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.

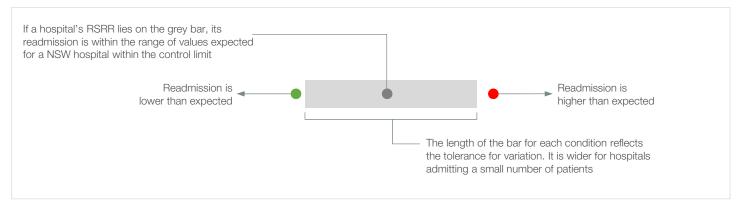
For each hospital, the RSRR compares the 'observed' number of readmissions to any hospital, within 30 days of discharge for a specific clinical condition or within 60 days for specified surgical procedures, with the 'expected' number of readmissions. The expected number of readmissions is calculated 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

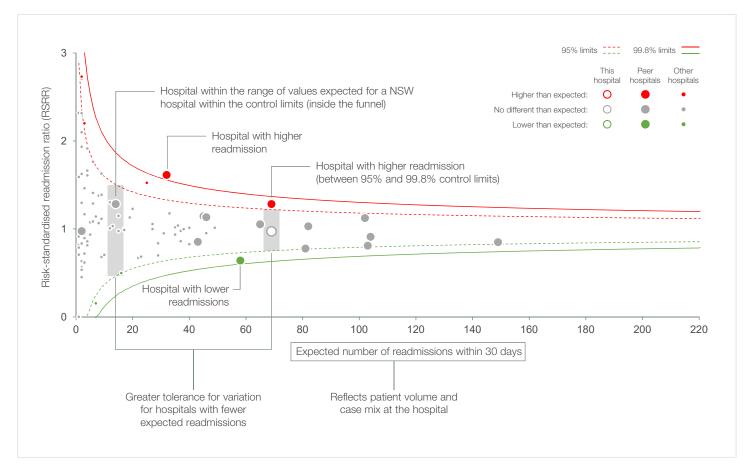
Condition	RSRR			July 201	5 – Jur	ne 2018			F	SRRs fo	r three-y	ear perio	ds
		0.0	0.5	1.0	1.5	2.0	2.5	3.0	July 03 – June 06	July 06 – June 09	July 09 – June 12	July 12 – June 15	July 15 – June 18
Acute myocardial infarction	0.98			•					•	•	•	•	•
Ischaemic stroke	0.94			•					•	•	•	•	•
Congestive heart failure	1.08								•	•	•	•	•
Pneumonia	0.95			•					•	•	•	•	•
Chronic obstructive pulmonary disease	1.11								•	•	•	•	•
Hip fracture surgery	0.75			•					•	•	•	•	•
Total hip replacement	1.11			•					0	•	•	•	•
Total knee replacement	1.13								•	•	•	•	•
Readmiss	ion this perioc	No		nan expect	ed	959	% control	limits	No	atistically sign significant o 0 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^{1,2,3}

This hospital	NSW
2,233	28,583
4.6	5.2
682	9,182
2,154	25,477
79	3,106
	This hospital 2,233 4.6 682 2,154 79

Age profile for index hospitalisations (years)⁴

				■ 15	5–44	■45–64	■65–74	■75–84	85+
This hospital	5.3	40.7		26.9	9		18.1		9.1
NSW	4.8	34.2		24.1		21.9		15.0	
			%	index cases					

Patient factors associated with 30-day acute myocardial infarction readmission^{5,6}

Lymphoma					-0.1				
Abuse drug/alcohol/psychoses					0.4				
Peripheral vascular disorder					0.5				
Depression				-(9.9				
Solid tumour without metastasis				-(9.9				
Deficiency anaemia				-1.6	;				
Coagulopathy				-1.7					
Female				-2.6					
Diabetes, complicated				-2.9					
Chronic pulmonary disease				-2.9					
Hypertension				-3.4					
Congestive heart failure				-3.5					
Previous AMI admission				-4.3					
Cardiac arrhythmia			-6.8						
Fluid and electrolyte disorders			-7.7						
	20	-15	-10	-5	0	5	10	15	20
			% differe	nce from NSV	V (index case	s with factor r	ecorded)		

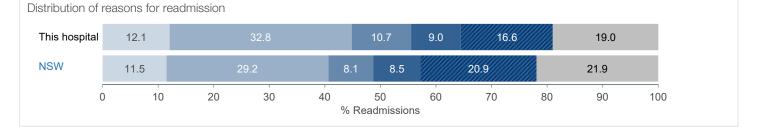
% difference from NSW (index cases with factor recorded)

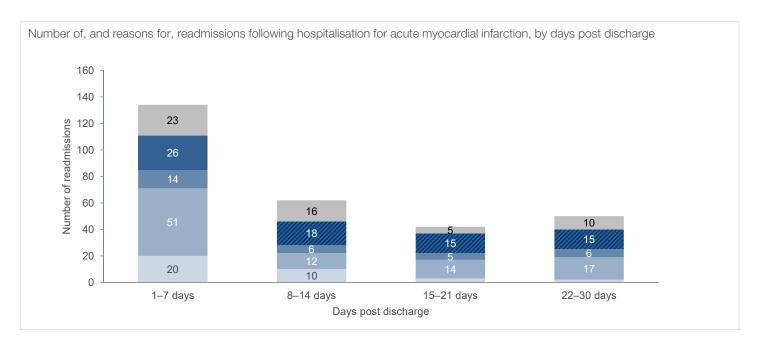
30-day readmission following hospitalisation for acute myocardial infarction, July 2015 – June 2018

ocation of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for acute myocardial infarction	288	4,250
Returns to acute care	6	159
Readmitted following hospital discharge	282	4,091
Readmitted to the same hospital where acute care was completed	136	2,815
Readmitted to a different hospital	146	1,276
To an urban public hospital	56	
To a regional or rural public hospital	81	
To a private hospital	9	

