TASMANIAN INFECTION PREVENTION AND CONTROL UNIT

Tasmanian Acute Public Hospitals

Healthcare Associated Infection Surveillance Report.

Report No 16 (period ending 30th December 2012)

February 2013

Department of Health and Human Services

Tasmania
Explore the possibilities

Tasmanian Acute Public Hospitals Healthcare Associated Infection Surveillance Report

Tasmanian Infection Prevention and Control Unit (TIPCU)

Department of Health and Human Services, Tasmania

Published 2013

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Suggested reference: Mitchell, B., McGregor, A., Wells, A., Wilson, F. (2012). Tasmanian Acute Public Hospitals Healthcare Associated Infection Surveillance Report No:16. Hobart: Department of Health and Human Services.

Notes

- This report does not contain the methodology used to collect the data. Protocols relating to the surveillance programs are published on the TIPCU website, www.dhhs.tas.gov.au/tipcu
- An explanatory document is available on the TIPCU website. This document provides insight into understanding the surveillance report.
- Data from previous reports should not be relied upon. Use the most to date report when quoting/using data.

TASMANIAN INFECTION PREVENTION AND CONTROL UNIT

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Contents

Executive summary

This surveillance report describes data relating to a number of key Healthcare Associated Infection (HAI) 'indicators'. It is the intention of the Tasmanian Infection Prevention and Control Unit (TIPCU) to publish this report quarterly. The TIPCU website (www.dhhs.tas.gov.au/tipcu) contains details of the surveillance program, including the rationale for the indicators surveyed and the methodologies used in data collection, validation and analysis. These details are not contained in this report but are freely available online should further information be required. In addition, an explanatory document has been developed to accompany this surveillance report.

Any form of comparison between hospitals should be done with extreme caution and direct comparisons are not recommended. Information about how Tasmanian rates compare with those of other Australian states and internationally, are provided in the Key Points sections of this report. A question and answer document and an explanatory document are also available on the TIPCU website (www.dhhs.tas.gov.au/tipcu). The Appendices in this report contain more detailed information.

The key findings of this report are:

- The rate of healthcare associated *Staphylococcus aureus* bacteraemia remains low.
- The occurrence of vancomycin resistant enterococcus remains low
- Hand hygiene compliance has improved since the previous audit period.

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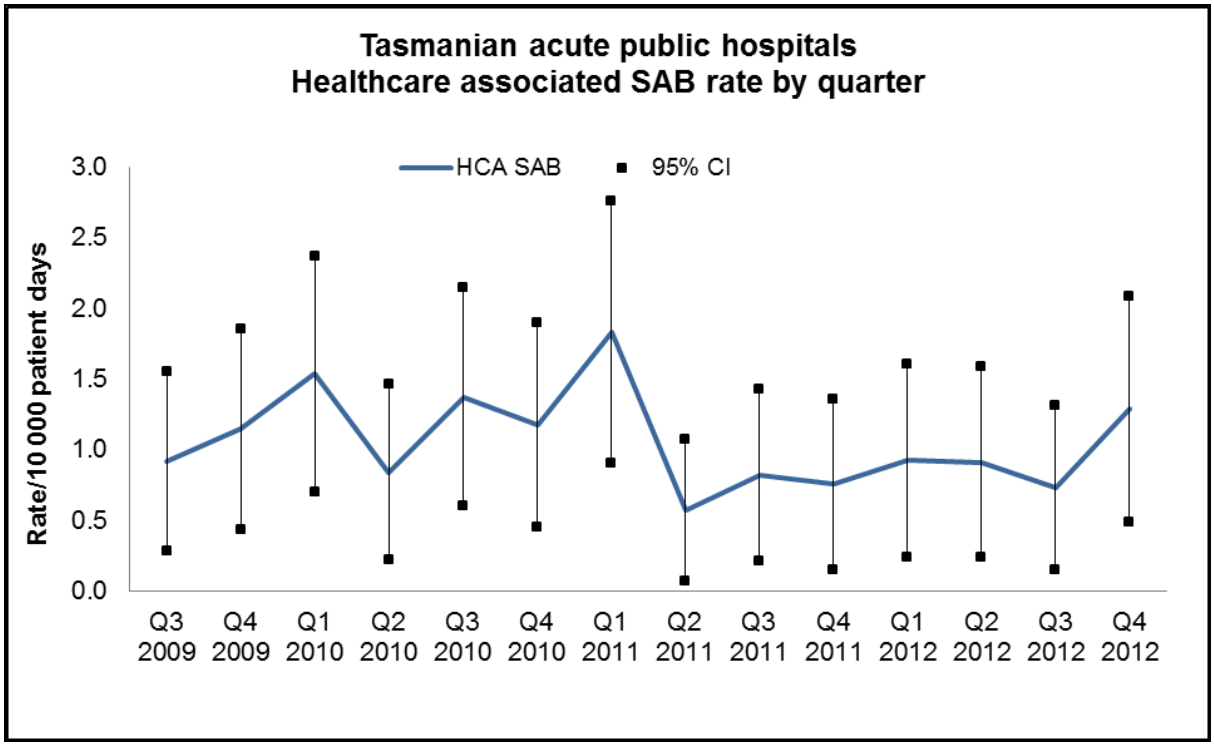
Staphylococcus aureus bacteraemia (SAB)

Tasmanian rates

Figure 1 outlines the Tasmanian combined acute public hospital rates of healthcare associated *Staphylococcus aureus* bacteraemia (HCA SAB).

The mean (average) rate of healthcare associated *Staphylococcus aureus* bacteraemia between July 1st 2009 and December 30th 2012 is 1.06 per 10 000 patient days (95% CI 0.87 – 1.24).

