Big differences in length of hospital stays and rate of avoidable admissions

Background information
The National Health Performance Authority has released two reports simultaneously. These reports are the first in a series of reports to be released that address efficiency and effectiveness in the Australian health care system. The aim is to assist system managers and health professionals in identifying more efficient approaches to care.

The first report is called Hospital Performance: Length of stay in public hospitals in 2011–12 and it looks at how long patients spend in public hospitals for 16 common conditions and procedures. The second related report is called Healthy Communities: Selected potentially avoidable hospitalisations in 2011–12 and it looks at admission rates for 21 conditions for which hospitalisation is considered avoidable.

Hospital Performance: Length of stay in public hospitals in 2011–12
What is length of stay?
This report provides information on the average length of stay among patients for 16 common conditions and procedures at 125 public hospitals (58 major metropolitan, 27 major regional, 23 large metropolitan and 17 large regional hospitals). To work out the average length of stay for a procedure such as appendix or gallbladder removal, two numbers are important. The first is the number of patient stays. The second is the number of bed days each patient spends in hospital.

The average length of stay is the total number of bed days spent in hospital divided by the number of stays.

- In 2011–12, there were more than 5.7 million stays in public hospitals across Australia and these patients used a total of 19.1 million bed days.
  - There were 2.9 million stays in public hospitals that lasted one or more nights, accounting for 16.3 million bed days.
  - This report presents information on 16 conditions and procedures at 125 public hospitals amounting to 382,006 stays of one or more nights, accounting for 1.48 million bed days which equates to 7.7% of all bed days in public hospitals. Of those stays, 82% were in major and large hospitals and data on these stays is a focus in this report.

Why length of stay matters
The length of time patients spend in hospital has a large impact on overall health system costs. Shorter stays are more efficient from a hospital’s perspective because beds can be made available more quickly to provide care for other patients. Opportunities exist to increase efficiency by reducing the length of hospital stays, provided patients are not put at risk by being sent home too soon.
**How we chose the 16 conditions and procedures**
The 16 conditions and procedures were chosen because they represent major areas of medical and surgical care. Many of the conditions or procedures (including childbirth, cellulitis, lung disease and heart failure) tend to affect people with similar characteristics, which can variously include age, gender, lifestyle factors and pre-existing health conditions. Taken together, this removes a number of factors that may otherwise have partially explained the variations observed in lengths of stay. See box at end of backgrounder for full list.

**Why length of stay**
The Council of Australian Governments (COAG) has identified relative length of stay in hospital as an efficiency measure for hospitals. It is one of the 48 indicators contained in the Performance and Accountability Framework that guides the Performance Authority’s work.

**How to use the report**
In Figure 2 on page six the graph shows the **number of stays** in all public hospitals for overnight stays for each of the 16 conditions and procedures. In Figure 3 on page seven the graph shows the **number of bed days** in all public hospitals for each of the 16 conditions and procedures. By comparing these graphs, it is possible to see that some conditions and procedures responsible for smaller numbers of stays account for a disproportionately higher share of bed days, or vice versa.

The average length of stay for vaginal and caesarean delivery in major and large public hospitals is shown in Figure 5 on page 11.

Throughout the report (on pages 11, 15, 17, 19, 21, 25, 27, 29, 31, 33 and 35,) there are a series of graphs called ‘strings of pearls’ that depict the variation between hospitals in average lengths of stay for each condition or procedure. Hospitals at the bottom of each ‘string’ have the shortest average stays, while those at the top have the longest. The vertical axis to the left shows the scale in days.

**Healthy Communities: Potentially avoidable hospitalisations in 2011–12**

What does potentially avoidable hospitalisations mean?
Potentially avoidable hospitalisations are admissions of people to hospital that may have been avoided by timely and effective provision of health care in the community. This report includes the rate of hospital admissions for 21 conditions within each of the geographic areas, or catchments, covered by the network of 61 Medicare Locals that have been set up across Australia to improve the responsiveness, coordination and integration of local health services.

Potentially avoidable hospitalisation does not mean that a person hospitalised with a condition for which hospitalisation is considered to be potentially avoidable did not need to be hospitalised at the time of admission. Instead, the admission may have been avoided by timely access to adequate primary health care to prevent the condition or manage the condition appropriately out of hospital. It is important to recognise that a potentially avoidable hospitalisation may have become unavoidable by the time a patient was admitted.

The 21 selected potentially avoidable hospitalisations have been categorised into three broad types in the report: chronic, acute and vaccine-preventable.
In 2011–12, there were over 635,000 admissions in Australia for the 21 conditions for which hospitalisation is considered to be potentially avoidable, accounting for 7% of all admissions in that year.

These hospitalisations were associated with almost 2.5 million hospital bed days, or 9% of all hospital bed days.