Reasons for and time to readmission⁸

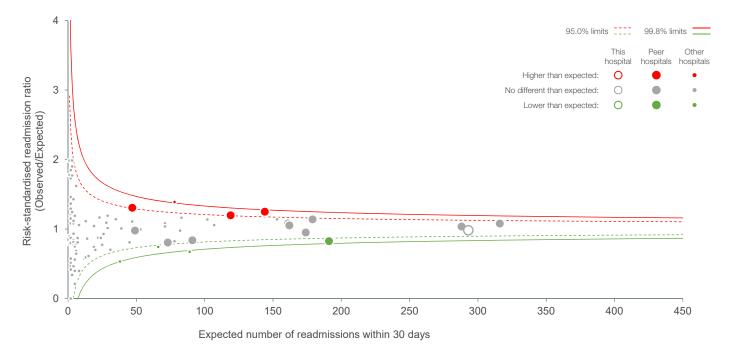
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, <7 days post discharge)
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions



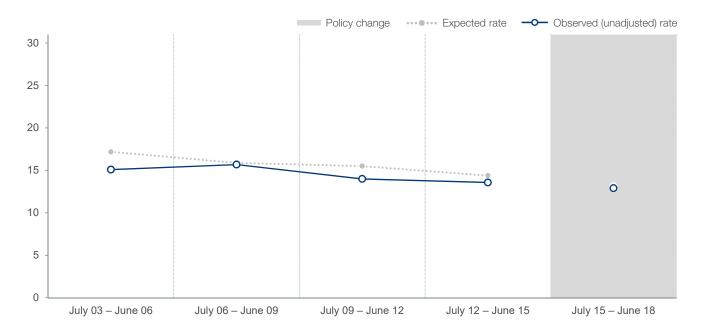


30-day readmission following hospitalisation for acute myocardial infarction, July 2015 – June 2018

Acute myocardial infarction risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals⁹



Acute myocardial infarction, this hospital's expected **readmission rates**¹⁰ 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.
- 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^{1,2,3}

	This hospital	NSW
Total index cases for ischaemic stroke	870	16,435
Average length of stay (days)	6.7	7.3
Patients transferred in from acute care in another hospital	74	1,916
Discharge destination		
Home	425	8,688
Other	445	7,747

Age profile for index hospitalisations (years)⁴

						■15-44	■45–64	■65–74	■75–84	85+	
This hospital	6.0	22.0		25.3				18.2			
NSW		20.0		23.5		30.4			22.4		
	% index cases										

Patient factors associated with 30-day ischaemic stroke readmission^{5,6}

Other neurological disorders						3.0			
Lymphoma					0	.2			
Deficiency anaemia				-	0.5				
Liver disease				-().7				
Solid tumour without metastasis				-1	.0				
Coagulopathy				-1	.0				
Congestive heart failure				-1.	3				
Diabetes, complicated				-2.2					
Weight loss				-3.7					
Cardiac arrhythmia				-4.2					
Fluid and electrolyte disorders			-6	.3					
-	20	-15	-10	-5	0	5	10	15	20
			% differe	ence from NSV	/ (index ca	ases with factor r	ecorded)		

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

Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for ischaemic stroke	76	1,638
Returns to acute care	29	505
Readmitted following hospital discharge	47	1,133
Readmitted to the same hospital where acute care was completed	31	868
Readmitted to a different hospital	16	265
To an urban public hospital	11	
To a regional or rural public hospital	2	
To a private hospital	3	

Reasons for and time to readmission⁸

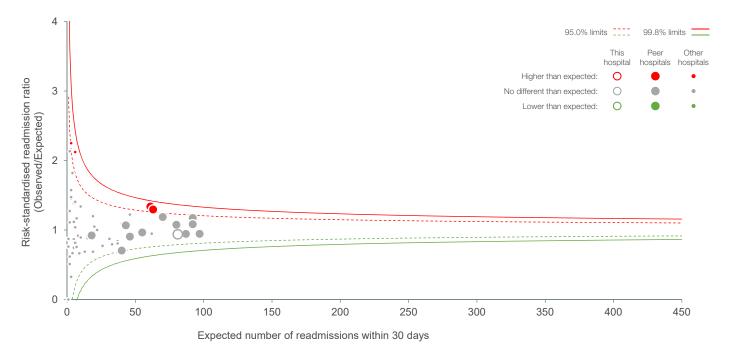
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, <7 days post discharge)</p>
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other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

Distribution of reasons for readmission											
This hospital	18.4	7.9		26.3		5.3 11.8	3	30	0.3		
NSW	18.2	8.8		20.5	5.4	12.8		34.3			
C) 10	20	30	40 %	50 Readmissi	60 ons	70	80	90	10	

