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.

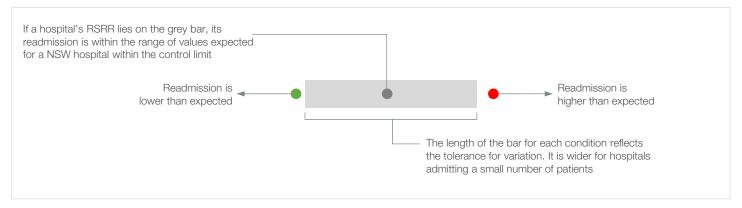
For each hospital, the RSRR compares the 'observed' number of readmissions to any hospital, within 30 days of discharge for a specific clinical condition or within 60 days for specified surgical procedures, with the 'expected' number of readmissions. The expected number of readmissions is calculated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

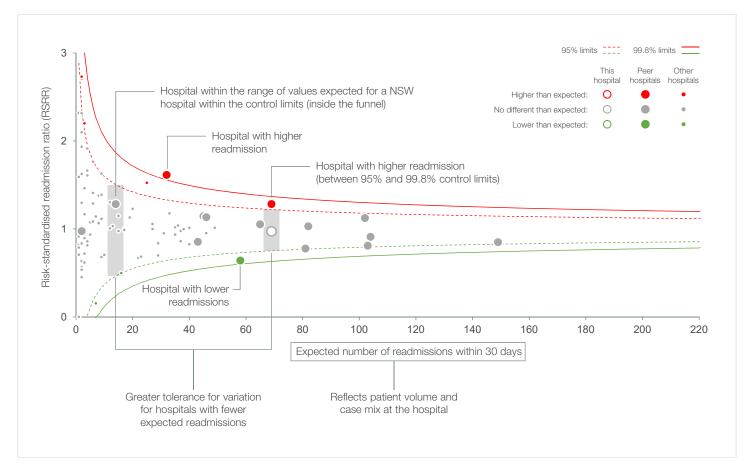
Condition	RSRR	RSRR July 2015 – June 2018							RSRRs for three-year periods				
		0.0	0.5	1.0	1.5	2.0	2.5	3.0	July 03 – June 06	July 06 – June 09	July 09 – June 12	July 12 – June 15	July 15 – June 18
Acute myocardial infarction	1.09			•					•	•	•	•	•
Ischaemic stroke	0.66		•						•	•	•	•	•
Congestive heart failure	1.06			•					•	•	•	•	•
Pneumonia	1.02			•					•	•	•	•	•
Chronic obstructive pulmonary disease	1.04			•					•	•	•	•	•
Hip fracture surgery	1.30								•	•	•	•	•
Total hip replacement	0.57		•						•	•	•	•	•
Total knee replacement	1.16			•					•	•	•	•	•
Readmis	sion this perioc	No	ver than exp different tha her than ex	an expecte	ed	959	% control l	limits	No	atistically sig significant o D cases	nificant resu difference	t	

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
Total index cases for acute myocardial infarction	151	28,583
Average length of stay (days)	7.0	5.2
Patients transferred in from acute care in another hospital	89	9,182
Discharge destination		
Home	127	25,477
Other	24	3,106

Age profile for index hospitalisations (years)⁴

				■ 15-44	4 ■45–64	■65–74	■75–84	85+
This hospital		21.2	15.2	25.2		35.8		
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}

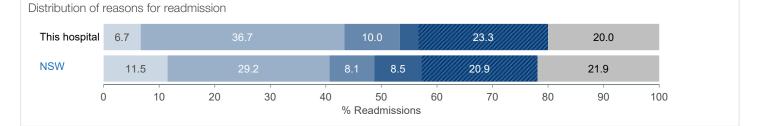
Deficiency anaemia						1:	3.0	
Hypertension						11.9	9	
Previous AMI admission						11.3		
Female						11.2		
Fluid and electrolyte disorders						10.8		
Congestive heart failure					7	.0		
Chronic pulmonary disease					6.2	2		
Cardiac arrhythmia					4.7			
Peripheral vascular disorder					1.7			
Diabetes, complicated					1.6			
Coagulopathy					1.3			
Depression				-0.2				
Lymphoma				-0.3				
Solid tumour without metastasis				-0.6				
Abuse drug/alcohol/psychoses				-1.7				
	30	-20	-10	0		10	20	30
			% difference from	NSW (index	cases with fac	ctor recorde	d)	