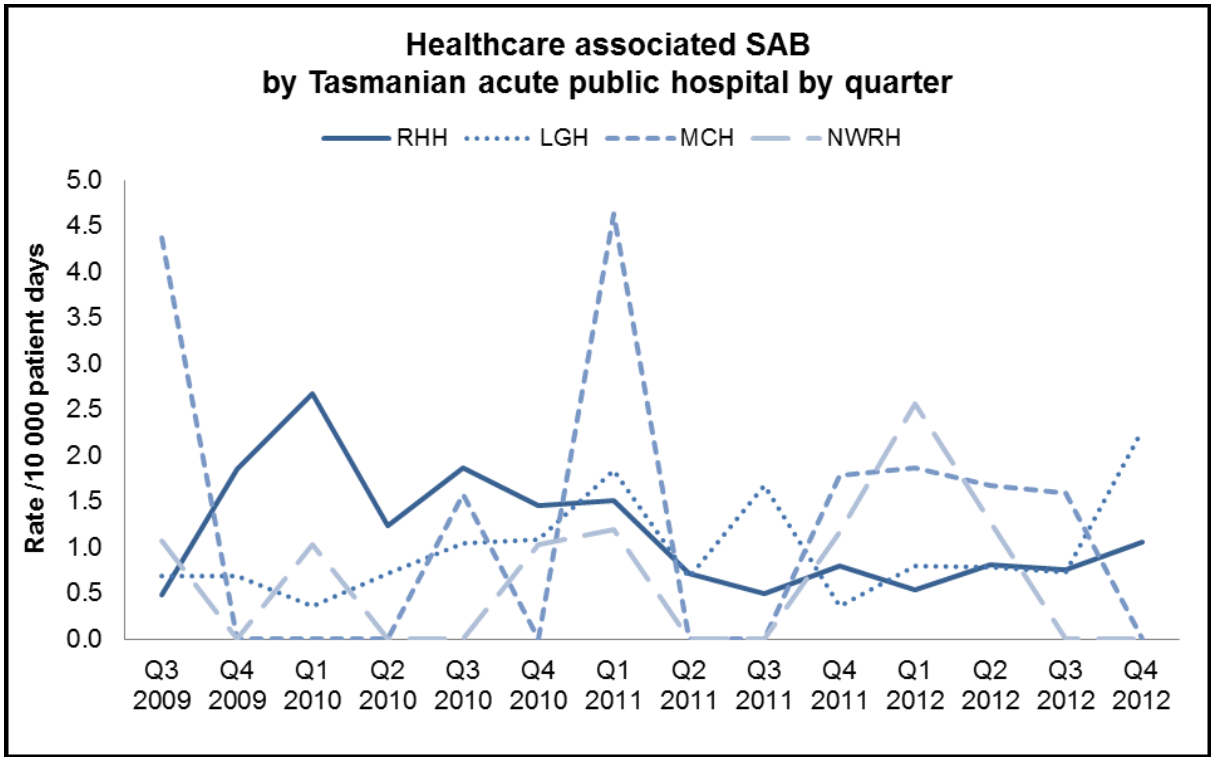
Figure 1 Healthcare associated *Staphylococcus aureus* bacteraemia rate.



Hospital rates

Figure 2 outlines the individual acute public hospitals rates of healthcare associated *Staphylococcus aureus* bacteraemia. This information is also contained in tables within the Appendix.

Figure 2 Healthcare associated *Staphylococcus aureus* bacteraemia rate by hospital



Key points

- The Tasmanian rate of healthcare associated *Staphylococcus aureus* bacteraemia (HCA SAB) is comparable to data reported in other Australian states and territories.
    - The rate of HCA SAB in Western Australia public hospitals (2010–11) was 0.85 per 10 000 bed days[1].
    - The rate of HCA SAB in South Australia was reported as1.0 per 10 000 patient days in 2011[2].
    - The rate of HCA SAB at The Canberra Hospital in 2010-2011 is reported as 1.06 cases per 10,000 days of patient care[3].

[1]HISWA Annual Report 2010-2011.

[2]South Australian Healthcare Associated Bloodstream Infection Report 2011

[3] MyHospitals http://www.myhospitals.gov.au/hospital/the-canberra-hospital/safety-and-quality/sab

