# Readmission and returns to acute care following hospitalisation for eight clinical conditions, July 2015 – June 2018

Measures that assess how healthcare affects patient outcomes, such as risk-standardised readmission ratios (RSRR), 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 this report, readmission includes both readmission following hospital discharge and returns to acute care from non-acute inpatient settings. This allows for fairer comparisons given the range of different arrangements hospitals have in place for nonacute care.

The RSRR differs from other readmission indicators principally because it is risk-adjusted and it takes into account readmission to any, rather than just the same, hospital. This includes readmissions to all hospitals, public and private, and provides a more meaningful and accurate reflection of readmissions, which are attributed to the last discharging hospital. The RSRR calculation takes into account the volume and characteristics of adults treated in each hospital (known as the case mix), as different hospitals provide care to patients who may be more or less likely to require readmission following discharge.

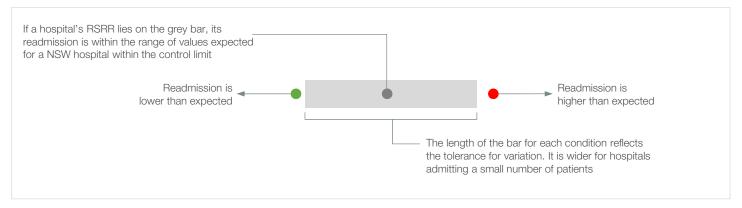
For each hospital, the RSRR compares the 'observed' number of readmissions to any hospital, within 30 days of discharge for a specific clinical condition or within 60 days for specified surgical procedures, with the 'expected' number of readmissions. The expected number of readmissions is calculated based on all adults admitted with that condition to any New South Wales (NSW) hospital.

The RSRR is a ratio. A ratio of less than 1.0 indicates that readmission was lower than expected to that hospital, whereas a ratio higher than 1.0 indicates higher readmission. Small deviations from 1.0 are not considered meaningful. The RSRR is not designed to compare hospitals to each other. Rather it compares each hospital's outcomes with what would have been expected given its particular case mix.

#### Risk-standardised readmission ratios (RSRRs) for eight clinical conditions

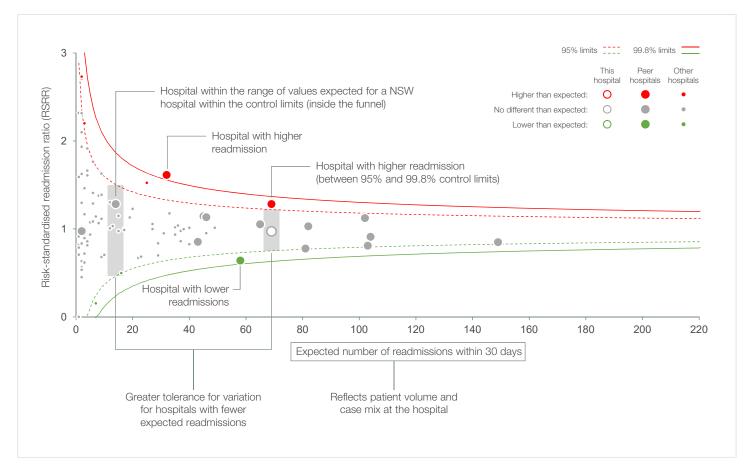
Condition	RSRR	July 2015 – June 2018						R	RSRRs for three-year periods				
		0.0	0.5	1.0	1.5	2.0	2.5	3.0	July 03 – June 06	July 06 – June 09	July 09 – June 12	July 12 – June 15	July 15 – June 18
Acute myocardial infarction	1.11								•	•	•	•	•
Ischaemic stroke	0.89			•					•	•	•	•	•
Congestive heart failure	1.12								•	•	•	•	•
Pneumonia	1.01			•					•	•	•	•	•
Chronic obstructive pulmonary disease	1.08								•	•	•	•	•
Hip fracture surgery	0.70		•						•	•	•	•	•
Total hip replacement	0.98			•					•	•	•	•	•
Total knee replacement	0.87								•	•	•	•	•
Readmiss	sion this perioc	No		han expect	ed	95%	6 control I	imits	No	atistically sign significant of Cases	nificant resu difference	lt	

#### How to interpret the dashboard



#### How to interpret a funnel plot

Funnel plots with 95% and 99.8% control limits around the NSW ratio are used to identify outlier hospitals, which are shaded in green or red. Control limits reflect the expected variation in the data.



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

#### Patient cohort, index hospitalisations<sup>1,2,3</sup>

	This hospital	NSW
Total index cases for acute myocardial infarction	341	28,583
Average length of stay (days)	5.4	5.2
Patients transferred in from acute care in another hospital	65	9,182
Discharge destination		
Home	310	25,477
Other	31	3,106

#### Age profile for index hospitalisations (years)<sup>4</sup>

			■15-4	4 45-64	■65–74	■75–84	85+
This hospital		35.8	25.5	2	21.7		.1
NSW	4.8	34.2	24.1	21.	9	15.0	0

% index cases

#### Patient factors associated with 30-day acute myocardial infarction readmission<sup>5,6</sup>

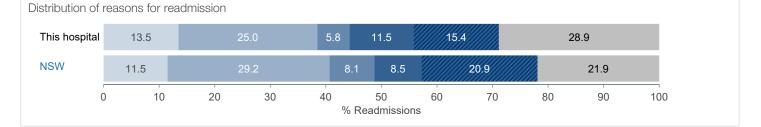
Female					3.1
Deficiency anaemia					1.0
Diabetes, complicated					0.7
Lymphoma				-0.3	
Chronic pulmonary disease				-0.4	
Depression				-0.9	
Coagulopathy			-	1.4	
Peripheral vascular disorder			-	1.5	
Congestive heart failure			-	1.6	
Solid tumour without metastasis			-1	1.7	
Abuse drug/alcohol/psychoses			-1	.9	
Fluid and electrolyte disorders			-5.4		
Previous AMI admission			-6.8		
Cardiac arrhythmia		-13.5			
Hypertension		-14.1			
	30 -	-20	-10	0	0 10 20 30
		% dif	ference from NS	N (inde)	ex cases with factor recorded)

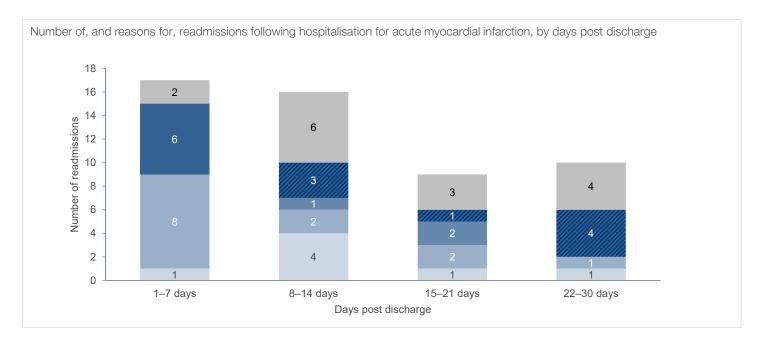
# 30-day readmission following hospitalisation for acute myocardial infarction, July 2015 – June 2018

ocation of readmissions <sup>7</sup>	This hospital	NSW
Total readmissions following index hospitalisation for acute myocardial infarction	52	4,250
Returns to acute care	1	159
Readmitted following hospital discharge	51	4,091
Readmitted to the same hospital where acute care was completed	30	2,815
Readmitted to a different hospital	21	1,276
To an urban public hospital	21	
To a regional or rural public hospital	0	
To a private hospital	0	