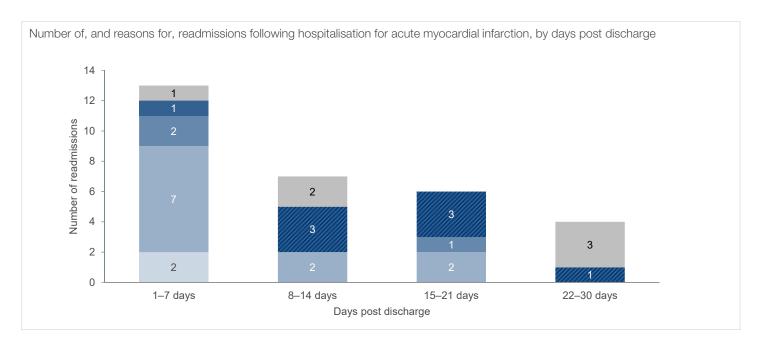
30-day readmission following hospitalisation for acute myocardial infarction, July 2015 – June 2018

Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for acute myocardial infarction	30	4,250
Returns to acute care	6	159
Readmitted following hospital discharge	24	4,091
Readmitted to the same hospital where acute care was completed	16	2,815
Readmitted to a different hospital	8	1,276
To an urban public hospital	8	
To a regional or rural public hospital	0	
To a private hospital	0	

Reasons for and time to readmission⁸

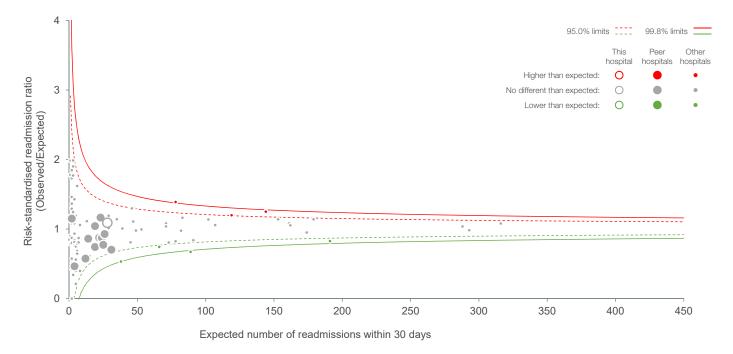
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, ≤7 days post discharge)
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions



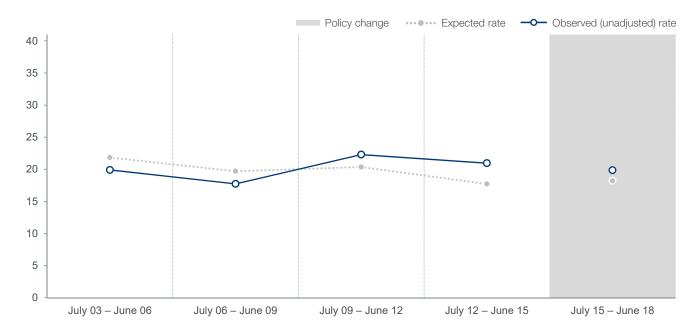


30-day readmission following hospitalisation for acute myocardial infarction, July 2015 – June 2018

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
89	16,435
6.8	7.3
7	1,916
41	8,688
48	7,747
	This hospital 89 6.8 7 41 48

Age profile for index hospitalisations (years)⁴

							∎15–4	44	■45–64	■65–7	4	75–84	85+
This hospital	12.4	14.6			34.8					38	.2		
NSW	:	20.0		23.5			30	0.4				22.4	
	% index cases												

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

Fluid and electrolyte disorders							8.2		
Weight loss						5.5			
Congestive heart failure						2.2			
Diabetes, complicated						1.8			
Deficiency anaemia						1.2			
Lymphoma					-0.3				
Liver disease				-().7				
Cardiac arrhythmia				-().8				
Coagulopathy				-1.6					
Solid tumour without metastasis				-2.7					
Other neurological disorders				-5.2					
-	20	-15	-10	-5	0	5	10	15	20
			% differe	nce from NSV	/ (index ca	ases with factor r	ecorded)		

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

ocation of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for ischaemic stroke	6	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 readmission⁸

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

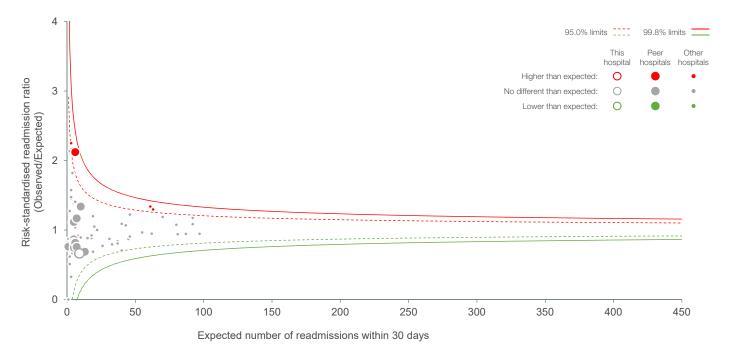
<10 readmissions Detailed results not shown