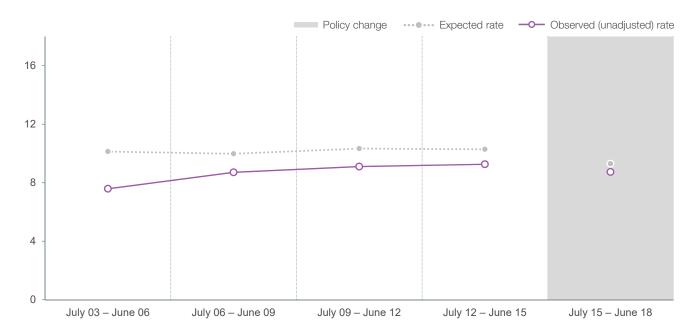


30-day readmission following hospitalisation for ischaemic stroke, July 2015 – June 2018

Ischaemic stroke risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals⁹







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.
- 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^{1,2,3}

i his nospital	NSW
1,159	33,686
6.1	6.0
205	2,723
1,017	29,025
142	4,661
	1,159 6.1 205 1,017 142

Age profile for index hospitalisations (years)⁴

			■ 15-44	■45–64	■65–74	■75–84	85+	
This hospital	13.2	21.6	33.8	28.8				
NSW	10.8	18.9	33.6		34.9			
			% index cases					

Patient factors associated with 30-day congestive heart failure readmission^{5,6}

Renal failure							8.5		
Diabetes, complicated						4.8			
Previous congestive heart failure admission						2.3			
Metastatic cancer	-				-0.3				
Chronic pulmonary disease	;			-	-0.6				
Fluid and electrolyte disorders	;			-(0.9				
Cardiac arrhythmia				-1	1.0				
Deficiency anaemia				-1.8	3				
Coagulopathy				-2.2					
	-20	-15	-10	-5	0	5	10	15	20
			% differe	nce from NSV	N (index cas	ses with factor r	ecorded)		

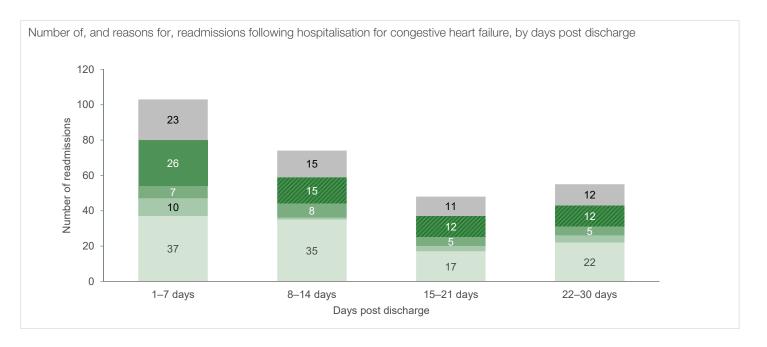
30-day readmission following hospitalisation for congestive heart failure, July 2015 – June 2018

Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for congestive heart failure	280	7,465
Returns to acute care	11	309
Readmitted following hospital discharge	269	7,156
Readmitted to the same hospital where acute care was completed	183	5,843
Readmitted to a different hospital	86	1,313
To an urban public hospital	71	
To a regional or rural public hospital	9	
To a private hospital	6	

Reasons for and time to readmission⁸

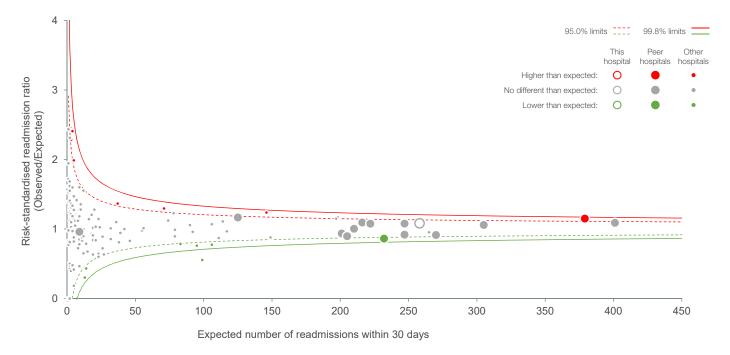
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, <7 days post discharge)</p>
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other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



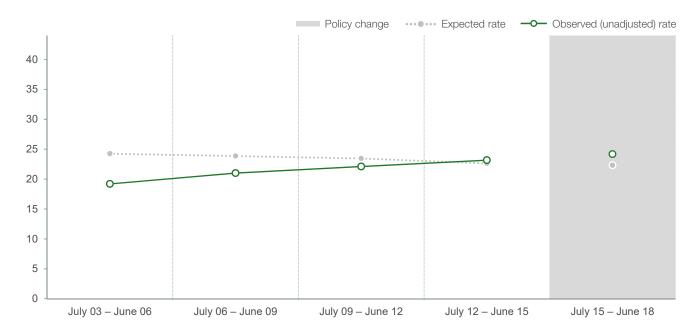


30-day readmission following hospitalisation for congestive heart failure, July 2015 – June 2018

Congestive heart failure risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals⁹



Congestive heart failure, this hospital's expected **readmission rates**¹⁰ 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.
- 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^{1,2,3}

