

Methicillin-Resistant *Staphylococcus aureus* (MRSA) Bloodstream Infections Surveillance results: 2014-2015

From April 1, 2014, to March 31, 2015, 88 healthcare facilities participated in the surveillance of methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections, for a combined total of 4,689,050 inpatient days (Table 1). Together, these facilities reported 95 cases of healthcare-associated MRSA. The incidence rate was 0.20 / 10,000 patient-days. This incidence rate has declined over the past five years but has stabilized this year. The proportion of methicillin resistance in healthcare-associated *S. aureus* bloodstream infections was 17.8%. Data was extracted on May 20th, 2015 and updated on June 1st 2015 for complications

Updated : February 24, 2016

Table 1 – Participation of Healthcare Facilities in the Surveillance of MRSA Bloodstream Infections, Québec, 2010-2011 to 2014-2015

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Facilities (N)	87	88	88	88	88
Admissions (N)	615,164	629,667	639,647	641,111	641,111
Inpatient days (N)	4,951,162	4,930,856	5,005,289	4,889,050	4,889,050
MRSA bloodstream infections					
Healthcare-associated (categories 1a et 1b) (N)	143	144	147	96	95

Total (cat. 1a, 1b, 1c, 1d, 2, 3 et 4) (N)	334	300	300	257	238
<i>S. aureus</i> bloodstream infection					
Healthcare-associated (cat. 1a et 1b) (N)	676	610	660	527	511
Total (cat. 1a, 1b, 1c, 1d, 2, 3 et 4) (N)	1,743	1,774	1,941	1,800	1,700

NB: It is possible that number of MRSA and *S. aureus* of categories 1d, 2, 3 and 4 are not complete since date entry for periods 12 and 13 in 2014-2015 have been delayed.

Open all

Incidence Rates

In 2014-2015, the incidence rate for healthcare-associated MRSA was 0.20 / 10,000 patient-days (Figure 1 and Table 2). The incidence rate of healthcare-associated MRSA in pediatric facilities was equal to 0.08 in 2014-2015.

Figure 1 - Incidence Rate of Healthcare-associated MRSA (cat. 1a + 1b), by Type of Healthcare Facility, Québec, 2014-2015 (Incidence Rate per 10,000 Patient-Days [95% CI])

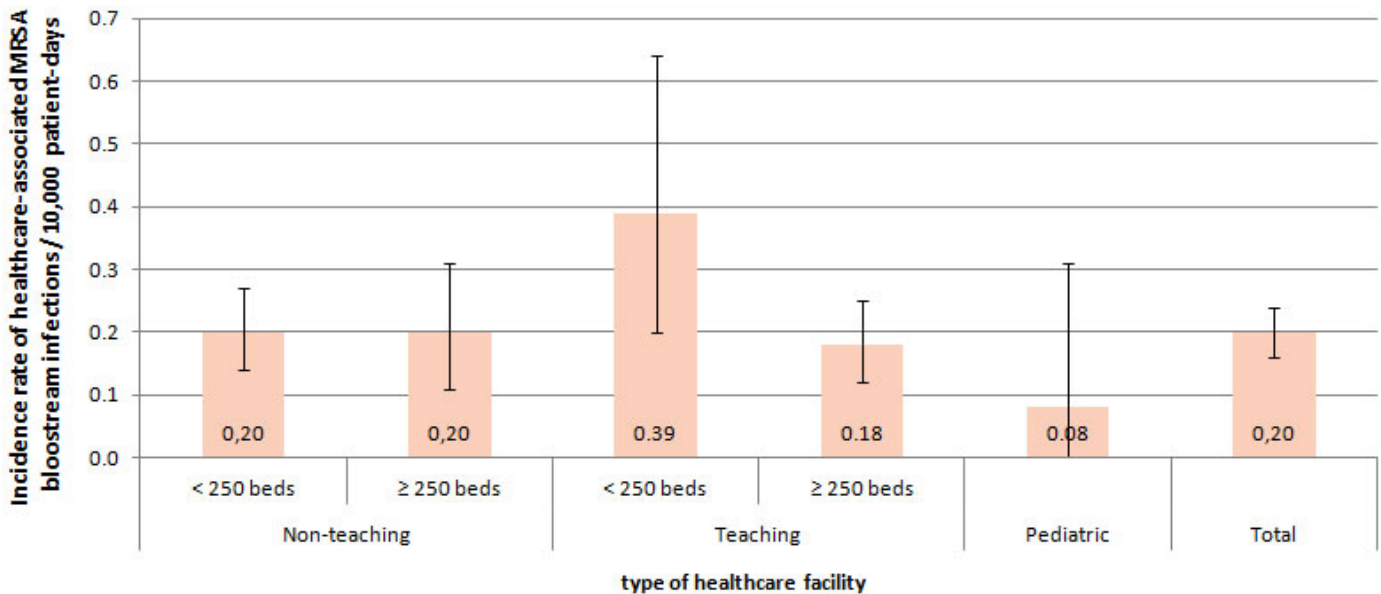


Table 2 - Percentile Distribution and Incidence Rate of Healthcare-Associated MRSA Bloodstream Infections (cat. 1a + 1b) by Type of Healthcare Facility, Québec, 2014-2015 (Incidence Rate per 10,000 Patient-Days [95% CI])