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

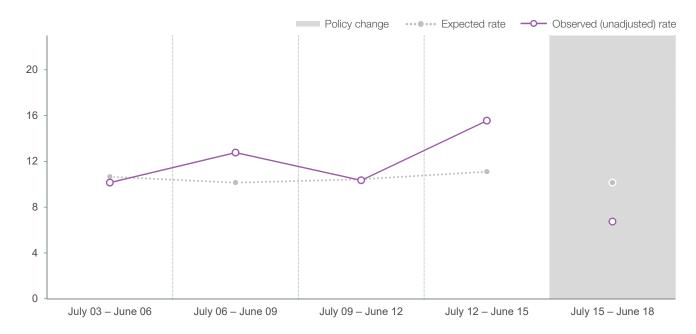
<10 readmissions Detailed results not shown

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 hospitals⁹



Ischaemic stroke, 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 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

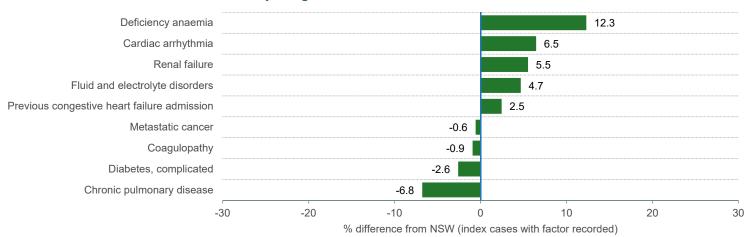
Patient cohort, index hospitalisations^{1,2,3}

This hospital	NSW
402	33,686
6.6	6.0
16	2,723
315	29,025
87	4,661
	This hospital 402 6.6 16 315 87

Age profile for index hospitalisations (years)⁴

						∎ 15-44	■45–64	■65–74	■75–84	85+
This hospital	6.0	8.2	28.	Э			57.0			
NSW		10.8	18.9	18.9		33.6 34.9				
					% index cases					

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

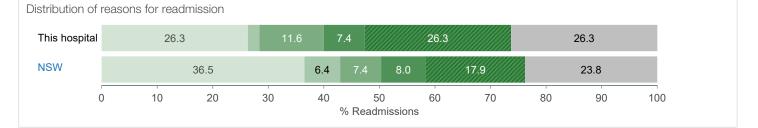


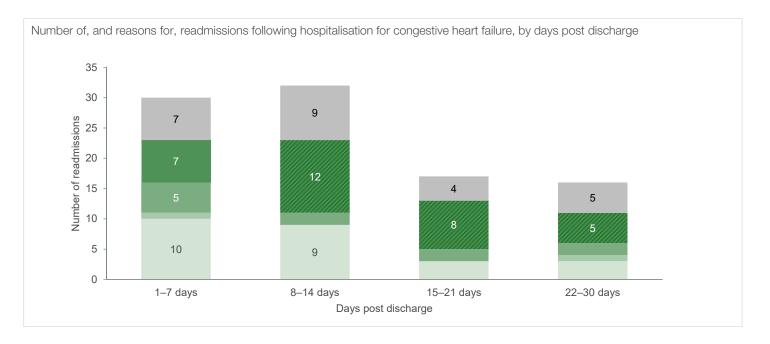
30-day readmission following hospitalisation for congestive heart failure, July 2015 – June 2018

Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for congestive heart failure	95	7,465
Returns to acute care	9	309
Readmitted following hospital discharge	86	7,156
Readmitted to the same hospital where acute care was completed	60	5,843
Readmitted to a different hospital	26	1,313
To an urban public hospital	24	
To a regional or rural public hospital	0	
To a private hospital	2	

Reasons for and time to readmission⁸

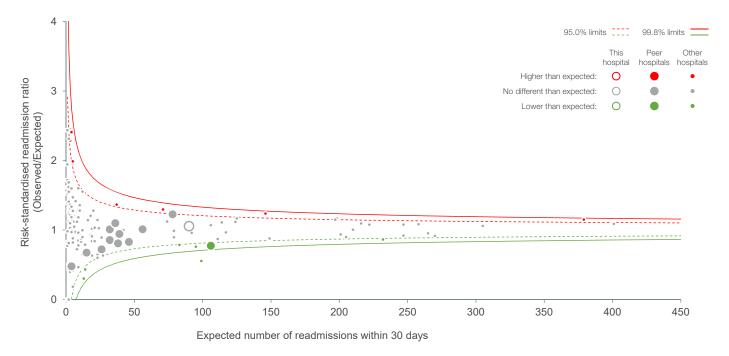
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, ≤7 days post discharge)
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions



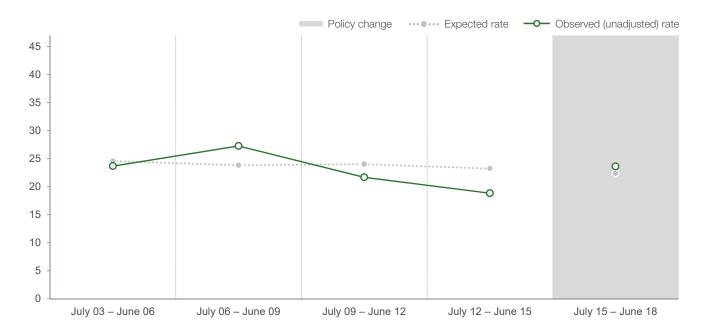


30-day readmission following hospitalisation for congestive heart failure, July 2015 – June 2018

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).
- 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	NSW
Total index cases for pneumonia	625	48,855
Average length of stay (days)	5.4	5.1
Patients transferred in from acute care in another hospital	23	3,190
Discharge destination		
Home	512	42,535
Other	113	6,320

Age profile for index hospitalisations (years)⁴

					= 1	8–44	45-64	65-74	75-84	85+
This hospital	7.5	13.3	10.7	28.2				40.3		
NSW	11.1	19	9.9	19.9		26.1			23.0	
	% index cases									

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

Female		8.1
Hypertension		7.5
Fluid and electrolyte disorders		6.3
Cardiac arrhythmia		5.4
Weight loss		4.9
Congestive heart failure		3.6
Deficiency anaemia		2.2
Depression		1.8
Previous pneumonia admission		1.4
Peripheral vascular disorder		1.2
Renal failure		0.3
Paralysis		0.2
Diabetes, complicated	-0.2	
Coagulopathy	-0.5	
Abuse drug/alcohol/psychoses	-0.5	
Lymphoma	-0.8	
Rheumatoid arthritis/collagen	-1.2	
Liver disease	-1.7	
Metastatic cancer	-2.3	
Solid tumour without metastasis	-3.7	
Chronic pulmonary disease	-5.8	

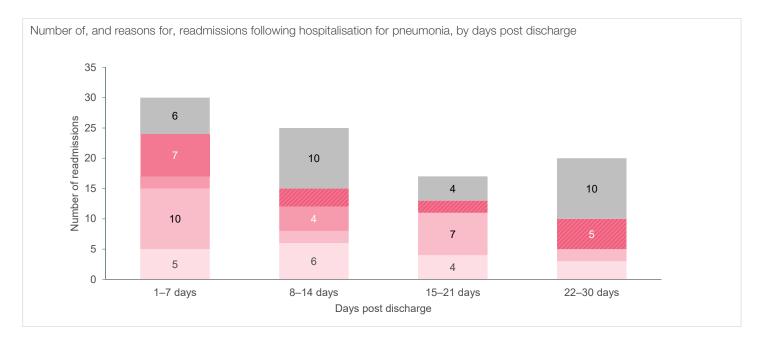
30-day readmission following hospitalisation for pneumonia, July 2015 – June 2018

Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for pneumonia	92	6,704
Returns to acute care	9	325
Readmitted following hospital discharge	83	6,379
Readmitted to the same hospital where acute care was completed	51	5,201
Readmitted to a different hospital	32	1,178
To an urban public hospital	30	
To a regional or rural public hospital	1	
To a private hospital	1	

Reasons for and time to readmission⁸

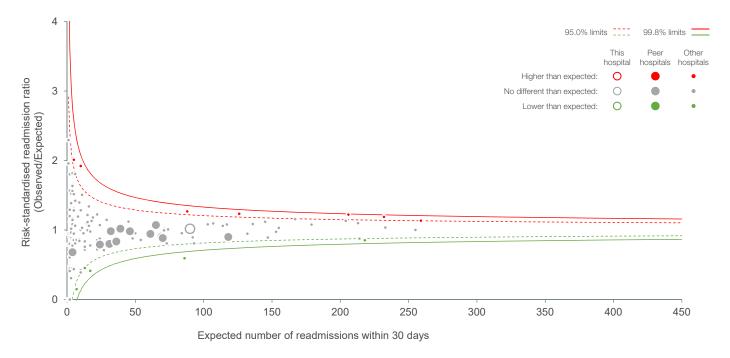
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, ≤7 days post discharge)
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions

Distribution of	reasons for readmis	ssion							
This hospital	19.6	22.8	6.5	7.6	10.9		32.0	6	
NSW	19.5	20.0	7.8	7.5	14.2		31	.1	
C	0 10	20 30	40 % Re	50 eadmissior	60 1s	70	80	90	100

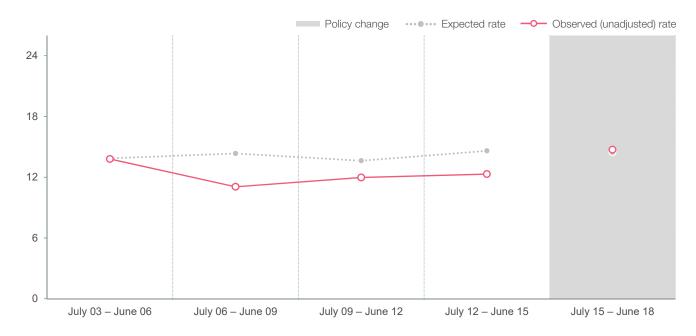


30-day readmission following hospitalisation for pneumonia, July 2015 – June 2018

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

	This hospital	NSW
otal index cases for chronic obstructive pulmonary disease	452	48,336
Average length of stay (days)	5.3	4.8
Patients transferred in from acute care in another hospital	13	2,330
Discharge destination		
Home	393	43,932
Other	59	4,404

Age profile for index hospitalisations (years)⁴

				45-64	65-74 75	6-84 85+
This hospital	15.0	24.6	30.	.5	29	9.9
NSW	21.2	31.7		32.0)	15.1
			% index cases	5		

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

Weight loss				11	.3	
Fluid and electrolyte disorders				9.9		
Hypertension				6.5		
Deficiency anaemia				3.7		
Renal failure				1.7		
Congestive heart failure				1.3		
Dementia				1.1		
Peripheral vascular disorder				0.3		
Cardiac arrhythmia				0.0		
Diabetes, complicated			-0.1			
Female			-0.2			
Depression			-0.7			
Diabetes, uncomplicated			-0.7			
Abuse drug/alcohol/psychoses			-1.3			
Solid tumour without metastasis			-1.5			
Pulmonary circulation disorders		-:	2.3			
Previous COPD admission		-3.	0			
-30) -20	-10	C) 10	20	30
		% difference from NS	SW (inde	x cases with factor recor	ded)	

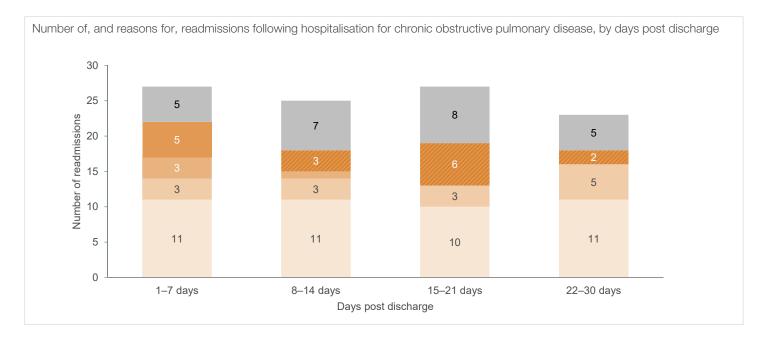
30-day readmission following hospitalisation for chronic obstructive pulmonary disease, July 2015 – June 2018

Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for chronic obstructive pulmonary disease	102	10,241
Returns to acute care	9	233
Readmitted following hospital discharge	93	10,008
Readmitted to the same hospital where acute care was completed	69	8,472
Readmitted to a different hospital	24	1,536
To an urban public hospital	20	
To a regional or rural public hospital	0	
To a private hospital	4	

