POPULATION HEALTH SERVICES

Tasmanian Acute Public Hospitals

Healthcare Associated Infection Surveillance Report

Report 21 – Quarter 1 2014



Department of Health and Human Services

Tasmanian Government

Tasmanian Acute Public Hospitals Healthcare Associated Infection Surveillance Report

Tasmanian Infection Prevention and Control Unit (TIPCU)

Department of Health and Human Services, Tasmania

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Peer reviewed and approved by the Tasmanian Healthcare Associated Advisory Committee and Chief Medical Officer, DHHS Tasmania.

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 up to date report when quoting/using data.

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Hand hygiene compliance data March 2014 20

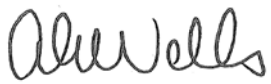
Executive summary

This surveillance report describes data relating to a number of key Healthcare Associated Infection (HAI) indicators. The Tasmanian Infection Prevention and Control Unit (TIPCU) 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. 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 are provided in the Key Points sections of this report. 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.
- In Quarter 1, 2014, there was an increase in hospital identified *Clostridium difficile* infection (CDI) and healthcare associated – healthcare facility onset *Clostridium difficile* infection (HCA – HCF CDI).
- The occurrence of vancomycin resistant *enterococcus* remains low.
- The Tasmanian hand hygiene compliance rate increased in the latest data collection period and exceeds the national threshold level.





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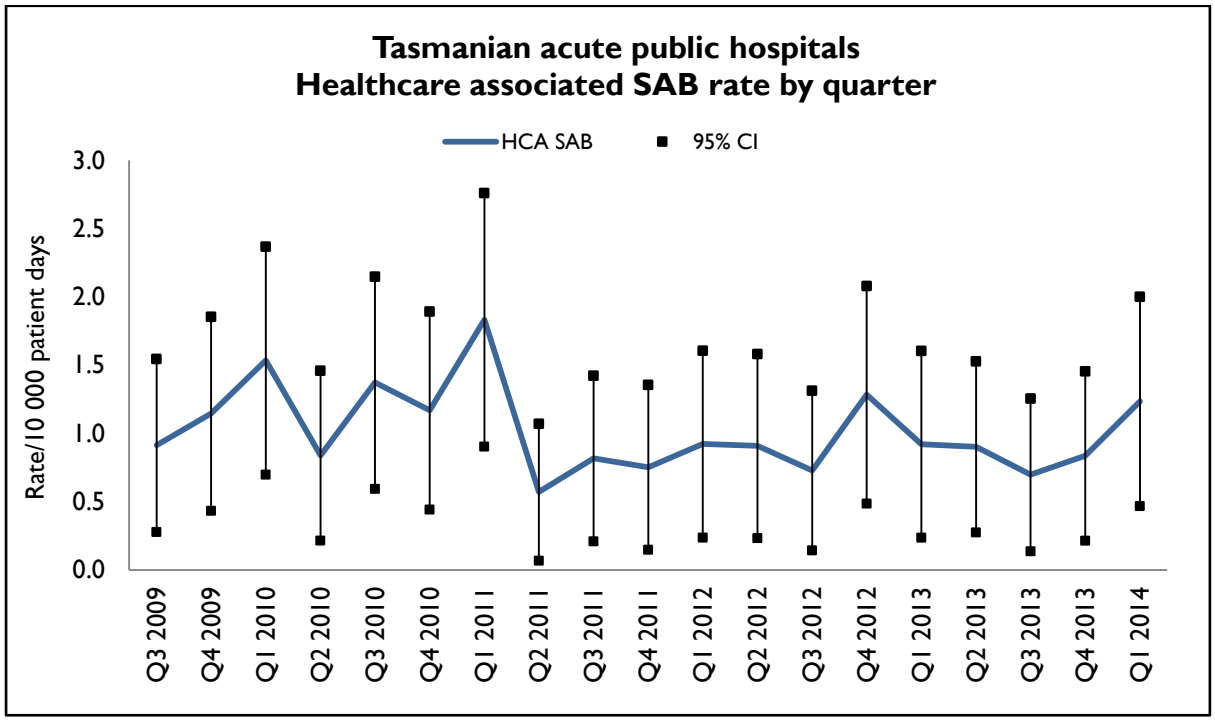
Staphylococcus aureus bacteraemia (SAB)

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 March 31st 2014 is 1.02 per 10 000 patient days (95% CI 0.86 – 1.18).