Type of Healthcare Facility	Distribution of Incidence Rate					Incidence rate [95% CI]
	Min.	25%	50%	75%	90%	

Non-teaching facilities

< 250 beds (N = 55)	0	0	0	0.23	0.53	2.07	0.2 [0.14-0.27]
≥ 250 beds (N = 7)	0.12	0.15	0.19	0.21	0.35	0.35	0.2 [0.11-0.31]

Teaching facilities

< 250 beds (N = 6)	0	0	0.08	0.62	0.81	0.81	0.39 [0.20-0.64]
≥ 250 beds (N = 18)	0	0	0.15	0.29	0.72	1.26	0.18 [0.12-0.25]

Pediatric facilities (N = 2) 0 0 0.06 0.11 0.11 0.11 0.08 [0-0.31]

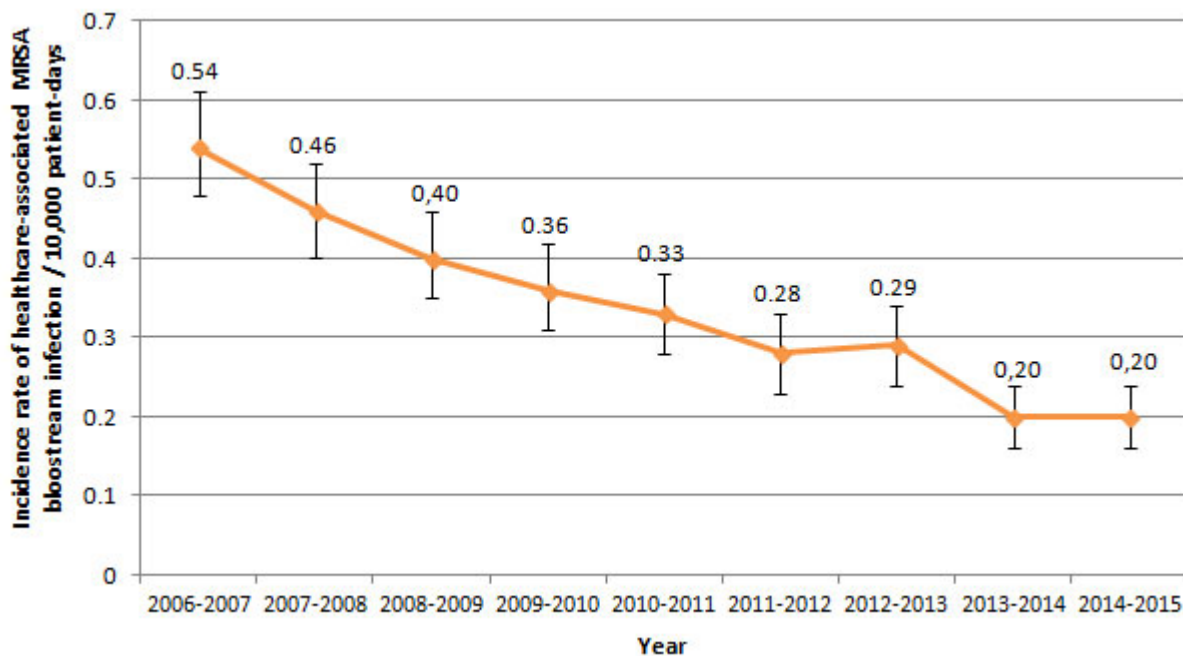
Total (N = 88) 0 0 0 0.22 0.54 2.07 0.20 [0.16-0.24]

Incidence Rate Trends

The incidence rate of healthcare-associated MRSA bloodstream infections decreased in the past five years (Figure 2). The incidence rate of healthcare-associated MRSA bloodstream infections was 0.54 per 10,000 patient-days during the first year of mandatory surveillance (2006-2007).

Compared with 2013-2014, the incidence rate of healthcare-associated MRSA bloodstream infections in 2014-2015 was stable (Table 3).

Figure 2 - Incidence Rate of Healthcare-associated MRSA Bloodstream Infections (cat. 1a + 1b) for Participating Healthcare Facilities, Québec, 2006-2007 to 2014-2015 (Incidence Rate per 10,000 Patient-Days [95% CI]) (N = 82)



Note: data analyzed are those from healthcare facilities that participated in the surveillance from 2006-2007 to 2014-2015 and at least 12 periods between 2006-2007 and 2013-2014.