#### Reasons for and time to readmission<sup>8</sup>

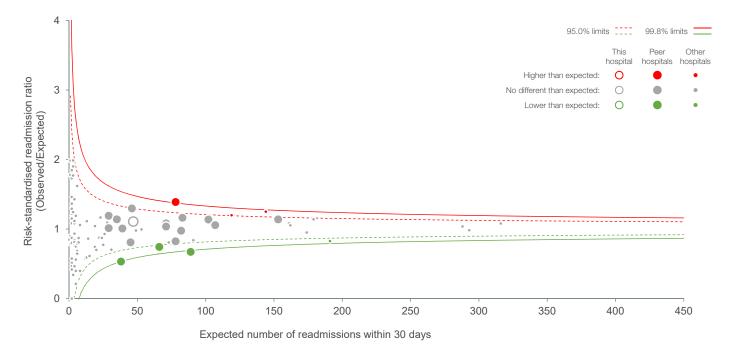
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, <7 days post discharge)</li>
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions



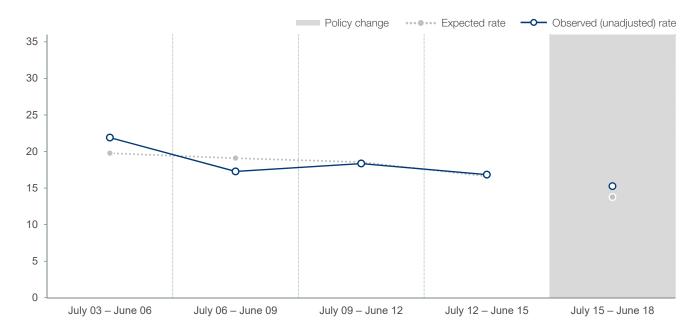


# 30-day readmission following hospitalisation for acute myocardial infarction, July 2015 – June 2018

Acute myocardial infarction risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals<sup>9</sup>



## Acute myocardial infarction, this hospital's expected **readmission rates**<sup>10</sup> and observed (unadjusted) readmission rates, July 2003 – June 2018



#### **Reference notes**

- 1. Data refer to patients aged 15+ years who were discharged from this hospital to a non-acute care setting, between July 2015 and June 2018, following an acute hospitalisation with AMI as principal diagnosis (ICD-10-AM codes I21, I22).
- For calculation of average length of stay, index admissions that were transferred in from, or transferred out to, another acute care hospital were excluded. Unreasonably long episodes are trimmed on the basis of the Diagnosis Related Group (DRG) of the episode. The trim point is the third quartile plus 1.5x the interquartile range of all in-scope episodes in each DRG.
- 3. For episodes coded as 'Discharged by hospital' or 'Discharged on leave', patients are considered as discharged home. All other modes of separation are deemed a discharge destination other than home. Where there is a non-acute care admission within one day of any discharge, it is not considered as discharged home regardless of the mode of separation.
- 4. Age at admission date.
- Comorbidities are identified from the hospital discharge records using the Elixhauser comorbidity set (plus dementia) with a one year look-back from the date of the admission. Only those conditions that were found to have a statistically significant impact on readmission (p<0.05) are shown.</li>
- 6. Age was a statistically significant factor in the final model for acute myocardial infarction.
- Readmissions include both returns to acute care from non-acute inpatient settings and readmissions following hospital discharge. Hospitals are classified as urban and regional/rural using the geocoded address of the hospital assigned to Australian Bureau of Statistics statistical areas (SA2) and the Australian remoteness index for areas.
- 8. Reasons for readmission follow the same clinical grouping as used in the previous report *Return to acute care following discharge from hospital, July 2012 June 2015.* Please refer to the previously published *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition,* which outline the specifications used to describe reasons for readmission.
- 9. Results for hospitals with expected readmission <1 are not shown. Hospitals are classified according to the NSW Ministry of Health's peer grouping as at January 2018.
- 10. Readmission rates at an average NSW public hospital with the same case-mix.

Details of analyses are available in *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition* and the *Technical Supplement – Readmission and returns to acute care following hospitalisation for eight clinical conditions, July 2015-June 2018.* 

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

#### Patient cohort, index hospitalisations<sup>1,2,3</sup>

	This hospital	NSW
Total index cases for ischaemic stroke	111	16,435
Average length of stay (days)	9.4	7.3
Patients transferred in from acute care in another hospital	17	1,916
Discharge destination		
Home	48	8,688
Other	63	7,747

#### Age profile for index hospitalisations (years)<sup>4</sup>

			■15-44	■45–64	■65–74	■75–84	85+
This hospital	24.3	19.8	35.1			18.0	
NSW	20.0	23.5	30.4	30.4		22.4	
		% i	index cases				

#### Patient factors associated with 30-day ischaemic stroke readmission<sup>5,6</sup>

Diabetes, complicated				5.9		
Liver disease			-0.1	0.0		
Lymphoma			-0.3			
Deficiency anaemia			-0.6			
Coagulopathy		-	3.0			
Congestive heart failure		-	3.2			
Weight loss		-3	3.5			
Solid tumour without metastasis		-3	.8			
Fluid and electrolyte disorders		-4.8				
Cardiac arrhythmia		-10.1				
Other neurological disorders	-16.6					
-30	0 -20	-10	0	10	20	30
		% difference from	NSW (index c	ases with factor recorded	d)	

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

ocation of readmissions <sup>7</sup>	This hospital	NSW
Total readmissions following index hospitalisation for ischaemic stroke	9	1,638
Returns to acute care		
Readmitted following hospital discharge		
Readmitted to the same hospital where acute care was completed		
Readmitted to a different hospital		
To an urban public hospital		
To a regional or rural public hospital		
To a private hospital		

#### Reasons for and time to readmission<sup>8</sup>

Same principal diagnosis

■ Potentially related to hospital care (time sensitive, ≤7 days post discharge)

Distribution of reasons for readmission

Condition related to principal diagnosis

Potentially related to hospital care (time sensitive, 8–30 days post discharge)

- Potentially related to hospital care (not time sensitive)
- Other conditions

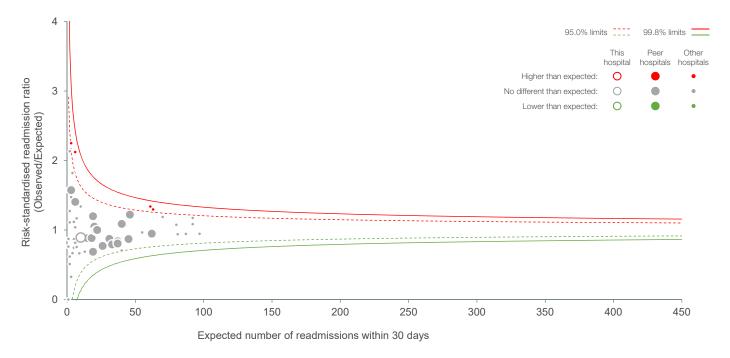
<10 readmissions Detailed results not shown

Number of, and reasons for, readmissions following hospitalisation for ischaemic stroke, by days post discharge

