED within four hours, particularly between 230 and 240 minutes.

In Figure 2, the build-up of patients departing within the first 100 minutes remains consistent with Figure 1. Figure 1 continues to illustrate a gradual decline in the number of patients departing EDs after 240 minutes. By comparison, Figure 2 demonstrates the number of patients departing EDs spikes just before the four-hour target, between 230 and 240 minutes and the number of patients departing immediately after 240 minutes drops by 70 per cent.

Some hospitals have termed this 'target based care'.

Other jurisdictions have experienced similar departure distributions after introducing ED performance targets.

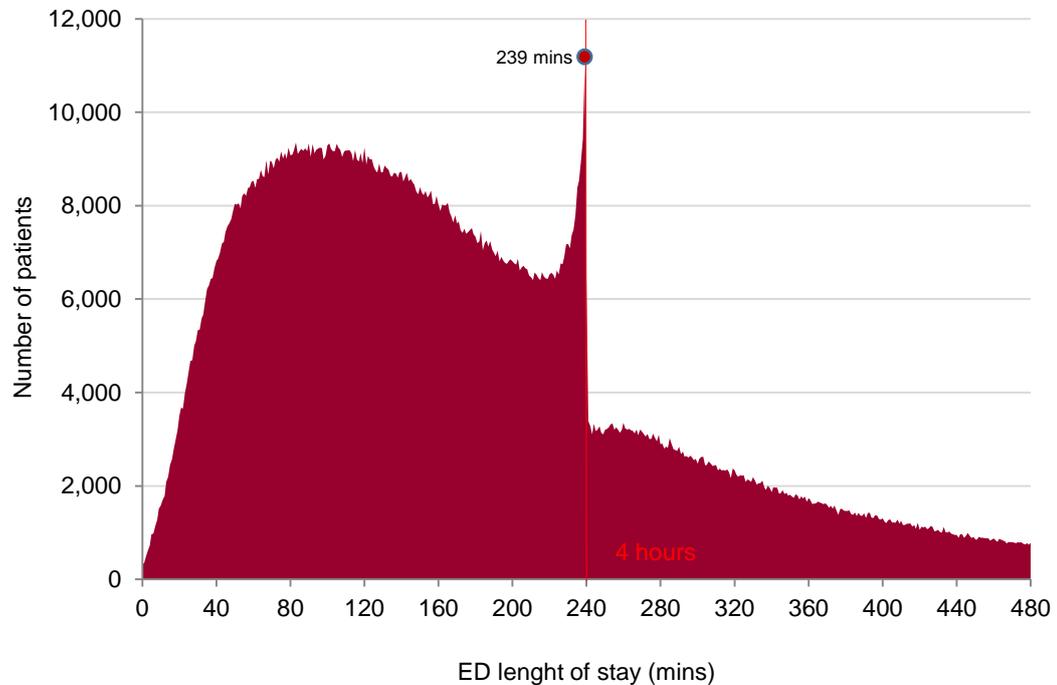
Figure 1
Emergency department stay
1 July 2011 to 30 September 2012



Reporting hospitals as at 30 June 2014 as listed in Appendix C
Data range captured is 0–480 minutes

Source: Queensland Audit Office using extracted EDIS data

Figure 2
Emergency department stay
1 October 2012 to 30 June 2014



Reporting hospitals as at 30 June 2014 as listed in Appendix C
Data range captured is 0–480 minutes

Source: Queensland Audit Office using extracted EDIS data

EDIS is used in Queensland and other Australian jurisdictions to record and measure performance against the four-hour target and to determine eligibility for reward funding. While EDIS was designed to manage and monitor patient flows, the introduction of performance targets has resulted in EDIS being relied upon for time recording. EDIS and the work environment were not designed or customised to provide accurate time based performance reporting and have not been adapted to provide reasonable assurance that the times recorded in EDIS are accurate.

These system deficits, combined with some control and process deficiencies, mean the Queensland ED dataset is prone to a number of inaccurate or unverifiable records. This is most noticeable for patients who depart the ED near the four-hour mark. At the five hospitals we visited, more than 20 per cent of records in the final five minutes were unverifiable. The reasons for this include:

- a lack of accountability in time stamping and amending ED records
- a lack of an authorising environment for changing event times in medical records
- digit bias, whereby staff enter times to the nearest 30 minute increment.

After our audit began, the spike in the distribution of patients' length of stay decreased at Rockhampton and Redland hospitals: both were included as part of the audit field work. This was due to a previous practice of amending incorrect data, or retrospectively finalising records, to indicate the key performance indicator time, instead of the actual time the patient departed the ED.

Short stay units (SSUs) are dedicated treatment spaces near the ED to manage patients for up to 24 hours. They are not designed to be used as overflow areas for EDs and, for the purposes of the NPA, an admission to an SSU completes the length of stay in an ED. The expanded use of SSUs across the state has helped patients by increasing the number of cubicles available for treatment and monitoring; however, consistent with Figure 2, there is a spike of admissions to the SSUs just before the four-hour target.

Some Queensland hospitals are admitting patients to SSUs to meet the four-hour target, not when they are identified as being suitable for admission. While this does not result in a performance benefit under the four-hour target, it delays making the treatment area in the ED available for the next patient.

The classification of the patient's ED journey is not consistently reported. While the application of the terms 'admit' or 'discharge' were straightforward, the use of the definition of 'did not wait for treatment' is used inconsistently across hospitals. The National Health Data Dictionary has defined this term; however, the DoH has issued guidance that contradicts it.

If followed, the DoH definition renders the reporting of the metric as meaningless and may result in an additional cost of \$7.7m to the Queensland health system.

Recommendations

It is recommended that the Department of Health and the Hospital and Health Services:

1. ensure the definition of 'did not wait' is clearly understood by:
 - aligning the Emergency Department Information System terminology reference guide definition of 'did not wait' with the National Health Data Dictionary
 - clearly communicating and explaining to emergency department staff how the definition is to be applied
 - publicly reporting both the number and percentage of patients who did not wait for treatment and those who left after treatment commenced
2. review the role of short stay units and formalise guidelines on their operation and management to reduce inappropriate inpatient admissions
3. ensure datasets are accurate and verifiable by:
 - reviewing and implementing controls to ensure timely and accurate recording of patient information in the Emergency Department Information System
 - recording retrospective amendments that are evidenced and authorised
 - reassessing the information technology constraints that led to audit logs being turned off with a view to re-enabling audit logs and improving accountability.
4. prior to the completion of the *National Health Reform Agreement—National Partnership Agreement on Improving Public Hospital Services*, undertake a clinical, evidence based review of the emergency access target to determine an achievable target or targets encouraging timely decision making without compromising patient safety.

Reference to comments

In accordance with section 64 of the *Auditor-General Act 2009*, a copy of this report was provided to the following entities with a request for comments:

- the Department of Health
- Cairns and Hinterland Hospital and Health Service
- Central Queensland Hospital and Health Service
- Metro South Hospital and Health Service
- West Moreton Hospital and Health Service.

Their views have been considered in reaching our audit conclusions and are represented to the extent relevant and warranted in preparing this report.

The comments received are included in Appendix A of this report.

1 Context

1.1 Emergency department targets

1.1.1 National Emergency Access Target

In July 2011, all Australian states and territories signed the *National Health Reform Agreement—National Partnership Agreement on Improving Public Hospital Services* (the NPA) with the Commonwealth. The NPA is scheduled to run until 30 June 2017.

The NPA establishes financial incentives (reward funding) for public hospitals to meet targets, including the National Emergency Access Target (the NEAT). The aim of the NEAT is to improve patient access to public hospital emergency departments (EDs). Jurisdictions must submit accurate and verifiable data, on a calendar year basis, to calculate performance. The NPA states that 'patient safety is the utmost priority, and the target is not to overrule clinical judgement'.

Performance is measured as the percentage of patients who physically leave the ED within four hours of their arrival. Unplanned patient re-attendance—patients who return to the ED with the same or similar complaint within 48 hours of discharge—is also monitored, although no reward funding is attached to this. Patients leave the ED in one of three broad categories. They can:

- leave or be discharged
- be admitted to hospital (either to an inpatient ward or the short stay ward/unit)
- be transferred to another hospital.

As part of its 2014–15 budget, the Australian Government announced the NPA would cease from 2015–16, twelve months earlier than originally agreed. As payments under the NPA are payable by 30 June of the following assessment period, 2014 is likely to become the final year of the NEAT.

Incremental targets have been set for each jurisdiction, rising from their individual 2009–10 baseline and staged to meet the final NEAT of 90 per cent. Figure 1A shows the baseline and NEAT for all states and territories.

Figure 1A
Percentage of ED departures within four hours: baseline and targets
2009–10 to 2015

Year	QLD %	NSW %	VIC %	WA %	SA %	TAS %	ACT %	NT %
2009–10 Baseline	63.8	61.8	65.9	71.3	59.4	66.0	55.8	66.2
Targets (calendar year)								
2012	70.0	69.0	72.0	76.0	67.0	72.0	64.0	69.0
2013	77.0	76.0	78.0	81.0	75.0	78.0	73.0	78.0
2014	83.0	83.0	84.0	85.0	82.0	84.0	81.0	84.0
2015	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0

Note: The baseline is derived from each jurisdiction's 2009-10 submitted Non-Admitted Patient ED Care National Minimal Data Set.

Source: *National Partnership Agreement on Improving Public Hospital Services*

In Queensland, 27 EDs comprising 93.7 per cent of all 2013 presentations, have their performance measured to calculate the state's achievement against the four-hour target. A list of the 27 reporting EDs is included in Appendix C.

The NEAT is reflected in Queensland Health's service delivery statement as a performance measure:

Percentage of emergency department attendances who depart within four hours of their arrival in the department.

1.1.2 Queensland Health service agreements

Hospital and Health Services (HHSs) were established on 1 July 2012, separating the delivery of hospital and health services from the policy and administration of the Department of Health (the DoH). The DoH and HHSs—collectively known as Queensland Health—have signed individual service agreements which specify accountabilities, responsibilities, funding levels, key performance indicators (KPIs) and specific targets attracting reward funding.

Figure 1B shows the Queensland Health KPIs and targets for ED performance across all HHSs. The four-hour target is the same for all HHSs, regardless of the size of each HHS, its case mix or catchment demographics. KPIs for the time to begin treatment (based on a patient's assessed urgency when triaged) are also included in the service agreements.

Figure 1B
Queensland target and clinically recommended times for treatment

Key performance indicators	2013 %	2014 %
Four-hour target	77	83
ED patients seen by medical staff within the clinically recommended time:		
• Category 1: within 2 minutes	100	100
• Category 2: within 10 minutes	80	80
• Category 3: within 30 minutes	75	75
• Category 4: within 60 minutes	70	70
• Category 5: within 120 minutes	70	70

Note: Categories reflect the Australasian Triage Scale (ATS) as defined the Australasian College for Emergency Medicine. The ATS is a tool for ensuring patients are seen in a timely manner, commensurate with their clinical urgency. South West, Central West and Torres and Cape HHSs do not have these KPIs.

Source: Queensland Audit Office from Queensland Health service agreements

While the NPA monitors unplanned re-attendances (patients who return to the ED for a similar reason within 48 hours), no target has been set. The DoH has not set a target either and has removed the KPI as part of a consolidation program. Hospitals have the ability to monitor the number of unplanned re-attendances.

1.2 Funding for achieving targets

1.2.1 National Emergency Access Target

Under the NPA, the Australian Government provided Queensland with capital funding and facilitation funding of \$108.9 million for the period from 2009–10 to 2012–13 to assist in meeting the NEAT.

Queensland could potentially receive reward payments of \$10.4 million for each year the NEAT is met—up to \$41.6 million over 2012–13 to 2015–16. Reward funding is cumulative, meaning if the 2012 and 2013 targets are missed, but a subsequent target is achieved, the total reward funding for those years is paid. Reward funding is also phased in at 50 per cent achievement, meaning that if Queensland achieves 50 per cent of the difference between the previous year's target (or baseline) and the current year's target, it will receive 50 per cent of its reward payment.

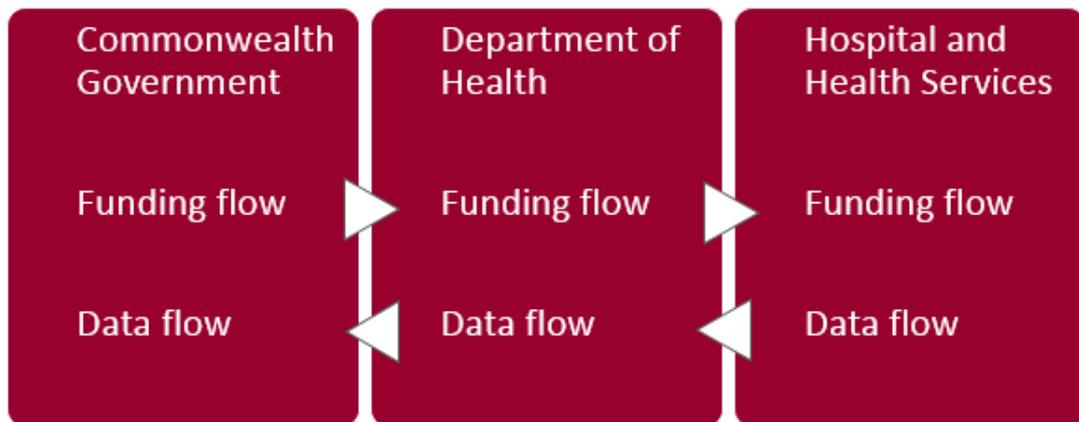
1.2.2 Quality improvement payments

Service agreements require the DoH to make quality improvement payments (QIP) to individual HHSs for achieving the four-hour target and, independently, for achieving certain levels of patient satisfaction. Payments to individual HHSs must be made, regardless of whether the state as a whole has achieved the targets under the NPA.

The total amount of the QIP in any one year equates to full reward funding available in that year. Unlike the relationship between the Commonwealth and the state, in which funding is provided once a year, the state splits the calendar year into two tranches with an interim and final payment being made for achievement of the target.

Figure 1C illustrates the funding flow between the Commonwealth, the DoH and the HHSs.

Figure 1C
Funding and data flows for the purposes of ED KPIs



Source: Queensland Audit Office

1.3 Changing models of care

Queensland Health has made a concerted effort to reduce the amount of time patients spend in the ED, while maintaining high quality patient care. The clinicians to whom we spoke were supportive of the principles of the four-hour target and were given input and ownership of improvement processes aimed at achieving its KPIs. The DoH has sponsored three major projects to give clinicians and administrators tools and processes to improve the patient experience in the ED.

Metropolitan Emergency Department Access Initiative

The Metropolitan Emergency Department Access Initiative (MEDAI) began in October 2011 and the final report was presented to Queensland Health in July 2012. MEDAI covered all 15 metropolitan hospitals in south-east Queensland and was established to:

...identify a range of initiatives to enhance the interface between Queensland public hospitals and the Queensland Ambulance Service (QAS) to improve consumer access to Emergency Department services in metropolitan hospitals.

The project focused on a whole-of-hospital approach to improve patient flow and patient management which, in turn, aimed to reduce ambulance ramping. Seven findings were identified and 15 recommendations made; the government accepted all recommendations.

MacroNeat

MacroNeat was the primary program developed from the NPA facilitation funding to help hospitals achieve the four-hour target.

MacroNeat was run in 15 hospitals across the state and focused on a whole-of-hospital approach to achieving the four-hour target specific to each hospital. All of the hospitals we visited participated in the program.

Short stay units

Short stay units (SSUs) have been used in Australian hospitals for many years and are recognised as an appropriate tool for hospitals to monitor a select group of patients. SSUs are staffed 24 hours a day and are administered by the ED. The NPA and the Australian Institute of Health and Welfare define SSUs as:

- designed for patients who require short term care
- having a fixed number of beds with a minimum level of facilities
- physically separate from the ED
- having specific admission and discharge policies.

It further states that SSUs are:

...not a temporary ED overflow area nor used to keep patients solely awaiting an inpatient bed nor awaiting treatment in the ED...

The Australian Institute of Health and Welfare has refined the definition to state explicitly that SSUs are designed for stays of less than 24 hours. The DoH is developing a better practice guideline on the establishment, operation and management of SSUs to reduce inappropriate inpatient admissions and health care costs.

In December 2013, the Australasian College for Emergency Medicine (ACEM), cautioned:

...ACEM contends that the role of SSUs, within the context of classification systems for emergency care services and associated funding, needs to be appropriately defined in order to avoid gaming or distortion of hospital data and resultant funding allocations...

For the purposes of the NPA and service agreements, a patient departs the ED once he or she has physically transferred to the SSU. In the absence of definitive DoH guidance, the hospitals we spoke to aimed to have fewer than 15 per cent of SSU patients subsequently admitted to inpatient wards. Meeting this indicates assessment processes for admission to SSUs are appropriate, while allowing tolerance for where a patient's condition deteriorates.

In Queensland, 24 public hospitals operate SSUs. Since December 2011, approximately 10 per cent of all ED presentations are admitted to SSUs.

1.4 Emergency Department Information System

Performance against targets is measured using data captured by the Emergency Department Information System (EDIS). EDIS is used in most Australian hospitals. In Queensland, EDIS is used by all major regional and urban emergency departments; many rural EDs use Rural EDIS.

EDIS captures most aspects of patient progress through the ED, including:

- patient arrival and first seen time
- clinical notes (some hospitals are in the process of changing to writing notes in EDIS)
- patient location in the ED
- details of treating doctors and nurses.

EDIS is an online 'real-time' system with data entry reflected immediately, allowing it to be used to manage patient flow in the ED. It provides a graphical layout of the ED and staff are able to electronically move a patient from the waiting room to treatment areas and from the treatment areas to a departure box. This view quickly allows staff to see which treatment areas are occupied by whom, and which are free.

To assist in seeing patients within the clinically recommended times and making timely clinical decisions, a traffic light system has been introduced on the 'patient tracking screen' in EDIS. It is based on the length of time spent in the ED and the visual cues help staff ensure that no patient 'slips through the cracks'.

1.5 Queensland's performance

Queensland has reported improvements in 2012 and 2013 in the percentage of patients who depart EDs within four hours of arrival. Figure 1D shows a summary of performance to date.

Figure 1D
Queensland's NEAT metrics
2009–10 to 2015

Year	Target %	Actual result %	Reward funding available \$ m	Commonwealth reward funding received \$ m	DoH reward funding paid \$ m
2009–10 Baseline	N/A	63.80	N/A	N/A	N/A
Calendar 2012	70.00	66.88	10.40	1.80	0.67
Calendar 2013	77.00	75.60	10.40	TBC	4.40
Calendar 2014	83.00	N/A	10.40	N/A	1.03
Calendar 2015	90.00	N/A	10.40	N/A	N/A

Note: DoH 2014 reward funding is for performance for January to June 2014 only.

Source: Queensland Audit Office using extracted EDIS data, the NPA and Clinical Access and Redesign Unit in the Department of Health

Queensland did not achieve its statewide target in 2012 and consequently did not qualify for reward funding. However, the Commonwealth made a partial payment of \$1.8 million to reflect Queensland's improved performance in 2012 under all aspects of the NPA; this included the National Elective Surgery Target and the NEAT. Five HHSs were entitled to state reward funding, with the DoH making a collective payment of \$674 000.

While not achieving the NEAT in 2013, we have calculated that the state is eligible for partial reward funding; the Commonwealth is yet to confirm the amount. In 2013, 12 HHSs met the four-hour target. The performance of all HHSs for 2012 and 2013 is in Appendix D. An inter-jurisdictional comparison of NEAT performance is included in Appendix E.

Figure 1E shows the statewide ED average patient length of stay has been trending down; it dropped below four hours in the second half of 2012 and has remained below four hours since. As the average length of stay has decreased, the capacity of an ED to provide services should increase; however, this is subject to variables such as:

- the number of patients attending the ED
- the number of ED cubicles funded (made available for use)
- the number of staff rostered.

With accurate data, hospitals could calculate their improved capacity and use this information for resource planning.

Figure 1E
Average length of ED stay
1 July 2011 to 30 June 2014

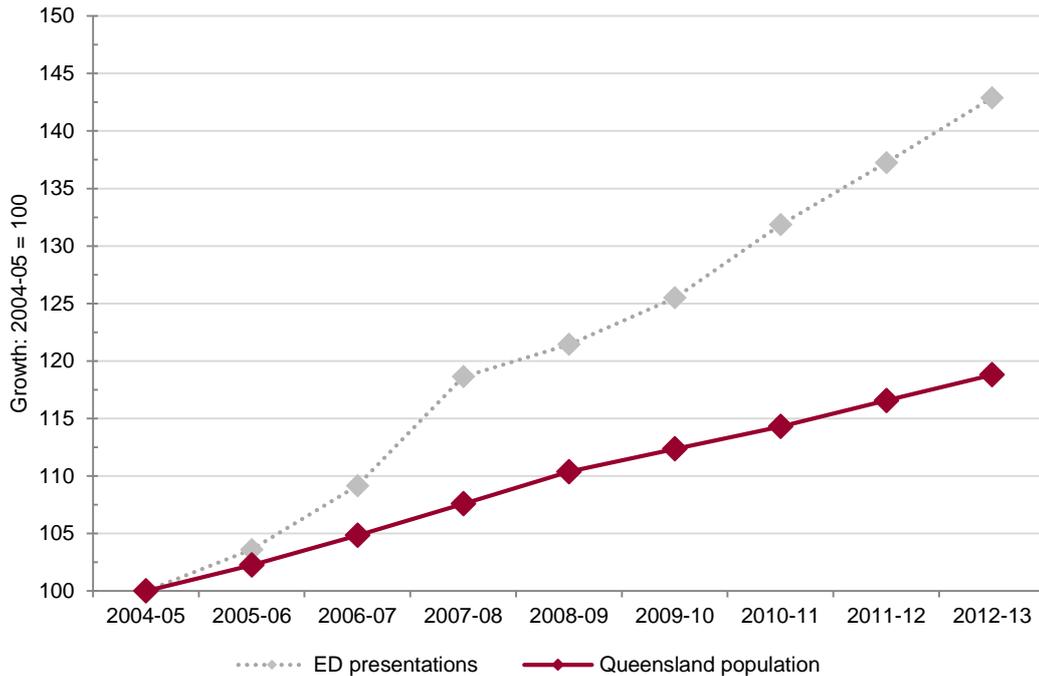


Source: Queensland Audit Office using extracted EDIS data

1.6 Growth in presentations

Queensland's performance should be noted against the increase in people presenting to EDs, compared to the increase in population growth. Figure 1F shows growth in presentations is increasing, on average, by 1.7 percentage points more than growth in population. Presentations to EDs are growing at an average annual growth rate of 3.6 per cent, compared to population growth of 1.9 per cent. Ambulance arrivals and people who walked into the ED drive growth in presentations equally.