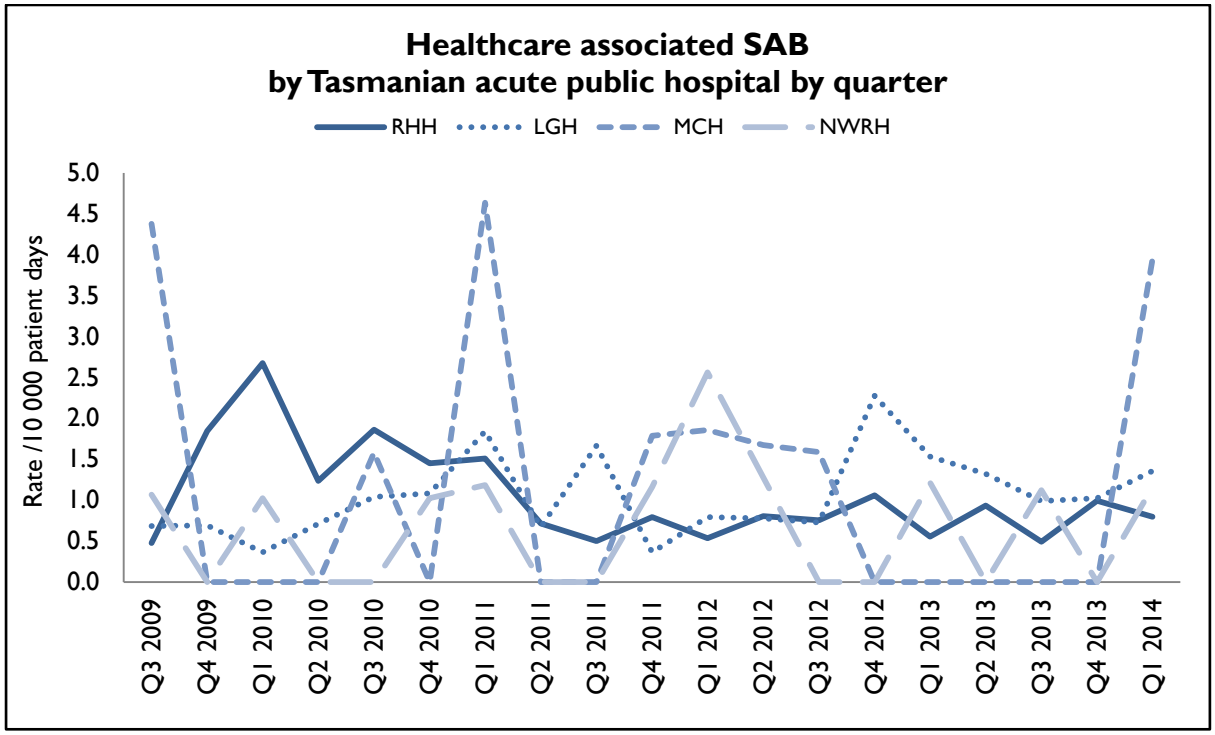
Figure 1 Healthcare associated *Staphylococcus aureus* bacteraemia rate.



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

- For Quarter 1, 2014, three of the four larger public hospitals had HCA SAB rates below the National Healthcare Agreement (2011) target of no more than of 2 HCA SAB/10 000 patient days[1].
    - Mersey Community Hospital had a rate of 3.94 HCA SAB/10 000 patient days. This represents 2 cases of HCA SAB for the quarter.
    - Due to the lower denominator (patient days), the rate at both Mersey Community Hospital and North West Regional Hospital, the rate will be greater than the National Healthcare Agreement target if more than 1 HCA SAB is identified in a quarter.
- The Tasmanian rate of healthcare associated *Staphylococcus aureus* bacteraemia (HCA SAB) is comparable to the most recently published data reported in other Australian states and territories.
    - The HCA SAB aggregate rate in Q4 2013 in Western Australia was 0.88 per 10 000 bed days[2].
    - The aggregate rate of HCA SAB in South Australia in 2012 was reported as 0.8 per 10 000 bed days[3].
    - The rate of HCA SAB at The Canberra Hospital in 2012-2013 is reported as 1.72 cases per 10,000 days of patient care[4].

1. MyHospitals http://www.myhospitals.gov.au/publications/sab/march-2014
2. HISWA Quarterly Aggregate Report Quarter 4, 2013 – Number 34
3. South Australian Healthcare Associated Bloodstream Infection Report 2012
4. MyHospitals http://www.myhospitals.gov.au/hospital/the-canberra-hospital/safety-and-quality/sab