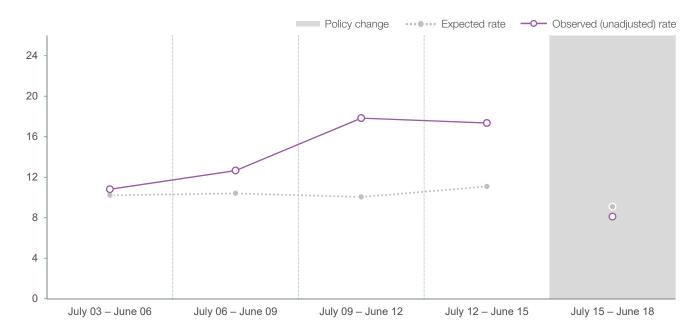
<10 readmissions Detailed results not shown

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

Ischaemic stroke risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals<sup>9</sup>



## Ischaemic stroke, this hospital's expected **readmission rates**<sup>10</sup> and observed (unadjusted) readmission rates, July 2003 – June 2018



#### **Reference notes**

- 1. Data refer to patients aged 15+ years who were discharged from this hospital to a non-acute care setting, between July 2015 and June 2018, following an acute hospitalisation with ischaemic stroke as principal diagnosis (ICD-10-AM code I63).
- For calculation of average length of stay, index admissions that were transferred in from, or transferred out to, another acute care hospital were excluded. Unreasonably long episodes are trimmed on the basis of the Diagnosis Related Group (DRG) of the episode. The trim point is the third quartile plus 1.5x the interquartile range of all in-scope episodes in each DRG.
- 3. For episodes coded as 'Discharged by hospital' or 'Discharged on leave', patients are considered as discharged home. All other modes of separation are deemed a discharge destination other than home. Where there is a non-acute care admission within one day of any discharge, it is not considered as discharged home regardless of the mode of separation.
- 4. Age at admission date.
- Comorbidities are identified from the hospital discharge records using the Elixhauser comorbidity set (plus dementia) with a one year look-back from the date of the admission. Only those conditions that were found to have a statistically significant impact on readmission (p<0.05) are shown.</li>
- 6. Age was not a statistically significant factor in the final model for ischaemic stroke.
- Readmissions include both returns to acute care from non-acute inpatient settings and readmissions following hospital discharge. Hospitals are classified as urban and regional/rural using the geocoded address of the hospital assigned to Australian Bureau of Statistics statistical areas (SA2) and the Australian remoteness index for areas.
- 8. Reasons for readmission follow the same clinical grouping as used in the previous report *Return to acute care following discharge from hospital, July 2012 June 2015.* Please refer to the previously published *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition,* which outline the specifications used to describe reasons for readmission.
- 9. Results for hospitals with expected readmission <1 are not shown. Hospitals are classified according to the NSW Ministry of Health's peer grouping as at January 2018.
- 10. Readmission rates at an average NSW public hospital with the same case-mix.

Details of analyses are available in *Spotlight on Measurement: Measuring return to acute care following discharge from hospital,* 2nd edition and the *Technical Supplement – Readmission and returns to acute care following hospitalisation for eight clinical conditions,* July 2015-June 2018.

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

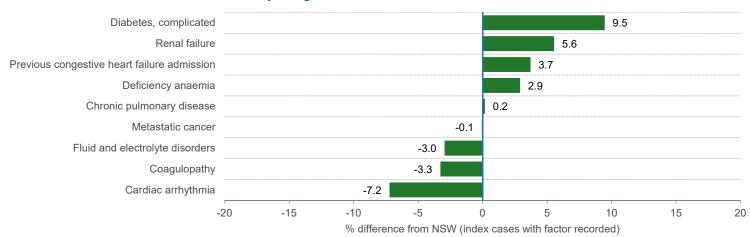
#### Patient cohort, index hospitalisations<sup>1,2,3</sup>

This hospital	NSW
553	33,686
5.8	6.0
5	2,723
473	29,025
80	4,661
	This hospital   553   5.8   5   473   80

#### Age profile for index hospitalisations (years)<sup>4</sup>

			∎ 15-44	■ 45–64	■65–74	■75–84	85+
This hospital	8.7	16.6	39.8		34.2	2	
NSW	10.8	18.9	33.6		34.9	I	
			% index cases				

#### Patient factors associated with 30-day congestive heart failure readmission<sup>5,6</sup>



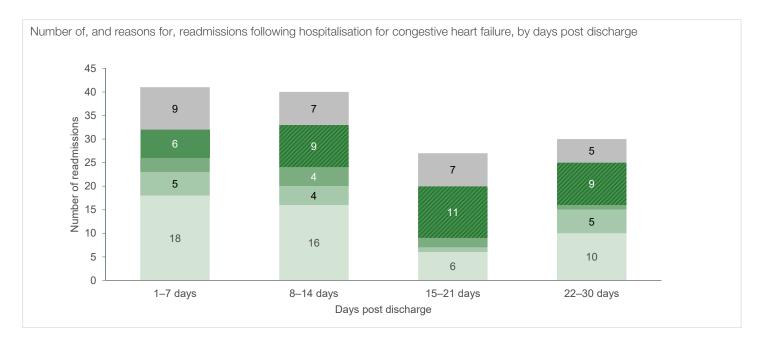
### 30-day readmission following hospitalisation for congestive heart failure, July 2015 – June 2018

_ocation of readmissions <sup>7</sup>	This hospital	NSW
Total readmissions following index hospitalisation for congestive heart failure	138	7,465
Returns to acute care	6	309
Readmitted following hospital discharge	132	7,156
Readmitted to the same hospital where acute care was completed	83	5,843
Readmitted to a different hospital	49	1,313
To an urban public hospital	49	
To a regional or rural public hospital	0	
To a private hospital	0	

#### Reasons for and time to readmission<sup>8</sup>

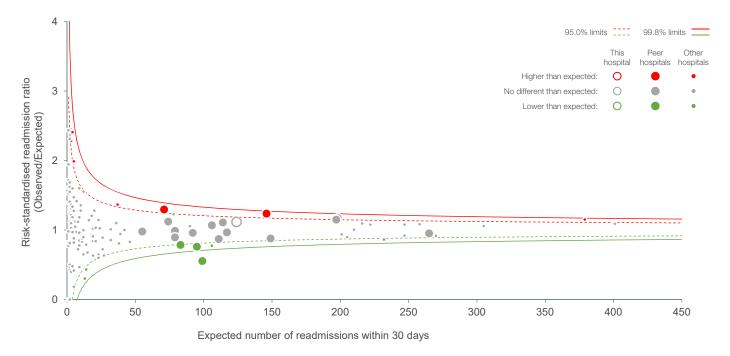
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, ≤7 days post discharge)
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions



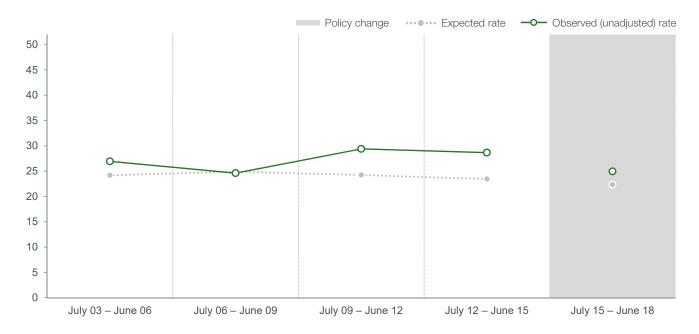


# 30-day readmission following hospitalisation for congestive heart failure, July 2015 – June 2018

Congestive heart failure risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals<sup>9</sup>



## Congestive heart failure, this hospital's expected **readmission rates**<sup>10</sup> and observed (unadjusted) readmission rates, July 2003 – June 2018