Figure 1F
Growth in presentations vs growth in population
2004–05 to 2012–13



Reporting hospitals as at 30 June 2014 as listed in Appendix C

Source: Queensland Audit Office using Australian Bureau of Statistics and extracted EDIS data

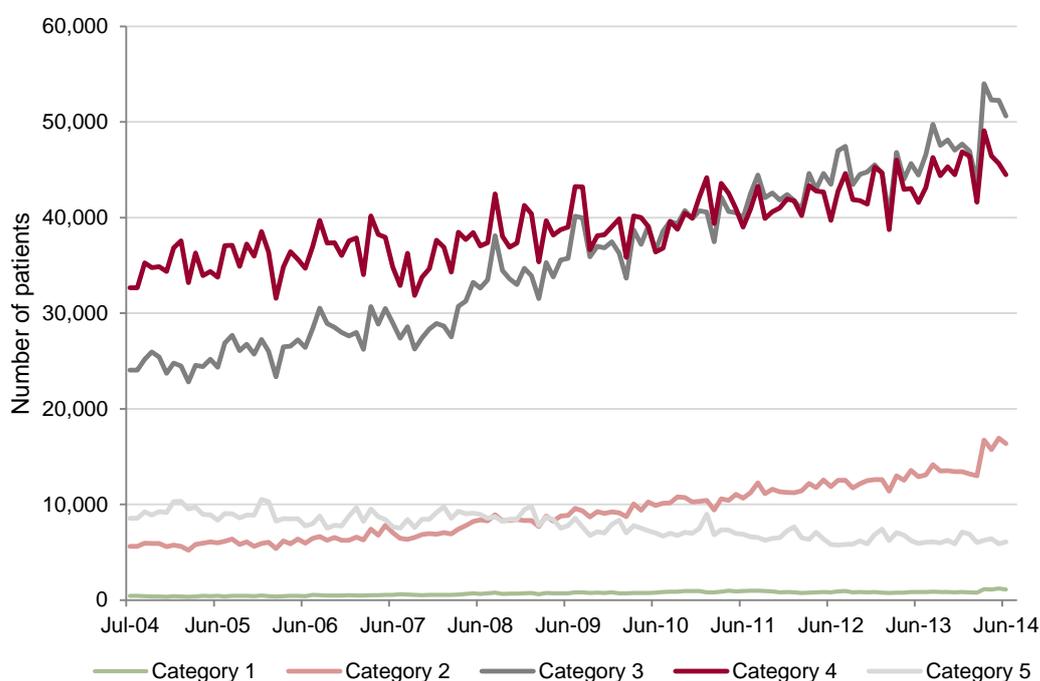
The number of category 1 and 5 presentations to EDs (where a category 1 patient should be seen within two minutes and a category 5 patient should be seen within 120 minutes) has been stable over the last ten financial years.

There have been significant increases in the other categories. Figure 1G shows increases in:

- category 2 presentations (seen within 10 minutes) by 10 735 presentations (191 per cent)
- category 3 presentations (seen within 30 minutes) by 26 609 presentations (111 per cent)
- category 4 presentations (seen within 60 minutes) by 11 835 presentations (36 per cent).

The DoH and the HHSs have managed this growth by increasing capacity, introducing the four-hour target, clinical process redesign projects and building new EDs or retrofitting existing EDs.

Figure 1G
Growth in triage categories
1 July 2004 to 30 June 2014



Reporting hospitals as at 30 June 2014 as listed in Appendix C

Source: Queensland Audit Office from extracted EDIS data

1.7 Previous time based target experiences

Introducing a time based target to either admit or discharge a patient from the ED can have significant benefits to patient experience in the ED. It encourages timely decision making and allows EDs to treat more people over the same period of time.

While many jurisdictions have largely experienced benefits from the introduction of a four-hour target, experiences within Australia and internationally illustrate that some negative outcomes and adverse behaviours can occur. This is particularly the case without strong governance, including robust internal controls and comprehensive management oversight.

1.7.1 The United Kingdom

In the UK, a target of treating 100 per cent of patients within four hours commenced in 2004. The target was subsequently reduced to 98 per cent in 2005 and to 95 per cent in 2010. Over the 2013–14 year, EDs in England have averaged treating 95.7 per cent of patients within four hours.

The UK target has been the subject of a number of studies and reviews. Some of these reviews have identified similar graphs to this report's Figure 2; however, the UK employs different models of care to Queensland. This makes it difficult to compare and contrast performance in the UK directly with performance in Queensland.

In the mid-2000s, data manipulation and poor clinical outcomes, including patient deaths, occurred in a limited number of UK hospitals when the National Health Service introduced a target of treating 100 per cent of patients within four hours. Across the UK, further reviews into the four-hour target were unable to definitively rule out data manipulation or 'gaming' to meet targets. The reviews have encouraged further studies of the results to ensure patient safety is not compromised.

1.7.2 Victoria

In 2009, before the introduction of the NEAT, the Victorian Auditor-General found that, in Victorian EDs:

It was not possible to assure that reported performance against the majority of the access indicators fairly represented actual performance...

and that there were:

...instances of admitted data manipulation to meet indicator targets...

Victorian hospitals were inconsistently interpreting reporting rules and guidelines; for example, the time recorded when a patient was 'first seen'. The Victorian Auditor-General noted poor data security, no audit logs and failure to audit datasets contributed to the finding.

1.7.3 Western Australia

In 2009, Western Australia (WA) pioneered the introduction of a four-hour target in Australia before it was rolled out under the NPA from 1 January 2012. A review of the trial was made publicly available and published in December 2011.

The review found that, by redesigning clinical service, the quality of patient care and patient flow was improved. WA currently treats the greatest percentage of presentations within four hours, Australia-wide.

The review identified areas of risk, such as failing to provide adequate staffing and resources to facilitate timely access to the wards, but no adverse patient outcomes were found.

1.7.4 Australian Capital Territory

Data manipulation was uncovered in the Australia Capital Territory (ACT) at the Canberra Hospital when the Health Directorate undertook an internal review on the basis that the distribution of patient length of stays was unusual. The distribution was similar to those seen in Queensland hospitals as depicted in this report's Figure 2. An executive officer of the Health Directorate subsequently admitted to making improper changes to ED records with the aim of achieving performance targets over a period from late 2010 to early 2012.

The ACT Auditor-General found the data manipulations spanned a longer period of time than that to which the executive admitted. Poor controls surrounding EDIS—the same software used by Queensland Health—rendered it impossible to identify the source.

1.8 Queensland Health data integrity review

The DoH was first made aware of data integrity issues in early 2013 during an internal review into digit bias. The researchers informed DoH executives that the length of time to receive treatment and the length of stay in the ED had anomalies and were 'unusual'. The researchers suggested that further monitoring for data quality and efficiency purposes would be beneficial. The DoH did not investigate the concerns around data quality and chose to focus on indicators of patient safety and quality of care.

1.9 Audit objective, method and cost

The objective of the audit was to assess the performance of Queensland's public EDs in achieving targets under the NEAT. We have not audited the clinical decisions made within an ED, SSU or on the inpatient wards.

The cost of the audit was \$365 000.

The audit addressed the objective through the sub-objectives and lines of inquiry set out in Figure 1H.

Figure 1H
Audit scope

Sub-objectives		Lines of inquiry	
1	The publicly reported performance of emergency departments is reliable.	1.1	EDIS data are complete, accurate and valid.
2	The patient experience is adversely affected by efforts to achieve performance targets.	2.1	Monitoring of patient movements reduces the risk of adverse behaviours occurring in attempting to achieve the NEAT.

Source: Queensland Audit Office

Assessment against the lines of inquiry was made using the criteria set out in Figure 11.

Figure 11
Audit criteria

Lines of inquiry		Criteria	
1.1	EDIS datasets are complete, accurate and valid	1.1.1	EDIS is secure from unauthorised access through the application (application level security).
		1.1.2	Nationally endorsed criteria governing how to measure emergency department wait times are understood and complied with.
		1.1.3	DoH / HHS endorsed criteria, governing when data can be amended, are relevant and appropriate; understood and complied with.
		1.1.4	Sufficient, corroborating evidence exists to support data and justify amendments.
		1.1.5	EDIS data are independently validated and quality assured before submission for statistical and funding purposes.
2.1	Monitoring of patient movements reduces the risk of adverse behaviours occurring in attempting to achieve the NEAT.	2.1.1	Hospitals have developed models of care that facilitate treatment of patients within the NEAT.
		2.1.2	Monitoring of patient movements to illustrate if adverse behaviours are occurring in attempting to achieve the NEAT and act upon findings.

Source: Queensland Audit Office

1.9.1 Entities subject to this audit

Our audit included the DoH, all hospitals with SSUs and all reporting hospitals. A sample of hospitals selected for specific testing was included in the audit. The sampling methodology is described in Appendix B.

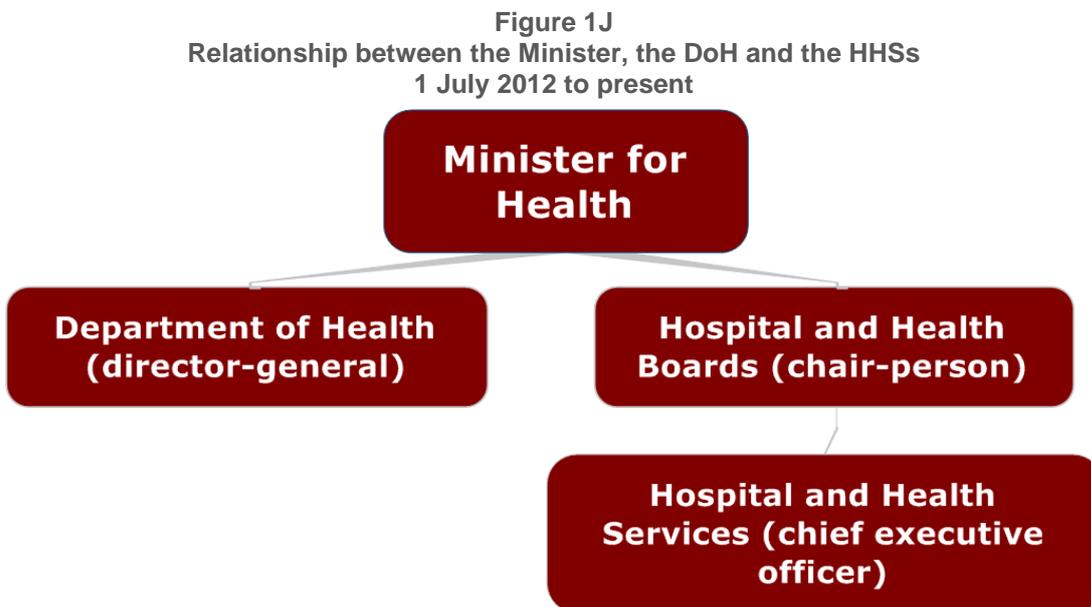
1.9.2 Accountability relationship

HHSs are independent statutory bodies which deliver healthcare services to Queenslanders within their local areas. A board of directors, accountable to the Minister for Health, administers each HHS.

The DoH is the manager of the health system and, via the Director-General, reports to the Minister for Health. The role of the system manager is to:

- purchase healthcare services from the HHSs
- manage statewide planning and industrial relations
- set policies, regulations and health service directives
- monitor performance of HHSs and the system as a whole
- collate and validate performance data and provide data to the Commonwealth.

This legal relationship is depicted in Figure 1J



Source: Queensland Audit Office

1.10 Report structure

The remainder of the report is structured as follows:

- Chapter 2—recording information
- Chapter 3—controls to assure data integrity
- Chapter 4—admissions achieving the four-hour target
- Appendix A contains responses received.
- Appendix B contains the audit methodology.
- Appendix C lists Queensland reporting hospitals for the purposes of the NEAT.
- Appendix D contains HHS performance against the four-hour target for 2012 and 2013.
- Appendix E contains an inter-jurisdictional comparison of NEAT performance
- Appendix F contains the Australian Institute of Health and Welfare definition on clinical care commencement.

2 Recording information

In brief

Background

The *National Partnership Agreement on Improving Public Hospital Services* requires the states and territories to submit accurate and verifiable data to the Commonwealth for the purposes of determining performance and eligibility for reward funding. It also states that patient safety is the utmost priority and the four-hour target is not to overrule clinical judgement.

The National Health Data Dictionary defines the terms used for collecting and classifying health data. It is used by all jurisdictions to aid in consistency and comparability of information.

Conclusions

There is no evidence of a decrease in quality of care in attempting to achieve the four-hour target; however, poor controls over the recording of times in the Emergency Department Information System (EDIS) means that reported performance may not reflect actual performance. Digit bias and key performance indicator bias, as well as having a significant number of unverifiable departures recorded just before the four-hour target, means the Department of Health cannot prove the reported datasets are reliable.

Transferring patients to the short stay unit just before the four hour target—and not as soon as they are identified as being suitable for admission—delays making the ED cubicle available for the next presentation. This practice hampers efficient patient flow and efforts to meet the four-hour target.

Key findings

- More than 20 per cent of amended or retrospectively written records within the last five minutes before the four-hour target were unverifiable.
- Departure times have significant digit bias to the hour and half hour.
- Both Queensland Ambulance Service and emergency department staff record the time a patient is triaged; yet in only 13 per cent of sampled occasions did the times align.
- Patients are being transferred to short stay units to meet the four-hour target, not at the time they are recognised as being suitable for admission.
- The number of people recorded as 'did not wait for treatment' is inconsistently reported; if Hospital and Health Services adopted the Department of Health guidelines in 2013–14, they would have received an unbudgeted additional \$7.7 million.

Recommendations

It is recommended that the Department of Health and the Hospital and Health Services:

1. **ensure the definition of 'did not wait' is clearly understood by:**
 - **aligning the Emergency Department Information System terminology reference guide definition of 'did not wait' with the National Health Data Dictionary**
 - **clearly communicating and explaining to emergency department staff how the definition is to be applied**
 - **publicly reporting both the number and percentage of patients who did not wait for treatment and those who left after treatment commenced**
2. **review the role of short stay units and formalise guidelines on their operation and management to reduce inappropriate inpatient admissions.**

2.1 Background

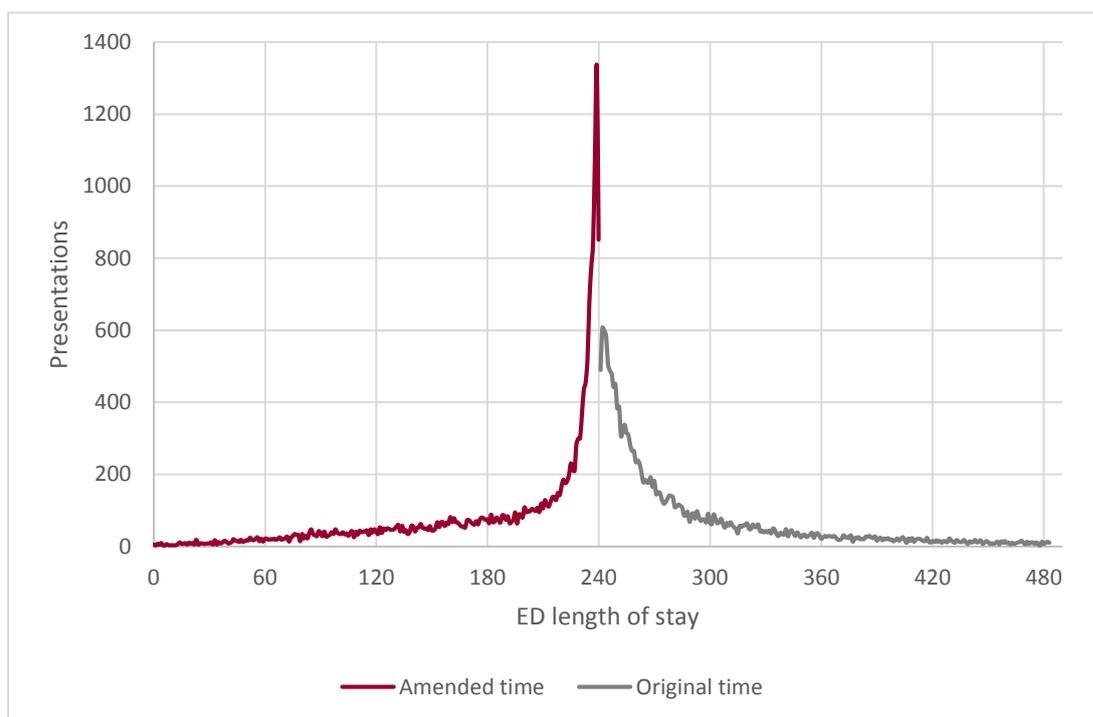
Queensland is a signatory to the *National Health Reform Agreement—National Partnership Agreement on Improving Public Hospital Services* (the NPA). The NPA requires Queensland to provide 'accurate and verifiable data' for the purposes of calculating performance against the National Emergency Access Target (the NEAT), being the percentage of people who present to an emergency department (ED) and depart within four hours. Performance data are captured in the Emergency Department Information System (EDIS).

Figure 2 in this report shows a statewide spike of departures just before the four-hour target. In other jurisdictions, this shift from previous ED performance was found to warrant further examination.

At four of five hospitals we visited, we noted 20 per cent of all amended or retrospectively written records (19 500 records) that recorded an initial length of stay greater than four hours were adjusted to be within four hours. Of these, forty-six per cent (8 872) were amended to have a length of stay between 225 and 240 minutes (15 minutes prior to the four-hour target). Some hospitals have termed this build-up of departures around the four-hour target as 'target based care'. This is shown in Figure 2A.

Due to the lack of an audit trail in the form of audit logs or manual records, we are unable to determine when the record was finalised or by whom; therefore, we cannot distinguish between whether the record was retrospectively written or amended during the validation process.

Figure 2A
Records amended or retrospectively written to within four hours
1 October 2012 to 30 June 2014



Includes only amended or retrospectively written records at Cairns, Ipswich, Redland and Princess Alexandra Hospitals where initial length of stay greater than four hours adjusted to be within four hours
Rockhampton Hospital has been excluded as it deletes the entry that indicates if data have been amended or retrospectively written
Data continue past 480 minutes
Excludes patients transferred to short stay units due to matching issues and variances of less than three minutes.

Source: Queensland Audit Office using extracted EDIS data

Of 102 000 amended records at these four hospitals, 89 records (less than 0.09 per cent) were amended to increase the length of stay past four hours.

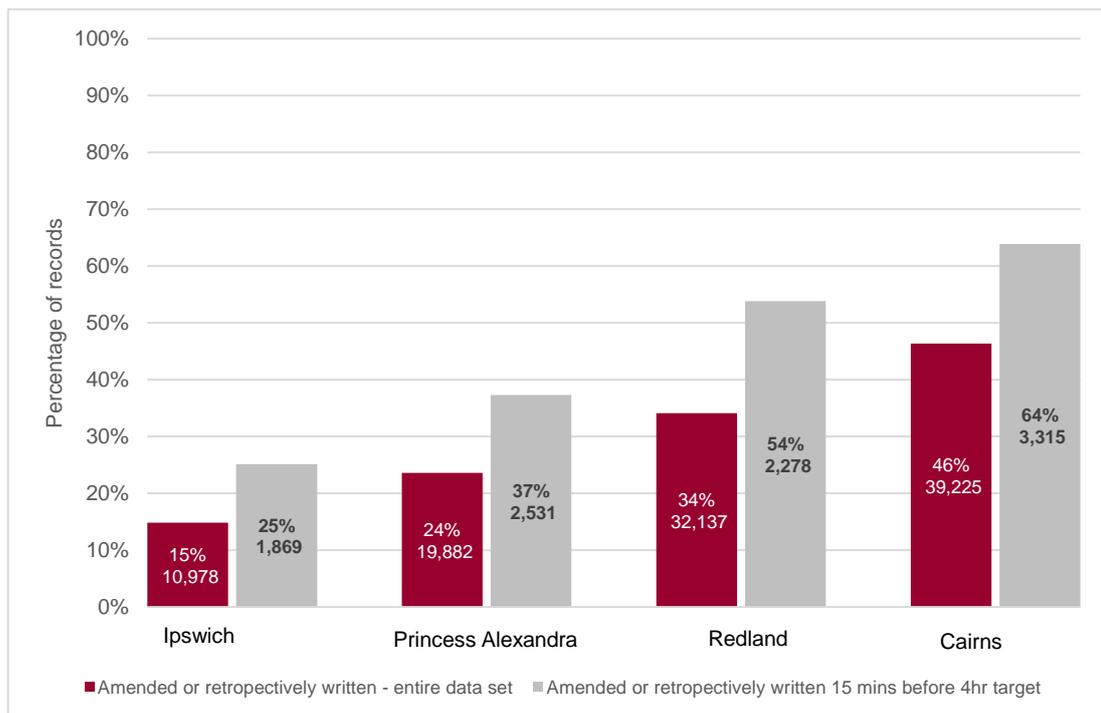
The fifth hospital—Rockhampton Hospital—deletes the record that indicates if patient records have been amended or retrospectively entered: management was unaware this practice was occurring. Administration staff were deleting these entries in the belief that it adversely affects management reporting. These deletions do not represent good record management practices. None of the other four hospitals applied the practice of deleting records.