This hospital	11210
1,008	48,855
5.0	5.1
93	3,190
860	42,535
148	6,320
	1,008 5.0 93 860 148

Age profile for index hospitalisations (years)⁴

				■18-44	■45–64	65-74	75-84	85+
This hospital	14.1	20.2	20.7		25.3		19.6	
NSW	11.1	19.9	19.9	26.	1		23.0	
			% index	cases				

Patient factors associated with 30-day pneumonia readmission^{5,6}

Renal failure		6.1
Diabetes, complicated		3.9
Rheumatoid arthritis/collagen		1.3
Abuse drug/alcohol/psychoses		1.0
Hypertension		0.6
Liver disease		0.3
Paralysis		0.3
Congestive heart failure		0.2
Chronic pulmonary disease		0.2
Depression		0.2
Deficiency anaemia	-0.1	
Peripheral vascular disorder	-0.4	
Coagulopathy	-0.5	
Previous pneumonia admission	-0.5	
Lymphoma	-0.6	
Cardiac arrhythmia	-0.9	
Metastatic cancer	-2.2	
Solid tumour without metastasis	-2.7	
Fluid and electrolyte disorders	-3.7	
Weight loss	-3.9	
Female	-5.6	

Performance Profile: John Hunter Hospital

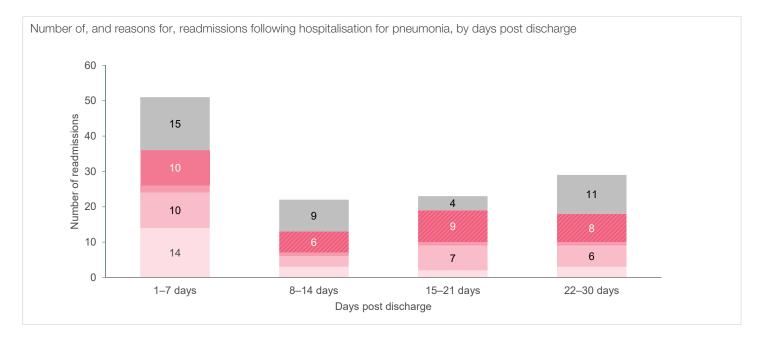
30-day readmission following hospitalisation for pneumonia, July 2015 – June 2018

Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for pneumonia	125	6,704
Returns to acute care	1	325
Readmitted following hospital discharge	124	6,379
Readmitted to the same hospital where acute care was completed	88	5,201
Readmitted to a different hospital	36	1,178
To an urban public hospital	24	
To a regional or rural public hospital	9	
To a private hospital	3	

Reasons for and time to readmission⁸

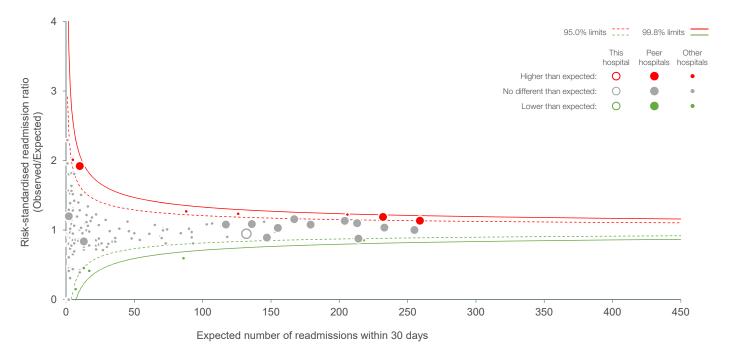
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, ≤7 days post discharge)
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions

Distribution of	reasons for readm	iission							
This hospital	17.6	20.8	4.0	8.0	18.4		31	.2	
NSW	19.5	20.0	7.8	3 7.5	14.2		31	.1	
() 10	20 30	40	50 Readmissio	60 ons	70	80	90	10

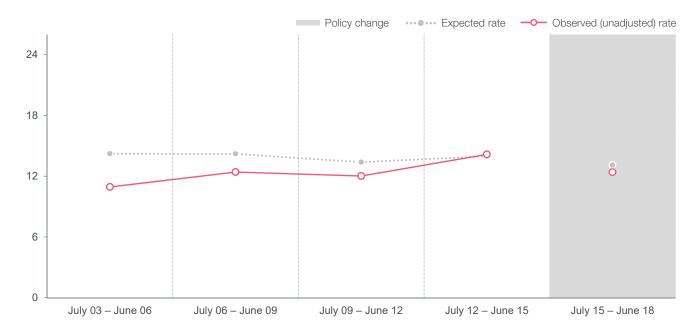


30-day readmission following hospitalisation for pneumonia, July 2015 – June 2018

Pneumonia risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals⁹



Pneumonia, this hospital's expected **readmission rates**¹⁰ 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.
- 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^{1,2,3}

1,060	48,336
5.2	4.8
62	2,330
955	43,932
105	4,404
	1,060 5.2 62 955 105

Age profile for index hospitalisations (years)⁴

			45-64	65-74	75-84	85+
This hospital	21.5	37.2		30.3		11.0
NSW	21.2	31.7	3	2.0		15.1
		% index case	s			

Patient factors associated with 30-day chronic obstructive pulmonary disease readmission^{5,6}