#### **Reference notes**

- 1. Data refer to patients aged 15+ years who were discharged from this hospital to a non-acute care setting, between July 2015 and June 2018, following an acute hospitalisation with congestive heart failure as principal diagnosis (ICD-10-AM codes I11.0, I13.0, I13.2, I50.0, I50.1, I50.9).
- 2. For calculation of average length of stay, index admissions that were transferred in from, or transferred out to, another acute care hospital were excluded. Unreasonably long episodes are trimmed on the basis of the Diagnosis Related Group (DRG) of the episode. The trim point is the third quartile plus 1.5x the interquartile range of all in-scope episodes in each DRG.
- 3. For episodes coded as 'Discharged by hospital' or 'Discharged on leave', patients are considered as discharged home. All other modes of separation are deemed a discharge destination other than home. Where there is a non-acute care admission within one day of any discharge, it is not considered as discharged home regardless of the mode of separation.
- 4. Age at admission date.
- Comorbidities are identified from the hospital discharge records using the Elixhauser comorbidity set (plus dementia) with a one year look-back from the date of the admission. Only those conditions that were found to have a statistically significant impact on readmission (p<0.05) are shown.</li>
- 6. Age was not a statistically significant factor in the final model for congestive heart failure.
- Readmissions include both returns to acute care from non-acute inpatient settings and readmissions following hospital discharge. Hospitals are classified as urban and regional/rural using the geocoded address of the hospital assigned to Australian Bureau of Statistics statistical areas (SA2) and the Australian remoteness index for areas.
- 8. Reasons for readmission follow the same clinical grouping as used in the previous report *Return to acute care following discharge from hospital, July 2012 June 2015.* Please refer to the previously published *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition,* which outline the specifications used to describe reasons for readmission.
- 9. Results for hospitals with expected readmission <1 are not shown. Hospitals are classified according to the NSW Ministry of Health's peer grouping as at January 2018.
- 10. Readmission rates at an average NSW public hospital with the same case-mix.

Details of analyses are available in *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition* and the *Technical Supplement – Readmission and returns to acute care following hospitalisation for eight clinical conditions, July 2015-June 2018.* 

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

#### Patient cohort, index hospitalisations<sup>1,2,3</sup>

This hospital	NSW
590	48,855
5.3	5.1
20	3,190
493	42,535
97	6,320
	This hospital   590   5.3   20   493   97

#### Age profile for index hospitalisations (years)<sup>4</sup>

				■ 18–44	■45–64	65-74	75-84	85+
This hospital	11.7	19.2	18.5	26.8		23.9		
NSW	11.1	19.9	19.9 26.1				23.0	
			% inde	x cases				

#### Patient factors associated with 30-day pneumonia readmission<sup>5,6</sup>

Female	4.0
Diabetes, complicated	1.5
Deficiency anaemia	0.3
Congestive heart failure	-0.1
Lymphoma	-0.6
Cardiac arrhythmia	-0.6
Renal failure	-0.7
Depression	-0.8
Paralysis	-1.0
Rheumatoid arthritis/collagen	-1.0
Liver disease	-1.3
Peripheral vascular disorder	-1.3
Coagulopathy	-1.8
Fluid and electrolyte disorders	-2.1
Metastatic cancer	-2.3
Hypertension	-2.4
Weight loss	-2.5
Solid tumour without metastasis	-2.5
Abuse drug/alcohol/psychoses	-2.8
Previous pneumonia admission	-3.2
Chronic pulmonary disease	-7.4

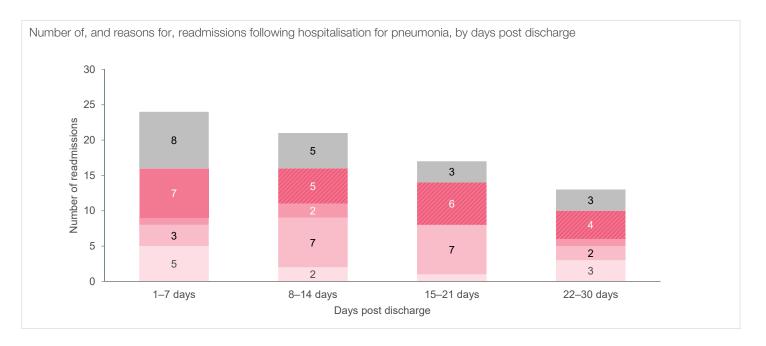
## 30-day readmission following hospitalisation for pneumonia, July 2015 – June 2018

Location of readmissions <sup>7</sup>	This hospital	NSW
Total readmissions following index hospitalisation for pneumonia	75	6,704
Returns to acute care	1	325
Readmitted following hospital discharge	74	6,379
Readmitted to the same hospital where acute care was completed	57	5,201
Readmitted to a different hospital	17	1,178
To an urban public hospital	17	
To a regional or rural public hospital	0	
To a private hospital	0	

#### Reasons for and time to readmission<sup>8</sup>

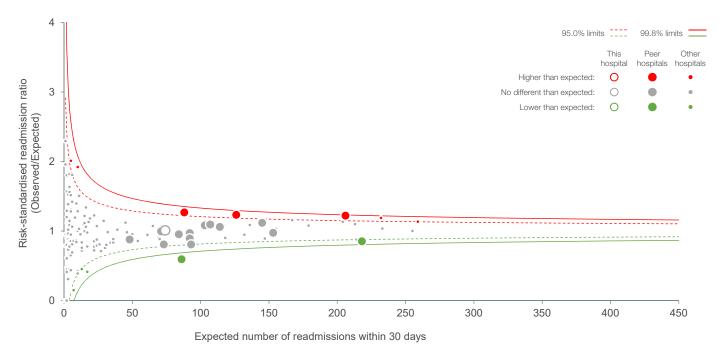
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, <7 days post discharge)</p>
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions

Distribution of reasons for readmission												
This hospital	14	.7		25.3	5.3	9.3	20.0			25.3		
NSW		19.5		20.0	7.8	7.5	14.2		31.	1		
	0	10	20	30	40 % R	50 eadmissi	60 ons	70	80	90	100	

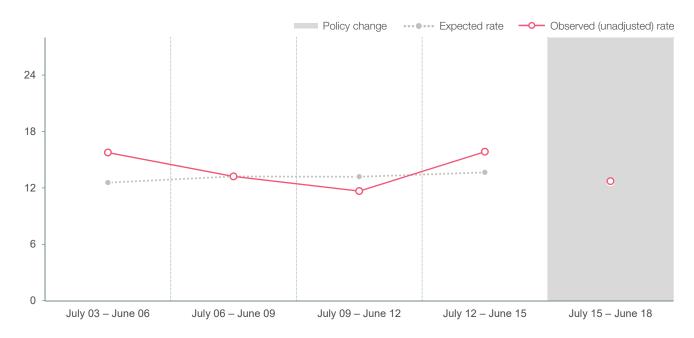


## 30-day readmission following hospitalisation for pneumonia, July 2015 – June 2018

Pneumonia risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals<sup>9</sup>



# Pneumonia, this hospital's expected **readmission rates**<sup>10</sup> and observed (unadjusted) readmission rates, July 2003 – June 2018



