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Variation in reported practice in Queensland hospitals:

Patients admitted through the emergency department who are discharged home and do not leave the emergency department for the duration of their hospital stay - The ED Cohort 2007/08 update

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Key findings

This report provides an overview of characteristics of patients who were admitted to hospital after presenting at an emergency department and who were discharged home but spent their entire hospital admission within the emergency department (the ED cohort) in the 2007/08 financial year. This report provides an update on a previous report which used data from 2005/2006. Overall, it was found that:

- 82% of patients who did not leave the ED for the duration of their hospital stay were discharged to their home or usual residence
- The ED cohort comprised over 20% of admissions at some facilities
- 73.2% of the ED cohort had no procedure recorded
- Two procedures comprised over 38.6% of recorded procedures for the cohort: “CT scan of the brain” and “repair of wound of the skin”. Both of these are type C procedures which the Commonwealth Department for Health and Aged Care recommend should not be admitted
- Mackay Base, Redcliffe and Queen Elizabeth II Jubilee Hospitals had the highest proportions of ED cohort admissions (over 10% of all ED presentations within their hospital)
- Bundaberg and Mackay Base Hospitals had the highest rates (over 30%) of ED cohort admissions lasting less than one hour

It is difficult to determine the reasons for admission of the ED cohort patients. Investigation of patients’ principal diagnoses and diagnosis related groups (DRGs) showed that the majority of admissions for these patients were related to pain and general injuries. Most of the admissions had either no procedure recorded or were coded as a “Type C” procedure (as defined by the Commonwealth Department for Health and Aged Care), for which admission is not recommended. It is not possible to quantify those patients who were ‘admitted for observation’ because the ‘observation’ code was rarely used. Other issues such as lack of availability of hospital resources (such as beds) could also contribute to the number of ED only admissions, but are not easily identified in the data. These data issues make it difficult to verify whether or not admissions occurred in accordance with appropriate guidelines.

1.0 Background and purpose of the report

There has been some debate over whether patients who do not leave the emergency department for the duration of their admission and are discharged home should be included in admitted patient data collections. Not admitting these patients would have a significant impact on hospital admission rates so it is important to improve our understanding about this patient group. This report describes the characteristics of those patients admitted to hospital from the emergency department who spend their entire hospital stay in the emergency department and are discharged home (the ED cohort).

2.0 Methodology

Analyses were conducted by the Health Statistics Centre, Queensland Health. Analyses were conducted using data from the Queensland Hospital Admitted Patient Data Collection (QHAPDC) for financial years 2005/06, 2006/07 and 2007/08. Patients who spent their entire admission within the emergency department were identified using the ward code field within QHAPDC. That is, they were patients with a ward code identified as belonging to the emergency department within the hospital to which they were admitted and a mode of separation indicating that they left the hospital (discharged home) without leaving the emergency department. A list of ward codes relating to emergency departments at each hospital was compiled by the Data Collections Unit in the Health Statistics Centre. Patients admitted to Emergency Medical Units (EMU) were not included in the ED cohort. Patients admitted to Short Stay wards were also excluded from the ED cohort unless a ward operated as both an Emergency and a Short Stay ward or exclusion of the Short Stay ward did not leave an emergency-related ward within that facility. To allow more accurate distinction between ED, EMU and Short Stay wards, definitions of wards used were those obtained in 2008. Since ward codes within some facilities have changed since 2005/06 there may be some wards that have been included or excluded erroneously. For example, in a case where the only emergency-related ward was a Short Stay ward in 2005/06 but a separate ED ward was created between then and 2008, the short stay ward that existed in 2005/06 would have been excluded from the analysis. This methodology allows for greater consistency for comparison of practices over time and only resulted in exclusion of all potential 'ED cohort' records for one hospital in 2005/06 (Mater Children's Public Hospital).

To limit confounding, all deaths were removed from the analysis.