Clostridium difficile infection

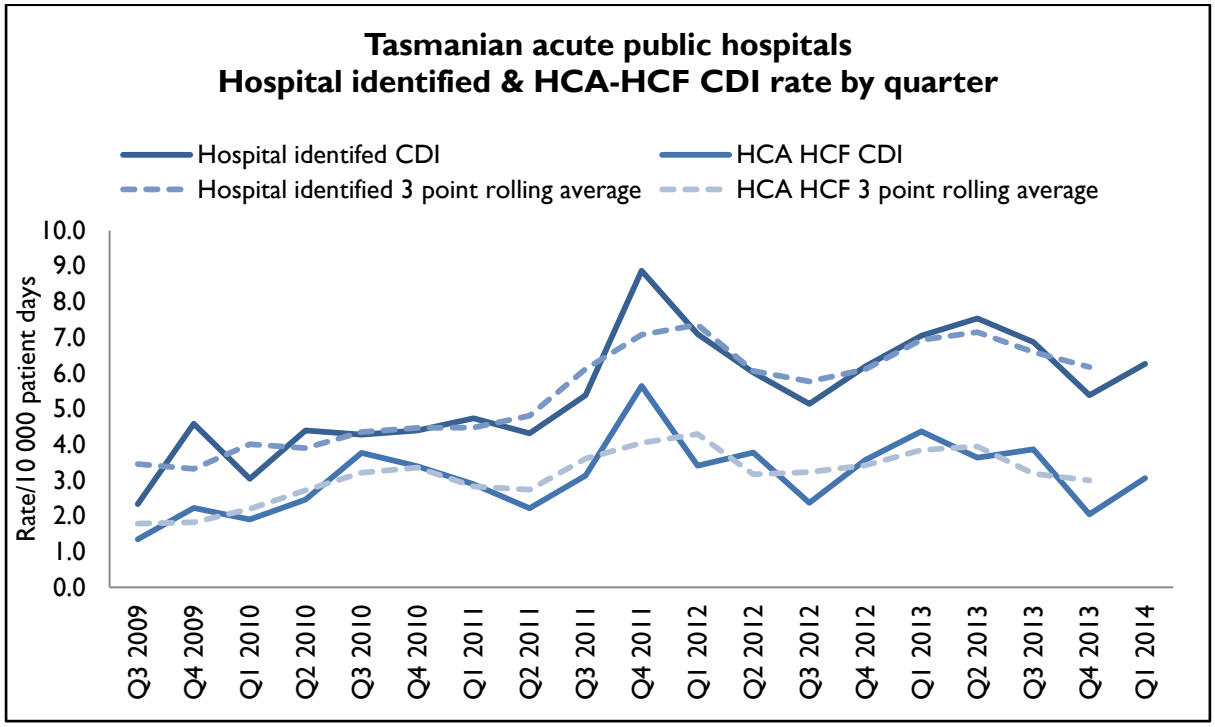
Tasmanian rates

Figure 3 outlines 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 March 31st 2014 is 5.43 per 10 000 patient days (95% CI 5.05 – 5.80).

The mean rate of **healthcare associated – healthcare facility onset (HCA-HCF)** CDI between July 1st 2009 and March 31st 2014 is 3.09 per 10 000 patient days (95% CI 2.80 – 3.38)

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.