Hospitals are amending or retrospectively finalising a greater number of ED records for patients whose length of stay is between 225 and 240 minutes, compared to their entire dataset. This indicates hospital data validation processes are focusing on records that are ultimately being finalised just within the four-hour target.

Figure 2B compares the number of records amended or retrospectively written in the entire dataset (left hand column) and contrasts it with the 15 minutes before the four-hour target (right hand column) for the four hospitals included in Figure 2A.

Retrospectively written records present a higher level of risk of being inaccurate as it places a greater emphasis on memory in an environment where up to 120–180 patients are seen in a day. Equally, staff not involved in patient care who amend data increase the chance of introducing errors.

Figure 2B
Amended or retrospectively written records: Entire dataset vs final 15 minutes
1 October 2012 to 30 June 2014



Excludes admissions to short stay units and variances less than three minutes

Source: Queensland Audit Office using extracted EDIS data

The Department of Health (DoH) was first made aware of data integrity issues in early 2013, independent of the hospital data validation processes, when an internal review into digit bias for time recording purposes found:

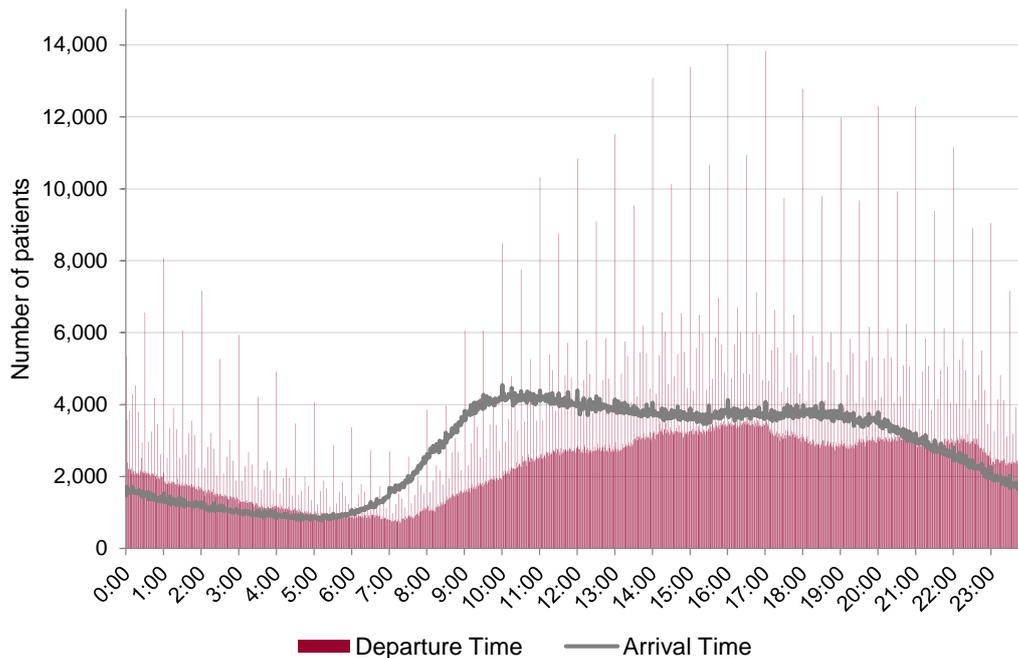
...times in the ED data should not be relied on to definitively measure and compare service times where precision to the level of minute is required...

This report was made available to all staff in April 2013 via the Queensland Health intranet.

We undertook our own analysis on EDIS data; Figure 2C compares the number of arrivals to the number of departures on a minute by minute basis. It illustrates that, while arrivals do not appear to be influenced by digit bias, departures are susceptible. The larger departure spikes are all on the hour or half hour, the smaller spikes are on five-minute increments.

Such digit bias in EDIS occurs when staff enter a manual departure time for the patient rather than using the 'now' button. Both the departure status of patients discharged and patients admitted displayed these results.

Figure 2C
Digit bias: Arrivals vs departures
1 July 2011 to 30 June 2014



Reporting hospitals as at 30 June 2014, as listed in Appendix C

Source: Queensland Audit Office using extracted EDIS data

Because EDIS is now required to capture performance information, it must have appropriate precision, reliability and accuracy. We looked at why these data issues were occurring and what that meant for the reliability and accuracy of Queensland's reported ED performance data.

2.2 Conclusions

The publicly reported percentage of patients who left the ED within four hours is susceptible to inconsistencies, error and manipulation and relies on the trust and honesty of the staff involved. Over 20 per cent of the records we tested had departure times that either contradicted other medical records or had no evidence to support changing the departure time. This, coupled with assertions from the DoH and clinicians that times recorded in manual records may not be reliable, has resulted in questions about whether performance measured against time based key performance indicators (KPIs) is accurate. The reliability, accuracy and verifiability of reported data is open to question.

Hospitals are able to move patients out of EDs into short stay units (SSUs) to continue their treatment. For performance reporting purposes, this movement constitutes the end of their ED journey. Hospitals are frequently admitting patients to SSUs to meet the four-hour target, not when they are identified as being suitable for admission. Using SSUs in this manner delays care to other patients who are awaiting access to ED cubicles.

The classification of data within EDIS is also inconsistently recorded; the DoH has issued guidance for recording patients who did not wait for treatment that contradicts the national definition. Based on our discussions with the hospitals we visited and an analysis of the statewide EDIS dataset, most hospitals are not applying the guidelines. If they did, the additional cost to the DoH in 2013–14 would be \$7.7 million. The inconsistent capturing of this metric results in performance outcomes that are not comparable between hospitals or with other Australian jurisdictions and results in publicly reported performance results that are unreliable and, at some hospitals, meaningless.

2.3 Testing records

A patient's progress through the ED is time stamped at the following points:

- on arrival
- when first seen and receives meaningful treatment
- when the patient physically departs the ED, whether admitted or discharged.

We followed the patient journey through EDIS, testing these time stamps to determine if amended and retrospectively entered EDIS data are accurate and verifiable—supported by corroborating evidence—and if patients are receiving faster treatment, as publicly reported. We chose five hospitals, based on the sampling methodology in Appendix B.

We classified records as unverifiable if:

- EDIS time stamps conflicted with times recorded in other records, as this indicated one or both of the records were inaccurate
- where there was no supporting evidence to justify amending a time.

2.3.1 Triage

All patients are triaged on arrival, including Queensland Ambulance Service (QAS) patients, and then 'clerked' into the ED. This helps ensure the appropriate care can be arranged as quickly as possible for those most in need. The QAS issues reports for all ambulance arrivals. These can be compared to EDIS, whereas arrivals who 'walk into' the ED do not have a corroborating record. As audit logs are turned off, we were unable to determine if triage staff used the system time or manually entered an arrival time.

The QAS and ED staff record the triage time on separate systems for calculating performance against KPIs and to provide a record of events. On 1 October 2013, the QAS became a business unit of the DoH.

As part of the Metropolitan Emergency Department Access Initiative, 3 801 QAS and EDIS records from a week in February 2012 were matched to determine their level of correlation. The review found 11 per cent matched to the minute, with an average variation of four minutes before, and five minutes after the EDIS triage time and a median variation of three minutes before and four minutes after, respectively.

Our sample testing showed these discrepancies still exist; this is illustrated in Figure 2D. Of the 113 ambulance arrivals we tested, 30 were missing the QAS report (27 per cent) while 15 arrivals correlated (13 per cent). Where QAS records were available, there was an average deviation of four minutes with a maximum discrepancy of 29 minutes.

We were unable to determine which records were accurate; discrepancies can be attributed primarily to:

- EDIS and QAS clocks are not synchronised
- ED and QAS staff have differing work pressures, which impact on their ability to record in a timely manner when a patient was triaged.

Figure 2D
Discrepancies between EDIS and QAS triage times
September 2012 to 31 December 2013

Hospital	QAS arrivals	Hospital records missing QAS report	Records aligned	Average deviation minutes	Maximum deviation minutes
Cairns	31	17	6	3	10
Ipswich	25	1	3	4	12
Princess Alexandra	33	8	5	5	29
Redland	24	4	1	4	26
Total	113	30	15	4	29

Due to systemic nature of discrepancies, the arrival of QAS patients were not tested at Rockhampton Hospital

Source: Queensland Audit Office based on EDIS and QAS data

2.3.2 Time first seen by medical staff

Once a patient is triaged, he or she must wait to be seen by medical staff. The recommended wait time for each of the triage categories varies; these are outlined in Figure 1B in this report. Each HHS is measured on the percentage of patients it begins treating within the recommended wait time.

We found a low number of unverifiable records (4.09 per cent combined) at the facilities we visited.

2.3.3 Leaving the emergency department

The time a person physically leaves the ED is used to calculate when a patient's time in the ED is complete—not the time the decision is made, or the time the patient is ready to depart. Once a patient is ready to leave, he or she may still have to wait—for aids, such as a wheelchair or crutches, or medications, for test results or discharge letters.

Figure 2E illustrates all hospitals had unverifiable departure records, with more than 20 per cent of records either contradicting the departure times stated in the clinical notes or observation charts, or failing to support amending the record at all. Some clinical notes and other medical records ceased with no reference to when a patient was ready for departure or physically left.

Figure 2E
Departure records
September 2012 to 31 December 2013

Hospital	Unverifiable records	Records sampled
Cairns	20 (27%)	75
Ipswich	18 (24%)	76
Princess Alexandra	16 (21%)	75
Redland	18 (24%)	75
Rockhampton	5 (21%)	24

See Appendix B for sampling methodology

Source: Queensland Audit Office

One reason given by hospitals for unverifiable records was that staff members 'batch enter' large volumes of data retrospectively at a time convenient to them, not when they have finished treatment, tests or consultations with patients. The clinical notes do not always include the time the event occurred, as required by the clinical documentation standards.

Four of the five hospitals we visited electronically removed patients from the ED as soon as they had physically left. This allowed the next patient to be allocated to the treatment area and increased the likelihood of accurate records.

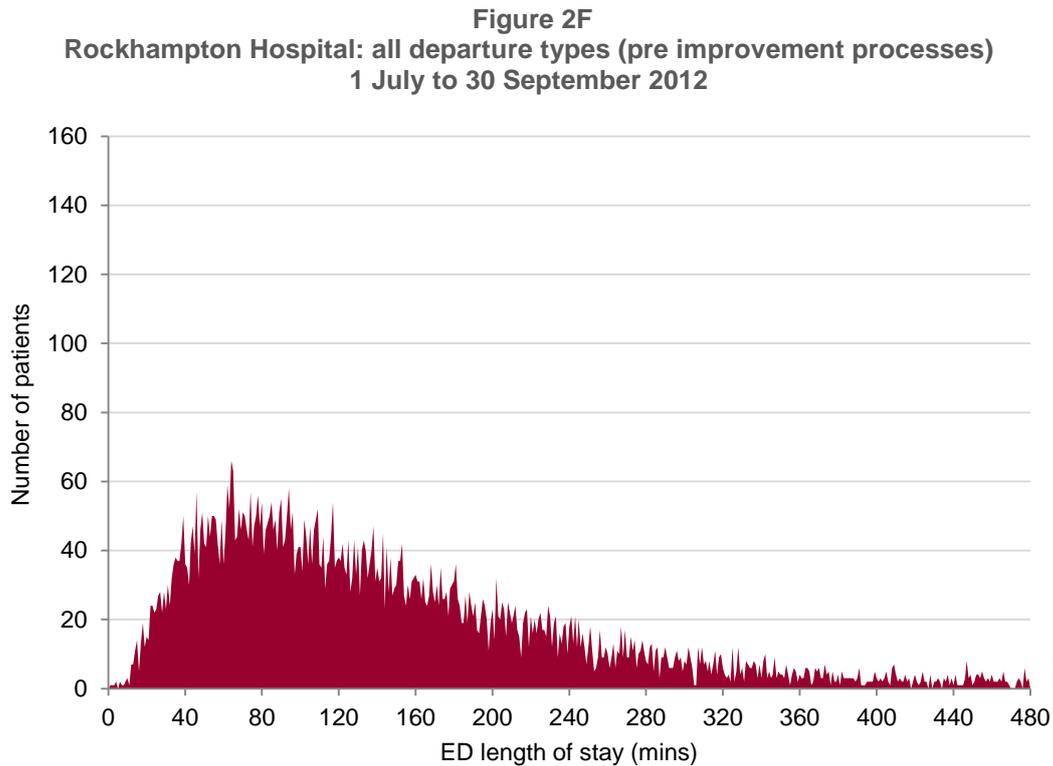
The Princess Alexandra Hospital has a different process; staff electronically keep a patient in the cubicle until it is confirmed that the area has been cleaned. While this process solved a problem with ambulance arrivals being moved into unsanitised rooms, the poor documentation of when each patient actually left resulted in a large number of records being unverifiable. The time needed to clean a treatment area can vary significantly.

The other EDs that we visited managed patient flow and sanitising rooms in a different manner.

ED performance data are highly susceptible to changes in practices and behaviour. At Rockhampton Hospital, the changes in behaviour are evident in the changing distribution of a patient length of stay across three points in time as shown in Figures 2F, 2G and 2H.

This illustrates a KPI bias where the time a patient departs the ED is recorded as just before the four-hour target. KPI bias results in inaccurate data; hospitals informed us this can affect their patient flow/bed management planning and their ability to roster ED staff effectively.

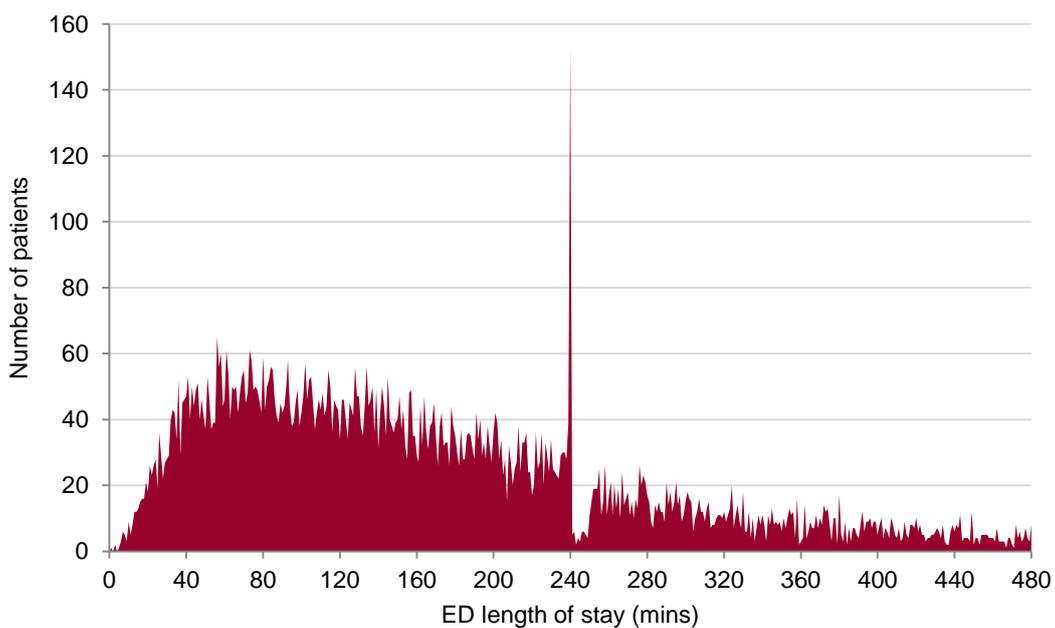
Figure 2F illustrates a three month period from July to September 2012, just before the improved four-hour target performance.



Source: Queensland Audit Office using extracted EDIS data

Figure 2G illustrates a three month period of January to March 2014, where records were amended to the four-hour KPI time, not the actual departure time.

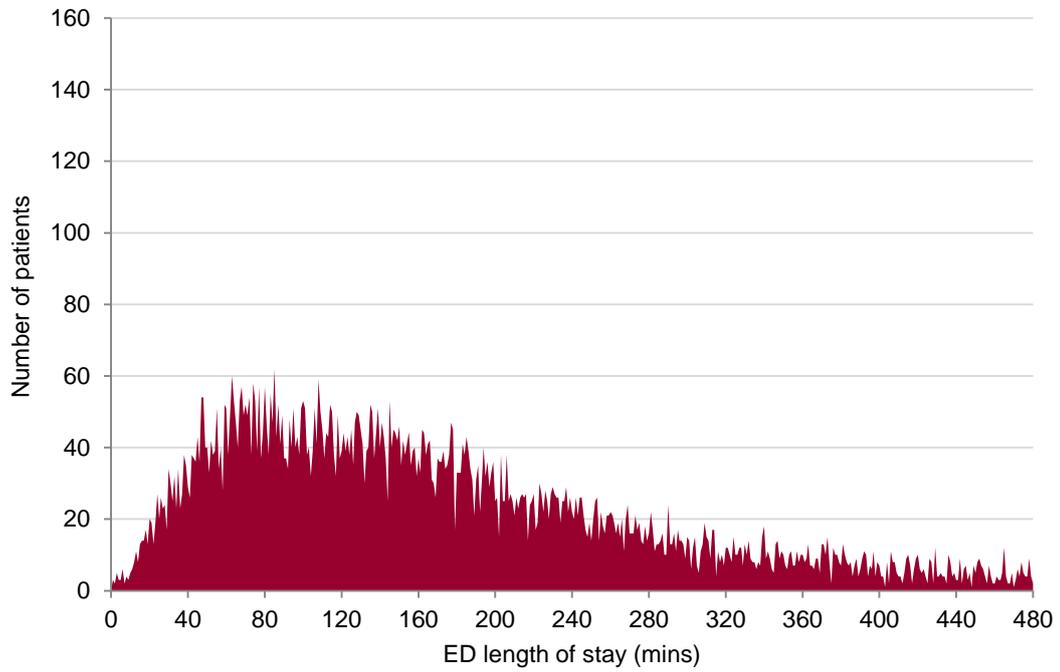
Figure 2G
Rockhampton Hospital: all departure types (post four-hour target introduction)
1 January to 31 March 2014



Source: Queensland Audit Office using extracted EDIS data

Figure 2H illustrates a three month period of April to June 2014, just after our audit team undertook field work at Rockhampton Hospital.

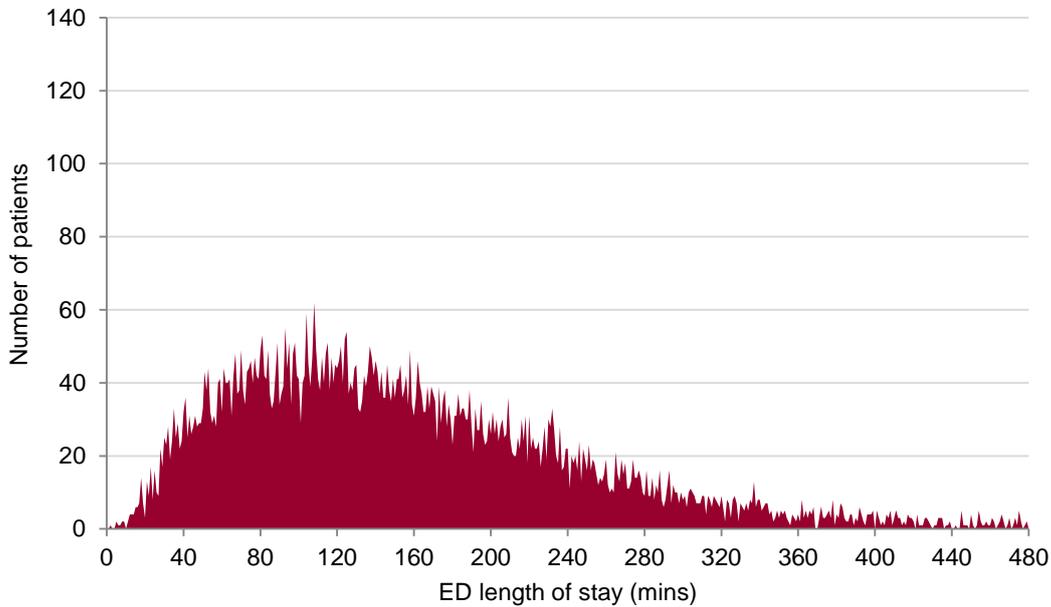
Figure 2H
Rockhampton Hospital: all departure types (after audit commenced)
1 April to 30 June 2014



Source: Queensland Audit Office using extracted EDIS data

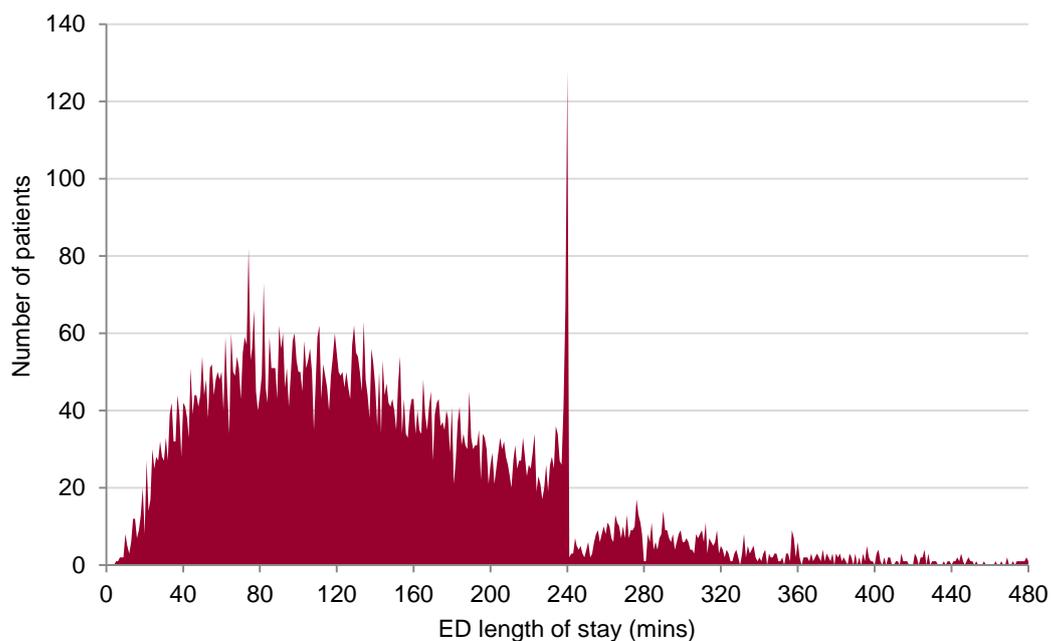
A similar change was observed for discharged patients at Redland Hospital as shown in Figures 2I, 2J and 2K. The spike at the four-hour target has halved at Redland Hospital; at Rockhampton Hospital, it is non-existent. Again, this change over April to June 2014 corresponded with the time our audit team engaged with Redland Hospital.

