Narrabri Hospital

30-day mortality following hospitalisation for seven conditions

Measures that assess how healthcare affects patient outcomes, such as risk-standardised mortality ratios (RSMRs), make a crucial contribution to informing efforts to improve care. They should be looked at alongside other measures and used by clinicians as a tool to prompt discussion and inform the development of quality improvement initiatives.

For each hospital, the RSMR compares the “observed” number of deaths within 30 days of admission for a specific clinical condition, with the “expected” number of deaths, which is calculated based on all patients admitted with that condition to any NSW hospital.

The RSMR calculation takes into account the volume and types of patients treated in each hospital (known as the case mix), as different hospitals provide care to patients who may be more or less likely, on admission, to die within 30 days.

The RSMR is a ratio. A ratio of less than 1.0 indicates that mortality is lower than expected in the hospital, while a ratio of greater than 1.0 indicates that mortality is higher than expected in the hospital. Small deviations from 1.0 are not considered meaningful.

When the ratio is statistically significantly lower than 1.0 it is shaded green, and this indicates that mortality is lower than expected in the hospital. When the ratio is statistically significantly higher than 1.0 it is shaded red, and this indicates that mortality is higher than expected in the hospital.

Funnel plots with 95% and 99.8% control limits around the NSW ratio of 1.0 are used to identify outlier hospitals, which are shaded green or red.

The RSMR is not designed to compare hospitals to each other. Rather it compares each hospital’s outcomes with what may have been expected given its particular case mix.

Risk-standardised mortality ratios (RSMRs) for seven conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>RSMR</th>
<th>July 2015 – June 2018</th>
<th>RSMRs for three-year periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute myocardial infarction</td>
<td>&lt; 50 index...</td>
<td>July 03 – June 06</td>
<td>○</td>
</tr>
<tr>
<td>Ischaemic stroke</td>
<td>&lt; 50 index...</td>
<td>July 06 – June 09</td>
<td>○</td>
</tr>
<tr>
<td>Haemorrhagic stroke</td>
<td>&lt; 50 index...</td>
<td>July 09 – June 12</td>
<td>○</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>&lt; 50 index...</td>
<td>July 12 – June 15</td>
<td>○</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>1.50</td>
<td>July 15 – June 18</td>
<td>○</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>&lt; 50 index...</td>
<td>July 03 – June 06</td>
<td>○</td>
</tr>
<tr>
<td>Hip fracture surgery</td>
<td>&lt; 50 index...</td>
<td>July 06 – June 09</td>
<td>○</td>
</tr>
</tbody>
</table>

* Data refer to patients who were discharged between July 2015 and June 2018 who were initially admitted to this hospital (regardless of whether they were subsequently transferred) in their last period of care, for an acute and emergency hospitalisation for the relevant condition. Deaths are from any cause, in or out of hospital, within 30 days of the hospitalisation admission date. The “expected” number of deaths is calculated using a statistical model. Details of analyses are available in Spotlight on Measurement: Measuring 30-day mortality following hospitalisation, 2nd edition and the Technical Supplement to Mortality following hospitalisation for seven clinical conditions, July 2015—June 2016.

† RSMR outliers between July 2012 – June 2016 used control limits of 95% and 99.8%. Periods between July 2000 and June 2012 used control limits of 90% and 99%. Historical results that were outside the 90% control limits but did not reach significance at the 95% level are categorised as “intermediate” results.

Notes: In June 2017, the NSW Health Admission Policy was released, stating that a patient treated in and discharged from an emergency department (ED) only, should not be recorded as an admitted patient. As a result, ED-only attendances were not included in BHI mortality analyses for the July 2015—June 2019 period, and comparison of results before and after this time should be made with caution. For more information, see the Technical Supplement to Mortality following hospitalisation for seven clinical conditions, July 2015—June 2018.

Data source: BHI analyses of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence.

Performance Profile: Narrabri Hospital

bhi.nsw.gov.au
How to interpret the dashboard

If a hospital’s RSMR lies on the grey bar, its mortality is within the range of values expected for a NSW hospital within the control limit.

- Mortality is lower than expected
- The length of the bar for each condition reflects the tolerance for variation. It is wider for hospitals admitting a small number of patients
- Mortality is higher than expected

How to interpret a funnel plot

- Hospital within the range of values expected for a NSW hospital within the control limit (inside the funnel)
- Hospital with higher mortality (between 95% and 99.8% control limits)
- Hospital with lower mortality
- This hospital’s result
- Greater tolerance for variation for hospitals with fewer expected deaths
- Reflects patient volume and case mix at the hospital

Legend:
- 95% limits
- 99.8% limits
- This hospital
- Peer hospitals
- Other hospitals
- Higher than expected
- No different than expected
- Lower than expected

Expected number of deaths within 30 days
Narrabri Hospital

30-day mortality following hospitalisation for acute myocardial infarction, July 2015 – June 2018