**How we chose the 21 conditions**

In Australia, the National Healthcare Agreement signed by the Commonwealth and all states and territories agreed on the need to report hospitalisations which are considered to be potentially avoidable. Potentially avoidable hospitalisation is an effectiveness measure for Medicare Locals. The data in the report is from 2011–12, when Medicare Locals were still being set up, so the findings are not a reflection on the performance of Medicare Locals but can be used to assist them in targeting interventions. See box at end of backgrounder for full list.

**How to use the report**

In Figure 2 on page eight the graph shows the **number of potentially avoidable hospitalisations** per 100,000 people, age standardised, by Medicare Local peer group. Each peer group average is located in the grey bar, with the striped sections beyond the ‘grey bar average’ showing Medicare Local catchments that are above the average for their peer group. The total number of separations in each Medicare Local catchment can be seen in the numbers to the right of its name.

In Figure 3 on page nine the graph shows the **percentage of same day potentially avoidable hospitalisations** per 100,000 people, by Medicare Local peer group. The Australian average can be seen in the top blue bar. Each peer group average is located in the grey bar, with the striped sections beyond the ‘grey bar average’ showing Medicare Local catchments that are above the average for their peer group. The total percentage of same day hospitalisations in each Medicare Local catchment can be seen in the numbers to the right of its name.

Figure 4 on page 11 provides a **state and territory snapshot of the number of potentially avoidable hospitalisations** per 100,000 people in Medicare Local peer group. Each Medicare Local catchment is segmented under a corresponding state or territory. Avoidable hospitalisations are expressed as a total (the green and blue bar in total) and by chronic admissions (the green section of the bar) and acute and vaccine-preventable admissions (the blue section of the bar). Figures are listed as a total, chronic admission and acute and vaccine-preventable admission to the right of each Medicare Local catchment name. This shows the variation overall and for chronic and acute and vaccine-preventable admissions.

The **variation within each single Medicare Local catchment area** is provided from page 22. Each map and graph outlines variation between smaller geographical areas called Statistical Areas Level 3 (SA3s), which are used by the Australian Bureau of Statistics. The maps and graphs show the range between the highest and lowest SA3s.

**Report peer groups for fair comparisons**

When presenting data in its Hospital Performance reports, the National Health Performance Authority groups hospitals into peer groups to allow fair comparisons. When presenting data in its Healthy Communities reports, the principle of peer grouping is applied to Medicare Local catchments.
Hospital peer groups
The Performance Authority has taken a number of steps to ensure comparisons are between similar patients as well as similar hospitals. The 125 largest public hospitals used in the report are peer grouped by size and location to enable fairer comparison. The four hospital peer groups used are: major metropolitan, major regional, large metropolitan and large regional.

Medicare Local peer groups
The national network of 61 Medicare Locals was established in 2011 to improve the responsiveness, coordination and integration of local primary health services. The Performance Authority has grouped Medicare Local catchments into peer groups on the basis of socioeconomic status, remoteness and distance to hospitals. There are seven Medicare Local catchment peer groups: Metropolitan 1, Metropolitan 2, Metropolitan 3, Regional 1, Regional 2, Rural 1 and Rural 2.

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The 16 selected conditions and procedures:

The Authority selected the following 16 conditions and procedures in conjunction with technical and clinical stakeholder committees:

**Childbirth**
- Vaginal delivery
- Caesarean delivery

**Medical conditions**
- Cellulitis
- Heart failure without complications
- Heart failure with complications
- COPD without complications
- COPD with complications
- Kidney and urinary tract infections without complications
- Kidney and urinary tract infections with complications

**Surgical procedures**
- Appendix removal
- Gallbladder removal
- Gynaecological reconstructive procedures
- Hysterectomy
- Knee replacement
- Hip replacement
- Prostate removal

For details on how these were selected, see Hospital Performance: Length of stay in public hospitals in 2011–12, Technical Supplement.
Healthy Communities: Selected potentially avoidable hospitalisations in 2011–12

Classification of selected potentially avoidable hospitalisations

**Chronic conditions**
- Asthma
- Congestive cardiac failure
- Diabetes complications
- Chronic Obstructive Pulmonary Disease (COPD)
- Angina
- Iron deficiency anaemia
- Hypertension
- Nutritional deficiencies
- Rheumatic heart disease

While these chronic conditions may be preventable through behaviour modification and lifestyle change, they can also theoretically be managed in a primary health care setting to prevent the condition worsening and requiring hospitalisation.4

**Acute conditions**
- Dehydration and gastroenteritis
- Pyelonephritis
- Perforated/bleeding ulcer
- Cellulitis
- Pelvic inflammatory disease
- Ear, nose and throat infections
- Dental conditions
- Appendicitis with generalised peritonitis
- Convulsions and epilepsy
- Gangrene

While these acute conditions may not be preventable, in theory hospitalisation should not occur if people receive timely and adequate access to primary health care.4

**Vaccine-preventable conditions**
- Influenza and pneumonia
- Other vaccine-preventable conditions

For these vaccine-preventable conditions, the condition is considered preventable and, therefore, the hospitalisation.4