#### **Reference notes**

- 1. Data refer to patients aged 18+ years who were discharged from this hospital to a non-acute care setting, between July 2015 and June 2018, following an acute hospitalisation with pneumonia as principal diagnosis (ICD-10-AM codes J13, J14, J15, J16, J18).
- For calculation of average length of stay, index admissions that were transferred in from, or transferred out to, another acute care hospital were excluded. Unreasonably long episodes are trimmed on the basis of the Diagnosis Related Group (DRG) of the episode. The trim point is the third quartile plus 1.5x the interquartile range of all in-scope episodes in each DRG.
- 3. For episodes coded as 'Discharged by hospital' or 'Discharged on leave', patients are considered as discharged home. All other modes of separation are deemed a discharge destination other than home. Where there is a non-acute care admission within one day of any discharge, it is not considered as discharged home regardless of the mode of separation.
- 4. Age at admission date.
- Comorbidities are identified from the hospital discharge records using the Elixhauser comorbidity set (plus dementia) with a one year look-back from the date of the admission. Only those conditions that were found to have a statistically significant impact on readmission (p<0.05) are shown.</li>
- 6. Age was a statistically significant factor in the final model for pneumonia.
- Readmissions include both returns to acute care from non-acute inpatient settings and readmissions following hospital discharge. Hospitals are classified as urban and regional/rural using the geocoded address of the hospital assigned to Australian Bureau of Statistics statistical areas (SA2) and the Australian remoteness index for areas.
- 8. Reasons for readmission follow the same clinical grouping as used in the previous report *Return to acute care following discharge from hospital, July 2012 June 2015.* Please refer to the previously published *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition,* which outline the specifications used to describe reasons for readmission.
- 9. Results for hospitals with expected readmission <1 are not shown. Hospitals are classified according to the NSW Ministry of Health's peer grouping as at January 2018.
- 10. Readmission rates at an average NSW public hospital with the same case-mix.

Details of analyses are available in *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition* and the *Technical Supplement – Readmission and returns to acute care following hospitalisation for eight clinical conditions, July 2015-June 2018.* 

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

#### Patient cohort, index hospitalisations<sup>1,2,3</sup>

	This hospital	NSW
otal index cases for chronic obstructive pulmonary disease	723	48,336
Average length of stay (days)	5.0	4.8
Patients transferred in from acute care in another hospital	5	2,330
Discharge destination		
Home	649	43,932
Other	74	4,404

#### Age profile for index hospitalisations (years)<sup>4</sup>

				45-64	65-74	<b>7</b> 5	-84	85+		
This hospital	14.7	28.4		38.9		18.	.1			
NSW	21.2	31.7		32.0			1	15.1		
	% index cases									

#### Patient factors associated with 30-day chronic obstructive pulmonary disease readmission<sup>5,6</sup>

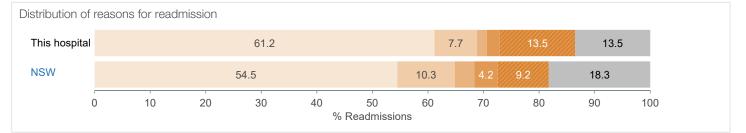
Diabetes, uncomplicated								8.1		
Fluid and electrolyte disorders								6.8		
Cardiac arrhythmia							3.9			
Diabetes, complicated							3.8			
Congestive heart failure							3.6			
Renal failure						1.8				
Pulmonary circulation disorders						1.2				
Solid tumour without metastasis						0.7				
Dementia						0.0				
Previous COPD admission					-0.3					
Deficiency anaemia					-0.3					
Depression				-	0.7					
Abuse drug/alcohol/psychoses				-1	.0					
Hypertension				-1	.2					
Peripheral vascular disorder				-1	.2					
Weight loss				-3.0						
Female			-6.7							
-20	0	-15	-10	-5	0		5	10	15	20
			% differer	nce from NSV	V (index	cases w	ith factor r	ecorded)		

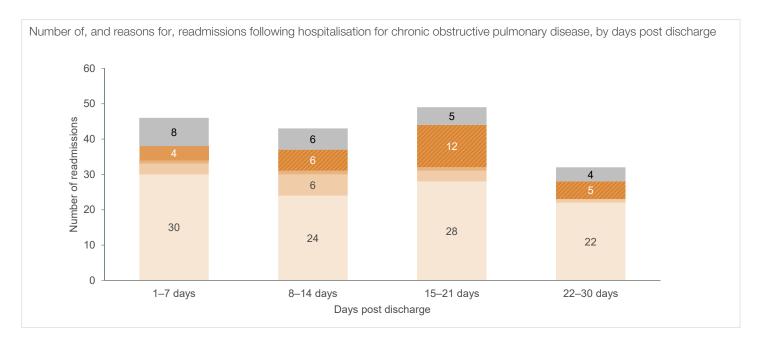
### 30-day readmission following hospitalisation for chronic obstructive pulmonary disease, July 2015 – June 2018

Location of readmissions <sup>7</sup>	This hospital	NSW
Total readmissions following index hospitalisation for chronic obstructive pulmonary disease	170	10,241
Returns to acute care	2	233
Readmitted following hospital discharge	168	10,008
Readmitted to the same hospital where acute care was completed	120	8,472
Readmitted to a different hospital	48	1,536
To an urban public hospital	47	
To a regional or rural public hospital	1	
To a private hospital	0	

#### Reasons for and time to readmission<sup>8</sup>

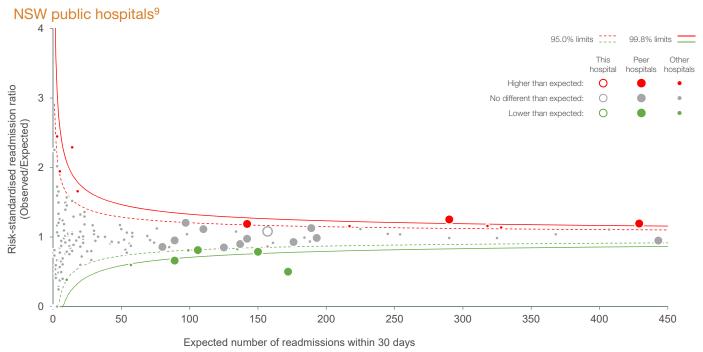
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, ≤7 days post discharge)
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions



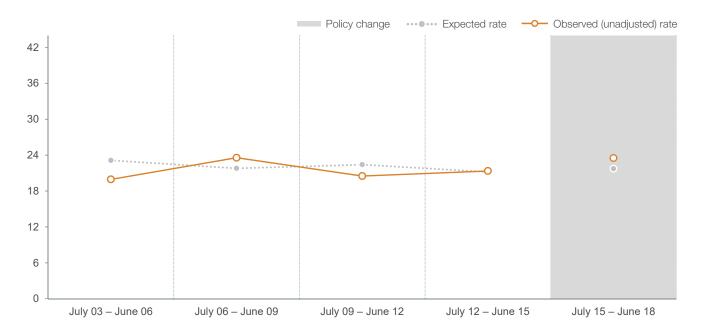


# 30-day readmission following hospitalisation for chronic obstructive pulmonary disease, July 2015 – June 2018

## Chronic obstructive pulmonary disease risk-standardised **readmission ratios** by number of expected readmissions,



## Chronic obstructive pulmonary disease, this hospital's expected **readmission rates**<sup>10</sup> and observed (unadjusted) readmission rates, July 2003 – June 2018