-20	-15	-10	-5 nce from NSV	C		5	10	15	20
Fluid and electrolyte disorders	 		-2.8						
Cardiac arrhythmia			-1.9						
Weight loss			-1.8						
Diabetes, uncomplicated			-1.	.2					
Dementia			-	-0.5					
Solid tumour without metastasis				-0.3					
Depression					0.1				
Abuse drug/alcohol/psychoses					0.1				
Female					0.1				
Peripheral vascular disorder					0.5				
Deficiency anaemia					0.5				
Hypertension					0.8				
Congestive heart failure					0.9				
Diabetes, complicated					1.2				
Previous COPD admission						3.1			
Renal failure						3.7			
Pulmonary circulation disorders						3.9			

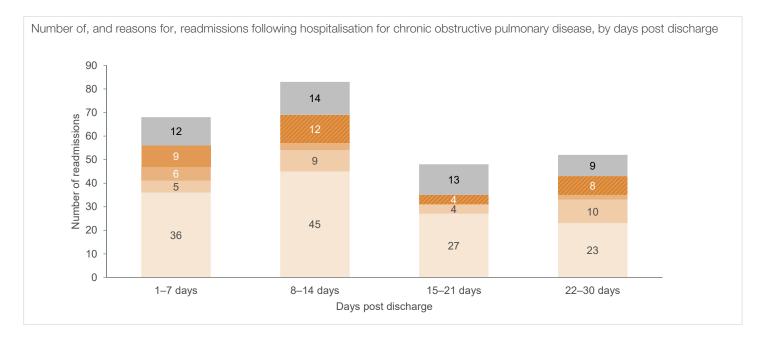
30-day readmission following hospitalisation for chronic obstructive pulmonary disease, July 2015 – June 2018

Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for chronic obstructive pulmonary disease	251	10,241
Returns to acute care	10	233
Readmitted following hospital discharge	241	10,008
Readmitted to the same hospital where acute care was completed	198	8,472
Readmitted to a different hospital	43	1,536
To an urban public hospital	34	
To a regional or rural public hospital	7	
To a private hospital	2	

Reasons for and time to readmission⁸

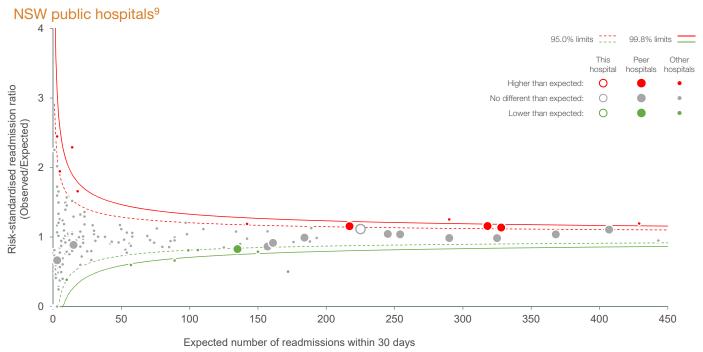
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, ≤7 days post discharge)
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions

Distribution of	reasons	for readr	mission									
This hospital			5	2.2			11.0	4.3		9.4	19.6	
NSW				54.5			10.3		4.2	9.2	18.3	
C)	10	20	30	40 %	50 Readmiss	60 ions		70	80	90	100

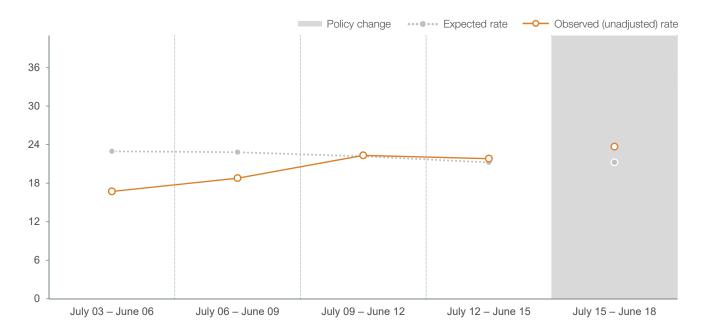


30-day readmission following hospitalisation for chronic obstructive pulmonary disease, July 2015 – June 2018

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



Chronic obstructive pulmonary disease, this hospital's expected **readmission rates**¹⁰ 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).
- 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.
- 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^{1,2,3}

	This hospital	NSW
otal index cases for hip fracture surgery	1,060	14,895
Average length of stay (days)	9.4	9.7
Patients transferred in from acute care in another hospital	54	2,030
Discharge destination		
Home	306	4,404
Other	754	10,491
Suloi	7.54	

Age profile for index hospitalisations (years)⁴

				50-64	65-74	■75–84	85+
This hospital	7.3	13.0	32.4		47.4		
NSW	6.8	13.9	31.6		47.8		
			% index ca	ases			

Patient factors associated with 30-day hip fracture surgery readmission^{5,6}

Dementia						1.0				
Other neurological disorders						0.6				
Depression						0.1				
AIDS/HIV						0.0				
Congestive heart failure					-0.3					
Female					-0.7					
Liver disease					-0.8					
Diabetes, complicated				-	1.1					
Chronic pulmonary disease				-	1.1					
Cardiac arrhythmia				-3.1						
Fluid and electrolyte disorders			-6.5	5						
-2	20	-15	-10	-5	()	5	10	15	20
			% differe	nce from NS	W (inde	x cases	with factor r	ecorded)		