Reasons for and time to readmission⁸

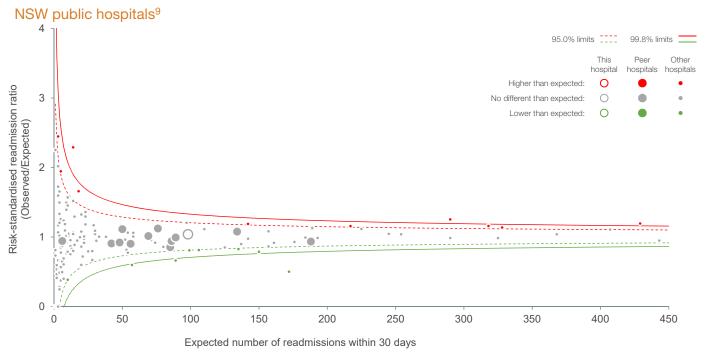
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, <7 days post discharge)</p>
- Condition related to principal diagnosis
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other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

Distribution of reasons for readmission This hospital 43.3 13.5 24.0 NSW 10.3 18.3 54.5 0 10 20 30 40 50 60 70 80 90 100 % Readmissions

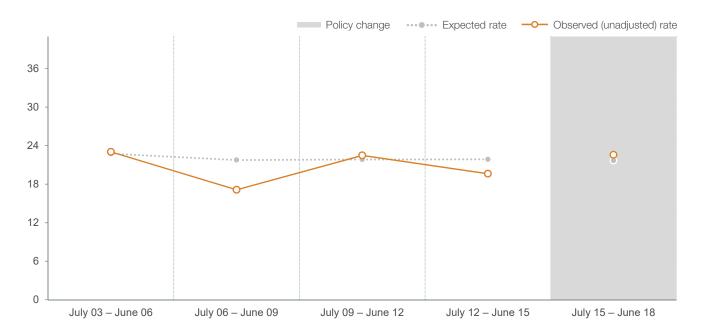


30-day readmission following hospitalisation for chronic obstructive pulmonary disease, July 2015 – June 2018

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.
- 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
Fotal index cases for hip fracture surgery	288	14,895
Average length of stay (days)	9.1	9.7
Patients transferred in from acute care in another hospital	2	2,030
Discharge destination		
Home	103	4,404
Other	185	10,491

Age profile for index hospitalisations (years)⁴

								■ 50—64	65-74	75-84	85+
This hospital	5.9	7.6		28.5					58.0		
NSW	6.8	13.9)		31.6				47.8		
						% index ca	ases				

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

Famala							F 0			
Female							5.2			
Diabetes, complicated						2.6				
Cardiac arrhythmia						2.3				
Chronic pulmonary disease						1.4				
Fluid and electrolyte disorders						1.0				
Depression						0.9				
Other neurological disorders						0.6				
Congestive heart failure						0.2				
AIDS/HIV					(0.0				
Liver disease				-	0.5					
Dementia				-1.6	6					
-1	20	-15	-10	-5	0		5	10	15	20
			% differe	nce from NSV	V (index	cases with	factor re	corded)		

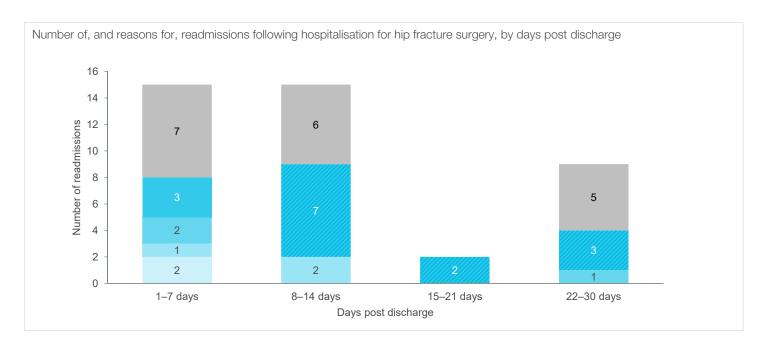
30-day readmission following hospitalisation for hip fracture surgery, July 2015 – June 2018

Location of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for hip fracture surgery	41	1,617
Returns to acute care	17	677
Readmitted following hospital discharge	24	940
Readmitted to the same hospital where acute care was completed	21	696
Readmitted to a different hospital	3	244
To an urban public hospital	2	
To a regional or rural public hospital	0	
To a private hospital	1	

Reasons for and time to readmission⁸

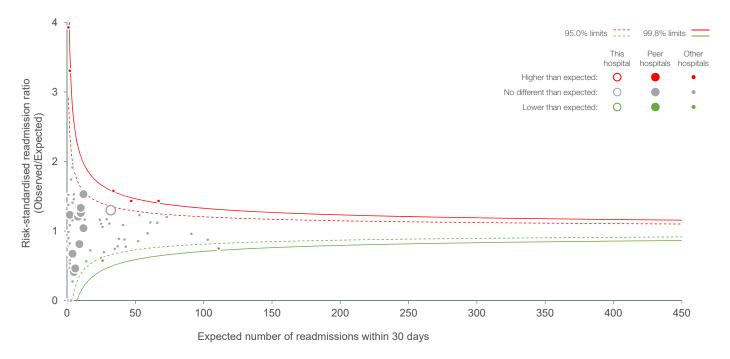
- Same principal diagnosis
- Potentially related to hospital care (time sensitive, <7 days post discharge)
- Orthopaedic complications
- Potentially related to hospital care (time sensitive, 8–30 days post discharge)
- Potentially related to hospital care (not time sensitive)
- Other conditions