Table 3 - Incidence Rate of Healthcare-associated MRSA Bloodstream Infections (cat. 1a + 1b) by type of Healthcare Facility for Participating Healthcare Facilities, Québec, 2010-2011 to 2014-2015 (Incidence Rate per 10,000 Patient-Days [95% CI]) (N = 86)

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Non-teaching facilities					
< 250 beds (N = 53)	0.24 [0.17-0.32]	0.23 [0.16-0.31]	0.22 [0.16-0.30]	0.15 [0.10-0.21]	0.20 [0.14-0.27]
≥ 250 beds (N = 7)	0.26 [0.15-0.39]	0.27 [0.16-0.40]	0.35 [0.23-0.50]	0.23 [0.13-0.35]	0.20 [0.11-0.31]
Teaching facilities					
< 250 beds (N = 6)	0.41 [0.21-0.68]	0.31 [0.14-0.54]	0.67 [0.41-1.00]	0.24 [0.10-0.45]	0.41 [0.21-0.68]
≥ 250 beds (N = 18)	0.46 [0.37-0.56]	0.36 [0.28-0.45]	0.28 [0.21-0.36]	0.23 [0.17-0.30]	0.18 [0.12-0.25]
Pediatric facilities (N = 2)	0	0	0.31 [0.08-0.68]	0	0.08 [0-0.31]
Total (N = 86)	0.34 [0.29-0.39]	0.29 [0.24-0.34]	0.29 [0.24-0.34]	0.20 [0.16-0.24]	0.20 [0.16-0.24]

Note: data analyzed are those from healthcare facilities that participated in the surveillance at least 11 periods between 2010-2011 and 2014-2015.

Number of Cases

In total, 238 cases of MRSA bloodstream infections were reported, of which 142 (59.7%) were healthcare-associated (cat. 1a, 1b, 1c, 1d, 2) and 125 (52.5%) were related to the reporting facility (cat. 1a, 1b, 1c, 1d) (Table 4)

Table 4 - Cases of MRSA and *S. aureus* Bloodstream Infections by Presumed Origin of Acquisition, Québec, 2014-2015 (N, %)

Category	Origin of Acquisition	MRSA		<i>S. aureus</i>	
		N	%*	N	%
1a	Healthcare-associated with a current hospitalisation in the reporting facility	87	5.1%	450	26.5%
1b	Healthcare-associated with a previous hospitalisation in the reporting facility	8		1	
1c	Healthcare-associated with ambulatory care in the reporting facility	25	1.5%	163	9.6%
1d	Healthcare-associated with long-term care unit in the reporting facility	5		14	0.8%

2	Healthcare-associated with another facility	17	1.0%	57	3.4%
3	Community-associated	75	4.4%	821	48.3%
4	Unknown origin of acquisition	21	1.2%	134	7.9%
Total		238	14.0%	1700	100.0%

* Percentage of MRSA compared to total *S. aureus*.

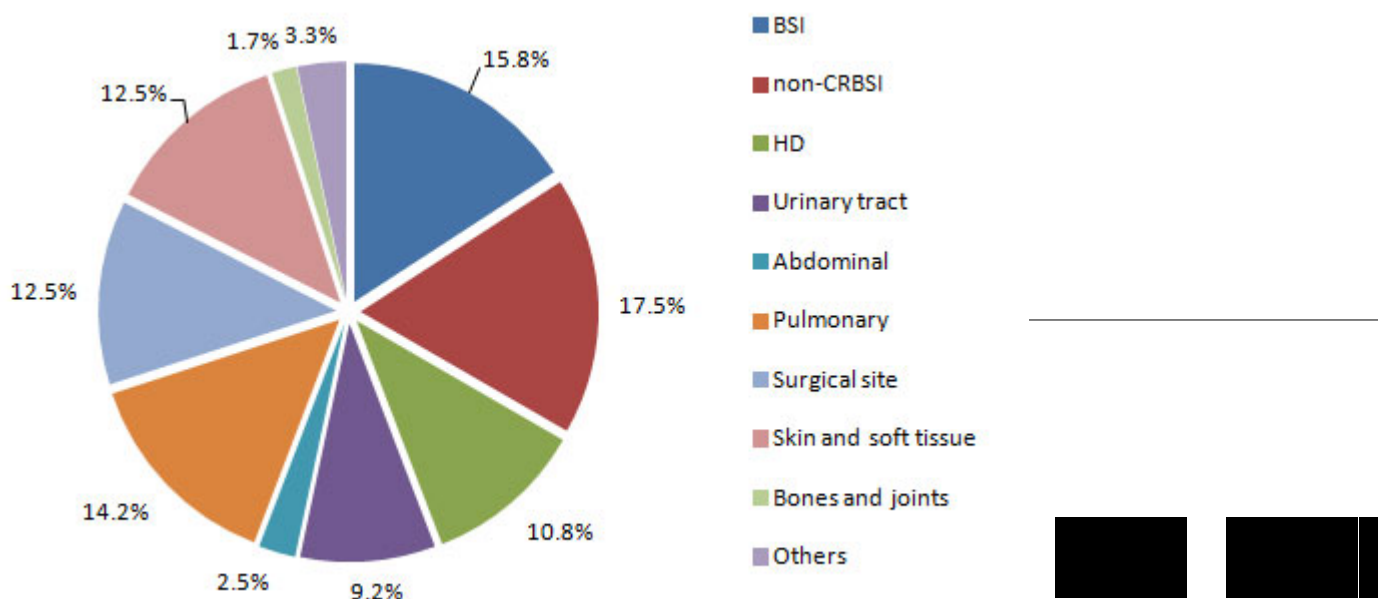
Note : It is possible that number of MRSA and *S. aureus* of categories 1d, 2, 3 and 4 are not complete since date entry for periods 12 and 13 in 2014-2015 have been delayed.