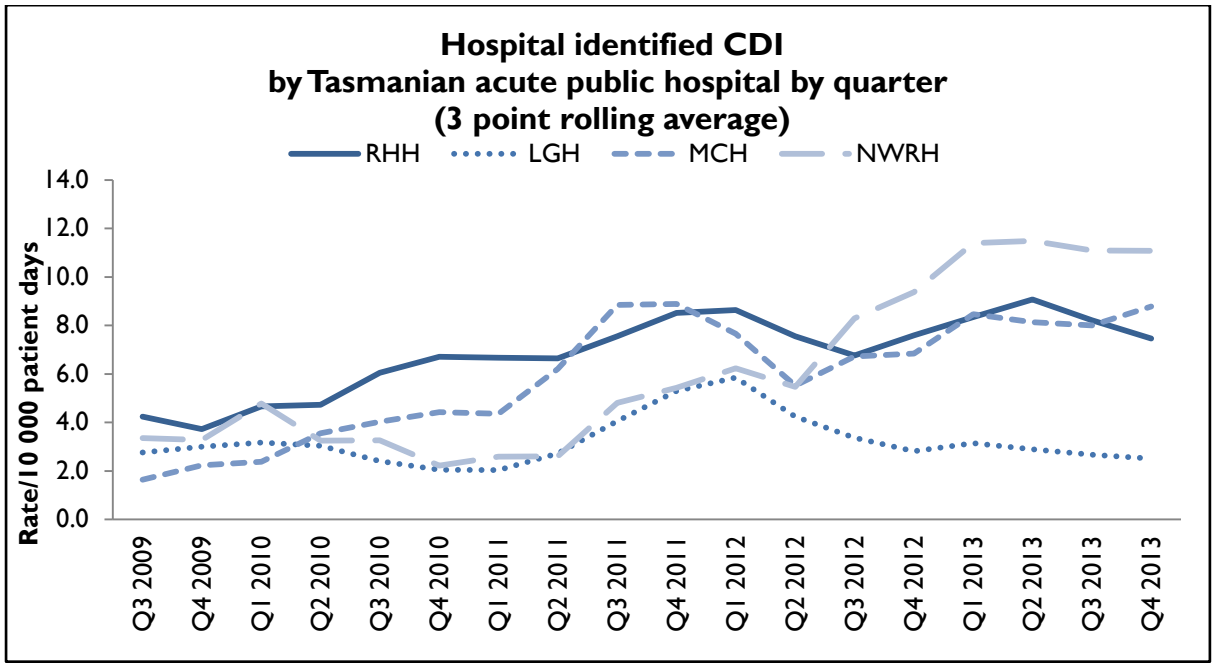
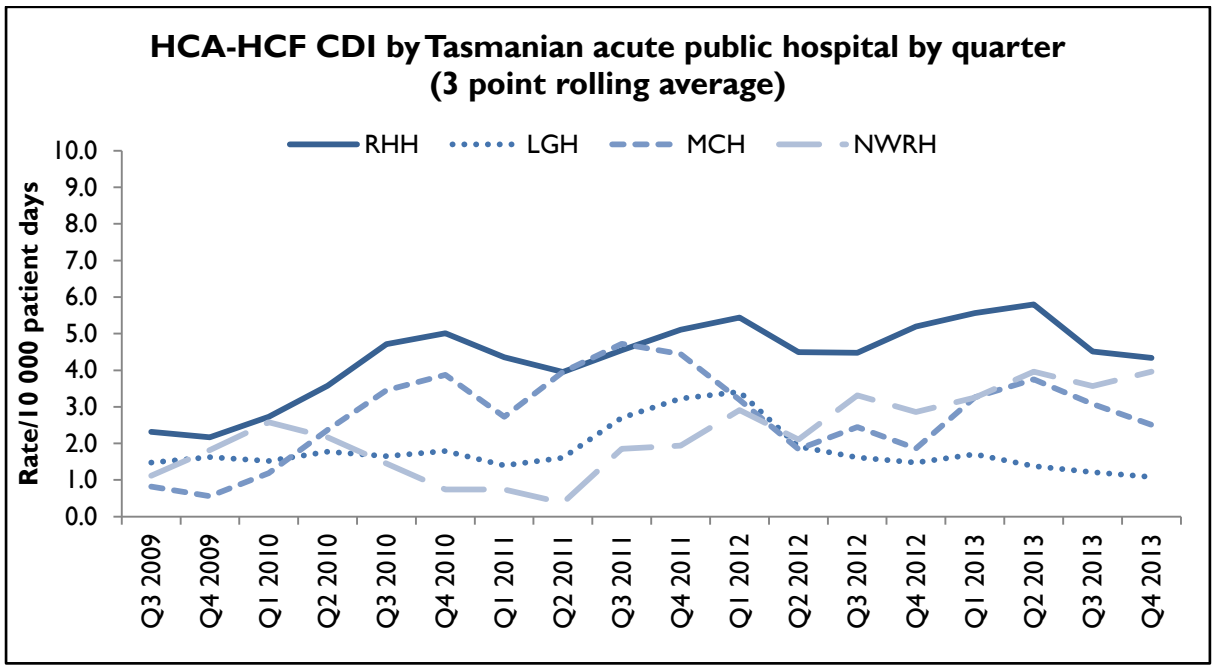


Figure 5 Healthcare associated – healthcare facility onset (HCA-HCF) *Clostridium difficile* infection rate by hospital.



Key points

- The HCA – HCF rate excludes persons who present to hospital with symptoms of CDI and/or develop symptoms within 2 days of admission.
- The three point rolling average calculates the average rate of the previous, current and next quarter thus this rate will always be reported up to the end of the previous quarter.
- The rates of both hospital identified CDI and HCA – HCF CDI have increased for this quarter from the previous quarter
    - Hospital identified CDI has increased from 5.4/10 000 patient days in Q4 2013, to 6.3/10 000 patient days - this represents 5 more cases identified in Q1 2014 over Q4 2013.
    - HCA – HCF CDI has increased from 2.1/10 000 patient days in Q4 2013 to 3.1/10 000 patient days - this represents 7 more cases in Q1 2014 over Q4 2013.
    - The rates and numbers of both hospital identified CDI and HCA – HCF CDI in Q1 2014 are similar to those identified in quarters other than Q4 2013.
- The rate of hospital identified CDI in Western Australian public hospitals in Q4 2013 was 3.95 per 10 000 bed days[1]. ·

1. HISWA Quarterly Aggregate Report Quarter 4, 2013 – Number 34

Vancomycin resistant *enterococcus* (VRE)

Tasmanian numbers

Table 1 –new VRE isolates per quarter within 1) acute public hospitals and 2) total Tasmanian isolates