Figure 2I
Redland Hospital: discharges (pre improvement processes)
1 July to 30 September 2012



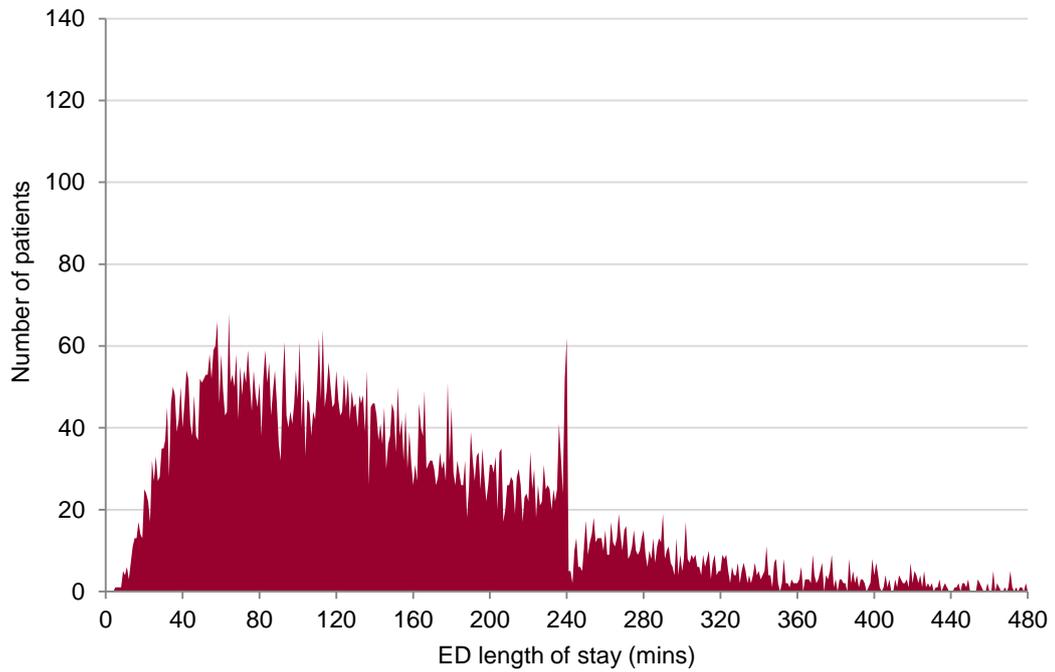
Source: Queensland Audit Office using extracted EDIS data

Figure 2J
Redland Hospital: discharges (post four-hour target introduction)
1 January to 31 March 2014



Source: Queensland Audit Office using extracted EDIS data

Figure 2K
Redland Hospital: discharges (after audit commenced)
1 April to 30 June 2014



Source: Queensland Audit Office using extracted EDIS data

2.3.4 Short stay units

The governance around how short stay units (SSUs) are used has improved with the advent of the NPA. The NPA required the DoH to issue specific policies for SSUs that met certain requirements:

- designated and designed for the short term treatment, observation, assessment and re-assessment of patients initially triaged and assessed in the ED
- have specific admission and discharge criteria and policies
- physically separated from the ED acute assessment area
- have a static number of beds with oxygen, suction and patient ablution facilities.

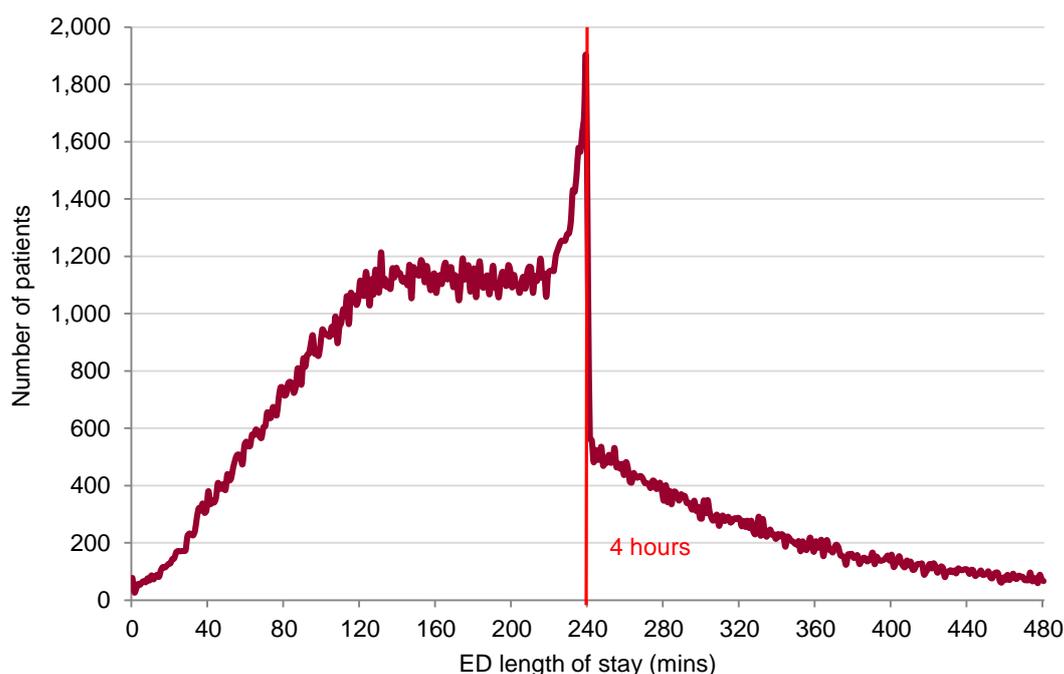
The hospitals we visited complied with these requirements.

Time of admission to short stay units

Approximately 10 per cent of all ED presentations are admitted to SSUs. All the hospitals we visited monitored SSU admissions, including the numbers and types of patients being admitted, time of admission and length of stay.

Figure 2L shows that, across all 24 hospitals with an SSU, 8.5 per cent of patients are admitted to the SSU in the 15 minutes just before the four-hour target.

Figure 2L
Time of admission to short stay units
1 January 2012 to 30 June 2014



All hospitals with Short Stay Units except the Mater public facilities

Source: Queensland Audit Office using extracted EDIS data

The DoH protocols and guidelines applicable during the testing period recommend that:

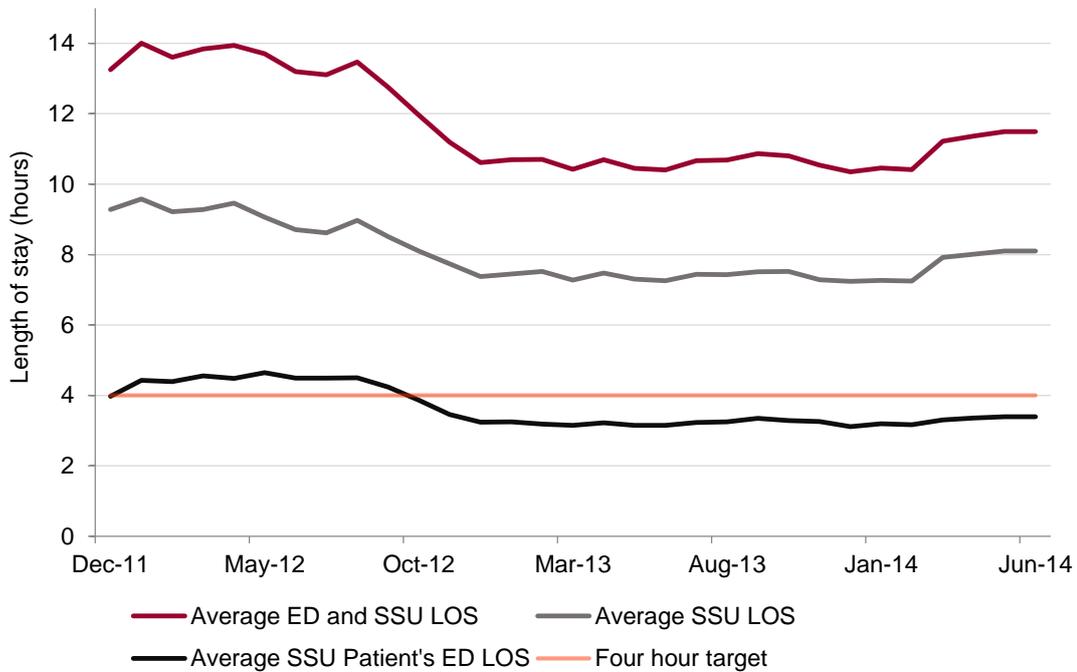
- the decision to admit a patient to an SSU is made in the first hour
- the patient is transferred within the second hour.

Despite early identification, medical staff prefer to keep patients in the ED for the majority of the 'work-up'.

Length of stay in short stay units

The combined average length of stay for patients admitted to SSUs, including ED length of stay, was just over 11 hours. This is illustrated in Figure 2M.

Figure 2M
Average length of stay in the emergency department, short stay units and combined
1 December 2011 to 30 June 2014



All hospitals with Short Stay Units except the Mater public facilities

Source: Queensland Audit Office using extracted EDIS data

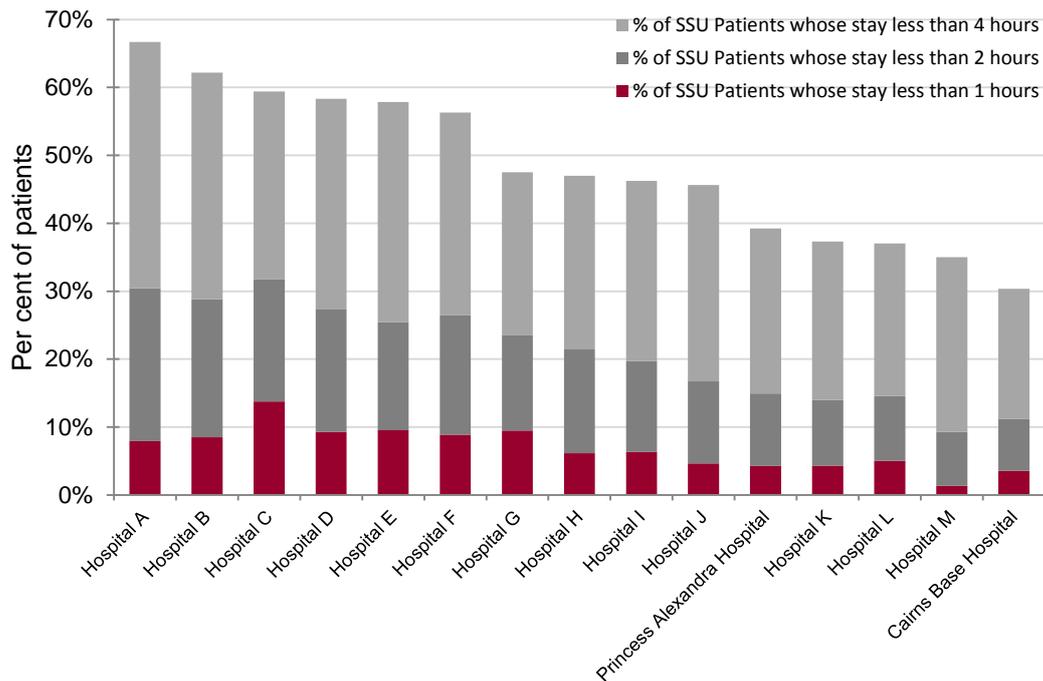
SSUs are designed for stays of between four hours and 24 hours, which is consistent with the NPA and DoH policy that SSUs are not to be used as ED overflows. The combined length of stay in Queensland EDs and SSUs has fallen from an average of 13.5 hours in early 2012 to just over 11.5 hours in the last three months of the 2014 calendar year.

While the combined ED and SSU length of stay average is 11.5 hours, patients are being admitted to meet the four-hour target and not when they are identified as being suitable for admission.

Figure 2N shows 15 hospitals (including two of the hospitals we visited), comprising 72 per cent of all SSU admissions, admit between 30 and 60 per cent of their SSU patients for less than four hours. Twenty-two of 24 hospitals with SSUs admit more than 20 per cent of their SSU patients for less than four hours.

The average combined ED and SSU length of stay at these 15 hospitals has fallen from 12.5 hours to 10.5 hours, indicating that this cohort of patients may always have been destined to have an overall length of stay greater than four hours. As Figures 2L and 2N illustrate, use of SSUs in this manner is more the norm than the exception.

Figure 2N
Patients staying less than four hours in the short stay unit
1 January 2012 to 30 June 2014



Only the hospitals we visited as part of the audit have been named.

Source: Queensland Audit Office using extracted EDIS statewide data

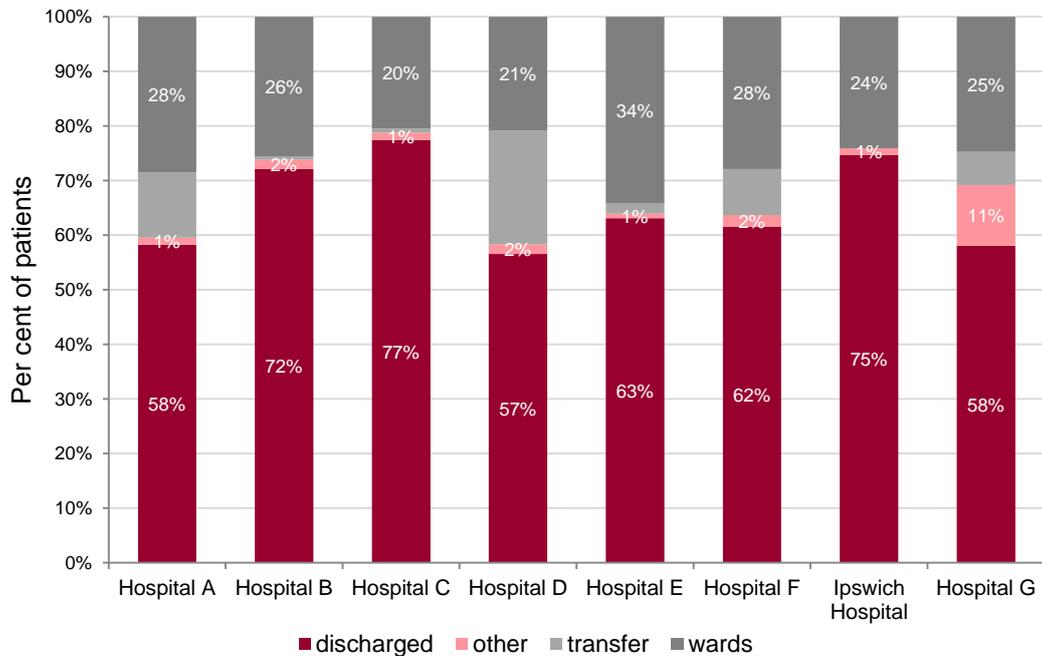
Some of the hospitals informed us that strict adherence to the policy would not generate the best outcomes for patients. If the ED was at capacity with additional patients in the waiting room, ED staff would admit stable patients to the SSU to free up a cubicle to treat new patients. While this approach provides timely care and improves patient flow in the short term, it uses the SSU as an ED overflow and, if regularly used in this manner, shifts capacity constraints.

Admissions from short stay unit to other wards

The NPA and the DoH also require that SSUs are not to be used for patients awaiting a bed on the inpatient wards. The DoH and HHSs have not set a target within a policy or guideline for the percentage of patients who should be admitted to inpatient wards from SSUs. As a general practice, some of the hospitals we visited targeted an admission rate of less than 10 per cent, while others targeted less than 15 per cent. The DoH is developing an indicator that would act as a warning for EDs to review their criteria on how they assess patient eligibility for admission to SSUs.

Figure 2O indicates eight EDs (including one of the hospitals we visited—Ipswich Hospital) are admitting more than 20 per cent of all SSU patients to an inpatient ward. Two of these hospitals are also transferring a further 12–20 per cent of patients to other hospitals. We were informed this practice promotes patient flow in the ED, opening up free cubicles to treat new patients. These metrics indicate that, at these hospitals, SSUs are being used as a temporary overflow area or to house patients who are awaiting a ward bed allocation.

Figure 2O
Types of departure by admitted short stay unit patients
1 January 2012 to 30 June 2014



Only hospitals with greater than 20 per cent of short stay unit patients being subsequently admitted to inpatient wards
Only the hospital we visited as part of the audit has been named.

Source: Queensland Audit Office using extracted EDIS data

2.4 Unplanned re-attendances

Unplanned re-attendances refer to patients who return to the emergency department for the same or similar reason within a short period of time; this metric provides an indicator of whether patients are receiving sufficient treatment in the ED on their first visit to resolve their complaint. The hospitals we visited monitored this metric.

There was no material change in the number of unplanned re-attendances presentations across the state or at an individual hospital level after the introduction of the four-hour target (4.09 per cent in 2012–13 to 4.35 per cent in 2013–14). This indicator suggests that the quality of care provided was not diminished in seeking to provide faster ED service.

2.5 Reporting inconsistencies

The states and territories have agreed to report data in a manner consistent with the National Health Data Dictionary; this allows inter-jurisdictional comparisons and a consistent basis on which to provide reward funding.

Across and within the hospitals we visited, we found a consistent understanding of the national standards for recording patient arrival and departure times. We noted differing interpretation of when a patient has 'left at their own risk' or 'left after treatment commenced' (LATC) compared to 'did not wait for treatment' (DNW).

2.5.1 Left after treatment commenced

The National Health Data Dictionary, issued by the Australian Institute of Health and Welfare, states contact associated with triage and taking observations before making clinical decisions does not constitute the commencement of a service.

Therefore, if a patient leaves before a clinical decision is made, he or she is classified as DNW.

Commencement of a service is contingent on beginning treatment in accordance with a recognised clinical pathway. If a patient leaves after treatment commences in accordance with a recognised clinical pathway, the patient is determined to have LATC. The Australian Institute of Health and Welfare published examples reproduced in Appendix F of this report.

This definition is important for two reasons:

- The percentage of patients who leave before receiving treatment (DNW) is publicly reported as an indicator of dissatisfaction and underlying problems in an ED.
- Queensland hospitals do not receive funding for patients who did not wait, but do for patients who leave after treatment has commenced.

The DoH has issued an EDIS terminology reference guide which provides a definition for patients who DNW which contradicts the National Health Data Dictionary. The DoH guidelines state that patients who DNW have not undergone a triage or assessment process.

All Queensland public EDs require that patients are triaged first, then registered as an arrival; this was a recommendation from the Metropolitan Emergency Department Access Initiative report agreed by government. Queensland public EDs now have clear signage and procedures in place to ensure this occurs.

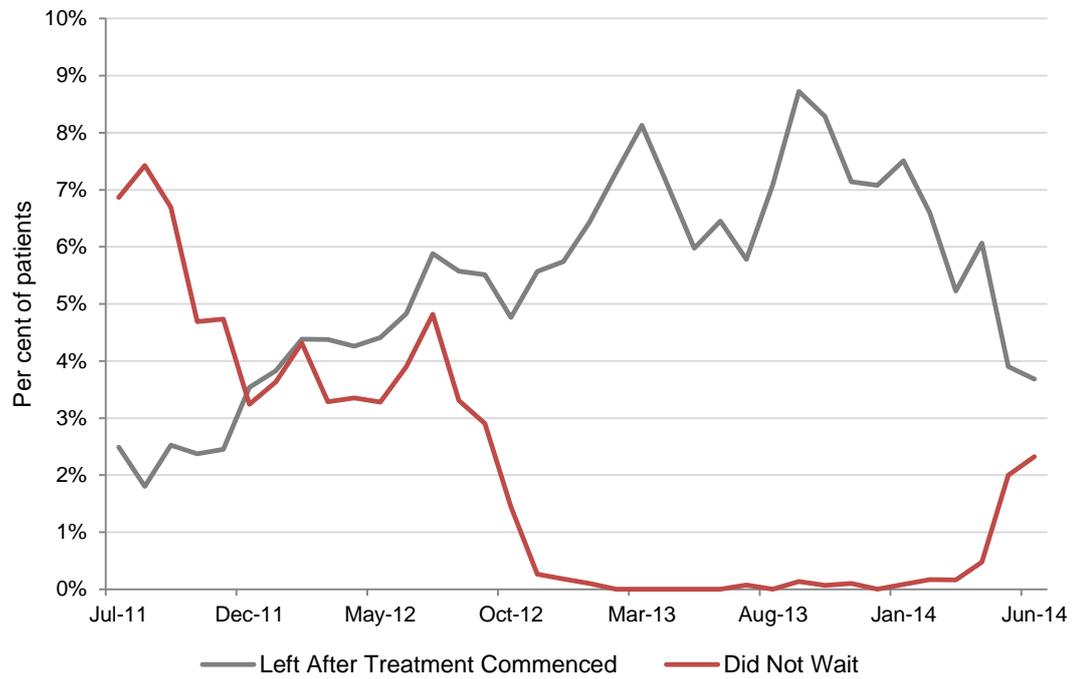
Adopting the DoH definition, therefore, should result in zero DNW patients and publicly reporting this metric becomes meaningless.