Non-catheter-related bloodstream infections represented the most frequently reported type of infection (17.5%) as either primary bloodstream infections related to catheter use and related to hemodialysis venous access (44.1%) among 120 healthcare-associated MRSA bloodstream infections (cat. 1a, 1b and 1c) in 2014-2015 (Table 4). This was followed by pulmonary (14.2%), skin and soft tissue (12.5%) surgical site (12.5%) and urinary tract (9.2%) infections (Figure 3 and Table 5).

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A total of 34 deaths were observed among the 120 healthcare-associated MRSA bloodstream infections, yealding a 30 days case fatality of 28.3% (Table 6).

Figure 3 - Breackdown of Healthcare-Associated MRSA Bloodstream Infections (cat. 1a, 1b and 1c) by Type of Infection. Québec, 2014-2015 (N = 120)



BSI : bloodstream infection
 Non-CRBSI : non- catheter-related primary bloodstream infection

HD: hemodialysis

Table 5 - Number of cases Corresponding to Each type of Infection Associated with Healthcare-Associated MRSA Bloodstream Infections (cat. 1a, 1b and 1c) by Type of Facility, Québec, 2014-2015 (N=120)

	Primary BSI		Secondary BSI				Surgical site	
	CRBSI	Non-CRBSI	HD	Urinary	Abdominal	Pulmonary		
Non-teaching facilities								
< 250 beds	4	8	2	6	1	7	2	
³ 250 beds	1	4	2	3	1	4	1	
Teaching facilities								
< 250 beds	4	1	1	0	0	1	2	
³ 250 beds	9	8	8	2	1	5	10	
Pediatric facilities	1	0	0	0	0	0	0	
Total	19	21	13	11	3	17	15	
Secondary BSI								
	Skin and soft tissues		Bones and joints		Central nervous system		others	Total
Non-teaching facilities								
< 250 beds	7		1		0		2	40
³ 250 beds	2		0		0		1	19
Teaching facilities								
< 250 beds	3		0		0		0	12
³ 250 beds	3		1		0		1	48
Pediatric facilities	0		0		0		0	1
Total	15		2		0		4	120

BSI : bloodstream infection

CRBSI : catheter-related bloodstream infection

Non-CRBSI : non-catheter-related bloodstream infection

HD: hemodialysis

Number of Deaths and 30-day Case Fatality Related to Healthcare-Associated MRSA Bloodstream Infections (cat. 1a, 1b and 1c), Québec, 2013-2014 to 2014-2015

	2013-2014	2014-2015
Healthcare-associated MRSA bloodstream infections	121	100
Number of deaths	39	34

Case fatality

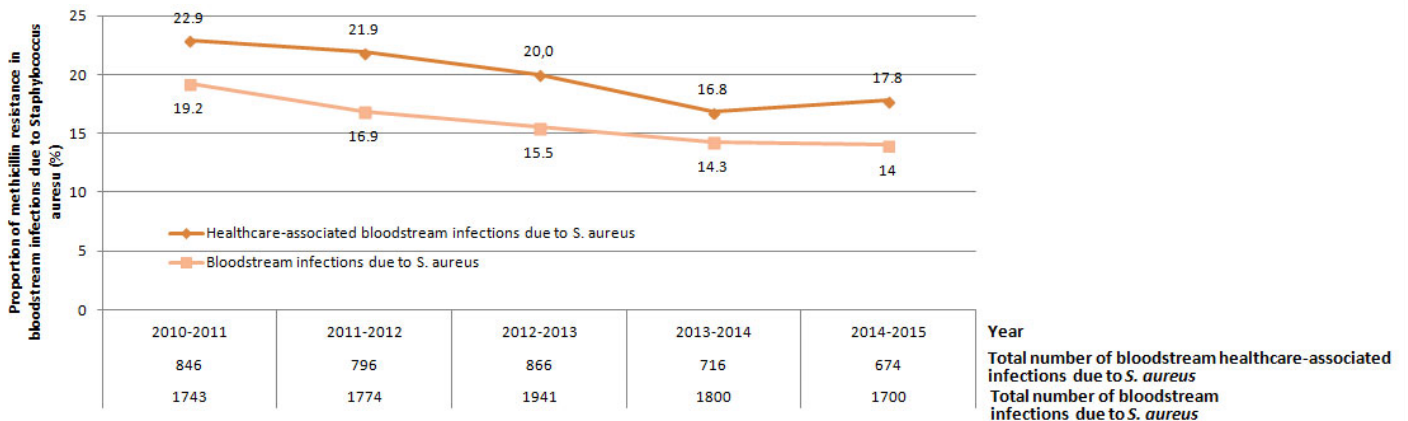
32.2%

28.3%

Microbiology

The proportion of methicillin resistance in healthcare-associated bloodstream infections due to *S. aureus* dropped between 2010-2011 and 2013-2014 to 16.8% before exhibiting an increase to 17.8 in 2014-2015 (Figure 4)

Figure 4 - Proportion of Methicillin Resistance in Healthcare-Associated Bloodstream Infections (cat. 1a, 1b and 1c) and all Bloodstream Infections (cat. 1a, 1b, 1c, 1d, 2, 3 and 4), Québec, 2010-2011 to 2014-2015 (N = 86)



Note: data analyzed are those from healthcare facilities that participated in the surveillance in 2014-2015 and at least 11 periods between 2010-2011 and 2013-2014.