	RHH	LGH	MCH	NWRH	Total Tasmanian
Q1 2008	11	-	-	-	13
Q2 2008	17	6	-	7	32
Q3 2008	1	1	-	10	12
Q4 2008	3	9	-	5	18
Q1 2009	-	4	2	3	9
Q2 2009	8	-	4	2	14
Q3 2009	1	-	2	1	4
Q4 2009	2	2	1	-	6
Q1 2010	1	-	1	-	2
Q2 2010	4	-	1	-	5
Q3 2010	10	-	2	2	14
Q4 2010	3	-	3	1	8
Q1 2011	-	-	2	1	3
Q2 2011	3	1	-	-	8
Q3 2011	1	1	-	-	3
Q4 2011	3	-	-	-	5
Q1 2012	3	2	2	2	10
Q2 2012	4	2	-	1	7
Q3 2012	3	2	2	-	8
Q4 2012	1	5	1	1	10
Q1 2013	13	0	3	-	18
Q2 2013	8	3	-	1	15
Q 3 2013	8	1	-	2	12
Q4 2013	4	3	-	3	16
Q1 2014	5	-	1	1	8

Key points

- This table provides information on both new VRE isolates identified in acute public hospitals and the total number of new VRE isolates identified across Tasmania.
- Isolates that are classified as 'hospital identified' does not necessarily mean that VRE was acquired at that hospital. Numbers of VRE isolates 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 'total isolates identified' includes all new cases identified in Tasmania and includes isolates from public and private hospitals, GP clinics and long term and residential care facilities.