Only Ipswich and Cairns Hospitals have adopted the DoH definition.

Effects of differing interpretations

Figure 2P and 2Q demonstrate how the differing interpretations affect the publicly reported DNW metric when compared to LATC. When the DoH interpretation was implemented in Cairns and Ipswich Hospitals, the number of patients categorised as DNW fell to almost zero, whereas the number of patients categorised as LATC increased by more than 100 per cent. The number of DNW patients increased at these hospitals in April, after the audit commenced; however, administrators assert this was incidental to the audit.

Figure 2P
Cairns and Ipswich hospitals: Did not wait vs left after treatment commenced
1 July 2011 to 30 June 2014

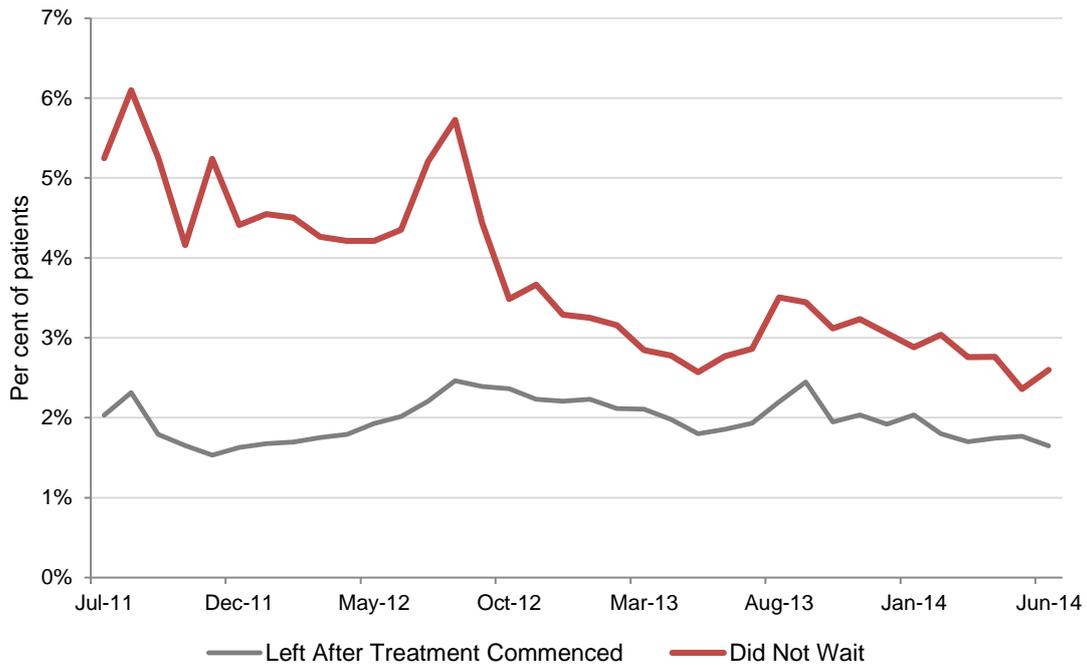


Source: Queensland Audit Office using extracted EDIS data

Figure 2Q illustrates that, over the period November 2012 to April 2014, reporting hospitals (excluding Cairns and Ipswich hospitals) average 2.2 per cent of patients who left after treatment commenced. Ipswich and Cairns Hospitals averaged 6.8 per cent.

Similarly, over the same period, the reporting hospitals (excluding Cairns and Ipswich hospitals) average 3.3 per cent of patients who did not wait compared to Cairns and Ipswich who average 0.1 per cent.

Figure 2Q
Other reporting hospitals: Did not wait vs left after treatment commenced
1 July 2011 to 30 June 2014



Reporting hospitals as listed in Appendix C; excludes Cairns and Ipswich hospitals

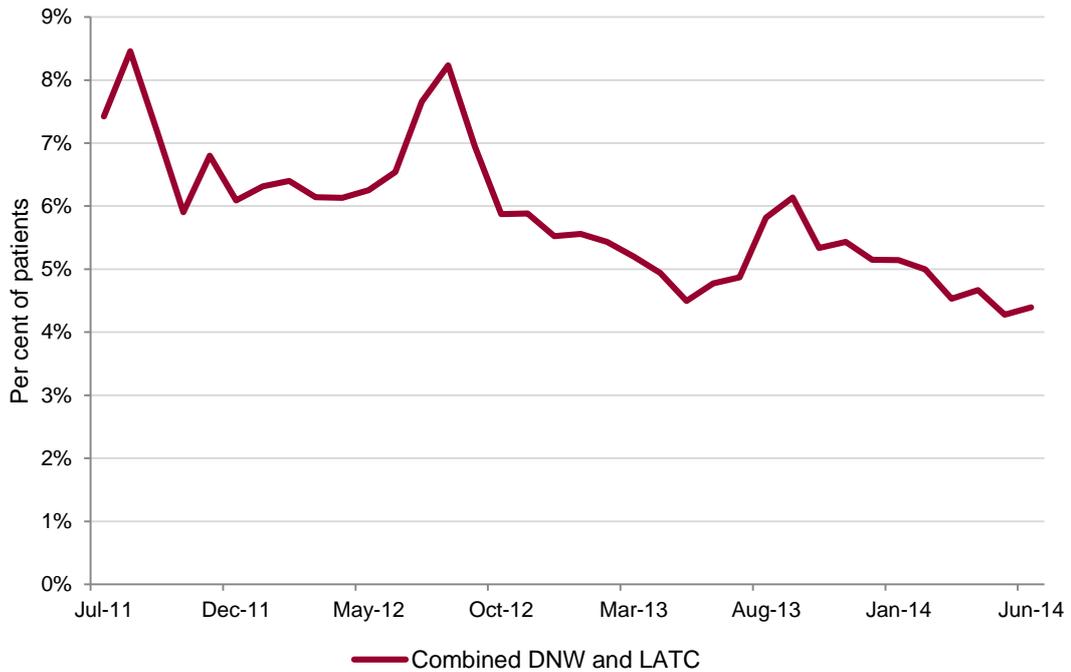
Source: Queensland Audit Office using extracted EDIS data

HHSs do not receive funding for patients who DNW but receive the same amount for a patient who LATC compared to a patient who has completed his or her treatment. We analysed the data for all reporting EDs and the results indicate that they have not adopted the DoH's definition. If they had done so in the 2013–14 year, the DoH would have been required to pay an additional \$7.7 million in funding to hospitals through HHSs (excluding Cairns and Ipswich Hospitals). This is a conservative estimate as we have used the lowest value paid by the DoH for ED activity.

2.5.2 Improvement in completed treatment

The number of people departing the ED before being discharged has been steadily falling. Figure 2R illustrates that, in the last three years to June 2014, the combined number of people who LATC or DNW for treatment has fallen from 7.4 per cent to 4.4 per cent. This indicates that the four-hour target is improving access to the ED as more patients are waiting for their treatment to be finalised.

Figure 2R
Did not wait and left after treatment commenced (combined)
1 July 2011 to 30 June 2014

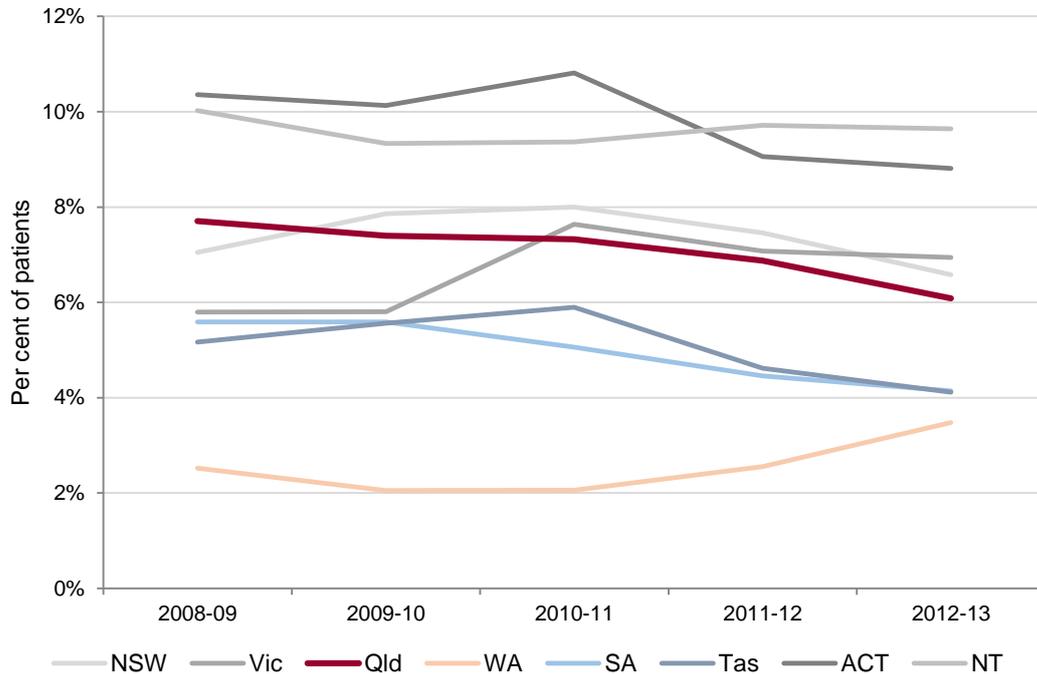


Reporting hospitals as listed in Appendix C

Source: Queensland Audit Office using extracted EDIS data

Figure 2S shows Queensland, when compared to other jurisdictions, has experienced the largest percentage point decrease of 1.6 per cent from 2008–09 to 2012–13. For 2012–13, Queensland has the fourth lowest number of patients, at 6.1 per cent, who leave the ED against medical advice. In the same year, four other jurisdictions also experienced a decrease; only Western Australia experienced an increase.

Figure 2S
Did not wait and left after treatment commenced (combined) nationally
2008–09 to 2012–13



Jurisdictional data for the 2013-14 year was not available at the time of writing

Source: QAO using Australian hospital statistics reports, Australian Institute of Health and Welfare

2.6 Recommendations

It is recommended that the Department of Health and the Hospital and Health Services:

- ensure the definition of 'did not wait' is clearly understood by:**
 - aligning the Emergency Department Information System terminology reference guide definition of 'did not wait' with the National Health Data Dictionary**
 - clearly communicating and explaining to emergency department staff how the definition is to be applied**
 - publicly reporting both the number and percentage of patients who did not wait for treatment and those who left after treatment commenced**
- review the role of short stay units and formalise guidelines on their operation and management to reduce inappropriate inpatient admissions.**

3 Controls to assure data integrity

In brief

Background

The Emergency Department Information System (EDIS) has changed from being a patient flow and monitoring tool to an all-encompassing emergency department management system. EDIS is tasked with accurately recording time at one-minute increments and the results are being used for funding purposes and to report performance publicly.

Hospitals employ business practice improvement officers to validate EDIS data.

Conclusions

EDIS has not been customised to meet the requirements of an effective time based management system, nor secured to protect sensitive data. The controls around access to the system and entering and validating data are weak; this reduces the integrity of the time events that are recorded and the accuracy of publicly reported performance results.

Key findings

- Staff members frequently share user access to EDIS, enabled by a long automatic log-out and driven by the inconvenience of having to log in every time data entry is required.
- Audit logs are turned off which renders it almost impossible to determine who entered or amended data and when.
- Data validation processes are inconsistent and amendments to records are not approved or reviewed for accuracy.

Recommendations

It is recommended that the Department of Health and the Hospital and Health Services:

3. ensure datasets are accurate and verifiable by:

- **reviewing and implementing controls to ensure timely and accurate recording of patient information in the Emergency Department Information System**
- **recording retrospective amendments that are evidenced and authorised**
- **reassessing the information technology constraints that led to audit logs being turned off with a view to re-enabling audit logs and improving accountability.**

3.1 Background

Over time, the requirements for the Emergency Department Information System (EDIS) have changed from a patient flow and monitoring tool. Since January 2012 when the length of stay in emergency departments started to be measured and publicly reported for funding purposes, EDIS has been used to capture time at one-minute increments.

EDIS terminals vary in their placement around Queensland emergency departments (EDs). Most hospitals do not place EDIS terminals in every cubicle or treatment area. While this would allow for immediate data entry and viewing of patient information, it increases risks of unauthorised access and unintentional damage to terminals.

Most hospitals instead have centralised banks of EDIS terminals. This layout reduces the risk of inappropriate access by the public, but requires medical staff to leave the patient to enter or view data. This in turn encourages data to be entered in batches and not immediately after the event or incident.

Time stamps are recorded at key points as patients progress through the ED. EDIS allows users to either enter the current time by clicking 'now', where real-time data entry is appropriate, or, if they are typing notes for actions undertaken in the past, to enter the time these events occurred retrospectively.

Hospitals are responsible for ensuring the data they capture are accurate; however, the *Hospital and Health Boards Act 2011* places the onus of validating data with the Department of Health (the DoH).

To improve the efficiency of undertaking a data validation process, many Queensland public hospitals employ data managers, known as business practice improvement officers (BPIOs) to cleanse and validate data in EDIS. The DoH has developed pro forma reports to aid staff in this task. BPIOs are not involved in patient care.

Access to EDIS needs to be easy and efficient for authorised users, due to the time pressures in providing emergency care. There also needs to be sufficient accountability for entering data into a patient's records. The DoH has policies, procedures and guidelines on how to use the EDIS application and the Hospital and Health Services (HHSs) offer or arrange training for staff in its use.

We expected to find that controls were robust, supported the accurate capture and maintained the integrity of data.

3.2 Conclusions

EDIS is critical as a patient flow and management tool. It has not been adapted by the DoH to meet the requirements of an effective time based management system, nor that of a secure system. An effective time based management system is a requirement in an environment where minutes matter in the measurement of performance at both a state and federal level.

The controls around electronic user access, data entry and audit logs are not robust and increase the risk of inaccurate and unverifiable records. There is no evidence that EDIS controls or risks were reviewed to ensure it would meet the *National Health Reform Agreement—National Partnership Agreement on Improving Public Hospital Services* (the NPA) requirements that data are both accurate and verifiable.

The controls over data quality are insufficient to provide assurance that the reported performance adequately reflects actual performance. The ownership of medical records is poor which reduces accountability for ensuring that the data are captured accurately.

A lack of audit logs and shared access to EDIS means it is almost impossible to determine who has entered or amended data and when. Combined with inconsistent data validation processes, this compromises the accuracy of the state's dataset and may also present an incomplete picture of a patient's ED experience when required for medico-legal purposes.

3.3 Controls over data integrity

3.3.1 User access

At a hospital level, there is an effective process in place to grant and extend EDIS access to those who need it; however, controls at a system level lack sufficient security to protect data from inappropriate access.

Logging on to EDIS is restricted by a user name and password. Staff at the facilities we visited informed us that they generally do not log themselves out of EDIS after they have finished entering data because logging in again takes too long. This reduces the effectiveness of having different levels of user access.

EDIS has an automatic log-out for inactive use. This is set at 200 minutes (3 hours, 20 minutes). The long automatic log-out for inactive use greatly reduces the need for staff to log on throughout the day, but reduces the accountability for actions taken in EDIS and increases the risk of inappropriate or unauthorised access to confidential patient information. Once logged in, anyone can enter data, assign doctors and nurses to patients, electronically move and discharge a patient, view clinical notes and write clinical comments. The only password protected functions are the ability to write new clinical notes, or to assign the password holder as the triage nurse or as the person who registered the patient and took his or her demographics.

3.3.2 Data entered retrospectively

There are appropriate reasons to adjust manually or to enter retrospectively the time a person has been seen for the first time or departed the ED. The focus of medical staff is on patient treatment: for example, should a category 1 patient present at the ED, the staff will immediately attend to the patient, and complete EDIS records afterwards. Occasionally staff may omit to record that a patient has left the ED, and will need to record retrospectively the time the patient left; this can mean entering an approximate time, based on memory.

Although necessary and appropriate in certain circumstances, writing records retrospectively increases the risk of recording inaccurate times due to:

- digit bias—the preference for rounding to the nearest 30 minutes
- key performance indicator (KPI) bias— entering a time just before the KPI time.

The DoH has a protocol that outlines the information to be included in clinical notes (whether electronically in EDIS or manually in patient medical records). It states that the time of entry shall be distinguished from the actual time of the incident, event or observation being reported.

EDIS automatically time stamps all clinical notes when they are saved. If the clinical note was written retrospectively, staff are required to record manually the time the event occurred in the free text field. At the EDs we visited, documentation of the time that events occurred (electronically or on paper) was inconsistently undertaken. We noted 42 of 325 records where it was not clear whether data were being entered retrospectively or at the time the actual event occurred. This reduces the reliability of the record if required for medico-legal purposes.

3.3.3 Audit logs

The audit logs in EDIS have been disabled, due to a system performance problem experienced a decade ago when EDIS used a separate database for each site. Since this time, EDIS has been migrated to a central database but the performance issues were not re-assessed and there is no evidence to support the continued claim of a performance problem if audit logs were to be re-enabled.

In the current environment, audit logs—if they were turned on—would improve the transparency of when data had been created or if and when data had been amended. Without additional password controls, audit logs would not be adequate to determine who created or amended the data.

There are other EDIS database tables that provide a limited ability to determine who may have treated a patient (staff history table) and where a patient was treated (patient location history table). The information in these tables does not provide the accountability that would be available if the DoH had enabled EDIS audit logs. The tables can be amended by campus administrators, but not by standard users.

3.4 Data validation

EDs operate 24 hours a day, seven days a week. Larger EDs can see up to 200 patients a day, with many of the larger regional and urban hospitals seeing 120 to 180 patients per day, every day. Consequently, thousands of records are being generated and updated across the state on a daily basis.

Under the NPA, the DoH is required to submit disaggregated ED datasets to the Commonwealth that are accurate and verifiable. The datasets are used for the purpose of calculating the National Emergency Access Target (the NEAT) performance and eligibility for reward funding. Regardless of the volume of records generated, quality assurance tests over the data must be performed to ensure data accuracy and integrity.

3.4.1 Validation controls

The Commonwealth has provided a base set of data validation tests to ensure a level of data integrity and comparability between jurisdictions. The dataset must pass 18 logic validations tests at a statewide level before being accepted; for example, departure from the ED cannot be before arrival. As EDIS does not have these controls built in, manual validation checks must be undertaken.

The validation tool highlights a further 96 areas for testing, including whether unusual distributions or results are returned, based on historical submissions; however, these are not compulsory. As the compulsory tests focus on logic only, unusual trends and unexpected behaviours can go unnoticed and individual hospitals are not subject to a level of scrutiny.

3.4.2 Validation outcomes

The DoH has developed exception reports to assist hospitals and has placed the onus on them for ensuring datasets are accurate and verifiable. This is despite the *Hospital and Health Boards Act 2011* requiring the DoH to validate data. Hospitals can choose when and how often these tests are run. As a consequence, we noted a large variance in the quality and frequency of the data validation process in the five hospitals we visited. This has required the DoH to change hospital records frequently to ensure the dataset is accepted by the Commonwealth. These amendments are not validated with the hospitals concerned.

The Princess Alexandra Hospital does not review data to identify a patient's correct length of stay. The hospitals that do have this review process focus on KPI breaches, but do not review the data for those who met the KPIs.

Amending data

Although the DoH has policies, procedures and guidelines on how to use EDIS, the documentation does not provide guidance on appropriate circumstances and processes for amendments. None of the facilities we visited had procedures to govern amending EDIS records. Decisions and practices for amending EDIS data are discretionary and inconsistent. This results in variances between hospitals and staff and affects the reliability and comparability of the data.

Rockhampton Hospital validates data for breaches of the four-hour target and the time first seen KPIs; however, records are not amended to the correct time but to one minute before the KPI. As an example, we found a patient had been discharged from the Rockhampton Hospital ED within 33 minutes of arrival. The patient's clinical notes were written 5 hours and 30 minutes later and recorded a length of stay of 4 hours and 19 minutes. The record was subsequently amended by administration staff to 239 minutes (one minute before the four-hour target), rather than to the patient's true departure time. This practice does not result in a performance benefit, but adversely affects the accuracy of the hospital's reporting, its patient flow analysis and, potentially, its roster planning.

Medical staff at the hospitals we visited rarely reviewed or amended patient records from the previous day as the validation task is the responsibility of the BPIOs. BPIOs do not necessarily have a clinical background and their amendments are not subject to review or approval by another staff member.

None of the five hospitals we visited kept appropriate and sufficiently detailed records to give evidence of:

- which records were changed
- why the changes were made; that is, the basis for determining an amendment to the record was appropriate
- which record fields were amended.

Without a sufficient audit trail, hospital administrators cannot be sure of the accuracy and appropriateness of amended patient records. This can have a significant medico-legal implication if a patient has an adverse medical outcome and spent a period of time in the ED.

The BPIOs at hospitals we visited informed us that, before amending records, they looked for corroborating evidence within EDIS, within patient charts or spoke to the appropriate medical staff member. The reasons for the amendments and details of the corroborating evidence were not recorded and could not be verified in all instances.

3.5 Recommendations

It is recommended that the Department of Health and the Hospital and Health Services:

- 3. ensure datasets are accurate and verifiable by:**
 - **reviewing and implementing controls to ensure timely and accurate recording of patient information in the Emergency Department Information System**
 - **recording retrospective amendments that are evidenced and authorised**
 - **reassessing the information technology constraints that led to audit logs being turned off with a view to re-enabling audit logs and improving accountability.**

4 Admissions achieving the four-hour target

In brief

Background

The four-hour target has been measured and reported on a calendar year basis since 1 January 2012. It applies equally to admissions and discharges.

Conclusions

Queensland will not achieve the 2014 and 2015 National Emergency Access Target without increasing the percentage of patients who are admitted to inpatient wards from the emergency department within four hours.

Key findings

- As of 30 June 2014, approximately 85 per cent of all discharged patients depart the emergency department within four hours, compared to approximately 35 per cent of admitted patients.
- The combined admissions to inpatient wards or short stay units has risen from 23 per cent to 31 per cent of all presentations.
- In some hospitals, the decision of when to admit patients to short stay units is made to meet the four-hour target— not when patients are identified as suitable for admission and stable.