Clostridium difficile infection

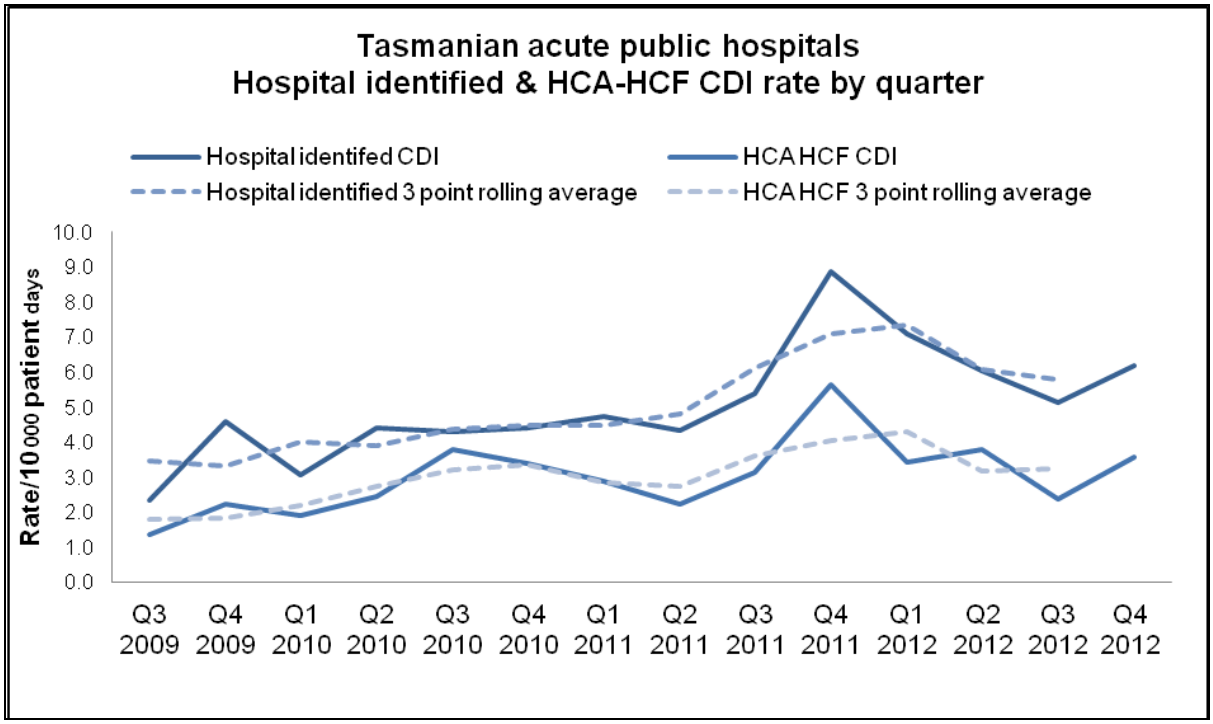
Tasmanian rates

Figure 3outlines the Tasmanian combined acute public hospital rates of **hospital identified** and the **healthcare associated-healthcare facility onset** (HCA-HCF) rates of Clo*stridium difficile* infection (CDI).

The mean (average) rate of **hospital identified** CDI between July 1st 2009 and December 30th 2012 is 5.01per 10 000 patient days (95% CI 4.58 – 5.43).

The mean rate of **healthcare associated – healthcare facility onset (HCA-HCF)** CDI between July 1st 2009 and December 30th 2012 is 2.99 per 10 000 patient days (95% CI 2.66 – 3.31).

Figure 3 Hospital identified and HCA-HCF *Clostridium difficile* infection rates.



Hospital rates

Figure 4 and Figure 5 outlines the individual acute public hospital rates of hospital identified and healthcare associated-healthcare facility onset (HCA-HCF) *Clostridium difficile* infection. This information is also contained in tables within the Appendix.

Figure 4 Hospital identified *Clostridium difficile* infection rate by hospital.

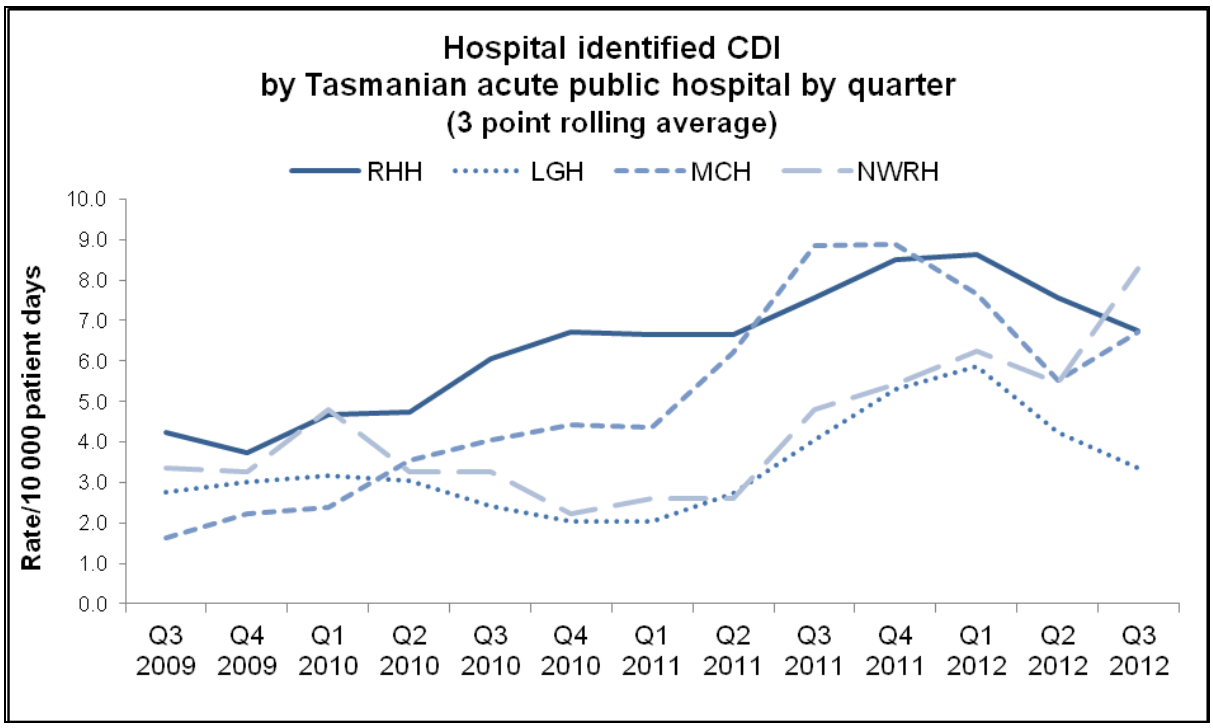
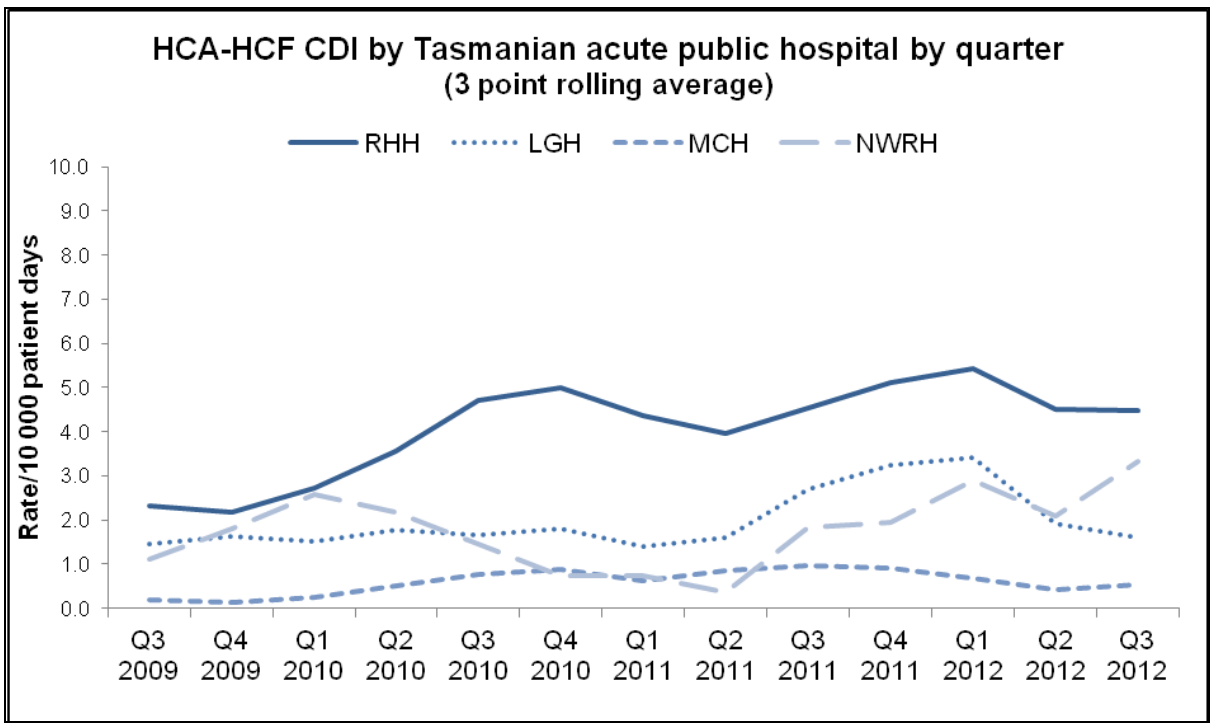