3.0 Results

3.1 Separation Mode

The mode of separation for patients who did not leave the ED for the duration of the first episode in their hospital stay was examined and is summarised in Table 3.1.1. The majority of patients were separated to home (81.9%). Similar results were found for the 48,008 patients who did not leave the ED for the duration of the first episode in their hospital stay in 2005/06 and the 52,827 patients in 2006/07.

Table 3.1.1 Mode of separation for patients who did not leave the ED for their entire hospital stay, 2005/06.

Separation Mode	Count	Percent
Completed episodes		
Home	53,912	81.9
Other health care	194	0.3
Discharged at own risk	1083	1.6
Non return from leave	3	0.0
Correctional facility	42	0.1
Aged care	159	0.2
Other	138	0.2
On-going admitted patient care		
Transfer to another hospital	10,187	15.5
Episode change	122	0.2
Total	65,840	100.0

Note: separation mode excludes deaths

3.2 Episode type

As shown in Table 3.2.1, nearly all episodes for the ED cohort were acute. This was also the case in 2005/06 and 2006/07.

Table 3.2.1 Episode type for the ED cohort, 2007/08

Episode Type	Count	Percent
Acute	53,857	99.9
Newborn	42	0.0
Geriatric Evaluation	1	0.0
Maintenance	2	0.0
Palliative	7	0.0
Other	3	0.0
Total	53,912	100.0

3.3 Procedure Codes

Procedures recorded in the ED cohort differed from those in the rest of the admitted patient data collection. 73.2% of patients had no procedure recorded in 2007/08 which was similar to the proportion in 2005/06 and 2006/07. As is shown in Table 3.3.1, patients in the ED cohort were nearly three times as likely *not* to have a procedure code as the overall admitted patient group. This is similar to the result found in 2005/06 and 2006/07.

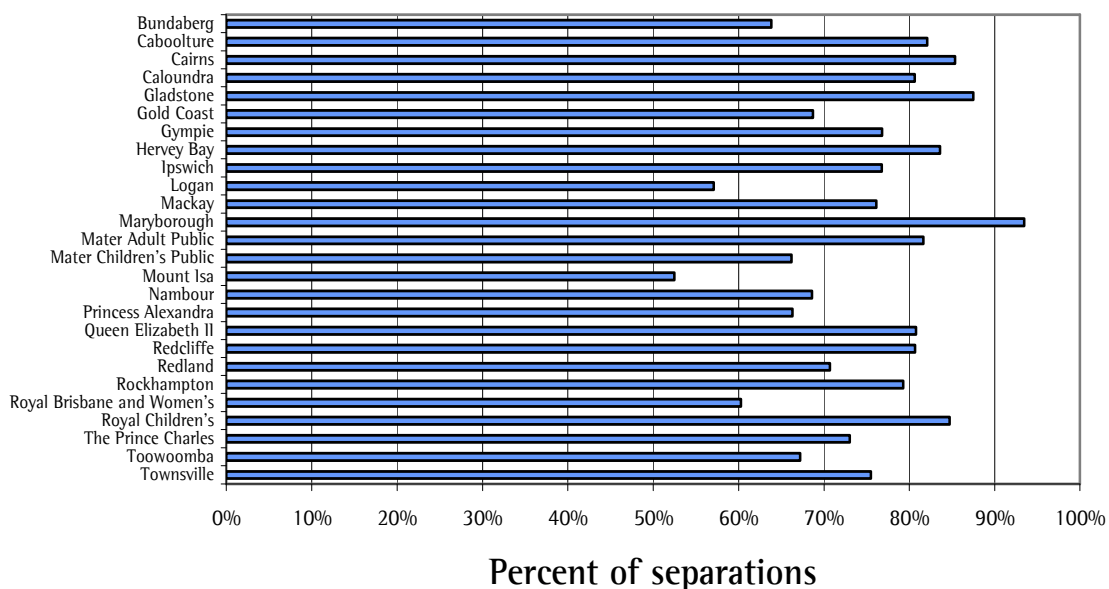
Table 3.3.1 Presence of procedure codes for the ED cohort compared with all other admitted patients (QHAPDC), Queensland, 2007/08.