Recommendation

It is recommended that the Department of Health and the Hospital and Health Services:

4. **prior to the completion of the *National Health Reform Agreement—National Partnership Agreement on Improving Public Hospital Services*, undertake a clinical, evidence based review of the emergency access target to determine an achievable target or targets encouraging timely decision making without compromising patient safety.**

4.1 Background

The four-hour target aims to motivate jurisdictions to reduce barriers to timely admission and overcrowding so more patients may be treated.

The four-hour target applies equally to all hospitals, regardless of the number of presentations or percentage of emergency admissions compared to patients discharged home.

Statewide, the effects of changed processes from clinical redesign initiatives largely became visible in September 2012. This coincided with:

- the commencement of the MacroNeat project
- implementation of the Metropolitan Emergency Department Access Initiative recommendations
- the increasing use of short stay units (SSUs).

4.2 Conclusions

Queensland public emergency departments (EDs) are treating more patients within four hours with the level of patient quality and care remaining high. Queensland performed strongly compared to other jurisdictions and has made the greatest reported improvement since 2009–10.

Nonetheless, Queensland hospitals will struggle to achieve the 2014 and 2015 four-hour targets of 83 per cent and 90 per cent of patients presenting to an ED leaving within four hours of arrival, while admissions to inpatient wards are consistently occurring after the four-hour target. Patients requiring admission often have complex medical issues and require more care than discharged patients. There are multiple causes for admissions exceeding the four-hour target; but often the decision to admit a patient is not being acted upon in a timely manner. Delays in requesting and performing a consultation reduces the time available to prepare a bed on the ward, which contributes to admissions failing to meet the four-hour target.

4.3 Admissions achieving the four-hour target

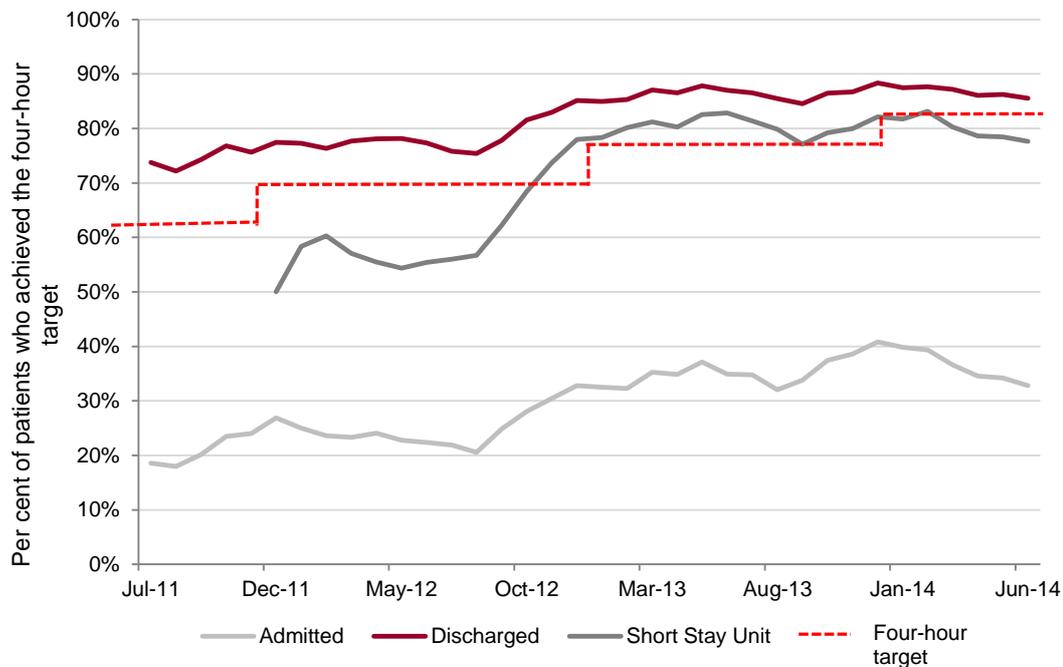
Admitting patients to wards is the greatest barrier to achieving the four-hour target for a number of reasons, all of which add time to patient length of stay:

- Patients requiring admissions generally have more complex conditions
- Admission requires a handover process; this can involve an initial consultation before requesting a bed and then a handover of clinical responsibilities to the inpatient team
- Before transferring the patient, ED staff liaise with inpatient teams to ensure a bed is available and the ward room prepared for the patient.

Figure 4A illustrates that, while the percentage of patients admitted to hospital within four hours has improved by 14 per cent from July 2011 to June 2014, less than 40 per cent of admitted patients are physically transferred to the wards within four hours.

In contrast, since its introduction, Queensland has consistently achieved the four-hour target for patients who are discharged home. Similarly, the four-hour target has been met for patients who are admitted to SSUs in 2013.

Figure 4A
Four-hour target by admission status
1 July 2011 to 30 June 2014

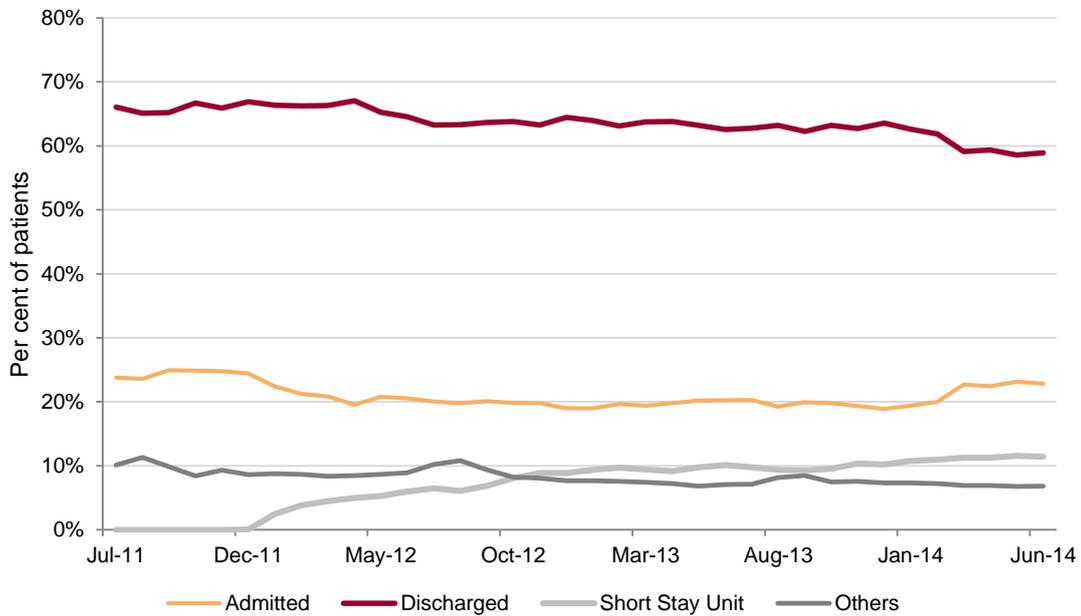


Reporting hospitals as listed in Appendix C

Source: Queensland Audit Office using extracted Emergency Department Information System data (EDIS)

Most people who present to EDs are discharged, as illustrated in Figure 4B. Over the last two and half years to June 2014, this has averaged 65 per cent and has only slightly decreased since July 2011. Over the same period, the number of people admitted to inpatient wards and SSUs has risen from 23 per cent to 31 per cent.

Figure 4B
Departure status of emergency department presentations
1 July 2011 to 30 June 2014



Reporting hospitals as listed in Appendix C
'Other' includes 'did not wait', 'left after treatment commenced', 'died in the ED', 'dead on arrival' and 'transferred to another facility'.

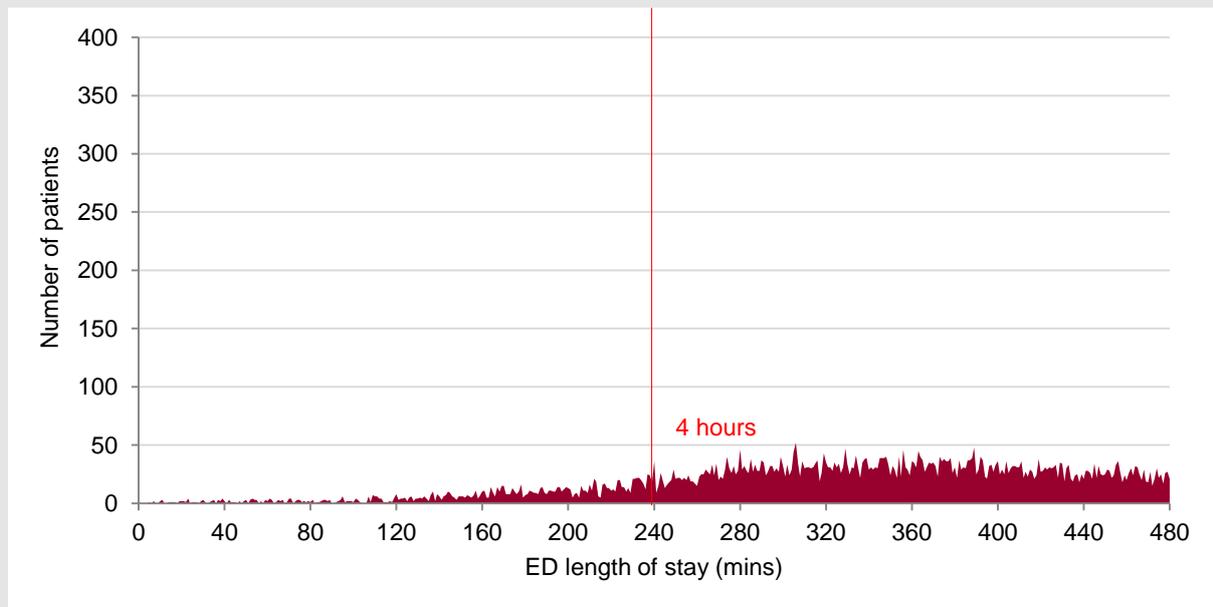
Source: Queensland Audit Office using extracted EDIS data

Case study 1

Effect of the patient departure mode on the four-hour target

Redland Hospital admits 14.3 per cent of all ED presentations and discharges 73.7 per cent. Of the 14.3 per cent admitted, 10.5 per cent depart the ED within four hours as shown in Figure 4C. In contrast, 89.8 per cent of discharged patients depart within four hours. This equates to a combined result of 76 per cent of ED presentations leaving within four hours. EDs have greater control over a discharged patient's journey compared with admitted patients. This is because discharged patients have lower levels of acuity and generally require less intensive treatment and monitoring.

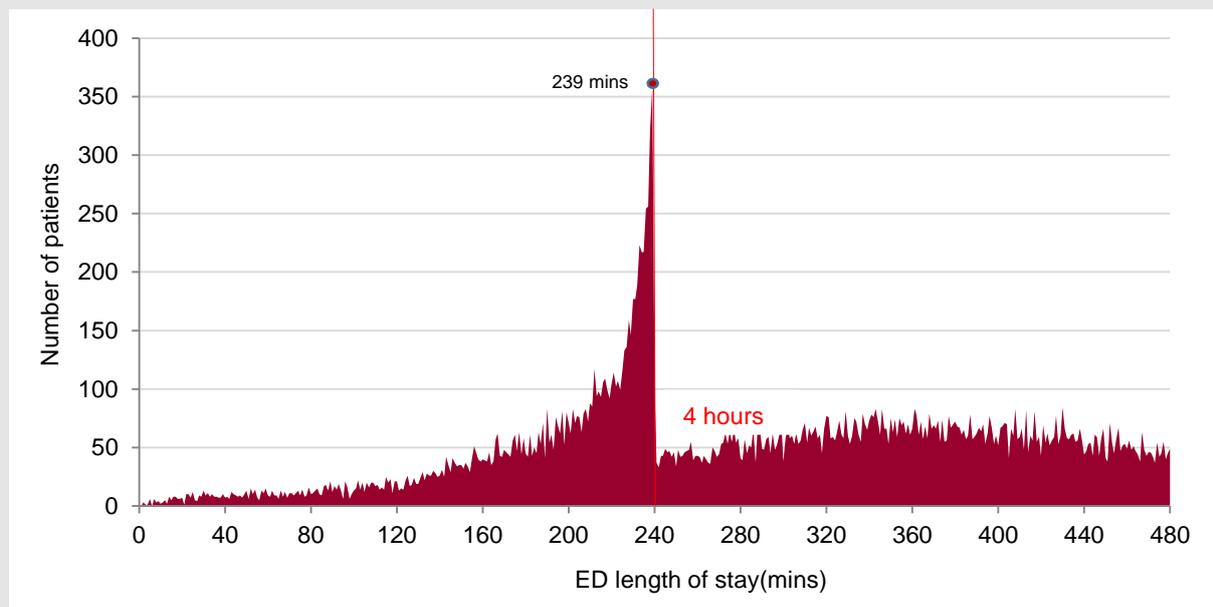
Figure 4C
Redland Hospital emergency department stay for 1 October 2012 to 30 June 2014



Source: Queensland Audit Office using extracted EDIS data

By comparison, the Princess Alexandra Hospital (PAH) admits 31.3 per cent of all presentations to inpatient wards, more than double the percentage points that Redland Hospital admits. More than 29.6 per cent of admitted patients at PAH depart the ED within four hours, 19.1 percentage points more than Redland, yet on an ED basis, PAH only achieves 64.4 per cent of all patients departing the ED within four hours.

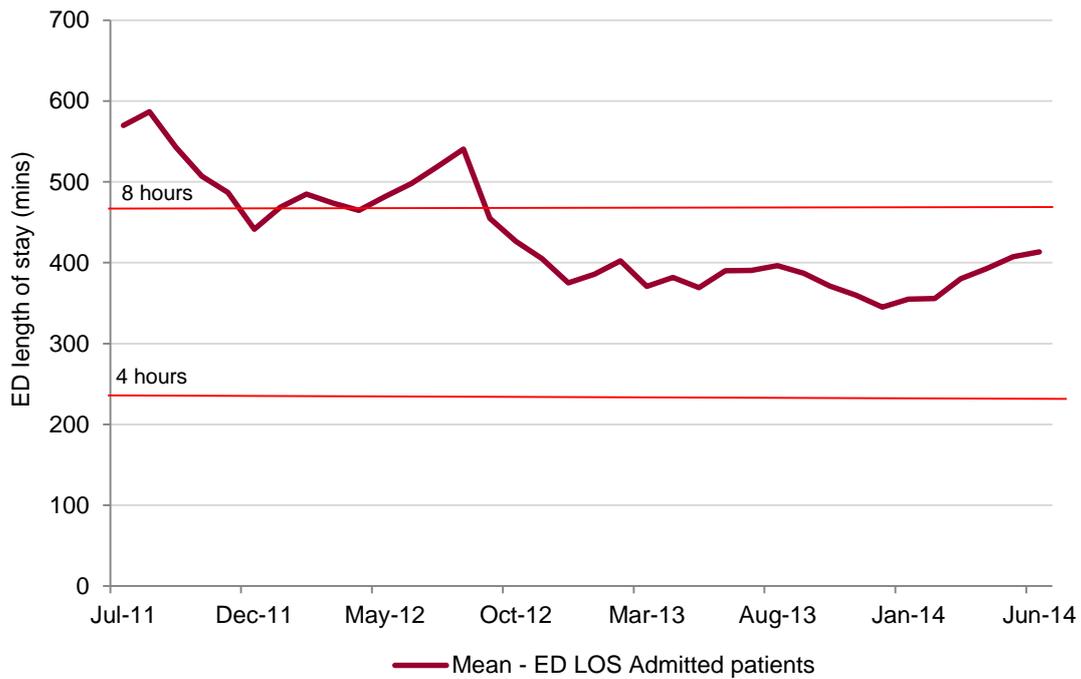
Figure 4D
Princess Alexandra Hospital emergency department stay for 1 October 2012 to 30 June 2014



Source: Queensland Audit Office using extracted EDIS data

Statewide, approximately 20 per cent of ED presentations are admitted to the inpatient wards. Figure 4E shows that, since the introduction of the four-hour target, the average ED length of stay, from arrival through to being transferred physically to the inpatient ward, has fallen from approximately eight to 5.75 hours, before rising to seven hours over the last six months.

Figure 4E
Average length of stay from ED arrival to inpatient ward transfer
1 July 2011 to 30 June 2014



Reporting hospitals at 30 June 2014 as listed in Appendix C

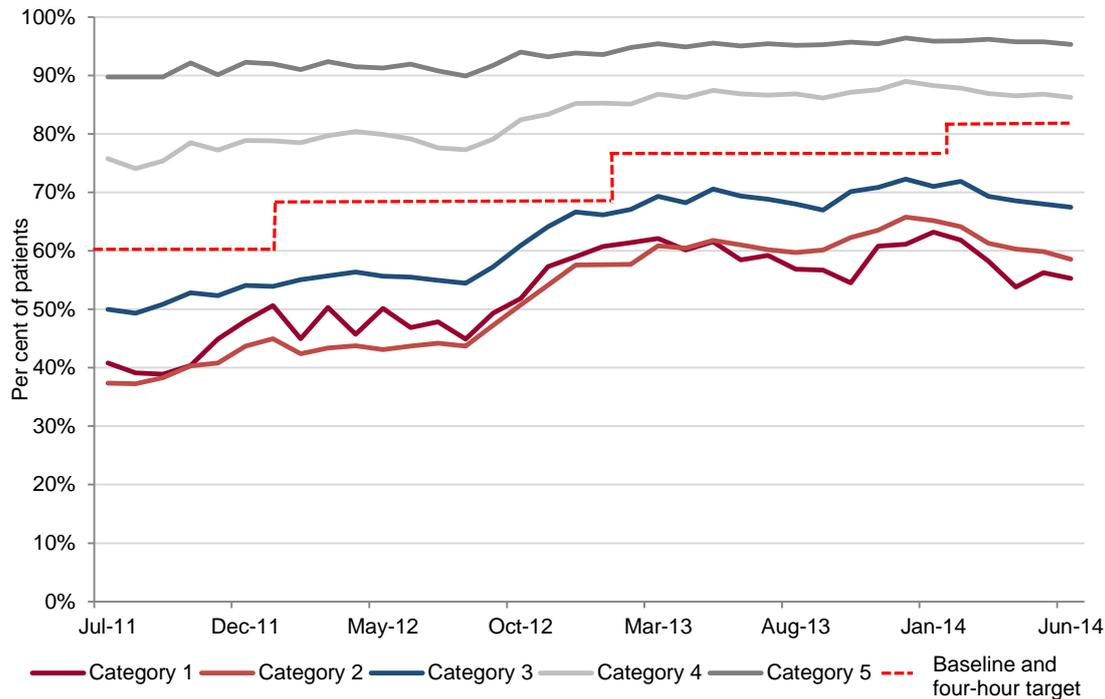
Source: Queensland Audit Office using extracted EDIS data

Most admitted patients are initially triaged as categories 1, 2 or 3, on the Australasian Triage Scale (ATS), depending on their clinical urgency on arrival. Figure 4F illustrates that, statewide, the largest improvement in performance was for these presentation categories. Figure 4F also shows categories 4 and 5 have achieved the four-hour target for 2012 and 2013 and currently are achieving the 2014 target.

Categories 1, 2 and 3 are not achieving the four-hour target. This is partly because, unlike category 4 and 5 patients, category 1, 2 and 3 patients comprise:

- a greater proportion with complex medical issues
- a greater portion being admitted than discharged.

Figure 4F
Four-hour target: achievement over time by ATS (all departure categories)
1 July 2011 to 30 June 2014



Reporting hospitals at 30 June 2014 as listed in Appendix C

Source: Queensland Audit Office using extracted EDIS data

Time to transfer

The DoH guidelines recommend that a decision to admit a patient to a ward should be made within two hours and the inpatient consultation performed within an hour of the request being made. This equates to a consultation being performed within three hours of the patient arriving at the ED. This process helps hospitals meet the four-hour target for admitted patients.

Statewide, more than 45 per cent of patients who had a documented consultation in EDIS did not have their consultations requested within two hours of their arrival to the ED. As a result, only 24 per cent of admitted patients received a consultation documented in EDIS within three hours; 32 per cent of admitted patients received their consultations within an hour of it being requested.

Hospitals have the ability to monitor when consultations are being requested and performed and by which specialty. Most hospitals do not have enough specialists or sufficiently experienced registrars on the wards after hours; consequently, ED staff prefer to retain admissions in either the ED or SSU. This is because:

- ED staff believe they are better placed to care for these patients until registrars and specialists return to work the following day.
- During hours, registrars and specialists are often busy with other duties, such as performing surgery, seeing current inpatients or running outpatient clinics.

EDIS allows the capture of the time consultations were requested and then performed; this helps to manage patient flow and in analysing the causes for delayed admissions to the inpatient wards. These fields were used to differing degrees in the EDs we visited; for example, as fields are optional, a blank field does not mean a consultation was not performed.

Consultation times are documented in EDIS in approximately 47 per cent of inpatient admissions and 25 per cent of SSU admissions. There was no difference in performance against the four-hour target for those who did have a consultation time documented in EDIS, compared to those who did not.

4.4 Recommendations

It is recommended that the Department of Health and the Hospital and Health Services:

4. prior to the completion of the *National Health Reform Agreement—National Partnership Agreement on Improving Public Hospital Services* undertake a clinical evidence based review of the emergency access target to determine an achievable target or targets encouraging timely decision making without compromising patient safety.

Appendices

Appendix A— Comments	54
Appendix B— Audit methodology	73
Audit objective.....	73
Reason for the audit.....	73
Performance audit approach.....	73
Sampling methodology.....	74
Appendix C— Queensland reporting hospitals	77
Appendix D— HHS performance against the four-hour target.....	78
Appendix E— Inter-jurisdictional comparison.....	79
Appendix F— Clinical care commencement.....	80

Appendix A—Comments

In accordance with section 64 of the *Auditor-General Act 2009*, a copy of this report was provided, with a request for comment, to:

- the Department of Health
- Cairns and Hinterland Hospital and Health Service
- Central Queensland Hospital and Health Service
- Metro South Hospital and Health Service
- West Moreton Hospital and Health Service.