Figure 5 Healthcare associated – healthcare facility onset (HCA-HCF) *Clostridium difficile* infection rate by hospital.



Key points

- Please note that HCA-HCF rate excludes persons who present to hospital with symptoms of CDI and/or develop symptoms within 48 hours of admission.
- The three point rolling average calculates the average rate of the previous, current and next quarter thus this rate will be always be reported up to the end of the previous quarter.
- The rate of hospital identified *Clostridium difficile* infection (CDI) and healthcare associated healthcare facility onset CDI have decreased since the increase noted in the final quarter of 2011but have not decreased to the levels seen prior to the 2011 increase.
- The overall rate of hospital identified CDI in Western Australian hospitals for 2010-11 was reported as 2.39 per 10 000 patient days[1] but had increased to 5.28 per 10 000 patient days by Quarter 1 2012[2].
- TIPCU is working with interstate counterparts and the Australian Commission on Safety and Quality in Health Care (ACSQHC) in standardising the reporting and testing of CDI, allowing for improved benchmarking.

[1]HISWA Annual Report 2010-11.
[2]HISWA Quarterly Aggregate Report Quarter 1, 2012 – Number 27

Vancomycin resistant *enterococcus* (VRE)

Tasmanian numbers

Table 1 – outlines the number of people identified with VRE per quarter within acute public hospitals.

Quarter	Colonisation	Infection	Total*
Q1 2008	12	1	13
Q2 2008	28	4	32
Q3 2008	10	2	12
Q4 2008	16	2	18
Q1 2009	7	0	9 (2 cases unknown)
Q2 2009	13	1	14
Q3 2009	3	1	4
Q4 2009	5	0	5
Q1 2010	2	0	2
Q2 2010	4	1	5
Q3 2010	13	1	14
Q4 2010	6	2	8
Q1 2011	3	0	3
Q2 2011	6	2	8
Q3 2011	3	0	3
Q4 2011	3	0	3
Q1 2012	8	2	10
Q2 2012	7	0	7
Q3 2012	7	1	8
Q4 2012	8	2	10

Hospital numbers

Table 2 - Number of people identified with VRE by acute public hospital

Quarter	RHH		LGH		NWRH		MCH	
	Col	Inf	Col	Inf	Col	Inf	Col	Inf
Q1 2008	10	1	-	-	-	-	-	-
Q2 2008	15	2	6	-	6	1	-	-
Q3 2008	1	-	1	-	8	2	-	-
Q4 2008	2	1	8	1	5	-	-	-
Q1 2009	-	-	4	-	3	-	2	-
Q2 2009	7	1	-	-	2	-	4	-
Q3 2009	1	-	-	-	-	1	2	-
Q4 2009	2	-	2	-	1	-	-	-
Q1 2010	1	-	1	-	-	-	-	-
Q2 2010	4	-	-	-	-	-	-	1
Q3 2010	10	-	-	-	2	-	1	1
Q4 2010	3	-	-	-	1	-	1	2
Q1 2011	-	-	-	-	1	-	2	-
Q2 2011	3	1	1	-	-	-	-	-
Q3 2011	1	-	1	-	-	-	-	-
Q4 2011	3	-	-	-	-	-	-	-
Q1 2012	3	-	2	-	2	-	1	1
Q2 2012	4	-	2	-	1	-	-	-
Q3 2012	2	1	2	-	-	-	2	-
Q4 2012	1	-	5	2	1	-	1	-