Procedure Code	ED Cohort (percent)	QHAPDC (percent)
No Procedure code	73.2	26.5
Procedure code present	26.8	73.5
Total	100.0	100

NOTE: "QHAPDC" includes only ED reporting hospitals and excludes in-hospital deaths

Figure 3.3.1 illustrates that the absence of procedure codes was reasonably consistent across all facilities and was not clustered within a small group of facilities.

Figure 3.3.1 Proportion of ED cohort admissions with no procedure codes by hospital, Queensland, 2007/08



As in 2005/06 and 2006/07, two procedure codes, *CT scan of the brain* and *repair of wound of the skin*, were used for a large proportion of the episodes (38.6%) for which a procedure code was recorded. These procedures are defined by the Commonwealth Department for Health and Aged Care as “type C” procedures and it is not recommended that patients are admitted for these procedures. It would only be expected that these patients would be admitted if they had at least one other procedure that was of a different type. However, as in 2005/06, this was not the case:

62.2% of patients receiving *CT scans of the brain* and 85.2% of patients receiving *repair wounds of the skin* did not have any other procedures recorded. The six most common procedures recorded for the ED cohort in 2007/08 are shown in Table 3.3.2.

Table 3.3.2 The six most common procedure codes recorded for the ED cohort, Queensland, 2007/08.

Procedure Name	Procedure Code	Count	Percent
CT scan of brain	5600100	3,540	18.1
Repair of wound of skin, other site	3002600	2,227	11.4
Allied health intervention, physiotherapy	9555003	1,144	5.8
Sedation, ASA 99	9251599	934	4.8
CT of abdomen & pelvis	5650100	888	4.5
Allied health intervention, social work	9555001	798	4.1

3.4 Length of Admission

Very short admissions of less than or equal to 1 hour were investigated separately.

Bundaberg and Mackay Base Hospitals each recorded stays of one hour or less for more than 30% of the ED cohort. Bundaberg and Mackay Base Hospitals also recorded more than 30% of ED cohort stays less than 1 hour in 2005/06 and 2006/07. Rockhampton Base Hospital had more than 30% of ED cohort stays less than 1 hour in 2005/06 and 2006/07, but in 2007/08 only 2.8% of ED cohort stays in Rockhampton Base Hospital were 1 hour or less.

Overall, only 31.5% of ED cohort admissions lasting an hour or less had a procedure recorded. At Mackay Base and Bundaberg Hospitals most of the recorded procedures for ED cohort admissions of less than or equal to one hour were for “repair of wound of the skin” (81.2% and 56.8%, respectively, for those who had procedures recorded). Of these admissions, more than 95% had no other procedure recorded.

Figure 3.4.1 shows the proportion of ED cohort patients admitted for one hour or less by hospital in 2007/08. Figure 3.4.2 shows the short admissions within the ED cohort as a proportion of all separations by hospital.

Figure 3.4.1 Proportion of ED cohort hospital stays that were one hour or less by hospital, Queensland, 2007/08