#### **Reference notes**

- 1. Data refer to patients aged 45+ years who were discharged from this hospital to a non-acute care setting, between July 2015 and June 2018, following an acute hospitalisation with COPD as principal diagnosis (ICD-10-AM code J41, J42, J43, J44, J47, and J20 and J40 if accompanied by J41, J42, J43, J44 and J47 in any secondary diagnoses).
- For calculation of average length of stay, index admissions that were transferred in from, or transferred out to, another acute care hospital were excluded. Unreasonably long episodes are trimmed on the basis of the Diagnosis Related Group (DRG) of the episode. The trim point is the third quartile plus 1.5x the interquartile range of all in-scope episodes in each DRG.
- 3. For episodes coded as 'Discharged by hospital' or 'Discharged on leave', patients are considered as discharged home. All other modes of separation are deemed a discharge destination other than home. Where there is a non-acute care admission within one day of any discharge, it is not considered as discharged home regardless of the mode of separation.
- 4. Age at admission date.
- Comorbidities are identified from the hospital discharge records using the Elixhauser comorbidity set (plus dementia) with a one year look-back from the date of the admission. Only those conditions that were found to have a statistically significant impact on readmission (p<0.05) are shown.</li>
- 6. Age was a statistically significant factor in the final model for chronic obstructive pulmonary disease.
- Readmissions include both returns to acute care from non-acute inpatient settings and readmissions following hospital discharge. Hospitals are classified as urban and regional/rural using the geocoded address of the hospital assigned to Australian Bureau of Statistics statistical areas (SA2) and the Australian remoteness index for areas.
- 8. Reasons for readmission follow the same clinical grouping as used in the previous report *Return to acute care following discharge from hospital, July 2012 June 2015.* Please refer to the previously published *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition,* which outline the specifications used to describe reasons for readmission.
- 9. Results for hospitals with expected readmission <1 are not shown. Hospitals are classified according to the NSW Ministry of Health's peer grouping as at January 2018.
- 10. Readmission rates at an average NSW public hospital with the same case-mix.

Details of analyses are available in *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition* and the *Technical Supplement – Readmission and returns to acute care following hospitalisation for eight clinical conditions, July 2015-June 2018.* 

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

#### Patient cohort, index hospitalisations<sup>1,2,3</sup>

This hospital	NSW
54	14,895
54	2,030
1	4,404
53	10,491
	This hospital   54   54   1   53

#### Age profile for index hospitalisations (years)<sup>4</sup>

						<b>5</b> 0–	64	65-74	■75–84	85+
This hospital	1	4.8		35.2						
NSW	6.8	13.9	9	31.6				47.8		
	% index cases									

#### Patient factors associated with 30-day hip fracture surgery readmission<sup>5,6</sup>

Diabetes, complicated					7.3		
Female					4.0		
Depression					1.1		
Congestive heart failure					0.8		
AIDS/HIV					0.0		
Liver disease				-0.1			
Fluid and electrolyte disorders				-0.5			
Chronic pulmonary disease				-0.5			
Other neurological disorders			-2	2.6			
Cardiac arrhythmia			-3.	0			
Dementia			-11.3				
	-30	-20	-10	0	10	20	30
		9	6 difference from NS	SW (index	cases with factor recorded	d)	

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

ocation of readmissions <sup>7</sup>	This hospital	NSW
Total readmissions following index hospitalisation for hip fracture surgery	4	1,617
Returns to acute care		
Readmitted following hospital discharge		
Readmitted to the same hospital where acute care was completed		
Readmitted to a different hospital		
To an urban public hospital		
To a regional or rural public hospital		
To a private hospital		

#### Reasons for and time to readmission<sup>8</sup>

Same principal diagnosis

■ Potentially related to hospital care (time sensitive, ≤7 days post discharge)

Distribution of reasons for readmission

Orthopaedic complications

Potentially related to hospital care (time sensitive, 8–30 days post discharge)

- Potentially related to hospital care (not time sensitive)
- Other conditions

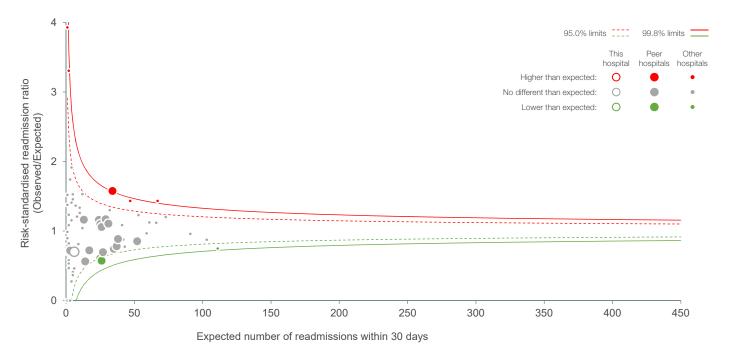
<10 readmissions Detailed results not shown

Number of, and reasons for, readmissions following hospitalisation for hip fracture surgery, by days post discharge

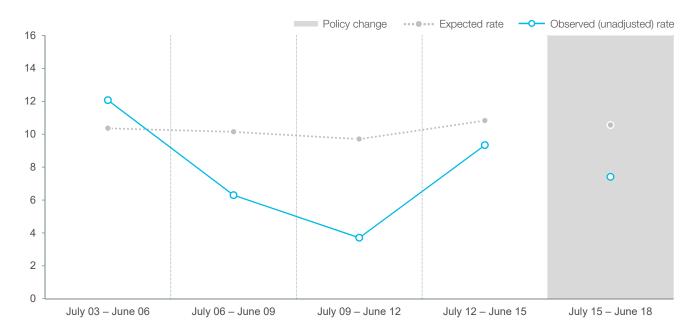
<10 readmissions Detailed results not shown

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

# Hip fracture surgery risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals<sup>9</sup>



## Hip fracture surgery, this hospital's expected **readmission rates**<sup>10</sup> and observed (unadjusted) readmission rates, July 2003 – June 2018



#### **Reference notes**

- 1. Data refer to patients aged 50+ years who were discharged from this hospital to a non-acute care setting, between July 2015 and June 2018, following an acute hospitalisation with hip fracture as principal diagnosis and treated with surgery (ICD-10-AM codes for hip fracture S72.0, S72.1, S72.2 accompanied with a fall codes W00-W19 and R29.6 and treated with a surgical procedure).
- For calculation of average length of stay, index admissions that were transferred in from, or transferred out to, another acute care hospital were excluded. Unreasonably long episodes are trimmed on the basis of the Diagnosis Related Group (DRG) of the episode. The trim point is the third quartile plus 1.5x the interquartile range of all in-scope episodes in each DRG.
- 3. For episodes coded as 'Discharged by hospital' or 'Discharged on leave', patients are considered as discharged home. All other modes of separation are deemed a discharge destination other than home. Where there is a non-acute care admission within one day of any discharge, it is not considered as discharged home regardless of the mode of separation.
- 4. Age at admission date.
- Comorbidities are identified from the hospital discharge records using the Elixhauser comorbidity set (plus dementia) with a one year look-back from the date of the admission. Only those conditions that were found to have a statistically significant impact on readmission (p<0.05) are shown.</li>
- 6. Age was a statistically significant factor in the final model for hip fracture surgery.
- Readmissions include both returns to acute care from non-acute inpatient settings and readmissions following hospital discharge. Hospitals are classified as urban and regional/rural using the geocoded address of the hospital assigned to Australian Bureau of Statistics statistical areas (SA2) and the Australian remoteness index for areas.
- 8. Reasons for readmission follow the same clinical grouping as used in the previous report *Return to acute care following discharge from hospital, July 2012 June 2015.* Please refer to the previously published *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition,* which outline the specifications used to describe reasons for readmission.
- 9. Results for hospitals with expected readmission <1 are not shown. Hospitals are classified according to the NSW Ministry of Health's peer grouping as at January 2018.
- 10. Readmission rates at an average NSW public hospital with the same case-mix.