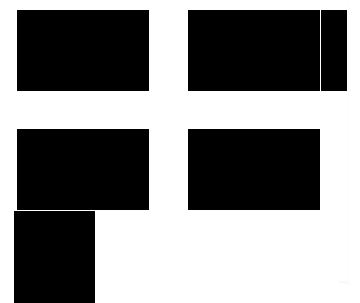
Data per Healthcare Facility

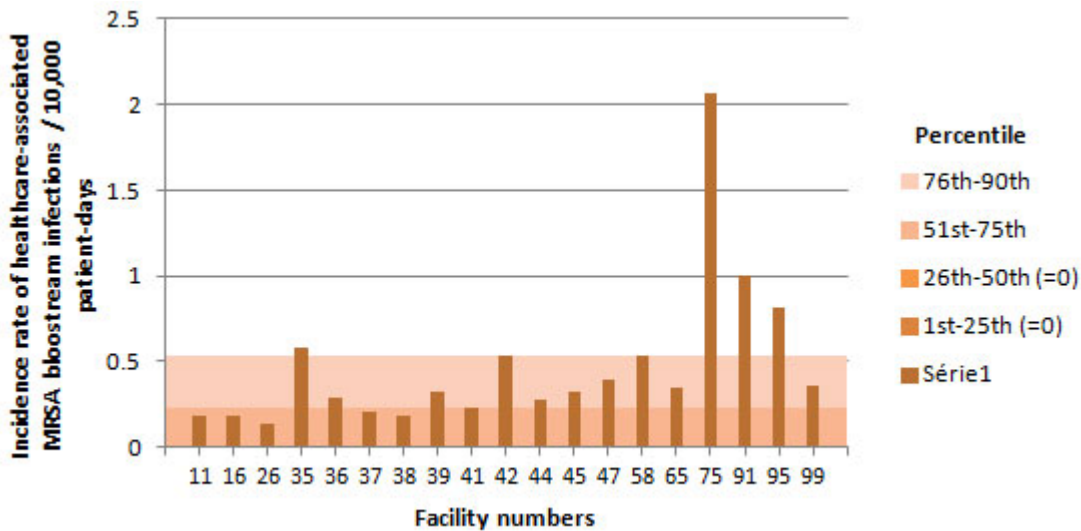
The incidence rate of healthcare-associated MRSA bloodstream infections and percentile ranking by type of facility are shown in Figures 5 through 9.

Figure 5 - Incidence Rate and Percentile Ranking of Healthcare-associated MRSA Bloodstream Infections (cat. 1a and 1b) by Facility for non-Teaching Healthcare Facilities with Less than 250 Beds, Québec, 2014-2015

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NB: Facilities 23, 32, 46, 49, 51, 52, 53, 56, 59, 61, 63, 64, 67, 70, 71, 72, 74, 77, 80, 81, 82, 83, 84, 85, 86, 88, 89, 96, 97, 103, 107, 109, 111, 112, 113 and 130 did not report any cases in 2014-2015.

Figure 6 - Incidence Rate and Percentile Ranking of Healthcare-associated MRSA Bloodstream Infections (cat. 1a and 1b) by Facility for non-Teaching Healthcare Facilities with 250 or more Beds, Québec, 2014-2015