Distribution of reasons for readmission This hospital 4.9 7.3 7.3 43.9 NSW 36.3 14.6 6.3 7.0 24.4 0 10 20 30 40 50 60 70 80 90 100 % Readmissions

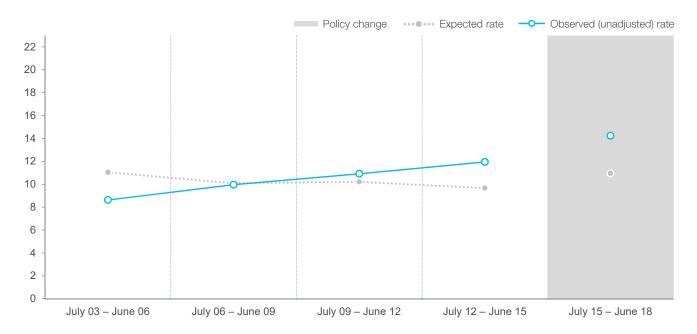


30-day readmission following hospitalisation for hip fracture surgery, July 2015 – June 2018

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	158	8,985
Average length of stay (days)	5.6	4.7
Discharge destination		
Home	104	7,472
Other	54	1,513

Age profile for index hospitalisations (years)⁴

		■ 18–44	45-6	65–74	75-84	85+
This hospital	41.1	26.6		22	.8	5.7
NSW	35.2			2	3.3	

% index cases

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

Weight loss						0.3			
Abuse drug/alcohol/psychoses						0.2			
Chronic pulmonary disease					(0.2			
Other neurological disorders					C).0			
Rheumatoid arthritis/collagen				-().5				
Coagulopathy				-().5				
Metastatic cancer				-(.6				
Depression				-0	9				
Cardiac arrhythmia				-1.	0				
Diabetes, complicated				-1.	1				
Diabetes, uncomplicated				-2.2					
-2	20	-15	-10	-5	0	5	10	15	20
			% differe	nce from NSW	(index of	cases with facto	or recorded)		

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

ocation of readmissions ⁷	This hospital	NSW
Total readmissions following index hospitalisation for total hip replacement	9	949
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 readmission⁸

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

Distribution of reasons for readmission

- Orthopaedic complications (outside time specified)
- Other conditions

Potentially related to hospital care (within time specified)

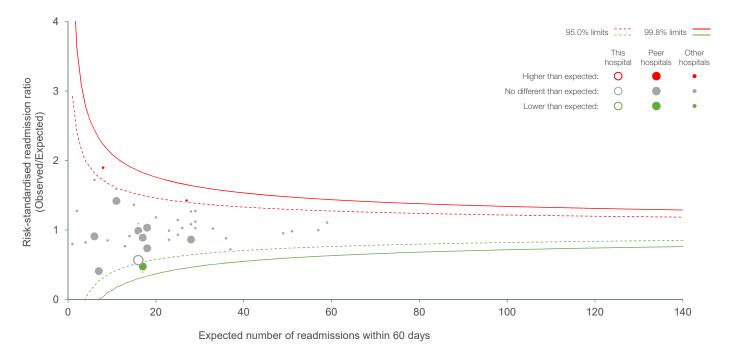
<10 readmissions Detailed results not shown

Number of, and reasons for, readmissions following hospitalisation for total hip replacement, by days post discharge

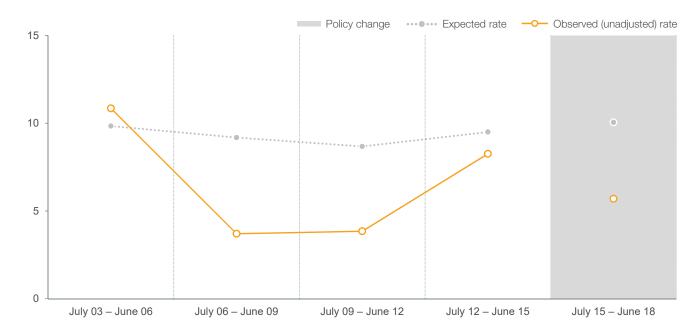
<10 readmissions Detailed results not shown