Details of analyses are available in *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition* and the *Technical Supplement – Readmission and returns to acute care following hospitalisation for eight clinical conditions, July 2015-June 2018.* 

## 60-day readmission following hospitalisation for total hip replacement, July 2015 – June 2018

#### Patient cohort, index hospitalisations<sup>1,2,3</sup>

	This hospital	NSW
al index cases for total hip replacement	492	8,985
Average length of stay (days)	5.1	4.7
Discharge destination		
Home	441	7,472
Other	51	1,513

#### Age profile for index hospitalisations (years)<sup>4</sup>

		■ 18–44	45–6	64 65-74	75-84	85+
This hospital	33.3			26.	6	
NSW	35.2	32.7		23.3		
		% index cases				

#### Patient factors associated with 60-day total hip replacement readmission<sup>5,6</sup>

Diabetes, uncomplicated						4.6			
Cardiac arrhythmia					0.8				
Rheumatoid arthritis/collagen					0.6				
Diabetes, complicated					0.5				
Depression				-0.1					
Coagulopathy				-0.1					
Chronic pulmonary disease				-0.1					
Other neurological disorders				-0.5					
Abuse drug/alcohol/psychoses				-0.5					
Metastatic cancer				-0.6					
Weight loss				-0.6					
-20	-15	-10	-5	C	)	5	10	15	20
		% differe	nce from I	ISW (inde	x cases	with factor r	ecorded)		

## 60-day readmission following hospitalisation for total hip replacement, July 2015 – June 2018

Location of readmissions <sup>7</sup>	This hospital	NSW
Total readmissions following index hospitalisation for total hip replacement	50	949
Returns to acute care	3	107
Readmitted following hospital discharge	47	842
Readmitted to the same hospital where acute care was completed	8	499
Readmitted to a different hospital	39	343
To an urban public hospital	38	
To a regional or rural public hospital	1	
To a private hospital	0	

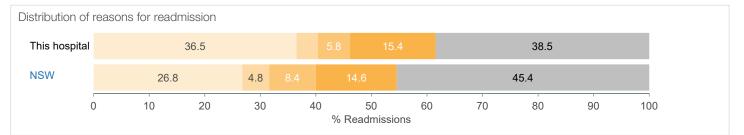
#### Reasons for and time to readmission<sup>8</sup>

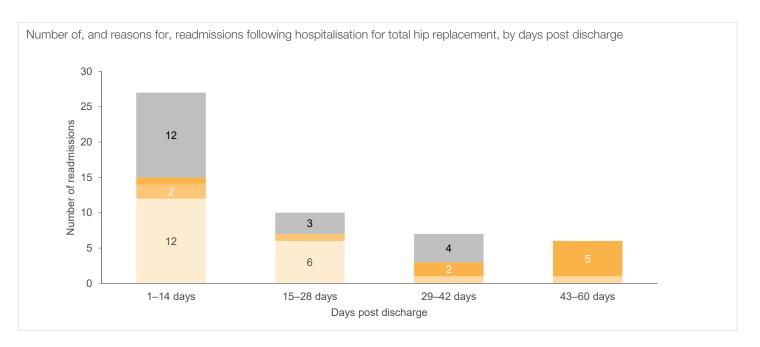
 Orthopaedic complications (within time specified)

Potentially related to hospital care (outside time specified)  Orthopaedic complications (outside time specified)

Other conditions

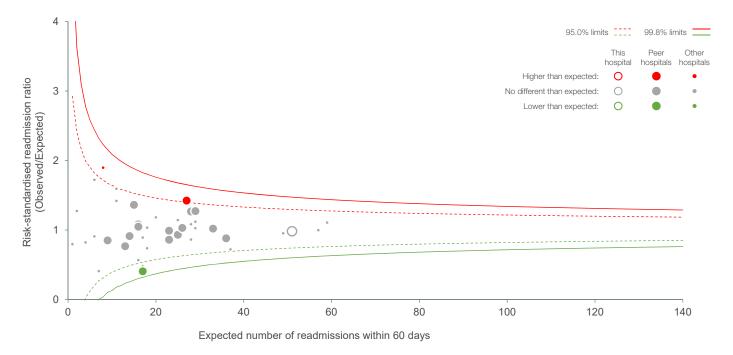
Potentially related to hospital care (within time specified)



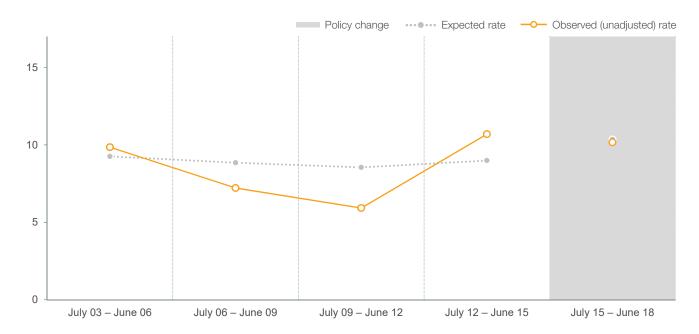


# 60-day readmission following hospitalisation for total hip replacement, July 2015 – June 2018

Total hip replacement risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals<sup>9</sup>



## Total hip replacement, this hospital's expected **readmission rates**<sup>10</sup> and observed (unadjusted) readmission rates, July 2003 – June 2018



#### **Reference notes**

- 1. Data refer to patients aged 18+ years who were discharged from this hospital to a non-acute care setting, between July 2015 and June 2018, following an acute hospitalisation for an elective total hip replacement (ACHI codes 49318-00, 49319-00).
- For calculation of average length of stay, index admissions that were transferred in from, or transferred out to, another acute care hospital were excluded. Unreasonably long episodes are trimmed on the basis of the Diagnosis Related Group (DRG) of the episode. The trim point is the third quartile plus 1.5x the interquartile range of all in-scope episodes in each DRG.
- 3. For episodes coded as 'Discharged by hospital' or 'Discharged on leave', patients are considered as discharged home. All other modes of separation are deemed a discharge destination other than home. Where there is a non-acute care admission within one day of any discharge, it is not considered as discharged home regardless of the mode of separation.
- 4. Age at admission date.
- Comorbidities are identified from the hospital discharge records using the Elixhauser comorbidity set (plus dementia) with a one year look-back from the date of the admission. Only those conditions that were found to have a statistically significant impact on readmission (p<0.05) are shown.</li>
- 6. Age was a statistically significant factor in the final model for total hip replacement.
- Readmissions include both returns to acute care from non-acute inpatient settings and readmissions following hospital discharge. Hospitals are classified as urban and regional/rural using the geocoded address of the hospital assigned to Australian Bureau of Statistics statistical areas (SA2) and the Australian remoteness index for areas.
- 8. Reasons for readmission follow the same clinical grouping as used in the previous report *Return to acute care following discharge from hospital, July 2012 June 2015.* Please refer to the previously published *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition,* which outline the specifications used to describe reasons for readmission.
- 9. Results for hospitals with expected readmission <1 are not shown. Hospitals are classified according to the NSW Ministry of Health's peer grouping as at January 2018.
- 10. Readmission rates at an average NSW public hospital with the same case-mix.