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

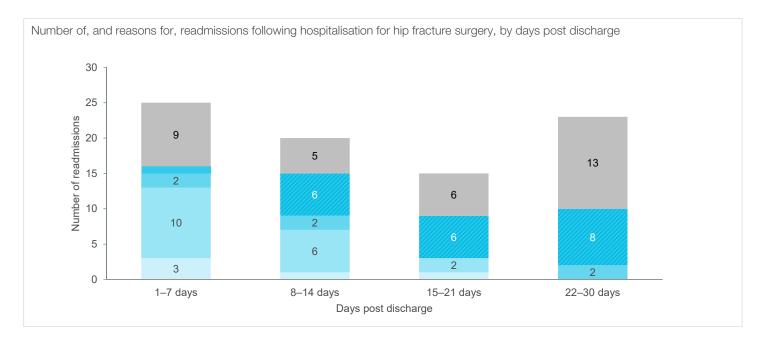
Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for hip fracture surgery	83	1,617
Returns to acute care	26	677
Readmitted following hospital discharge	57	940
Readmitted to the same hospital where acute care was completed	38	696
Readmitted to a different hospital	19	244
To an urban public hospital	19	
To a regional or rural public hospital	0	
To a private hospital	0	

Reasons for and time to readmission⁸

Same principal diagnosis

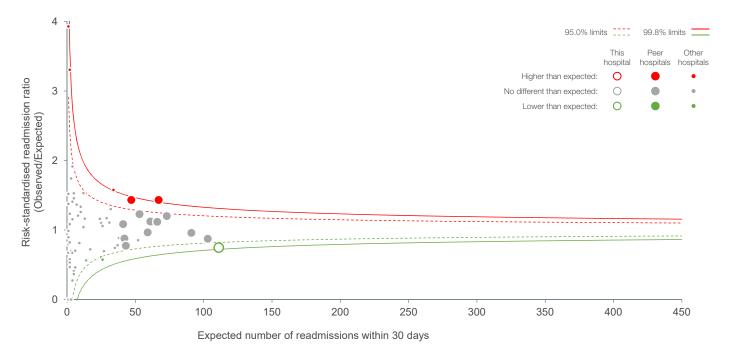
- Potentially related to hospital care (time sensitive, <7 days post discharge)
- Orthopaedic complications
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions

Distribution of reasons for readmission This hospital 6.0 21.7 7.2 39.8 NSW 14.6 6.3 36.3 7.0 24.4 0 10 20 30 40 50 60 70 80 90 100 % Readmissions

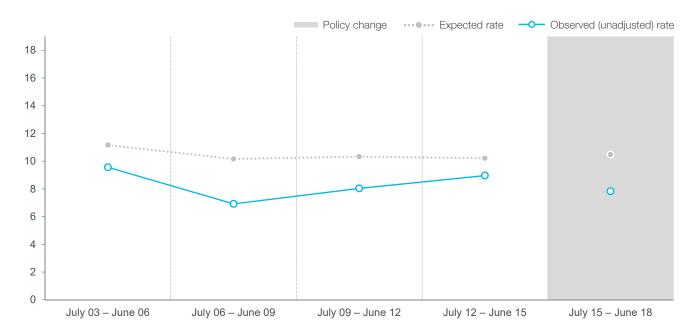


30-day readmission following hospitalisation for hip fracture surgery, July 2015 – June 2018

Hip fracture surgery risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals⁹



Hip fracture surgery, this hospital's expected **readmission rates**¹⁰ 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.
- 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^{1,2,3}

	This hospital	NSW
otal index cases for total hip replacement	600	8,985
Average length of stay (days)	4.6	4.7
Discharge destination		
Home	573	7,472
Other	27	1,513

Age profile for index hospitalisations (years)⁴

			■18-44 ■45-	64 65-74 75-84 85+
This hospital	7.5	35.8	32.3	20.2
NSW		35.2		23.3
			% index cases	

Patient factors associated with 60-day total hip replacement readmission^{5,6}

Diabetes, uncomplicated						1.1				
Abuse drug/alcohol/psychoses						0.5				
Rheumatoid arthritis/collagen						0.4				
Metastatic cancer						0.1				
Other neurological disorders						0.0				
Chronic pulmonary disease						0.0				
Depression					-0.2					
Weight loss					-0.5					
Coagulopathy					-0.6					
Diabetes, complicated					-1.2					
Cardiac arrhythmia				-4.1						
-	-20	-15	-10	-5	C)	5	10	15	20
			% differe	ence from N	SW (inde	x cases v	vith factor r	ecorded)		

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

Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for total hip replacement	65	949
Returns to acute care	2	107
Readmitted following hospital discharge	63	842
Readmitted to the same hospital where acute care was completed	41	499
Readmitted to a different hospital	22	343
To an urban public hospital	16	
To a regional or rural public hospital	6	
To a private hospital	0	