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
Fotal index cases for total knee replacement	163	15,940
Average length of stay (days)	6.1	4.9
Discharge destination		
Home	58	13,175
Other	105	2,765

Age profile for index hospitalisations (years)⁴

		■ 18–44	■45–64	4 65-74	■75–84	85+
This hospital	30.1	35.6		28.8		5.5
NSW	30.9	40.1		2	5.3	

% index cases

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

Female						6.	2		
Cardiac arrhythmia						2.8			
Fluid and electrolyte disorders						2.6			
Weight loss						1.9			
Blood loss anaemia					0	.7			
Chronic pulmonary disease					0.	5			
Coagulopathy					0.4	4			
Lymphoma				-(D.1				
Renal failure				-0).2				
Abuse drug/alcohol/psychoses				-0.8	3				
Diabetes, complicated				-2.2					
-	-20	-15	-10	-5	0	5	10	15	20
			% differe	nce from NSW	(index cas	ses 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	23	1,892
Returns to acute care	5	152
Readmitted following hospital discharge	18	1,740
Readmitted to the same hospital where acute care was completed	11	1,052
Readmitted to a different hospital	7	688
To an urban public hospital	5	
To a regional or rural public hospital	2	
To a private hospital	0	

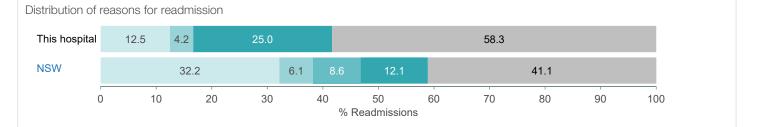
Reasons for and time to readmission⁸

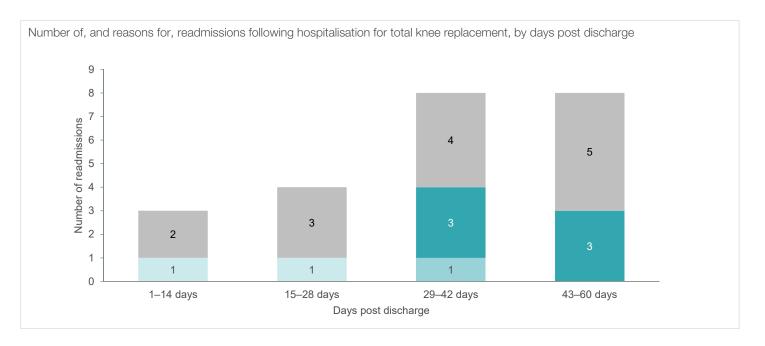
 Orthopaedic complications (within time specified)

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

Other conditions

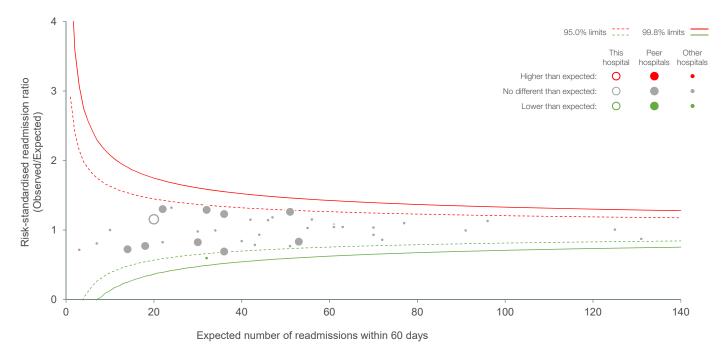
 Potentially related to hospital care (within time specified)



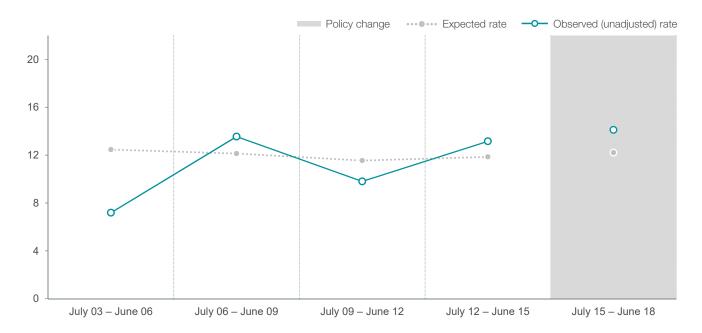


60-day readmission following hospitalisation for total knee replacement, July 2015 – June 2018

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).
- 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.

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