Col - colonisation Inf – infection

Key points

- This table provides information on hospital identified VRE. This does not necessarily mean that VRE was acquired at the hospital.
- The numbers of VRE identified are affected by the amount of screening undertaken by hospitals. Some hospitals may be more aggressive in their approach and hence may identify more VRE.
- The absolute number of VRE infections identified in Tasmania is lower than many other Australian states.

Hand hygiene compliance data

Tasmanian rates

Figure 6 - Hand hygiene compliance rate in Tasmanian public hospitals

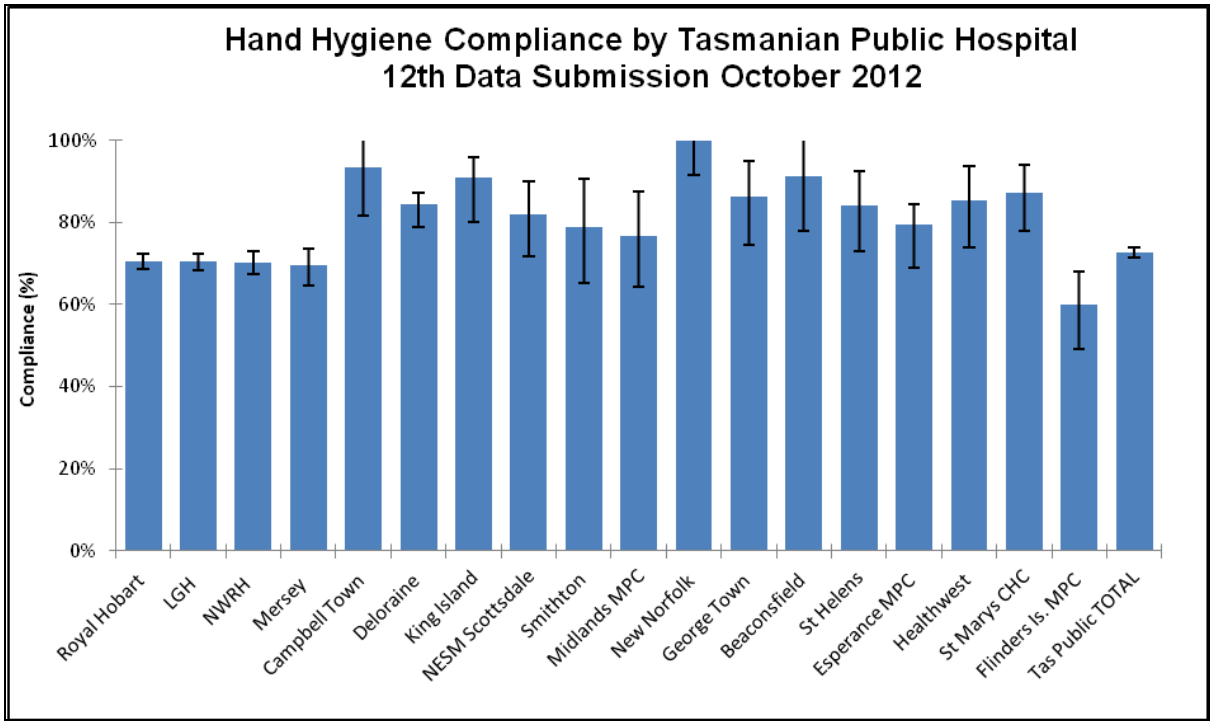


Figure 7 - Hand hygiene compliance by moment

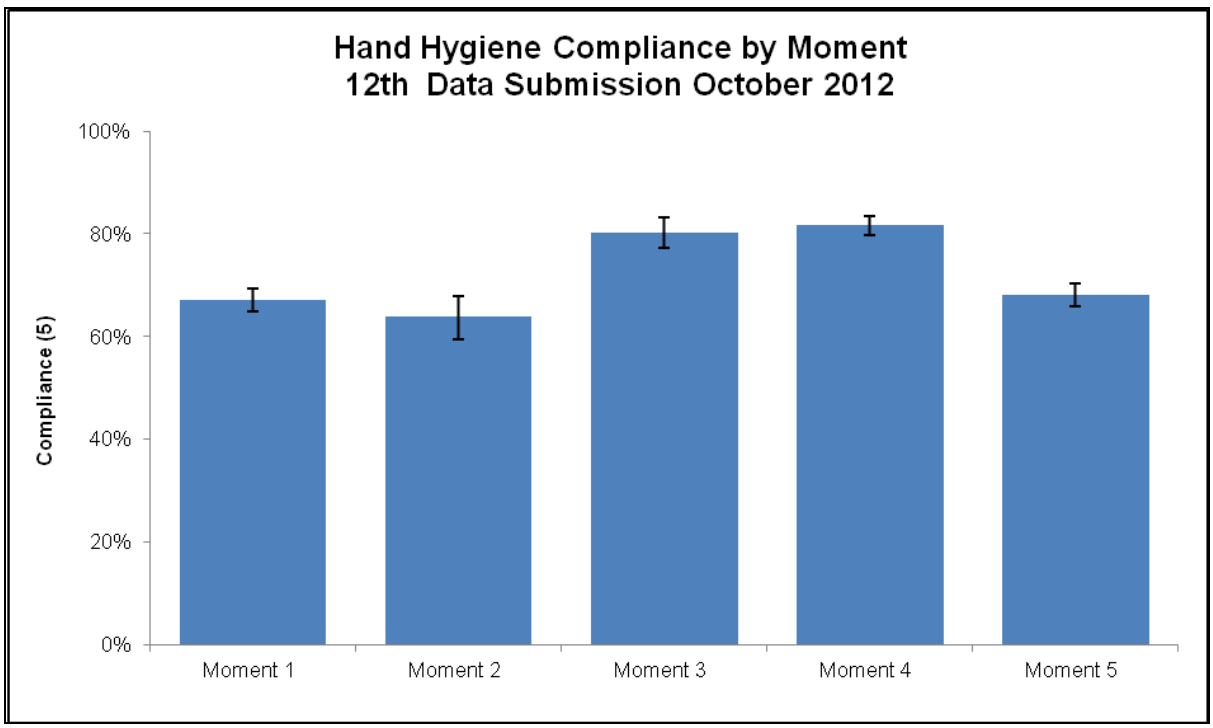
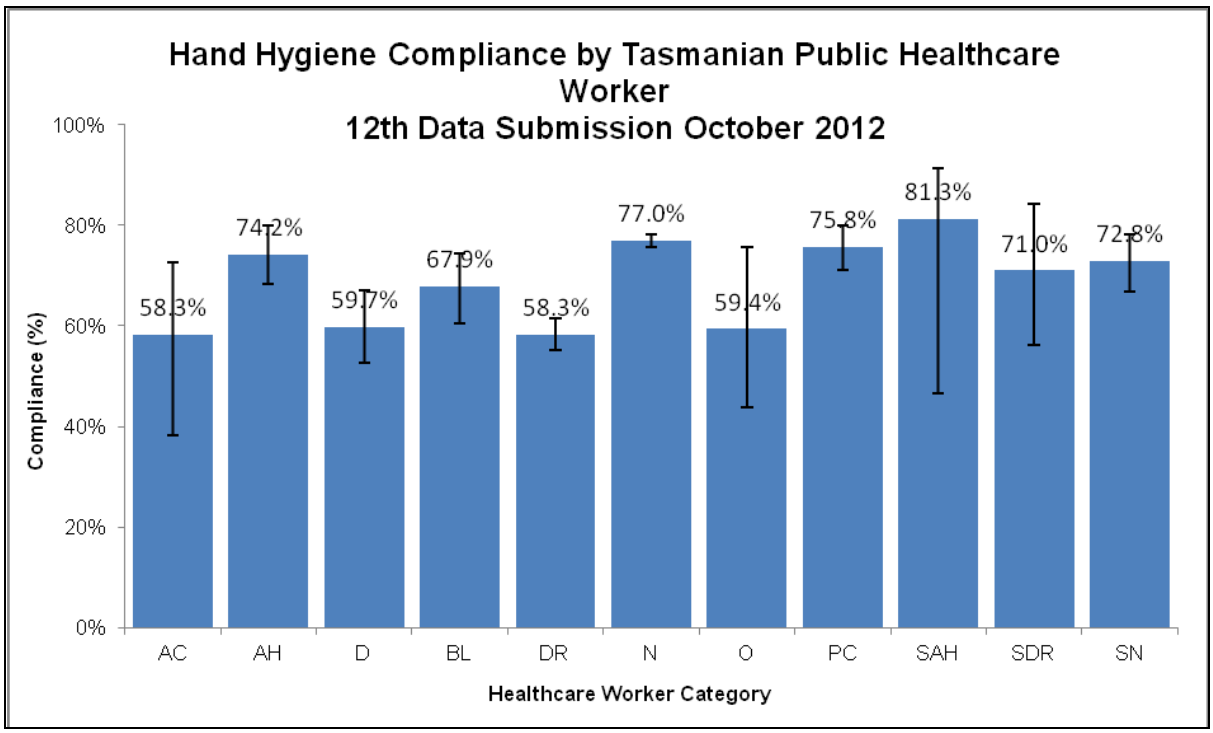


Figure 8 - Hand hygiene compliance by healthcare worker



Key points

- All Tasmanian public hospitals with acute inpatient beds submitted hand hygiene compliance data for the October 2012 submission period.
- All Tasmanian public hospitals with more than 25 acute inpatient beds submitted the defined minimum number of hand hygiene observations as outlined by Hand Hygiene Australia.
- Rural hospitals do not collect as much data as the four acute public hospitals, so comparisons between rural and acute hospitals are not recommended.
- The overall rate of Tasmanian hand hygiene compliance has increased from a baseline of 35.5% in March 2009 to 72.7% (95% CI 71.6% – 72.7%) in October 2012.
- The rate of hand hygiene compliance in Tasmania is comparable to that of other states. In the final data collection period of 2012, published hand hygiene rates were Western Australia (75%) and nationally (76%).
- The majority of hand hygiene compliance data is collected from nurse patient interactions (60% in the latest report).
- Hand hygiene compliance before touching a patient (Moment 1), undertaking a procedure (Moment 2) and after touching patient surroundings (Moment 5) are lower than those reported after undertaking a procedure (Moment 3) or after touching a patient (Moment 4).