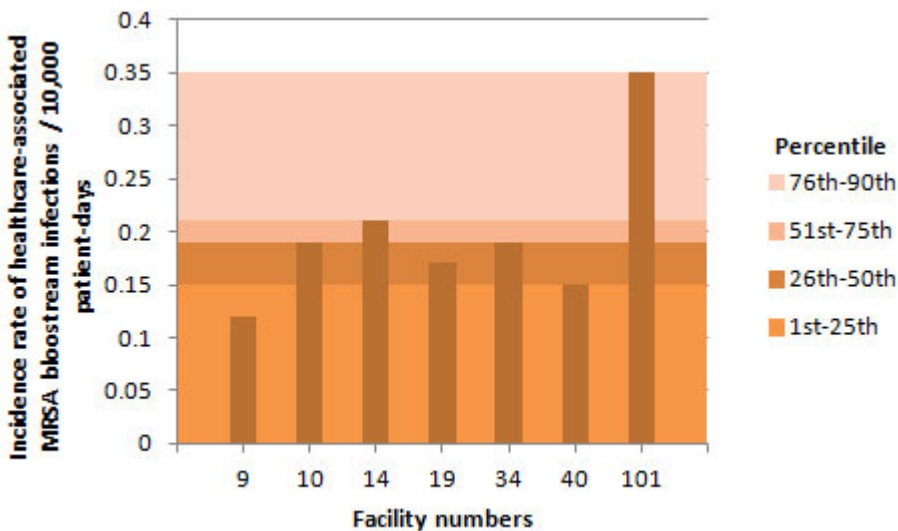
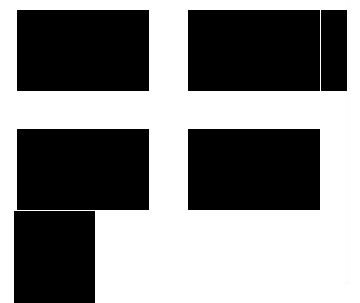
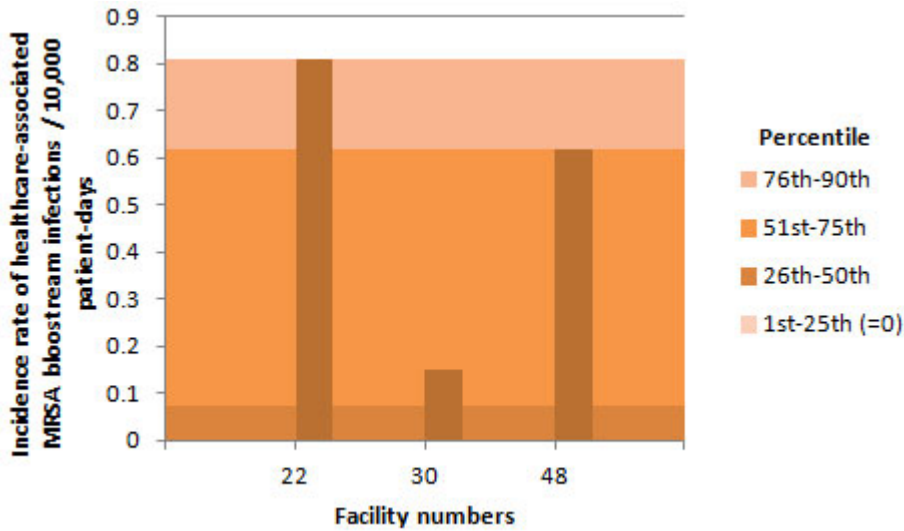


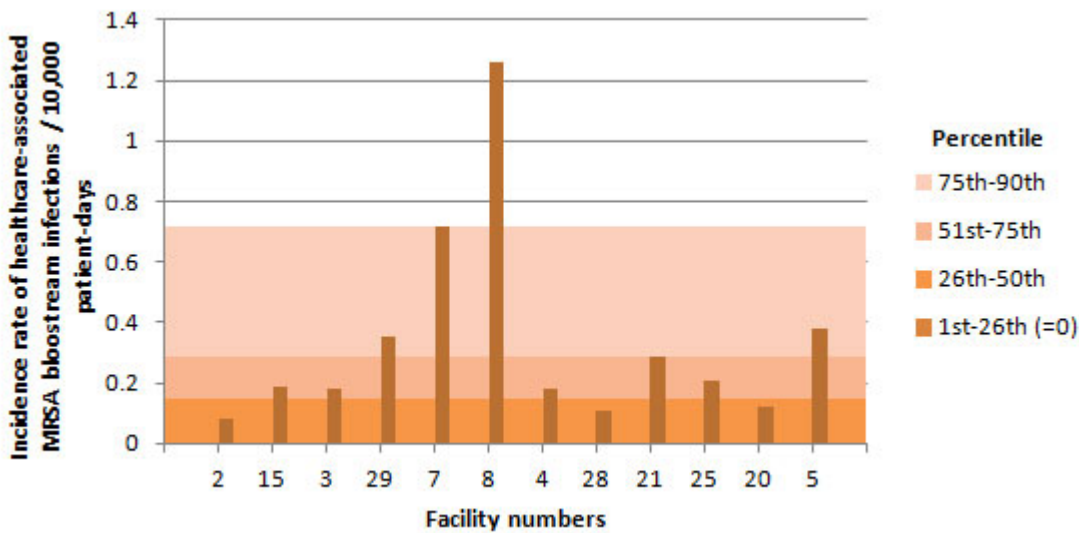
Figure 7 - Incidence Rate and Percentile Ranking of Healthcare-associated MRSA Bloodstream Infections (cat. 1a and 1b) by Facility of Teaching Healthcare Facilities with Less than 250 Beds, Québec, 2014-2015





NB: Facilities 13, 116 and 118 did not report any cases in 2014-2015.

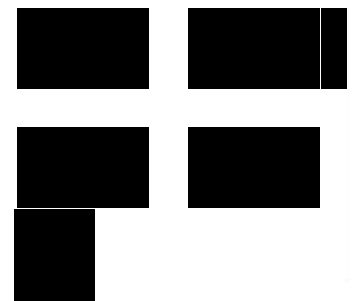
Figure 8 - Incidence Rate and Percentile Ranking of Healthcare-associated MRSA Bloodstream Infections (cat. 1a and 1b) by Facility for Teaching Healthcare Facilities with 250 or more Beds, Québec, 2014-2015