<50 index hospitalisations, results not shown
Narrabri Hospital

30-day mortality following hospitalisation for ischaemic stroke,
July 2015 – June 2018

<50 index hospitalisations,
results not shown
Narrabri Hospital

30-day mortality following hospitalisation for haemorrhagic stroke, July 2015 – June 2018

<50 index hospitalisations, results not shown
Narrabri Hospital

30-day mortality following hospitalisation for congestive heart failure, July 2015 – June 2018

<50 index hospitalisations, results not shown
Narrabri Hospital

30-day mortality following hospitalisation for pneumonia, July 2015 – June 2018

<table>
<thead>
<tr>
<th></th>
<th>This hospital</th>
<th>NSW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total pneumonia hospitalisations</td>
<td>56</td>
<td>56,247</td>
</tr>
<tr>
<td>Pneumonia patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presenting patients (index cases)</td>
<td>52</td>
<td>49,810</td>
</tr>
<tr>
<td>Patients transferred to another hospital within 30 days</td>
<td>10</td>
<td>5,260</td>
</tr>
<tr>
<td>Percentage of patients aged 65+ years</td>
<td>42.3%</td>
<td>69.4%</td>
</tr>
<tr>
<td>Percentage of patients aged 75+ years</td>
<td>38.5%</td>
<td>50.1%</td>
</tr>
</tbody>
</table>

Significant patient factors and comorbidities, this hospital, index cases

- Dementia: 2.7%
- Parkinson's disease: 0.9%
- Malignancy: 0.3%
- Shock: -0.6%
- Congestive heart failure: -11.8%
- Renal failure: -14.8%
- Hypotension: -15.2%
- Other COPD: -19.8%

% difference from NSW (index cases with factor recorded)

* Data refer to patients who were discharged between July 2015 and June 2018 who were initially admitted to this hospital (regardless of whether they were subsequently transferred) in their last period of care, for an acute and emergency hospitalisation with pneumonia as principal diagnosis (ICD-10-AM codes J13, J14, J15, J16, J18). Deaths are from any cause, in or out of hospital within 30 days of the hospitalisation admission date.

† Includes transfers for diagnostic tests, procedures and ongoing care.

‡ Age at admission date. Age was a statistical factor in the final model of 30-day mortality following hospitalisation for pneumonia.

§ Comorbidities as recorded on patient record, with one-year look-back from the admission date of the index case. The Australian Commission on Safety and Quality in Healthcare comorbidity list was used for acute myocardial infarction, ischaemic stroke, haemorrhagic stroke, pneumonia and hip fracture surgery. The Elixhauser comorbidity list was used for congestive heart failure and chronic obstructive pulmonary disease. STEMI refers to ST-elevation myocardial infarction. Only those conditions that were shown to have a significant impact on mortality (P<0.05) are shown.

Performance Profile: Narrabri Hospital
# Narrabri Hospital

## 30-day mortality following hospitalisation for pneumonia, July 2015 – June 2018

<table>
<thead>
<tr>
<th>Mortality (all causes) among 52 pneumonia index cases</th>
<th>This hospital</th>
<th>NSW</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 (9.6%)</td>
<td>4,538 (9.1%)</td>
<td></td>
</tr>
</tbody>
</table>

**Percentages: index cases who died within 30 days of hospitalisation**

<table>
<thead>
<tr>
<th>Where deaths occurred:</th>
<th>This hospital</th>
<th>NSW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage in this hospital</td>
<td>&lt;10 deaths</td>
<td>Detailed results not shown</td>
</tr>
<tr>
<td>Percentage in another hospital following transfer</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Percentage after discharge</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>When deaths occurred:</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Percentage on day of admission</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Percentage within seven days</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

## Cumulative mortality following hospitalisation for pneumonia, this hospital and NSW

* Cumulative percentage of deaths over the 30 days following admission to hospital for the relevant condition.
Narrabri Hospital

30-day mortality following hospitalisation for pneumonia, July 2015 – June 2018

Pneumonia risk-standardised mortality ratio by number of expected deaths, NSW public hospitals

Pneumonia, observed (unadjusted) mortality rates, this hospital and NSW, July 2003 – June 2018

* Results for hospitals with expected deaths <1 are not shown. Peer hospitals are identified according to the NSW Ministry of Health’s peer grouping as of January 2018.

† In June 2017, the NSW Health Admission Policy was released, stating that a patient treated in and discharged from an emergency department only, should not be recorded as an admitted patient. As a result, ED-only attendances were not included in BHI mortality analyses from July 2015 onwards and comparison of results before and after this time should be made with caution. For more information, see the Technical Supplement to Mortality following hospitalisation for seven clinical conditions, July 2015 – June 2018.
Narrabri Hospital

30-day mortality following hospitalisation for chronic obstructive pulmonary disease, July 2015 – June 2018

<50 index hospitalisations, results not shown
Narrabri Hospital

30-day mortality following hospitalisation for hip fracture surgery, July 2015 – June 2018

<50 index hospitalisations, results not shown