Acknowledgements

The production of this report is the culmination of work from a number of different organisations. In particular, we would like to acknowledge:

- Launceston General Hospital Infection Control Team and Executive Director of Nursing
- Royal Hobart Hospital Infection Control Team and Executive Director of Nursing
- North West Area Health Service Infection Control Team and Executive Director of Nursing
- Microbiology Departments at the Royal Hobart Hospital, Launceston General Hospital, DSPL and Gribbles Pathology
- Hand Hygiene Australia
- Communicable Disease Prevention Unit, Population Health
- Contributing Primary Health Sites

Appendix

Staphylococcus aureus bacteraemia

Data which classifies healthcare associated *Staphylococcus aureus* bacteraemia into Criterion A (>48 after admission or <48 hours after discharge) OR Criterion B (≤ 48 hours after hospital admission and one of more key clinical criteria met) is available upon request.

Table 3 - Tasmanian numbers and rate/10 000 patient days of healthcare associated *Staphylococcus aureus* bacteraemia (HCA-SAB).

Quarter	Total HCA-SAB	Number MSSA	Number MRSA	HCA SAB Rate
Q3 2009	8	7	1	0.91
Q4 2009	10	10	0	1.15
Q1 2010	13	13	0	1.53
Q2 2010	7	7	0	0.84
Q3 2010	12	11	1	1.47
Q4 2010	10	7	3	1.27
Q1 2011	15	13	2	1.83
Q2 2011	5	5	0	0.67
Q3 2011	7	7	0	0.82
Q4 2011	6	4	2	0.85
Q1 2012	7	6	1	0.92
Q2 2012	7	6	1	0.91
Q3 2012	6	6	0	0.73
Q4 2012	10	9	1	1.28

Table 4 - Royal Hobart Hospital numbers and rates/10 000 patient days of healthcare associated *Staphylococcus aureus* bacteraemia.

Quarter	Total HCA-SAB	Number MSSA	Number MRSA	HCA SAB Rate
Q3 2009	2	2	0	0.48
Q4 2009	8	8	0	1.85
Q1 2010	11	11	0	2.68
Q2 2010	5	5	0	1.23
Q3 2010	8	7	1	1.86
Q4 2010	6	5	1	1.45
Q1 2011	6	4	2	1.51
Q2 2011	3	3	0	0.71
Q3 2011	2	2	0	0.50
Q4 2011	3	2	1	0.79
Q1 2012	2	2	0	0.54
Q2 2012	3	3	0	0.80
Q3 2012	3	3	0	0.75
Q4 2012	4	4	0	1.06

Table 5 - Launceston General Hospital numbers and rates/10 000 patient days of healthcare associated *Staphylococcus aureus* bacteraemia.

Quarter	Total HCA-SAB	Number MSSA	Number MRSA	HCA SAB Rate
Q3 2009	2	1	1	0.68
Q4 2009	2	2	0	0.69
Q1 2010	1	1	0	0.36
Q2 2010	2	2	0	0.71
Q3 2010	3	3	0	1.04
Q4 2010	3	1	2	1.08
Q1 2011	5	5	0	1.84
Q2 2011	2	2	0	0.67
Q3 2011	5	5	0	1.67
Q4 2011	1	1	0	0.36
Q1 2012	2	1	1	0.79
Q2 2012	2	2	0	0.78
Q3 2012	2	2	0	0.73
Q4 2012	6	5	1	2.27

Table 6 - North West Regional Hospital numbers and rates/10 000 patient days of healthcare associated *Staphylococcus aureus* bacteraemia.

Quarter	Total HCA-SAB	Number MSSA	Number MRSA	HCA SAB Rate
Q3 2009	1	1	0	1.07
Q4 2009	0	0	0	0.00
Q1 2010	1	1	0	1.02
Q2 2010	0	0	0	0.00
Q3 2010	0	0	0	0.00
Q4 2010	1	1	0	1.02
Q1 2011	1	1	0	1.19
Q2 2011	0	0	0	0.00
Q3 2011	0	0	0	0.00
Q4 2011	1	1	0	1.16
Q1 2012	2	2	0	2.56
Q2 2012	1	0	1	1.28
Q3 2012	0	0	0	0.00
Q4 2012	0	0	0	0.00

Table 7 - Mersey Community Hospital numbers and rates/10 000 patient days of healthcare associated *Staphylococcus aureus* bacteraemia.

Quarter	Total HCA-SAB	Number MSSA	Number MRSA	HCA SAB Rate
Q3 2009	3	3	0	4.38
Q4 2009	0	0	0	0.00
Q1 2010	0	0	0	0.00
Q2 2010	0	0	0	0.00
Q3 2010	1	1	0	1.58
Q4 2010	0	0	0	0.00
Q1 2011	3	3	0	4.64
Q2 2011	0	0	0	0.00
Q3 2011	0	0	0	0.00
Q4 2011	1	0	1	1.79
Q1 2012	1	1	0	1.86
Q2 2012	1	1	0	1.67
Q3 2012	1	1	0	1.59
Q4 2012	0	0	0	0.00

Clostridium difficile infection

Table 8 – Tasmanian numbers and rates/10 000 patient days of *Clostridium difficile* infection.

Quarter	Total hospital identified CDI	Rate	Total HCA HCF	Rate
Q3 2009	19	2.3	11	1.4
Q4 2009	37	4.6	18	2.2
Q1 2010	24	3.0	15	1.9
Q2 2010	34	4.4	19	2.5
Q3 2010	34	4.3	30	3.8
Q4 2010	35	4.4	27	3.4
Q1 2011	35	4.7	22	2.9
Q2 2011	35	4.3	18	2.2
Q3 2011	43	5.4	25	3.1
Q4 2011	66	8.9	42	5.6
Q1 2012	50	7.1	24	3.4
Q2 2012	43	6.0	27	3.8
Q3 2012	39	5.1	18	2.4
Q4 2012	45	6.2	26	3.6

^ Healthcare associated, healthcare facility onset

Table 9 - Hospital numbers and rates/10 000 patient days of **hospital identified** *Clostridium difficile* infection.