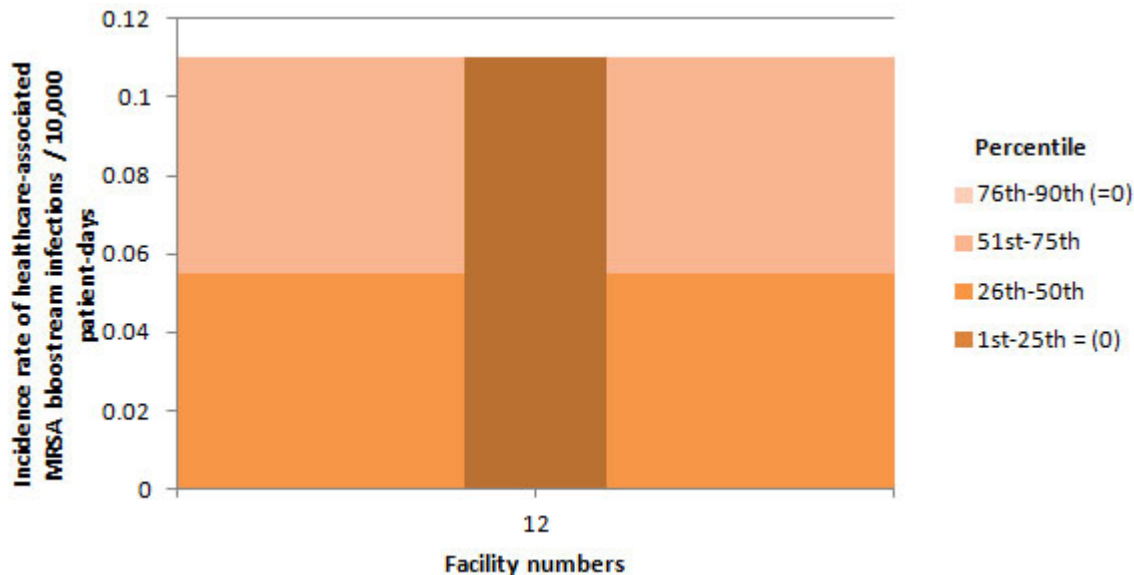


NB: Facilities 1, 18, 24, 27, 31, and 33 did not report any cases in 2014-2015.

Figure 9 - Incidence Rate and Percentile Ranking of Healthcare-associated MRSA Bloodstream Infections (cat. 1a and 1b) by Facility for Pediatric Healthcare Facilities, Québec, 2014-2015

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NB: Facilities 6 did not report any cases in 2014-2015.

At the local level, in 2014-2015, the incidence rate of healthcare-associated MRSA bloodstream infections ranged from 0 to 1.26 / 10,000 patient-days. The incidence rate for the past five years of surveillance is shown in Table 7. Significant variations compared to 2013-2014 are also indicated.

Overall, 4 facilities (4.5%) exhibited a significant decrease in the incidence rate of healthcare-associated MRSA bloodstream infections per 10,000 patient-days compared to the 2013-2014 surveillance year, whereas 6 facilities (6.8%) exhibited a significant increase in this incidence rate. Furthermore, in 2014-2015, the incidence rate of healthcare-associated MRSA bloodstream infections per 10,000 patient-days in health region of Chaudière-Appalaches significantly decreased as compared to 2013-2014.

Table 8 presents the number of healthcare-associated MRSA bloodstream infections and the proportion of methicillin resistance in healthcare-associated *S. aureus* bloodstream infections for the past five years.

Table 7 - Incidence rate of Healthcare-associated MRSA Bloodstream Infections (cat. 1a and 1b) by Facility, Québec, 2010-2011 to 2014-2015 (Incidence Rate per 10.000 Patient-Days [95% CI])

HR	Facility	Incidence rate of healthcare-associated MRSA bloodstream infections / 10.000 patient-days [95% CI]				
		2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
1	HÔPITAL RÉGIONAL D'ARVIK	0.38 [0-0.70]	0.19 [0-0.74]	0	0	0.19 [0-0.75]
3	CENTRE HÔPITALIER RÉGIONAL DU GOLF DU PARADIS	0	0.31 [0-1.02]	0.32 [0-1.25]	0	0
61	CENTRE NOTRE-DAME-DE-FATIMA	1.07 [0-4.2]	1.02 [0-4.01]	0		
71	HÔPITAL DE MATANE	0	0	0	0	0
77	HÔPITAL YAMQUI	0	0	0		
84	HÔPITAL DE NOTRE-DAME-DU-LAC	0	0	0		0