Hand hygiene compliance data

Tasmanian rates

Figure 6 - Hand hygiene compliance rate in Tasmanian public hospitals

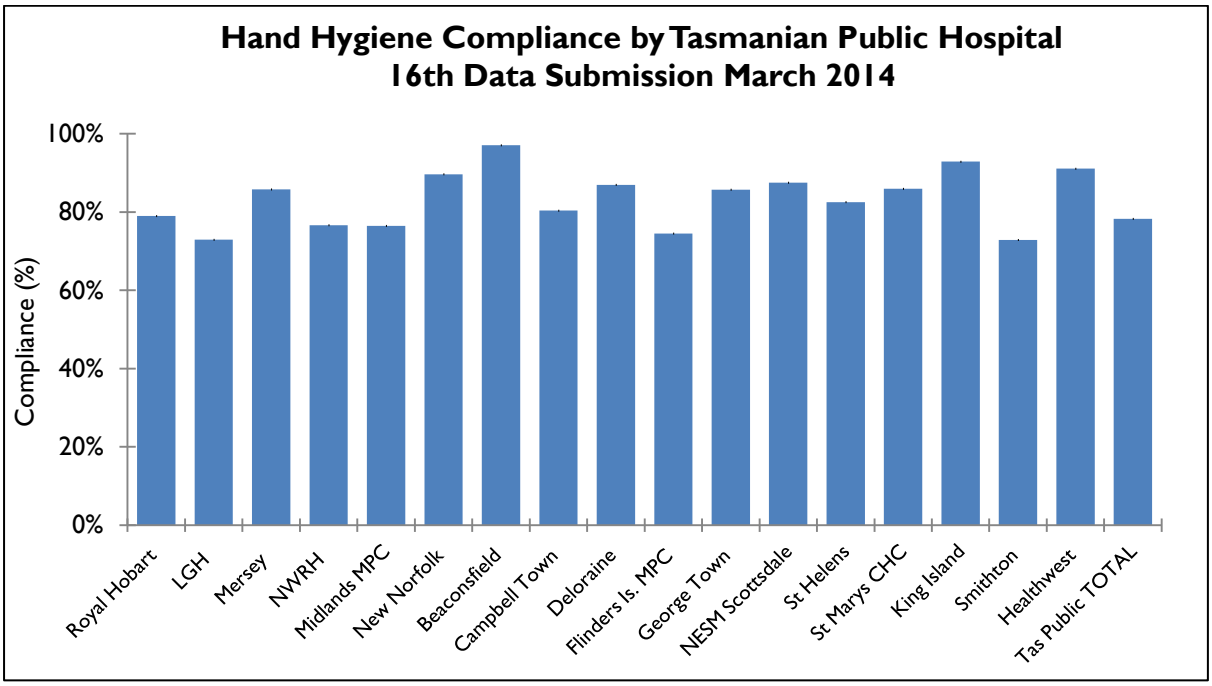


Figure 7 - Hand hygiene compliance by moment

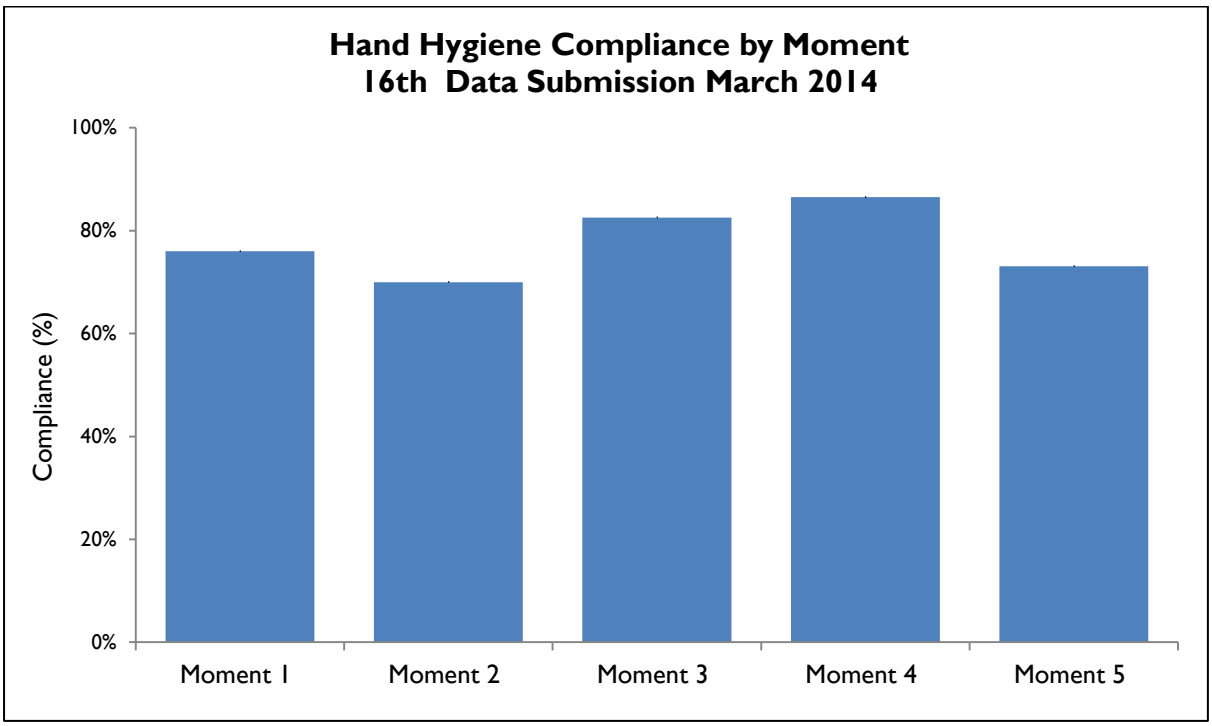
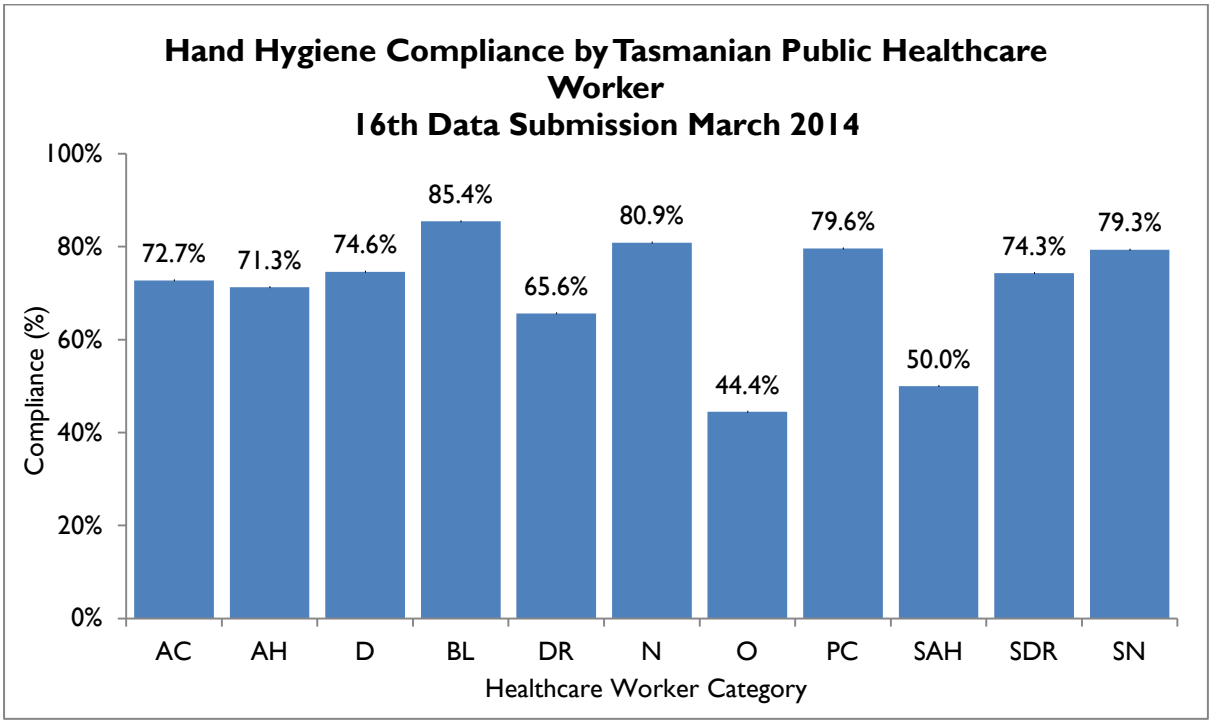