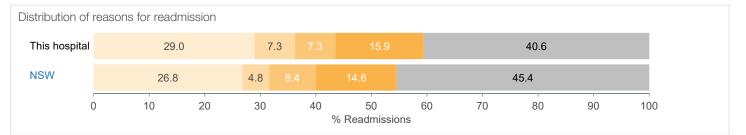
Reasons for and time to readmission⁸

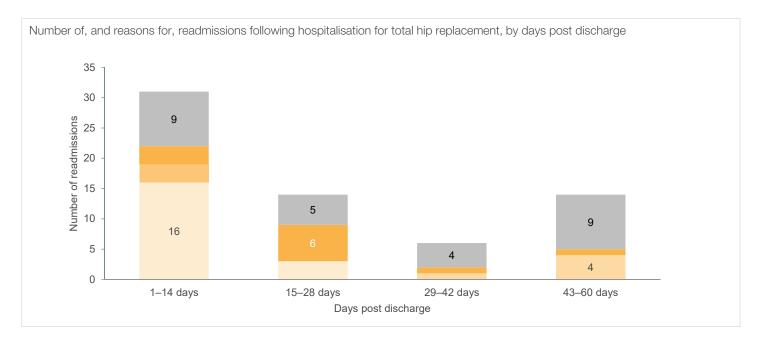
Orthopaedic complications (within time specified)

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

Other conditions

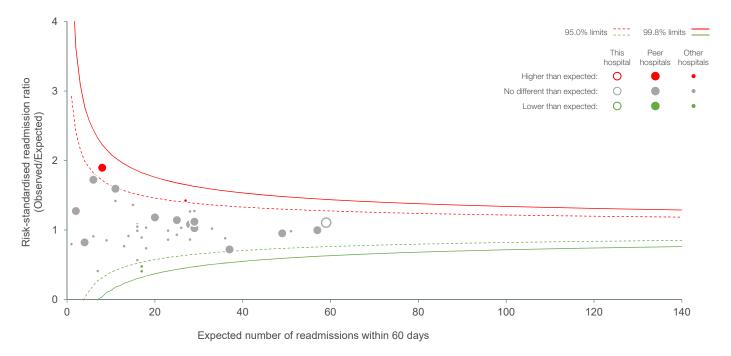
 Potentially related to hospital care (within time specified)



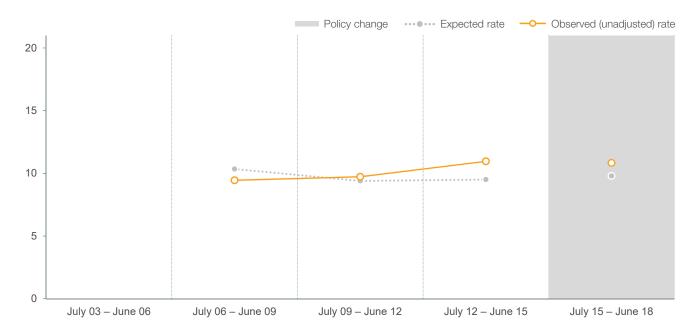


60-day readmission following hospitalisation for total hip replacement, July 2015 – June 2018

Total hip replacement risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals⁹



Total hip replacement, this hospital's expected **readmission rates**¹⁰ 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.
- 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^{1,2,3}

	This hospital	NSW
otal index cases for total knee replacement	851	15,940
Average length of stay (days)	4.9	4.9
Discharge destination		
Home	815	13,175
Other	36	2,765

Age profile for index hospitalisations (years)⁴

		■18-44 ■45-	64 65-74 75-84 85+
This hospital	33.6	37.8	24.7
NSW	30.9	40.1	25.3
		% index cases	

Patient factors associated with 60-day total knee replacement readmission^{5,6}

Renal failure -0.1 Lymphoma -0.2 Coagulopathy -0.2 Weight loss -0.2 Blood loss anaemia -0.3 Abuse drug/alcohol/psychoses -0.5 Chronic pulmonary disease -0.7 Female -1.5 Cardiac arrhythmia -1.8 Diabetes, complicated -3.6 Fluid and electrolyte disorders -3.6 -20 -15 -10 -5 0 5 10 15 2 % difference from NSW (index cases with factor recorded) -20 -15 -10 -5 0 5 10 15 2						_				
Coagulopathy -0.2 Weight loss -0.2 Blood loss anaemia -0.3 Abuse drug/alcohol/psychoses -0.5 Chronic pulmonary disease -0.7 Female -1.5 Diabetes, complicated -2.0 Fluid and electrolyte disorders -3.6 -20 -15 -10 -5 0 5 10 15 2	Renal failure					-0.1				
Weight loss -0.2 Blood loss anaemia -0.3 Abuse drug/alcohol/psychoses -0.5 Chronic pulmonary disease -0.7 Female -1.5 Cardiac arrhythmia -1.8 Diabetes, complicated -2.0 Fluid and electrolyte disorders -3.6 -20 -15 -10 -20 -15 -10	Lymphoma					-0.1				
Blood loss anaemia -0.3 Abuse drug/alcohol/psychoses -0.5 Chronic pulmonary disease -0.7 Female -1.5 Cardiac arrhythmia -1.8 Diabetes, complicated -2.0 Fluid and electrolyte disorders -15 -20 -15 -10 -5 0 5 10 15	Coagulopathy					-0.2				
Abuse drug/alcohol/psychoses -0.5 Chronic pulmonary disease -0.7 Female -1.5 Cardiac arrhythmia -1.8 Diabetes, complicated -2.0 Fluid and electrolyte disorders -3.6 -20 -15 -10 -20 -15 -10	Weight loss					-0.2				
Chronic pulmonary disease -0.7 Female -1.5 Cardiac arrhythmia -1.8 Diabetes, complicated -2.0 Fluid and electrolyte disorders -3.6 -20 -15 -10 -5 0 5 10 15 2	Blood loss anaemia					-0.3				
Female -1.5 Cardiac arrhythmia -1.8 Diabetes, complicated -2.0 Fluid and electrolyte disorders -3.6 -20 -15 -10 -5 0 5 10 15 2	Abuse drug/alcohol/psychoses					-0.5				
Cardiac arrhythmia Diabetes, complicated Fluid and electrolyte disorders -20 -15 -10 -5 0 5 10 15 2	Chronic pulmonary disease				-	0.7				
Diabetes, complicated -2.0 Fluid and electrolyte disorders -3.6 -20 -15 -10 -5 0 5 10 15 2	Female				-1.	5				
Fluid and electrolyte disorders -3.6 -20 -15 -10 -5 0 5 10 15 2	Cardiac arrhythmia				-1.8					
-20 -15 -10 -5 0 5 10 15 2	Diabetes, complicated				-2.0					
	Fluid and electrolyte disorders				-3.6					
% difference from NSW (index cases with factor recorded)		-20	-15	-10	-5	0	5	10	15	20
				% differe	nce from NSV	V (index case	es with factor r	ecorded)		