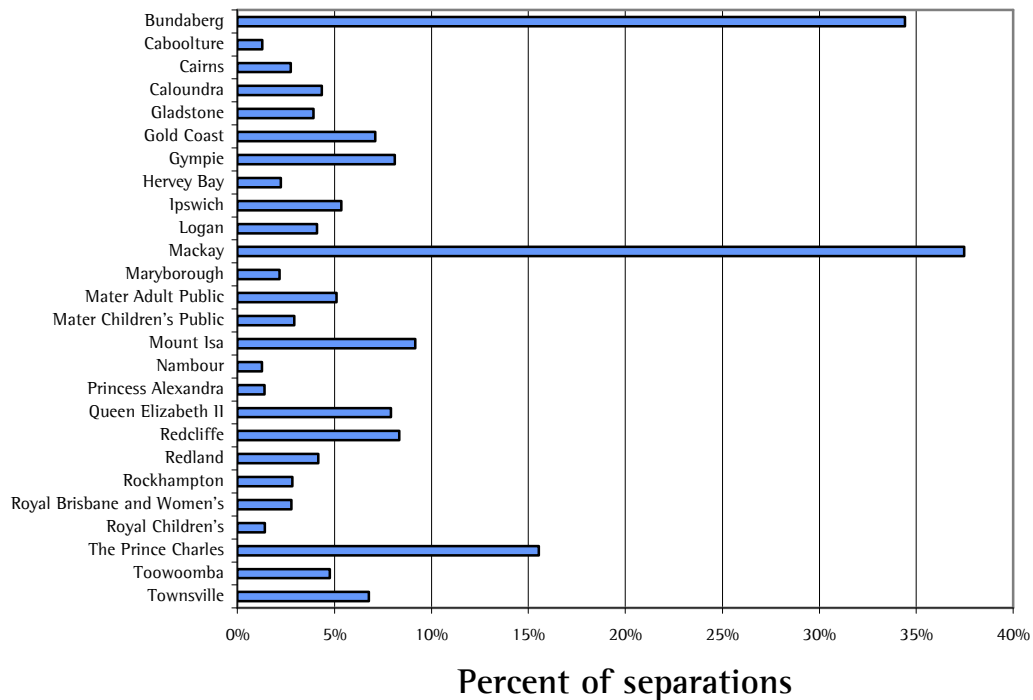
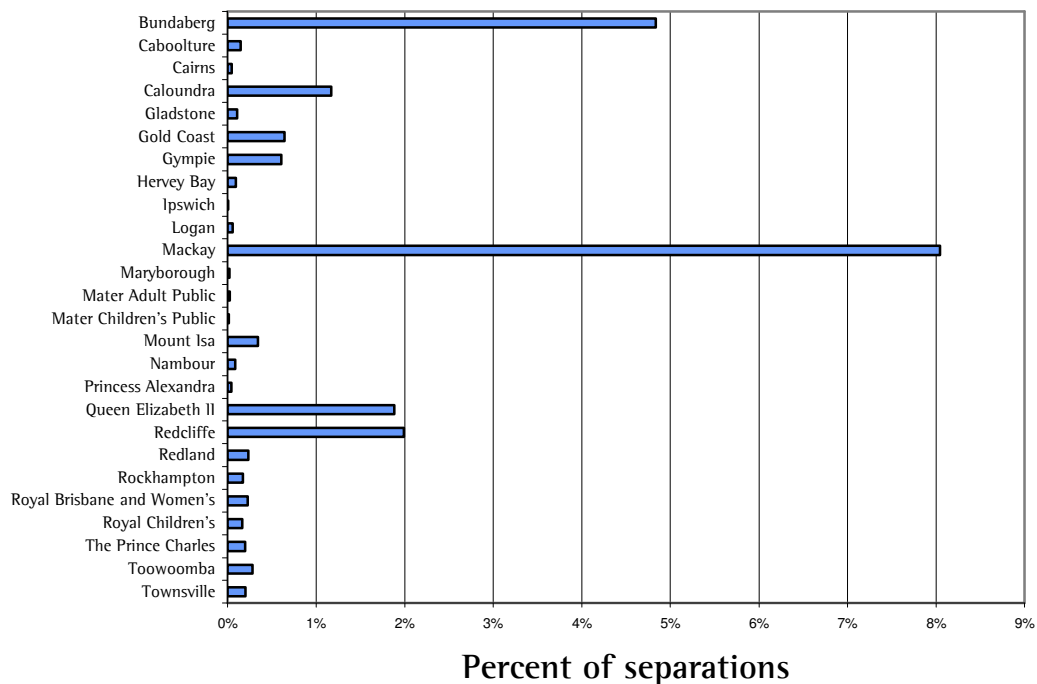


Figure 3.4.2 Proportion of all hospital separations that were in the ED cohort and one hour or less duration by hospital, 2007/08.