Figure 8 - Hand hygiene compliance by healthcare worker



Key points

- 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 78.3% in March 2014.
- The rate of hand hygiene compliance in Tasmania is comparable with other states. In the third data collection period of 2013, published hand hygiene rates were 78.2% in Victoria, 77% in Western Australia while the National rate was 79%.
- The majority of hand hygiene compliance data (70% in the latest report) is collected from nurse patient interactions.
- 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 data collection, analysis and input from a number of different organisations. In particular, we would like to acknowledge:

- Executive Director of Nursing THO North
- Executive Director of Nursing THO North West
- Executive Director of Nursing THO South
- Launceston General Hospital Infection Control Unit
- North West Regional Hospital Infection Control Team
- Mersey Community Hospital Infection Control Team
- Royal Hobart Hospital Infection Prevention and Control Unit
- The National Antimicrobial Utilisation Surveillance Program (NAUSP)
- Microbiology Departments at the Royal Hobart Hospital, Launceston General Hospital and DSPL
- Hand Hygiene Australia
- Communicable Diseases 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 2 - 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
Q1 2013	7	7	0	0.92
Q2 2013	8	7	1	0.90
Q3 2013	6	6	0	0.70
Q4 2013	7	7	0	0.84
Q1 2014	10	9	1	1.24

Table 3 - 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
Q1 2013	2	2	0	0.56
Q2 2013	4	4	0	0.93
Q3 2013	2	2	0	0.49
Q4 2013	4	4	0	0.99
Q1 2014	3	3	0	0.80

Table 4 - 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
Q1 2013	4	4	0	1.53
Q2 2013	4	3	1	1.32
Q3 2013	3	3	0	0.99
Q4 2013	3	3	0	1.03
Q1 2014	4	4	0	1.36

Table 5 - 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
Q1 2013	0	0	0	0.00
Q2 2013	0	0	0	0.00
Q3 2013	0	0	0	0.00
Q4 2013	0	0	0	0.00
Q1 2014	2	2	0	3.94

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
Q1 2013	1	1	0	1.21
Q2 2013	0	0	0	0.00
Q3 2013	1	1	0	1.12
Q4 2013	0	0	0	0.00
Q1 2014	1	0	1	1.16

Clostridium difficile infection (CDI)

Table 7 – Tasmanian numbers and rates/10 000 patient days of CDI.

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
Q1 2013	50	7.1	31	4.4
Q2 2013	57	7.4	27	3.5
Q3 2013	55	6.9	31	3.9
Q4 2013	42	5.4	16	2.1
Q1 2014	47	6.3	23	3.1

Table 8 - Hospital numbers and rates/10 000 patient days of **hospital identified** CDI.

Quarter	Royal Hobart		Launceston General		Mersey Community		NW Regional	
	Total	Rate	Total	Rate	Total	Rate	Total	Rate
Q3 2009	8	2.1	9	3.3	1	1.6	1	1.1
Q4 2009	25	6.4	6	2.2	1	1.7	5	5.8
Q1 2010	10	2.7	9	3.5	2	3.5	3	3.1
Q2 2010	18	4.9	10	3.8	1	1.9	5	5.6
Q3 2010	25	6.7	5	1.9	3	5.1	1	1.1
Q4 2010	25	6.6	4	1.5	3	4.9	3	3.1
Q1 2011	25	6.9	7	2.8	2	3.3	2	2.4
Q2 2011	25	6.5	5	1.8	3	4.9	2	2.2
Q3 2011	24	6.5	10	3.6	6	10.8	3	3.2
Q4 2011	34	9.8	18	7.0	6	11.5	8	9.4
Q1 2012	32	9.4	13	5.5	2	4.0	3	3.9
Q2 2012	23	6.7	12	5.0	4	7.3	4	5.2
Q3 2012	24	6.6	6	2.4	3	5.1	6	7.3
Q4 2012	24	6.9	7	2.8	4	7.9	10	12.3
Q1 2013	31	9.4	8	3.3	4	7.7	7	8.6
Q2 2013	32	8.7	9	3.4	5	9.8	11	13.2
Q3 2013	34	9.1	6	2.1	4	7.0	11	12.5
Q4 2013	25	6.8	7	2.6	4	7.3	6	7.3
Q1 2014	22	6.4	8	2.9	6	12.5	11	13.2

Table 9 - Hospital numbers and rates/10 000 patient days of **healthcare associated, healthcare facility onset** CDI.