Quarter	Royal Hobart		Launceston General		NW Regional		Mersey Community	
	Total	Rate	Total	Rate	Total	Rate	Total	Rate
Q3 2009	8	2.1	9	3.3	1	1.1	1	1.6
Q4 2009	25	6.4	6	2.2	5	5.8	1	1.7
Q1 2010	10	2.7	9	3.5	3	3.1	2	3.5
Q2 2010	18	4.9	10	3.8	5	5.6	1	1.9
Q3 2010	25	6.7	5	1.9	1	1.1	3	5.1
Q4 2010	25	6.6	4	1.5	3	3.1	3	4.9
Q1 2011	25	6.9	7	2.8	2	2.4	2	3.3
Q2 2011	25	6.5	5	1.8	2	2.2	3	4.9
Q3 2011	24	6.5	10	3.6	3	3.2	6	10.8
Q4 2011	34	9.8	18	7.0	8	9.4	6	11.5
Q1 2012	32	9.4	13	5.5	3	3.9	2	4.0
Q2 2012	23	6.7	12	5.0	4	5.2	4	7.3
Q3 2012	24	6.6	6	2.4	6	7.3	3	5.1
Q4 2012	24	6.9	7	2.8	10	12.3	4	7.9

Table 10 - Hospital numbers and rates/10 000 patient days of **healthcare associated, healthcare facility onset** *Clostridium difficile* infection.

Quarter	Royal Hobart		Launceston General		NW Regional		Mersey Community	
	Total	Rate	Total	Rate	Total	Rate	Total	Rate
Q3 2009	6	1.6	5	1.8	0	0.0	0	0.0
Q4 2009	12	3.1	3	1.1	2	2.3	1	1.7
Q1 2010	7	1.9	5	1.9	3	3.1	0	0.0
Q2 2010	12	3.3	4	1.5	2	2.2	1	1.9
Q3 2010	21	5.6	5	1.9	1	1.1	3	5.1
Q4 2010	20	5.3	4	1.5	1	1.0	2	3.2
Q1 2011	15	4.1	5	2.0	0	0.0	2	3.3
Q2 2011	14	3.7	2	0.7	1	1.1	1	1.6
Q3 2011	15	4.1	6	2.1	0	0.0	4	7.2
Q4 2011	21	6.0	14	5.4	4	4.7	3	5.8
Q1 2012	18	5.3	5	2.1	1	1.3	0	0.0
Q2 2012	17	5.0	6	2.5	2	2.6	2	3.6
Q3 2012	12	3.3	3	1.2	2	2.4	1	1.7
Q4 2012	18	5.2	3	1.2	4	4.9	1	2.0

Hand hygiene compliance data October 2012

Table 11 – Hand hygiene compliance rates by Tasmanian hospital and state level

Hospital	**Hand Hygiene Compliance Rate**	**Lower 95% Confidence**	**Upper 95% Confidence**
Royal Hobart	70.5%	68.7%	72.2%
Launceston General	70.4%	68.3%	72.5%
NW Regional	70.3%	67.5%	73.1%
Mersey Community	69.4%	64.7%	73.8%
Campbell Town	93.3%	87.4%	96.6%
Deloraine	84.3%	76.0%	90.1%
King Island	90.9%	80.4%	96.1%
Scottsdale	81.9%	71.5%	89.1%
Smithton	78.8%	66.0%	87.8%
Midlands MPC	76.8%	64.2%	85.9%
New Norfolk	100.0%	95.9%	100.0%
George Town	86.4%	78.5%	91.7%
Beaconsfield	91.2%	81.1%	96.2%
St Helens	84.3%	74.0%	91.0%
Esperance (Dover)	79.6%	67.1%	88.2%
Queenstown	85.5%	73.8%	92.4%
St Marys	87.3%	78.2%	93.0%
Flinders Island	60.0%	40.7%	76.6%
Tasmanian Rate	**72.7%**	**71.6%**	**73.8%**

Table 12 - Tasmanian hand hygiene compliance rates by healthcare worker

Code	Healthcare worker	Hand hygiene compliance rate	Lower 95% confidence	Upper 95% confidence
AC	Clerical	58.3%	38.8%	75.5%
AH	Allied Health	74.2%	69.0%	78.9%
D	Domestic	59.7%	52.5%	66.5%
BL	Invasive technician	67.9%	59.7%	75.0%
DR	Doctor	58.3%	55.3%	61.3%
N	Nurse/midwife	77.0%	75.6%	78.2%
O	Other	59.4%	42.3%	74.5%
PC	Personal care staff	75.8%	71.1%	79.9/%
SAH	Student Allied Health	81.3%	57.0%	93.4%
SDR	Student doctor	71.0%	59.4%	80.4%
SN	Student nurse/midwife	72.8%	69.0%	76.4%

Table 13 – Tasmanian hand hygiene compliance rates by moment

Moment	Compliance rate	Lower 95% confidence	Upper 95% confidence
1	67.1%	64.9%	69.2%
2	63.8%	59.4%	68.0%
3	80.3%	77.3%	83.0%
4	81.6%	79.8%	83.3%
5	68.1%	65.9%	70.2%

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Population Health

Department of Health and Human Services

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