Responsibility for the accuracy, fairness and balance of the comments rests with the heads of these agencies.

Comments from Director-General, Queensland Health



Enquiries to: Mr Michael Zanco
Executive Director
Clinical Access and
Redesign Unit
Health Services and Clinical
Innovation Division
Telephone: 3328 9134
File Ref: DG075101

17 OCT 2014
Mr Andrew Greaves
Auditor-General
Queensland Audit Office
PO Box 15396
CITY EAST QLD 4002

Dear Mr Greaves *Andrew,*

Thank you for your letter dated 26 September 2014, regarding the performance audit on emergency department performance reporting.

I acknowledge receipt of the Queensland Audit Office's proposed report to be tabled in Parliament, as well as the acquittal of issues and queries raised by Department of Health staff in response to the preliminary draft. I wish to advise that the Department of Health has no further comments at this point in time. As you have requested, please find attached the Department of Health's response with regard to the recommendations outlined in the report.

Should you require further information, the Department of Health's contact is Mr Michael Zanco, Executive Director, Clinical Access and Redesign Unit, Health Systems Innovation Branch, Health Service and Clinical Innovation Division, on telephone 3328 9134.

Yours sincerely

Ian Maynard
Ian Maynard
Director-General
Queensland Health

Encl. Queensland Department of Health's response to recommendations.

Office
19th Floor
Queensland Health Building
147 - 163 Charlotte Street
BRISBANE QLD 4000

Postal
GPO Box 48
BRISBANE QLD 4001

Phone
3234 1553

Fax
3234 1482

Response to recommendations

Response to recommendations

Response to recommendations provided by Director-General, Department of Health on 17 October 2014.

Recommendation	Agree / Disagree	Timeframe for Implementation	Additional Comments
<p>1. Ensure the definition of 'did not wait' is clearly understood by:</p> <ul style="list-style-type: none"> aligning the EDIS terminology reference guide definition of 'did not wait' with the National Health Data Dictionary clearly communicate and explain to ED staff how the definition is to be applied publically report both the number and percentage of patients who did not wait for treatment and those who left after treatment commenced. 	Agree.	January 2015	<ul style="list-style-type: none"> The Department will update the ED Terminology Reference Document to align with the National Health Data Dictionary 2012 version 16. The timeframe for completion of the update is December 2014. The Department will distribute the update to all Queensland Health emergency departments with an instruction on how to use EDIS for patients who did not wait. The Queensland Health Hospital Performance website currently reports the percentage of patients who did not wait for treatment. The Hospital Performance website will be updated to include reporting on the number of patients who did not wait for treatment and the number of patients who left after treatment commenced. The update will occur in line with the quarterly updated to the website scheduled for January 2015.
<p>2. Review the role of short stay units and formalise guidelines on the operation and management of SSUs to reduce inappropriate in-patient admissions.</p>	Agree.	December 2014	<ul style="list-style-type: none"> The Department will review the existing Emergency Department Short Stay Unit (EDSSU) Policy, Implementation Standard and Procedure for EDSSU functionality in EDIS. The establishment of Hospital and Health Services as statutory bodies requires that all policies and implementation standards be amended to guidelines, hence a change in format to EDSSU policy documentation. Consultation has occurred with key stakeholders, including emergency department directors across the state via the Queensland Emergency Department Strategic Advisory Panel. It is anticipated the guideline will be distributed for use to Hospital and Health Services by December 2014.
<p>3. Ensure data is accurate and verifiable by:</p> <ul style="list-style-type: none"> reviewing and implementing controls to ensure timely and accurate recording of patient information in EDIS 	Agree.	June 2015	<ul style="list-style-type: none"> The Department will review the system access controls available within EDIS with a view to tightening controls where the system allows. The Department will advise Hospital and Health Services to review EDIS user access to ensure that all staff are assigned individual, unique usernames and that the expiration of passwords must comply with Queensland Health standards. The timeframe

Responses to recommendations

<ul style="list-style-type: none"> recording retrospective amendments that are evidenced and authorised reassessing the IT constraints that led to audit logs being turned off with a view to re-enabling audit logs and improving accountability. 			<p>for completion is January 2015.</p> <ul style="list-style-type: none"> Through a process of education, the Department will advise Hospital and Health Services that any retrospective amendments in EDIS are to occur in consultation with the relevant medical staff or medical record. Emergency department directors will be required to establish a system of audit that identifies the approval process for retrospective data changes. The timeframe for completion is January 2015. The Department will reassess the IT constraints that led to the audit logs being disabled noting that re-enabling must not compromise the usability and responsiveness of the system, as this in turn has the potential to compromise quality and safety of patient care. The timeframe for completion is January 2015. The Department will investigate options for new technologies such as radio-frequency identification (RFID) tags that may promote a more effective data audit mechanism. The timeframe for completion of investigations is June 2015.
<p>4. Prior to the completion of the NPA, undertake a clinical evidence based review of the emergency access target to determine a target/s that is achievable, encourages timely decision-making and does not compromise patient safety.</p>	<p>Agree.</p>	<p>June 2015</p>	<ul style="list-style-type: none"> In April 2014, the Queensland Clinical Senate recommended pausing jurisdictional national emergency access target (NEAT) at their current 2014 targets (83% for Queensland) and that a scientific review take place to better inform ongoing policy and targets beyond 2015, and specifically to consider the value of a differentiated target for admitted and discharged patients and provide a suite of safety and quality indicators directly related to NEAT. To achieve this, the Clinical Access and Redesign Unit, Department of Health has commenced funding of a collaborative project with Metro South Hospital and Health Service. Leading clinicians and researchers, through the Collaborative Learning Emergency Admission Research (CLEAR) Project, will conduct an evidence based review of NEAT compliance in a major tertiary hospital (Princess Alexandra Hospital) and the various intended and unintended outcomes of NEAT compliance. The aims of the CLEAR Project are: <ol style="list-style-type: none"> to establish a state-wide standardised ED-inpatient safety dashboard (including definitions and standardised data collection and reporting) authorship of a discussion paper that reviews

Responses to recommendations

			<p>the relevant literature, national guidelines, college guidelines and relevant policy papers and reviews historical quality data and jurisdictional NEAT.</p> <ul style="list-style-type: none">• The dashboard will first be trialled at Princess Alexandra Hospital, and then rolled out across the state by June 2015. A project plan is currently under development.
--	--	--	--

Comments from Chief Executive, Cairns Hospital and Health Service



Queensland
Government

Ref:
Telephone: (07) 4226 3205
Email: CE-Office-CHHHS@health.qld.gov.au

Office of the Chief Executive
Cairns and Hinterland
Hospital and Health Service

Mr Andrew Greaves
Auditor-General, Queensland Audit Office
PO Box 15396
CITY EAST QLD 4002

Dear Mr Greaves,

Performance audit on emergency department performance reporting

Thank you for your correspondence dated 26 September 2014 regarding the proposed performance audit report, within which you requested that we complete a table responding to the recommendations provided in the report. We have enclosed the completed table for your attention.

Should you require any further information in relation to this matter, I have arranged for Mr Steve Bickford, Divisional Director, Critical Care & Perioperative, on telephone 4226 3313 to be available to assist you.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Julie Hartley-Jones'.

Julie Hartley-Jones, CBE
Chief Executive
Cairns and Hinterland Hospital and Health Service

21/10/2014

PO Box 902
CAIRNS QLD 4870

1

Response to recommendations

Responses to recommendations

Response to recommendations provided by Julie Hartley-Jones, Chief Executive, Cairns and Hinterland Hospital and Health Service.

Recommendation	Agree / Disagree	Timeframe for Implementation	Additional Comments
<p>1. Ensure that the definition of "did not wait" is clearly understood by:</p> <ul style="list-style-type: none"> Aligning the EDIS terminology reference guide definition of "did not wait" with the National Health Data Dictionary. Clearly communicate and explain to ED staff how the definition is to be applied. Publically report both the number and percentage of patients who did not wait for treatment and those who left after treatment commenced. 	Agree.	Implementation at the Cairns and Hinterland HHS will be within one week of clarification being provided by the Department.	All comments previously provided to Queensland Audit Office team.
<p>2. Review the role of short-stay units and formalise guidelines on the operation and management of SSUs to reduce inappropriate patient admissions.</p>	Agree.	Implementation at the Cairns and Hinterland HHS will be within one week of clarification being provided by the Department.	All comments previously provided to Queensland Audit Office team.
<p>3. Ensure data is accurate and verifiable by:</p> <ul style="list-style-type: none"> Reviewing and implementing controls to ensure timely and accurate recording of patient information in EDIS. Recording retrospective amendments that are evidenced and authorised. Reassessing the IT constraints that led to audit logs being turned off with a view to re-enabling audit logs and improving accountability. 	Agree.	Implementation at the Cairns and Hinterland HHS will be within one week of clarification being provided by the Department.	All comments previously provided to Queensland Audit Office team.
<p>4. Prior to the completion of the NPA, undertake a clinical evidence-based review of the emergency access target to determine a target/s that is achievable, encourages timely decision-making and does not compromise patient safety.</p>	Agree.	Implementation at the Cairns and Hinterland HHS will be within one week of clarification being provided by the Department.	All comments previously provided to Queensland Audit Office team.

Comments from Health Service Chief Executive, Central Queensland Hospital and Health Service



Central Queensland
Hospital and Health Service

Mr Andrew Greaves
Auditor General
Queensland Audit Office
PO Box 15396
CITY EAST Q 4002

Dear Mr Greaves,

Thank you for the Performance Audit on Emergency Department Performance Reporting.

Please find attached the CQHHS comments on the issues noted in the Audit.

Yours sincerely

A handwritten signature in blue ink, appearing to read "Len Richards".

Mr Len Richards *N FORK*
Health Service Chief Executive
Central Queensland Hospital and Health Service

21st October 2014

Central Queensland Hospital and Health Service
Canning Street Rockhampton
Po Box 871 Rockhampton
Queensland 4700 Australia

Telephone +61 4920 5759
Facsimile +61 4920 6335
Website www.cq.health.qld.gov.au

Response to recommendations



Central Queensland
Hospital and Health Service
QAO Emergency Audit Recommendations Action Plan

Plan Start Date and Time: Oct 2014

Plan End Date and Time: May 2015

Purpose: To implement the recommendations of the QAO Emergency Data Audit April 2014

QAO Problem: Recommendations	Action – Data	Action – Clinical Process	Responsible Officer	Status /Review
Did Not Wait <i>Incompatibility between DoH and National Health Data Dictionary (NHDD) definitions.</i>	Notify the EDIS Application Support Team regarding the manual; it is out of date for this item and others.		BPIO	Completed.
<i>Clear communication and explanation to ED staff on how the definition is to be applied.</i>	Commence formal weekly in-service training sessions and include NHDD definition of Did Not Wait. Develop a standardised in-service delivery plan.	All clinical staff to attend in-service related to the NHDD definition. All clinical staff to utilise the NHDD definition.	BPIO Clinical Leaders Clinical Leaders	Underway / 3 months (Next: January 2015)
	Document (a) in-services held and (b) attendance.		BPIO	
	Routinely audit application of the definition by clinical staff; feedback at team meetings.	Audit results to be fed back to clinical meetings; ward and training day meetings.	ED Director ED NUJM	
<i>Publicly report both the number and percentage of patients who did not wait and those who left after treatment commenced.</i>	Continue to provide data to monthly ED performance report (not public). Request CARU to include data in My Hospitals Website		BPIO	Underway / 3 months (Next: January 2015)

29/09/2014 12:57 PM

QAO Audit Action Plan

Page 1

Responses to recommendations



Central Queensland
Hospital and Health Service
QAO Emergency Audit Recommendations Action Plan

QAO Problem: Recommendations	Action – Data	Action – Clinical Process	Responsible Officer	Status /Review
Progress Comments: 08/10/2014	<i>CARU notified regarding manual and have acknowledged manual is to be redeveloped.</i> <i>CARU progressing request to add DNW and LATC to My Hospitals website.</i> <i>Weekly in-service sessions commenced.</i>			
Short Stay Unit	Review the role of Short Stay Units (SSU).	Include SSU guidelines in in-service training.	ED Director ED NUM BPIO	3 months (Next: January 2015)
	Formalise guidelines on the operation and management of the Short Stay Unit to reduce inappropriate admissions.	Guidelines to be published to the CQHHS intranet. Guidelines to be reviewed annually. Audit the percentage of SSU patients transferred to wards / discharged home; target <15%	ED Director ED NUM BPIO	3 months (Next: January 2015) 3 months (Next: January 2015)
Data Accuracy	Ensure data is accurate and verifiable: Review and implement controls to ensure timely and accurate recording of patient information in EDIS.	Spot audits to be completed monthly. Results to be fed back through BPIO to Senior ED Management Meeting Clinical staff document in real time, "Notes" facility used in time critical situations only. Clinical staff to ensure patient movement is recorded on EDIS in real time.	BADS BPIO Clinical Director NUM	3 months (Next: January 2015)
		Assign EDIS portfolio to super users: monitor and educate on the floor, 1 x Nurse and 1 x Medical Officer.	Clinical Leaders to be nominated	

29/09/2014 12:57 PM

QAO Audit Action Plan

Page 2

Responses to recommendations


Queensland Government
Central Queensland Hospital and Health Service
QAO Emergency Audit Recommendations Action Plan

QAO Problem: Recommendations	Action – Data	Action – Clinical Process	Responsible Officer	Status /Review
Ensure EDIS data analysis (including data quality analysis) is a standing agenda item for Senior ED Management Meeting.	Ensure EDIS data analysis (including data quality analysis) is a standing agenda item for Senior ED Management Meeting.		Clinical Director NUM	3 months (Next: January 2015)
Ensure data is accurate and verifiable: Recording retrospective amendments that are evidenced and authorised.	Work instructions for EDIS data cleansing to include evidence for retrospective modification of data. Retrospective amendment validation to be recorded in a single repository electronically.	Retrospective data changes made by clinical staff to be documented in the EDIS clinical notes area.	BPIO EDIS Data Validation Officer All Clinical Staff	3 months (Next: January 2015)
Ensure data is accurate and verifiable: Assessing IT constraints around audit logs.	Recommendation to be referred to CARU as the State decision maker on this issue. Maximum site validation parameters to be turned on in the system.		BPIO	Completed
Data Spike	Develop reports to audit discharges that occur between 3:30 and 4 hours.	Clinical staff to provide clinical notes with a clear indication of discharge against departure actual time.	BPIO Clinical Leaders	3 months (Next: January 2015)
0.09% of records amended to increase LOS >4 hours 19% of records amended to decrease LOS < 4 hours	Include the ratio of amended increased length of stay and decreased length of stay to total presentation records as Rockhampton Hospital PPM KPI (report to be developed by CARU).	Aim to reduce 20% of amended patient records to 5%	BPIO Clinical Leaders ED Director ED NUM	Underway / 3 months (Next: January 2015)
Deletion of record that indicates if	Review reporting for cubicle	Clinical staff to use "Notes" location	BPIO	3 months

29/09/2014 12:57 PM

QAO Audit Action Plan

Page 3

Responses to recommendations



Central Queensland
Hospital and Health Service
QAO Emergency Audit Recommendations Action Plan

QAO Problem: Recommendations	Action – Data	Action – Clinical Process	Responsible Officer	Status /Review
<p>patient record has been amended.</p> <p>Progress Comments: 08/10/2014</p>	<p>occupancy and fast track activity for ability to exclude "Notes" components.</p> <p>Training to be provided to all Administrative staff regarding amendment of records.</p>	<p>only in critical emergency situations.</p>		<p>(Next: January 2015)</p>
<p>Progress Comments: 08/10/2014</p>	<p>Audit Log request referred to CARU / EDIS Application support for consideration (State-wide decision and implications).</p> <p>Maximum site controlled validation parameters turned on in the EDIS application.</p> <p>State-wide reports requested from CARU and are currently being developed (audit between 15:30 and 16:00, ratio of amended LOS increased and decreased).</p>			
<p>Digit Bias</p> <p>Progress Comments: 08/10/2014</p>	<p>Audit the system time and date stamp to determine accuracy of time the patient left the department.</p> <p>State-wide report requested from CARU and is currently being developed.</p>	<p>Provide remedial training to staff making changes.</p>	<p>BPIO</p>	<p>3 months (Next: January 2015)</p>

Comments received from Health Service Chief Executive, Metro South Hospital and Health Service



Metro South Health

Mr Andrew Greaves
Auditor General
Queensland Audit Office

Dear Mr Greaves

Thank you for your correspondence of 26 September 2014 and the opportunity to provide comment, for inclusion in the QAO's Performance audit on emergency department performance reporting.

I note the recommendations of the report and we are in agreement with them, noting two of the recommendations are currently underway either by the Department of Health (recommendation 2) or by MSHHS in concert with the Department (recommendation 4).

With respect to the substance of the report and its findings, I note you did not find at the Princess Alexandra Hospital or Redlands Hospital any evidence of data manipulation, either ad hoc or systemic in relation to the reported NEAT performance. Further, the distribution of the Emergency Department discharge times in Metro South Hospitals is typical of that shown in published data across Australia and overseas.

The Princess Alexandra Hospital has made considerable study of the implementation and evaluation of strategies for improving access to emergency department care resulting in a recent publication in the Australian Health Review (Sullivan et al, October 2014). I commend this publication to you.

Whilst I agree timely and accurate recording of patient information, including departure time from the Emergency Department is important, it is the nature of clinical practice and the primacy of patient care, that will continue to see administrative tasks prioritised after clinical care activities.

Without real time tracking of patient movements via radiofrequency identification devices, there will always be a potential disconnect between the time a patient is seen, treated, and discharged and the documentation of the timing of that care in the patient record.

.../2

Office	Postal	Phone
Metro South Health Executive Services	PO Box 4043 Eight Mile Plains Q 4113	61 7 3156 4949

Comments received from Health Service Chief Executive, Metro South Hospital and Health Service

- 2 -

However, in the swings and roundabouts of millions of attendances, this would not be expected to have any material impact on any patient, health system manager or the public-at-large.

Yours sincerely



DR RICHARD ASHBY 16.10.14
Health Service Chief Executive
Metro South Hospital and Health Service

Responses to recommendations

QAO: Performance audit on emergency department performance reporting

Responses to recommendations provided by Dr Richard Ashby, Chief Executive, Metro South Hospital and Health Service on 10 October 2014

Recommendation	Agree/Disagree	Timeframe for Implementation	Additional Comments
<p>1. Ensure the definition of 'did not wait' is clearly understood by</p> <ul style="list-style-type: none"> Aligning the EDIS terminology reference guide definition of 'did not wait' with the National Health Data Dictionary Clearly communicate and explain to ED staff how the definition is to be applied Publically report both the number and percentage of patients who did not wait for treatment and those who left after treatment commenced 	Agree	N/A	MSHHS is already applying the National Health Data Dictionary definition.
<p>2. Review the role of short stay units and formalise guidelines on the operation and management of SSUs to reduce inappropriate admissions</p>	Agree	Currently underway	MSHHS understands from the QAO report page 10 'DoH is developing a better practice guideline on the establishment, operation and management of SSUs to reduce inappropriate in-patient admission and health care costs.'

Responses to recommendations

Recommendation	Agree/Disagree	Timeframe for Implementation	Additional Comments
<p>3. Ensure data is accurate and verifiable by:</p> <ul style="list-style-type: none"> • Reviewing and implementing controls to ensure timely and accurate recording of patient information in EDIS • Recording retrospective amendments that are evidenced and authorised • Reassessing the IT constraints that led to audit logs being turned off with a view to re-enabling audit logs and improving accountability 	<p>Agree</p>	<p>Ongoing</p>	<p>We agree with the principles of this recommendation in respect to timely and accurate recording of patient information; evidenced and authorised retrospective amendments and the use of audit logs. MSHHS is cognisant of these principles in the development and implementation of the Digital Healthcare Program.</p>
<p>4. Prior to the completion of the NPA, undertake a clinical evidence based review of the emergency access target to determine a target/s that is achievable, encourages timely decision-making and does not compromise patient safety</p>	<p>Agree</p>	<p>Currently underway</p>	<p>The Princess Alexandra Hospital is undertaking this work in collaboration with the Department of Health. The 'Admit SAFE (CLEAR) – National Emergency Access Target (NEAT) safety and quality indicator project' will inform ongoing policy and targets in relation to NEAT and will develop and deliver a safety and quality dashboard.</p>

Comments received from Acting Health Service Chief Executive, West Moreton Hospital and Health Service



West Moreton Hospital and Health Service

Enquiries to: Sharon Kelly
A/Health Service Chief Executive
Telephone: 3810 1126
Our Ref: MD09141388

21 October 2014

Mr Andrew Greaves
Auditor-General
Queensland Audit Office
PO BOX 15396
CITY EAST QLD 4002

Dear Mr Greaves

Performance audit on emergency department performance reporting

Thank you for your letter of 26 September 2014 in relation to the proposed report for the performance audit on emergency department performance reporting.

Please be advised West Moreton Hospital and Health Service (HHS) has reviewed and has attached responses to the recommendations.

West Moreton HHS remains of the view that without a recommendation that stipulates Queensland Ambulance Service data inputs undergo similar data integrity and business rule reviews, the system remains open to issues with quality of data and therefore, inadequate performance reporting assurance controls.

Yours sincerely

A handwritten signature in black ink that reads 'Sharon Kelly'. The signature is written in a cursive style with a large, looped 'S' at the beginning.

Sharon Kelly
Acting Health Service Chief Executive
West Moreton Hospital and Health Service

CC Dr Mary Corbett, Chair, West Moreton Hospital and Health Board

Encl.