3.5 The ED Cohort as a Proportion of all ED Presentations and all admissions

Figure 3.5.1 shows the patients who were admitted to hospital after presenting at an emergency department but who spent their entire hospital admission within the emergency department and were discharged to home (the ED cohort) as a proportion of *all ED presentations* by hospital. The highest proportions of ED cohort patients were observed at Redcliffe (14.7%) and Mackay Base (14.8%) Hospitals. Redcliffe and Mackay Base Hospitals also had a high proportion of ED presentations who were ED cohort patients in 2005/06 and 2006/07.

Figure 3.5.2 shows the ED cohort as a proportion of *all admissions*, by hospital. This figure shows that there is variation across facilities in the proportion of admissions that are confined entirely to the emergency department. For example, Ipswich Hospital had very few ED cohort patients whereas over 20% of all admissions were entirely within the ED at Caloundra, Redcliffe, Queen Elizabeth II Jubilee and Mackay Base Hospitals. Redcliffe, Queen Elizabeth II Jubilee and Mackay Base Hospitals also had a relatively high proportion of admissions within the ED cohort in 2005/06 and 2006/07 and Caloundra had a high proportion in 2006/07 but did not have a reporting ED prior to this. Redland Hospital had a relatively high proportion of admissions within the ED cohort in 2005/06 and 2006/07 (greater than 15%) but had only 5.7% of admissions within the ED cohort in 2007/08.

Figure 3.5.1 Proportion of ED presentations classified as ED cohort patients by hospital, Queensland, 2007/08.

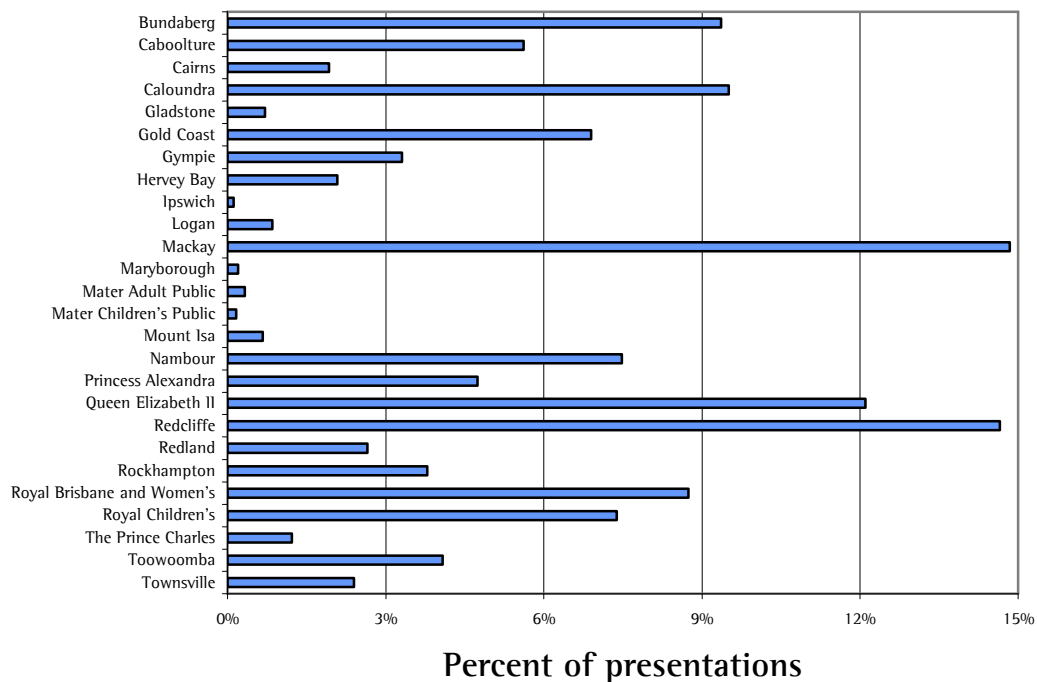


Figure 3.5.2 Proportion of all hospital admissions that were in the ED cohort by hospital, Queensland, 2007/08.