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

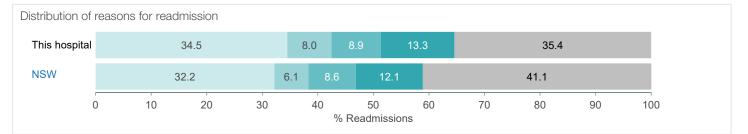
Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for total knee replacement	109	1,892
Returns to acute care	4	152
Readmitted following hospital discharge	105	1,740
Readmitted to the same hospital where acute care was completed	69	1,052
Readmitted to a different hospital	36	688
To an urban public hospital	25	
To a regional or rural public hospital	10	
To a private hospital	1	

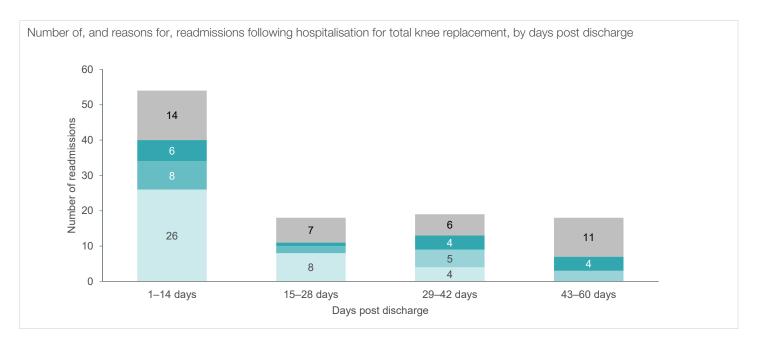
Reasons for and time to readmission⁸

 Orthopaedic complications (within time specified)

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

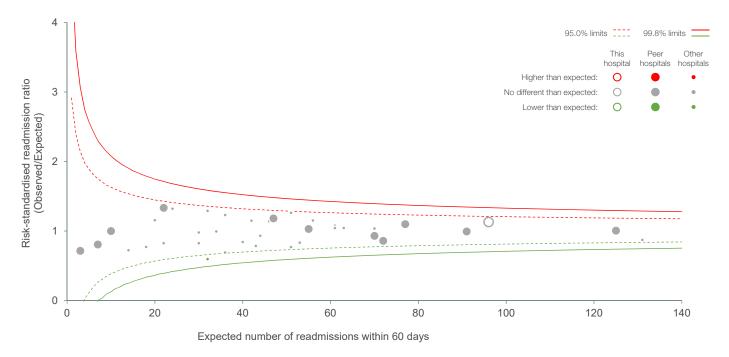
 Potentially related to hospital care (within time specified)



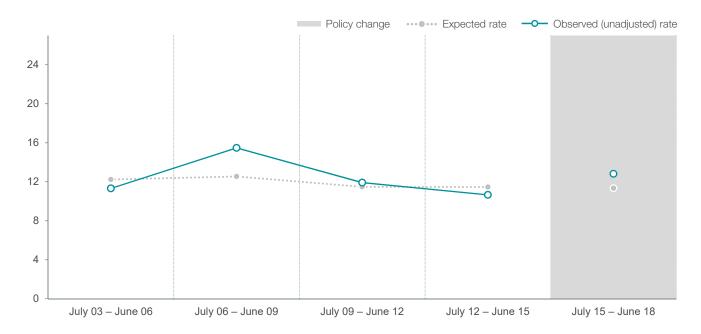


60-day readmission following hospitalisation for total knee replacement, July 2015 – June 2018

Total knee replacement risk-standardised **readmission ratios** by number of expected readmissions, NSW public hospitals⁹



Total knee replacement, this hospital's expected **readmission rates**¹⁰ 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).
- 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.
- 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.*