Office
West Moreton Hospital and
Health Service

Postal
PO BOX 73
IPSWICH QLD 4305

Phone
(07) 3810 1111

Fax
(07) 3810 1769

Responses to recommendations

Responses to recommendations

Response to recommendations provided by West Moreton Hospital and Health Service on 20 October 2014.

Recommendation	Agree / Disagree	Timeframe for Implementation	Additional Comments
<p>1. Ensure the definition of 'did not wait' is clearly understood by:</p> <ul style="list-style-type: none"> Aligning the EDIS terminology reference guide definition of 'did not wait' with the National Health Data Dictionary Clearly communicate and explain to ED staff how the definition is to be applied Publically report both the number and percentage of patients who did not wait for treatment and those who left after treatment commenced. 	Agree	Immediate	<p>Whilst the responsibility for aligning EDIS terminology reference guide definition with the National health Data Dictionary sits with the Department of Health, West Moreton HHS will ensure the implementation of definitions and alignment at a local level, is a priority.</p> <p>West Moreton HHS will communicate this information to staff as a priority, and will ensure appropriate follow up to monitor implementation in full.</p> <p>The responsibility for public reporting of data sits with the Department of Health. West Moreton HHS will align with Department of Health publically reported scope of information.</p>
<p>2. Review the role of short stay units and formalise guidelines on the operation and management of SSUs to reduce inappropriate in-patient admissions.</p>	Agree	3-6 months	<p>West Moreton HHS has previously reviewed business practices in line with Short Stay Unit definitions. West Moreton HHS has also undertaken an external review of Short Stay Unit operations within the last 12 months to ensure appropriate functioning in line with business rules.</p> <p>West Moreton HHS will formalise procedures and guidelines, to further ensure appropriate operations and management of the Short Stay Unit.</p> <p>West Moreton HHS currently routinely audits "short term patient management form" to ensure compliance.</p>
<p>3. Ensure data is accurate and verifiable by:</p> <ul style="list-style-type: none"> Reviewing and implementing controls to ensure timely and accurate recording of patient information in EDIS Recording retrospective amendments that are evidenced and authorised Reassessing the IT constraints 	Agree	6 months	<p>Whilst the business rules around EDIS and Queensland Ambulance Service data, are the responsibility of the Department of Health at a system level, West Moreton HHS has included performance data audits as part of the internal audit framework.</p> <p>West Moreton HHS will review and implement controls and input data quality mechanisms</p>

1

Responses to recommendations

Recommendation	Agree / Disagree	Timeframe for Implementation	Additional Comments
that led to audit logs being turned off with a view to re-enabling audit logs and improving accountability.			to ensure accuracy of data input. It is acknowledged the reassessment of IT constraints is the responsibility of the Department of Health.
4. Prior to the completion of the NPA, undertake a clinical evidence based review of the emergency access target to determine a target/s that is achievable, encourages timely decision-making and does not compromise patient safety.	Agree	As per the Department of Health response (recommended prior to January 2015 target increase to 90%)	This recommendation sits with the Department of Health and should be informed by the views of expert clinicians, and those of the Queensland Clinical Senate.

Appendix B—Audit methodology

Audit objective

The objective of the audit was to assess the performance of Queensland’s public emergency departments (EDs) in achieving targets under the National Emergency Access Target (the NEAT).

The audit addressed the objective through the sub-objectives and lines of inquiry set out in Figure B1.

Figure B1
Audit scope

Sub-objectives		Lines of inquiry	
1	The publicly reported performance of emergency departments is reliable	1.1	EDIS data are complete, accurate and valid
2	The patient experience is not adversely affected by efforts to achieve performance targets	2.1	Monitoring of patient movements reduces the risk of adverse behaviours occurring in attempting to achieve the NEAT.

Source: Queensland Audit Office

We have not audited the clinical decisions made within the ED, SSU or on the wards.

Reason for the audit

The National Health Reform Agreement—National Partnership Agreement on Improving Public Hospital Services (the NPA) tied \$3.350 billion in capital, facilitation and reward funding over 2011–12 to 2016–17 to improving public hospital access across Australia, of which at least \$750 million pertains to improving ED access. A key tenet was the achievement of a series of targets which are to be publicly reported, one of these targets is the NEAT.

The establishment of time based targets in EDs has led to concerns in other jurisdictions in the past around creating adverse incentives and has resulted in gaming and data manipulation.

Performance audit approach

The audit was conducted in accordance with the *Auditor-General of Queensland Auditing Standards—September 2012*, which incorporate the requirements of standards issued by the Australian Auditing and Assurance Standards Board.

The audit was conducted between February and June 2014. It included the Department of Health (the DoH) and all reporting hospitals, as listed in Appendix C.

The audit consisted of:

- interviews with staff at:
 - the DoH
 - Cairns Hospital
 - Rockhampton Hospital
 - Ipswich Hospital
 - Princess Alexandra Hospital
 - Redland Hospital

- walkthroughs of emergency department facilities at the hospitals we visited
- analysis of statewide data extracted from departmental systems, primarily the Emergency Department Information System (EDIS)
- analysis of key DoH and Hospital and Health Services (HHSs) documents, including directives, protocols, policies, guidelines, performance reports and industry reports
- analysis of other jurisdictional documents relating to emergency access targets
- sample testing of patient records at the five hospitals we visited.

Sampling methodology

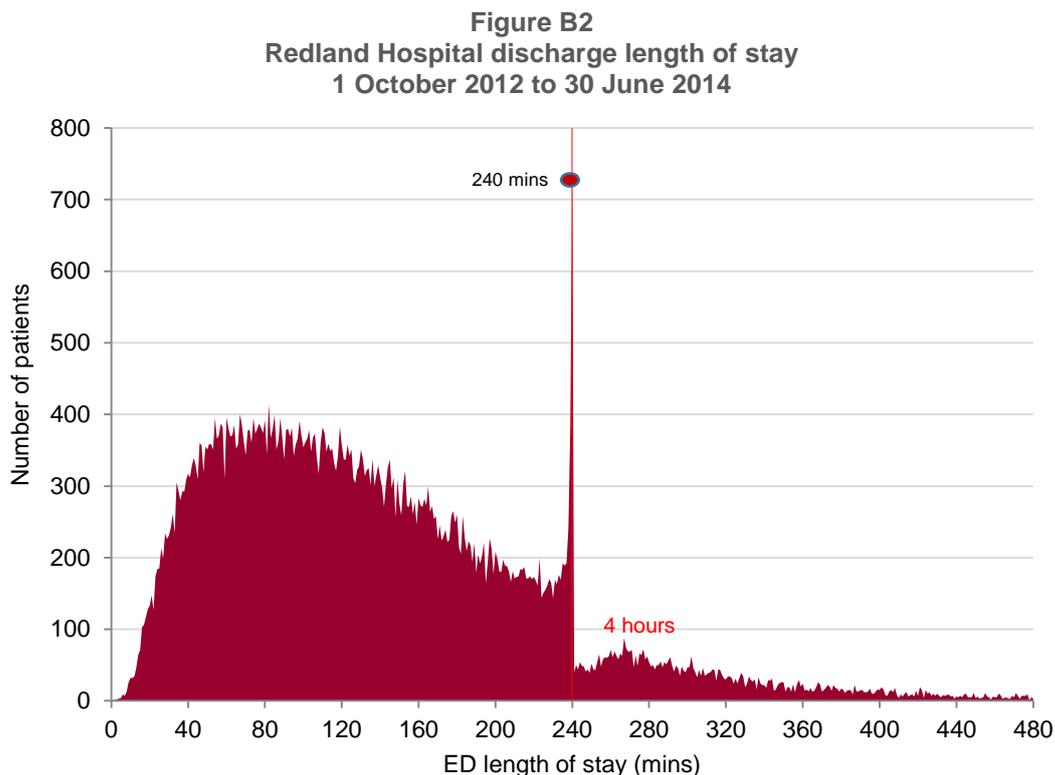
Site selection

We undertook sample testing on a facility basis, not at a HHS level. We selected three facilities:

- Cairns Hospital
- Ipswich Hospital
- Princess Alexandra Hospital.

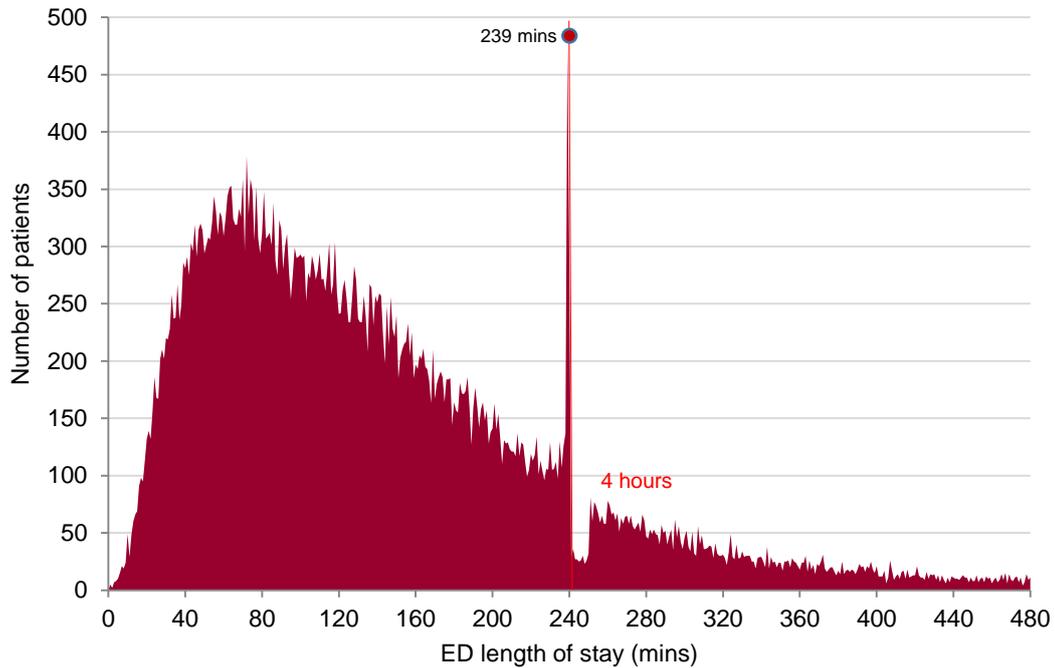
We selected these sites to provide geographic spread and as being representative of peer hospitals with similar graphs to Figure 1 in this report. Rockhampton and Redland Hospitals were also selected as they exhibited patterns that were slightly different to their peers.

While most Queensland hospitals have a rapid build up to the second spike at four hours, Rockhampton and Redland Hospitals both had small build ups with a spike on 239 and 240 minutes. These are illustrated in Figures B2 and B3.



Source: Queensland Audit Office using extracted EDIS data

Figure B3
Rockhampton Hospital discharge length of stay
1 October 2012 to 30 June 2014



Source: Queensland Audit Office using extracted EDIS data

Purpose

The purpose of the sample testing was to determine the accuracy and verifiability of amended and retrospectively written records in EDIS for patients whose length of stay spiked just before the four-hour target; this is a requirement of the NPA. We have not audited the clinical decisions made within the ED, short stay units or on the wards.

Methodology

The sample period began on 1 September 2012, as this marked the change in the distribution of a patient length of stay. It also coincided with the commencement of the MacroNeat program, implementation of the Metropolitan Emergency Department Access Initiative recommendations, and employment of business practice improvement officers.

The focus of medical staff is understandably on patient treatment. If records cannot be written immediately after the event, they are to be written as soon after as possible. Writing records after the event occurs ensures that clinical notes reflect what actually happened, not what was intended to happen. The DoH, and most HHSs, have issued a protocol that requires all clinical notes to distinguish between the time an event or incident occurred and the time the clinical note was written; in practice, where the note was written immediately afterwards, only one time is given.

We classified records as unverifiable if:

- EDIS time stamps conflicted with times recorded in other records, as this indicated one or both of the records were inaccurate
- where there was no supporting evidence to justify amending a time.

Where the time of the event was not written, or not clearly distinguished from when the note was written, we used independent registered nurses to help us apply a level of discretion to the difference in time between when the event was documented in EDIS and when the action or event may have occurred. If the clinical note described a very simple procedure, action or discussion, with a short expected duration we allowed approximately five minutes difference between the clinical note time and the EDIS time. Where a clinical note described a more complex procedure or an event with a longer expected duration, we allowed a longer time period. The period of time allowed for these cases varied in accordance with the circumstances of each record and was informed by independent advice provided by registered nurses.

All exceptions were validated with hospital staff.

Sampling parameters

Sampling parameters used for Cairns, Ipswich, Princess Alexandra and Redland Hospitals are illustrated in Figures B4 and B5.

Figure B4
Sampling parameters

Parameters	
Type of records sampled	Amended and retrospectively written records only
Period tested	1 September 2012 to 31 December 2013
Length of stay	235 to 239 minutes
Population size	Varied according to how many patients were treated in the testing window; see Figure B5
Confidence level	90 per cent
Tolerable deviation	5 per cent
Expected deviation	1.2 per cent

Source: Queensland Audit Office

Figure B5
Sampling population sizes

Hospital	Population size	Sample size
Cairns	2 345	75
Ipswich	3 645	76
Princess Alexandra	2 899	75
Redland	1 695	75

Source: Queensland Audit Office

We undertook subsequent testing at Rockhampton Hospital, due to inconclusive results from initial testing. Sample parameters used for subsequent testing were:

- records identified by Rockhampton Hospital as being amended
- period tested: April 2013
- departure population tested: all
- time first seen tested: 19 of 80 amended records (24 per cent).

Appendix C—Queensland reporting hospitals

Figure C1
Queensland reporting hospitals

Hospitals	
1.	Bundaberg Hospital
2.	Caboolture Hospital
3.	Cairns Base Hospital
4.	Caloundra Hospital
5.	Gladstone Hospital
6.	Gold Coast University Hospital (replaced Gold Coast Southport Hospital)
7.	Gympie Hospital
8.	Hervey Bay Hospital
9.	Ipswich Hospital
10.	Logan Hospital
11.	Mackay Base Hospital
12.	Maryborough Hospital
13.	Mater adults public hospital
14.	Mater children's public hospital
15.	Mount Isa Hospital
16.	Nambour Hospital
17.	Princess Alexandra Hospital
18.	Queen Elizabeth II Jubilee Hospital
19.	Redcliffe Hospital
20.	Redland Hospital
21.	Robina Hospital
22.	Rockhampton Base Hospital
23.	Royal Brisbane and Women's Hospital
24.	Royal Children's Hospital
25.	The Prince Charles Hospital
26.	Toowoomba Hospital
27.	Townsville Hospital

Source: Department of Health, Clinical Access and Redesign Unit

Appendix D—HHS performance against the four-hour target

Figure D1
HHS performance (including non-reporting hospitals) against the four-hour target

HHS	ED presentations %	2012 performance %	2013 performance %
Cairns and Hinterland	5.40	66.87	74.03
Cape York*	0.08	N/A	90.77
Central Queensland	7.73	67.56	77.42
Central West*	0.22	N/A	97.14
Children's Health Queensland	1.95	83.74	87.81
Darling Downs	5.47	67.48	86.53
Gold Coast	9.67	62.67	75.17
Mackay	3.83	76.57	80.84
Metro North	17.89	58.15	70.41
Metro South	18.77	63.56	74.77
North West	2.53	88.09	89.29
South West*	0.42	N/A	95.85
Sunshine Coast	7.82	68.88	75.57
Torres Strait—Northern Peninsula*	0.08	N/A	94.90
Townsville	6.05	65.63	79.60
West Moreton	3.83	67.19	79.67
Wide Bay	8.27	78.52	77.38
Statewide	100.00	67.56	77.42
Total	100.00	70	77

Percentage of statewide total seen over 2012 and 2013 calendar years; Number may not add to 100% due to rounding
N/A sites did not use EDIS or Rural EDIS.

Cape York and Torres Strait—Northern Peninsula merged on 1 July 2014 to form Torres and Cape Hospital and Health Service.

* These HHSs do not have the four-hour target as a KPI with the Department of Health

Source: Queensland Audit Office using extracted EDIS data

Appendix E—Inter-jurisdictional comparison

Although failing to meet the National Emergency Access Target (the NEAT) in 2012 and 2013, Queensland performed strongly compared to other jurisdictions and has made the greatest reported improvement since 2009–10; improving by 11.8 percentage points to 31 December 2013. In 2013, Queensland achieved the second best result nationwide behind Western Australia.

Queensland was one of six jurisdictions that treated a greater percentage of its ED presentations within four hours, compared to the previous year. Two jurisdictions achieved a lower 2013 result than their 2012 result. Figure E1 compares results by jurisdiction.

Figure E1
2012 and 2013 results for the National Emergency Access Target, by jurisdiction

Result %	QLD	WA	NSW	TAS	SA	VIC	NT	ACT
2009–10 baseline	63.8	71.3	61.8	66	59.4	65.9	66.2	55.8
2012	66.9	78.5	61.1	67.0	66.0	65.0	64.3	56.7
2013	75.6	77.8	70.8	67.1	65.1	67.3	62.5	59.4
Improvement between baseline and 2013 result	11.8	6.5	9	1.1	5.7	1.4	(3.7)	3.6

Source: Queensland Audit Office from National Partnership Agreement on Improving Public Hospital Services: Performance Report for 2012 and 2013

Figure E2 shows the statewide performance for all jurisdictions and gives the percentage point improvement between the 2012 target to the 2013 result. This is important for funding purposes. While Queensland did not achieve 100 per cent of the state's target, it improved by greater than 50 per cent and qualified for partial reward funding. For 2013, New South Wales was the only other jurisdiction eligible for partial reward funding.

Figure E2
National Emergency Access Target metrics, by jurisdiction

	QLD	WA	NSW	TAS	SA	VIC	NT	ACT
2009–10 baseline	63.8	71.3	61.8	66	59.4	65.9	66.2	55.8
2012 target	70	76	69	72	67	70	69	64
2012 result	66.9	78.5	61.1	67	66	65	64.3	56.7
Percentage point improvement between baseline and 2012 result	3.1	7.2	(0.7)	1	6.6	(0.9)	(1.9)	0.9
2013 target	77	81	71	78	75	75	75	65
2013 result	75.6	77.8	70.8	67.1	65.1	67.3	62.5	59.4
Percentage point improvement between 2012 target and 2013 result	5.6	1.8	1.8	(4.9)	(1.9)	(2.7)	(6.5)	(4.6)

All figures are expressed as a per cent unless noted otherwise

Source: Queensland Audit Office from National Partnership Agreement on Improving Public Hospital Services: Performance Report for 2012 and 2013

Appendix F—Clinical care commencement

As at 30 January 2012, the Australian Institute of Health and Welfare defined *non-admitted patient emergency department service episode—clinical care commencement* as:

Emergency department non-admitted clinical care can be commenced by a doctor, nurse, mental health practitioner or other health professional, when investigation, care and/or treatment is provided in accordance with an established clinical pathway defined by the emergency department. Placement of a patient in a cubicle and observations taken to monitor a patient pending a clinical decision regarding commencement of a clinical pathway, do not constitute commencement.

Patients with an episode end status of 'Did not wait' to be attended by a healthcare professional' should not have a clinical care commencement date, because they left before investigation, care and/or treatment was commenced by a health professional in accordance with an established clinical pathway defined by the emergency department.

The following examples illustrate the commencement of emergency department non-admitted clinical care.

Example 1

A patient presents at the emergency department with mild asthma. At triage, the patient is categorised as category three and returns to the waiting area.

The patient has a more severe asthma attack in the waiting area, is re-triaged to category two and shown to a cubicle where standard observations are taken.

A nurse comes to the cubicle and commences treatment based on an acknowledged clinical pathway of the emergency department. At this point: emergency department clinical care has commenced.

Example 2

A patient presents at the emergency department in an agitated, delusional state. At triage, the patient is categorised as category two and placed in a cubicle and the mental health practitioner notified.

Observations are taken and nursing staff continue to observe the patient.

The mental health practitioner arrives, assesses the patient and develops a management plan. At this point: emergency department clinical care has commenced.

Example 3

A patient presents at the emergency department with an ankle injury from football. At triage, the patient is categorised as category four and moved to the 'fast track area'.

The physiotherapist attends, examines the patient, makes an assessment (including diagnostic imaging requirements) and determines a treatment plan. At this point: emergency department clinical care has commenced.

Example 4

A patient presents at the emergency department with a sore arm, following a fall, with limited arm movement possible.

The patient is categorised as category three at triage and placed in a cubicle.

A nurse provides analgesia and assesses the patient, including ordering diagnostic imaging. At this point: emergency department clinical care has commenced.

Example 5

A patient presents at the emergency department feeling vague and having been generally unwell for a day or two. The patient has a slight cough. At triage, the patient is categorised as category three.

The patient is placed in a cubicle where standard observations are taken. Respiration is 26 bpm, BP is 90 / 60 and the patient is hypoxic. The patient is given oxygen, and the treating clinician attends and provides instruction regarding patient care. At this point: emergency department clinical care has commenced.

Example 6

A patient presents at the emergency department with chest pain. Triage category two is allocated. The patient is placed in a cubicle and a nurse gives oxygen and Anginine, takes blood samples and conducts an ECG. The ECG is reviewed. At this point: emergency department clinical care has commenced.

A doctor subsequently arrives and the patient is transferred to the catheter lab after examination.

Example 7

The emergency department is notified by ambulance that a patient is being transported having severe behavioural problems.

The patient is taken to an appropriate cubicle and restrained.

A clinician administers sedation and requests the attendance of a mental health practitioner. At this point: emergency department clinical care has commenced.

Source: Australian Institute of Health and Welfare 'Emergency Department clinical care commencement date' METeOR identifier: 474116

Auditor-General Reports to Parliament

Reports tabled in 2014–15

Number	Title	Date tabled in Legislative Assembly
1.	Results of audit: Internal control systems 2013–14	July 2014
2.	Hospital infrastructure projects	October 2014
3.	Emergency department performance reporting	October 2014

www.qao.qld.gov.au