Details of analyses are available in *Spotlight on Measurement: Measuring return to acute care following discharge from hospital,* 2nd edition and the *Technical Supplement – Readmission and returns to acute care following hospitalisation for eight clinical conditions,* July 2015-June 2018.

### 60-day readmission following hospitalisation for total knee replacement, July 2015 – June 2018

#### Patient cohort, index hospitalisations<sup>1,2,3</sup>

	This hospital	NSW
Fotal index cases for total knee replacement	1,123	15,940
Average length of stay (days)	5.3	4.9
Discharge destination		
Home	1,006	13,175
Other	117	2,765

#### Age profile for index hospitalisations (years)<sup>4</sup>

		■18-44 ■45-6	4 65-74 75-84 85-	+
This hospital	33.6	39.5	23.6	
NSW	30.9	40.1	25.3	

% index cases

#### Patient factors associated with 60-day total knee replacement readmission<sup>5,6</sup>

Female								8.5		
Fluid and electrolyte disorders						2.1				
Diabetes, complicated						1.9				
Cardiac arrhythmia						1.3				
Weight loss					-0.1					
Lymphoma					-0.1					
Chronic pulmonary disease					-0.1					
Coagulopathy					-0.1					
Blood loss anaemia					-0.3					
Abuse drug/alcohol/psychoses					-0.3					
Renal failure					-0.5					
-	20	-15	-10	-5	0		5	10	15	20
			% differe	nce from N	SW (index	cases with	factor re	ecorded)		

## 60-day readmission following hospitalisation for total knee replacement, July 2015 – June 2018

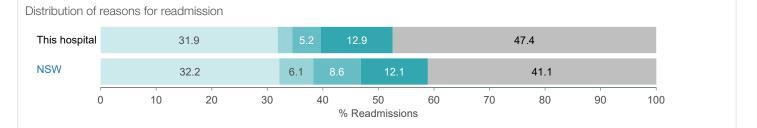
Location of readmissions <sup>7</sup>	This hospital	NSW	
Total readmissions following index hospitalisation for total knee replacement	114	1,892	
Returns to acute care	3	152	
Readmitted following hospital discharge	111	1,740	
Readmitted to the same hospital where acute care was completed	38	1,052	
Readmitted to a different hospital	73	688	
To an urban public hospital	70		
To a regional or rural public hospital	0		
To a private hospital	3		

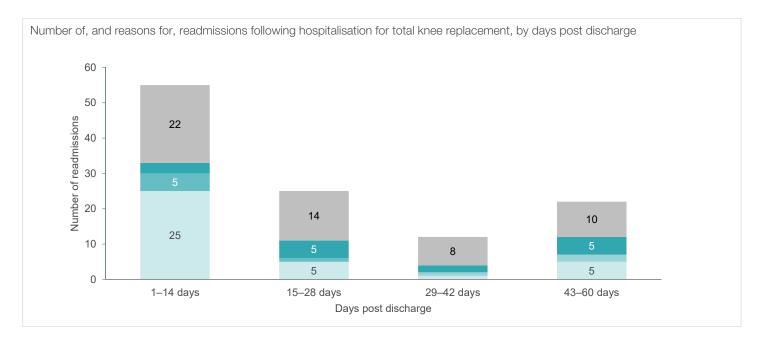
#### Reasons for and time to readmission<sup>8</sup>

 Orthopaedic complications (within time specified)

- Potentially related to hospital care (outside time specified)
- Orthopaedic complications (outside time specified)
- Other conditions

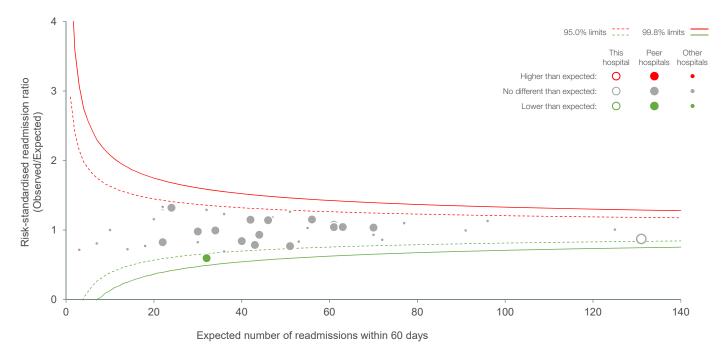
 Potentially related to hospital care (within time specified)



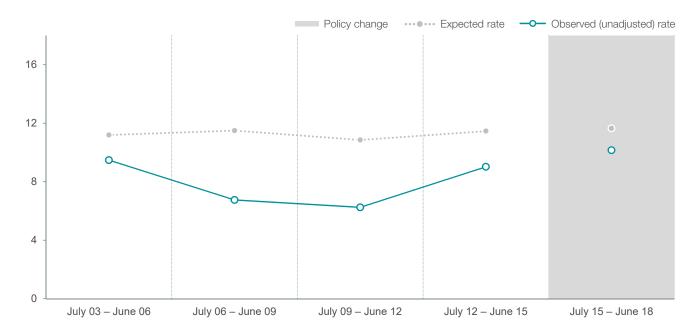


### 60-day readmission following hospitalisation for total knee replacement, July 2015 – June 2018

Total knee replacement risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals<sup>9</sup>



## Total knee replacement, this hospital's expected **readmission rates**<sup>10</sup> and observed (unadjusted) readmission rates, July 2003 – June 2018



#### **Reference notes**

- 1. Data refer to patients aged 18+ years who were discharged from this hospital to a non-acute care setting, between July 2015 and June 2018, following an acute hospitalisation for an elective total knee replacement (ACHI codes 49518-00, 49519-00, 49521-00, 49521-01, 49521-02, 49521-03, 49524-00, 49524-01).
- For calculation of average length of stay, index admissions that were transferred in from, or transferred out to, another acute care hospital were excluded. Unreasonably long episodes are trimmed on the basis of the Diagnosis Related Group (DRG) of the episode. The trim point is the third quartile plus 1.5x the interquartile range of all in-scope episodes in each DRG.
- 3. For episodes coded as 'Discharged by hospital' or 'Discharged on leave', patients are considered as discharged home. All other modes of separation are deemed a discharge destination other than home. Where there is a non-acute care admission within one day of any discharge, it is not considered as discharged home regardless of the mode of separation.
- 4. Age at admission date.
- Comorbidities are identified from the hospital discharge records using the Elixhauser comorbidity set (plus dementia) with a one year look-back from the date of the admission. Only those conditions that were found to have a statistically significant impact on readmission (p<0.05) are shown.</li>
- 6. Age was a statistically significant factor in the final model for total knee replacement.
- Readmissions include both returns to acute care from non-acute inpatient settings and readmissions following hospital discharge. Hospitals are classified as urban and regional/rural using the geocoded address of the hospital assigned to Australian Bureau of Statistics statistical areas (SA2) and the Australian remoteness index for areas.
- 8. Reasons for readmission follow the same clinical grouping as used in the previous report *Return to acute care following discharge from hospital, July 2012 June 2015.* Please refer to the previously published *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition,* which outline the specifications used to describe reasons for readmission.
- 9. Results for hospitals with expected readmission <1 are not shown. Hospitals are classified according to the NSW Ministry of Health's peer grouping as at January 2018.
- 10. Readmission rates at an average NSW public hospital with the same case-mix.

Details of analyses are available in *Spotlight on Measurement: Measuring return to acute care following discharge from hospital, 2nd edition* and the *Technical Supplement – Readmission and returns to acute care following hospitalisation for eight clinical conditions, July 2015-June 2018.*