Quarter	Royal Hobart		Launceston General		Mersey Community		NW Regional	
	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	1	1.7	2	2.3
Q1 2010	7	1.9	5	1.9	0	0.0	3	3.1
Q2 2010	12	3.3	4	1.5	1	1.9	2	2.2
Q3 2010	21	5.6	5	1.9	3	5.1	1	1.1
Q4 2010	20	5.3	4	1.5	2	3.2	1	1.0
Q1 2011	15	4.1	5	2.0	2	3.3	0	0.0
Q2 2011	14	3.7	2	0.7	1	1.6	1	1.1
Q3 2011	15	4.1	6	2.1	4	7.2	0	0.0
Q4 2011	21	6.0	14	5.4	3	5.8	4	4.7
Q1 2012	18	5.3	5	2.1	0	0.0	1	1.3
Q2 2012	17	5.0	6	2.5	2	3.6	2	2.6
Q3 2012	12	3.3	3	1.2	1	1.7	2	2.4
Q4 2012	18	5.2	3	1.2	1	2.0	4	4.9
Q1 2013	24	7.2	5	2.1	1	1.9	1	1.2
Q2 2013	16	4.4	5	1.9	3	5.9	3	3.6
Q3 2013	22	5.9	1	0.4	2	3.5	6	6.8
Q4 2013	12	3.2	4	1.5	0	0.0	0	0.0
Q1 2014	13	3.8	4	1.4	2	4.2	4	4.8

Hand hygiene compliance data March 2014

Table 10 – Hand hygiene compliance rates by Tasmanian hospital and state level

Hospital Name	HH Correctly Performed	HH Moments	Compliance rate	Lower 95% confidence interval	Upper 95% confidence interval
Royal Hobart	2177	2756	79.0%	77.4%	80.5%
LGH	1376	1887	72.9%	70.9%	74.9%
Mersey	344	401	85.8%	82.0%	88.9%
NWRH	699	912	76.6%	73.8%	79.3%
Midlands MPC	39	51	76.5%	63.2%	86.0%
New Norfolk	26	29	89.7%	73.6%	96.4%
Beaconsfield	66	68	97.1%	89.9%	99.2%
Campbell Town	45	56	80.4%	68.2%	88.7%
Deloraine	140	161	87.0%	80.9%	91.3%
Flinders Is. MPC	38	51	74.5%	61.1%	84.5%
George Town	90	105	85.7%	77.8%	91.1%
NESM Scottsdale	91	104	87.5%	79.8%	92.5%
St Helens	52	63	82.5%	71.4%	90.0%
St Marys CHC	55	64	85.9%	75.4%	92.4%
King Island	52	56	92.9%	83.0%	97.2%
Smithton	43	59	72.9%	60.4%	82.6%
Healthwest	51	56	91.1%	80.7%	96.1%
Tas Public TOTAL	**5384**	**6879**	**78.3%**	**77.3%**	**79.2%**

Table 11 – Tasmanian hand hygiene compliance rates by moment

Moments	HH Correctly Performed	Total HH Moments	Compliance rate	Lower 95% confidence interval	Upper 95% confidence interval
Moment 1	1287	1694	76.0%	73.9%	77.9%
Moment 2	352	503	70.0%	65.8%	73.8%
Moment 3	615	745	82.6%	79.7%	85.1%
Moment 4	1632	1887	86.5%	84.9%	88.0%
Moment 5	1498	2050	73.1%	71.1%	74.9%
Tas Public TOTAL	**5384**	**6879**	**78.3%**	**77.3%**	**79.2%**

Table 12 - Tasmanian hand hygiene compliance rates by healthcare worker

Staff Type	HH Correctly Performed	HH Moments	Compliance rate	Lower 95% confidence interval	Upper 95% confidence interval
Clerical	16	22	72.7%	51.8%	86.8%
Allied Health	181	254	71.3%	65.4%	76.5%
Domestic	132	177	74.6%	67.7%	80.4%
Invasive Technician	82	96	85.4%	77.0%	91.1%
Doctor	552	841	65.6%	62.4%	68.8%
Nurse/Midwife	3881	4800	80.9%	79.7%	81.9%
Other	4	9	44.4%	18.9%	73.3%
Personal care staff	230	289	79.6%	74.6%	83.8%
Student Allied Health	1	2	50.0%	50.0%	50.0%
Student Doctor	52	70	74.3%	63.0%	83.1%
Student Nurse/Midwife	253	319	79.3%	74.5%	83.4%
Tas Public TOTAL	**5384**	**6879**	**78.3%**	**77.3%**	**79.2%**