		BAS-SAINT-LAURENT	0.15 [0.01-0.43]	0.24 [0.05-0.59]	0.08 [0-0.31]	0	0.08 [0-0.32]
02	20	HÔPITAL DE CHICOUTIMI	0	0	0.22 [0.02-0.63]	0	0.12 [0-0.47]
	67	HÔPITAL ET CENTRE DE RÉADAPTATION DE JONQUIÈRE	0.25 [0-0.97]	0	0.25 [0-0.98]	0	0
	74	HÔPITAL DE DOLBEAU-MISTASSINI	0.51 [0-2.01]	0	0	0	0
	88	HÔPITAL. CLSC ET CENTRE D'HÉBERGEMENT DE ROBERVAL	0	0	0	0	0
	112	HÔPITAL D'ALMA	0.31 [0-1.21]	0	0	0	0
		SAGUENAY-LAC-SAINT-JEAN	0.14 [0.03-0.34]	0	0.14 [0.03-0.34]	0	0.05 [0-0.20]
03	2	HÔPITAL DE L'ENFANT-JÉSUS	0.07 [0-0.28]	0.36 [0.11-0.75]	0.07 [0-0.28]	0.44 [0.16-0.86]	0.08 [0-0.31]*
	7	PAVILLON L'HÔTEL-DIEU DE QUÉBEC	0.34 [0.06-0.84]	0.12 [0-0.47]	0.47 [0.12-1.04]	0.23 [0.02-0.66]	0.72 [0.26-1.41]
	24	HÔPITAL DU SAINT-SACREMENT	0	0	0.17 [0-0.68]	0	0
	27	PAVILLON CENTRE HOSPITALIER DE L'UNIVERSITÉ LAVAL	0	0.17 [0.02-0.48]	0	0	0
	28	PAVILLON SAINT-FRANÇOIS D'ASSISE	0.33 [0.06-0.81]	0.11 [0-0.43]	0.67 [0.24-1.31]	0.22 [0.02-0.63]	0.11 [0-0.43]
	33	INSTITUT UNIVERSITAIRE DE CARDIOLOGIE ET DE PNEUMOLOGIE DE QUÉBEC	0.21 [0.02-0.60]	0.31 [0.06-0.76]	0.20 [0.02-0.58]	0	0
	59	HÔPITAL DE BAIE-SAINT PAUL	0	0	0	0	0
	86	HÔPITAL DE LA MALBAIE	0	0	0	0	0
		CAPITALE-NATIONALE	0.15 [0.07-0.26]	0.20 [0.10-0.33]	0.23 [0.12-0.37]	0.17 [0.08-0.29]	0.13 [0.05-0.24]
04	23	HÔTEL-DIEU D'ARTHABASKA	0	0	0.18 [0-0.71]	0	0
	31	PAVILLON SAINT-JOSEPH	0.25 [0.05-0.61]	0.08 [0-0.32]	0.16 [0.02-0.45]	0	0
	41	HÔPITAL DU CENTRE-DE-LA-MAURICIE	0	0	0	0	0.23 [0-0.89]
	44	HÔPITAL SAINTE-CROIX	0	0.17 [0-0.66]	0.34 [0.03-0.97]	0.34 [0.03-0.98]	0.28 [0-1.10]
	85	CENTRE DE SANTÉ ET DE SERVICES SOCIAUX DU HAUT SAINT-LAURENT	0	0	0	0	0
		MAURICIE ET CENTRE DU QUÉBEC	0.11 [0.02-0.25]	0.01 [0.01-0.20]	0.17 [0.05-0.35]	0.07 [0.02-0.20]	0.08 [0.02-0.20]
05	15	HÔPITAL DE LAURIMONT	0.08 [0-0.3]	0.08 [0-0.32]	0.17 [0.02-0.49]	[0.02-0.52]	[0.02-0.54]
	30	HÔTEL-DIEU DE SHEPPARD	0	0.14 [0-0.56]	0.14 [0-0.56]	[0.02-0.52]	[0.02-0.54]
	49	CENTRE DE SANTÉ ET DE SERVICES SOCIAUX MEMPHRÉMAGOG	0	0	0	[0.02-0.52]	0

75	CENTRE DE SANTÉ ET DE SERVICES SOCIAUX DU GRANIT	0	0	0	0	2.07 [0.20-5.93]*
	ESTRIE	0.05 [0-0.19]	0.10 [0.01-0.28]	0.14 [0.03-0.35]	0.15 [0.03-0.37]	0.25 [0.08-0.52]
06 3	HÔPITAL ROYAL VICTORIA	0.74 [0.34-1.30]	0.24 [0.04-0.59]	0.34 [0.09-0.75]	0.53 [0.19-1.04]	0.18 [0.02-0.52]
4	HÔPITAL NOTRE-DAME DU CHUM	0.85 [0.40-1.46]	1.01 [0.52-1.66]	0.43 [0.14-0.89]	0.50 [0.18-0.98]	0.18 [0.02-0.51]
5	HÔPITAL GÉNÉRAL JUIF	0.61 [0.30-1.02]	0.39 [0.15-0.73]	0.29 [0.09-0.60]	0.23 [0.06-0.51]	0.38 [0.14-0.75]
6	HÔPITAL DE MONTRÉAL POUR ENFANTS	0	0	1.10 [0.29-2.44]	0	0
8	PAV. MAISONNEUVE / PAV. MARCEL-LAMOUREUX	0.55 [0.26-0.94]	0.22 [0.06-0.49]	0.11 [0.01-0.31]	0.11 [0.01-0.31]	1.26 [0.33-2.80]*
12	CENTRE HOSPITALIER UNIVERSITAIRE SAINTE-JUSTINE	0	0	0	0	0.11 [0-0.43]
13	INSTITUT DE CARDIOLOGIE DE MONTRÉAL	0.24 [0-0.94]	0	0.24 [0-0.94]	0.23 [0-0.91]	0
21	HÔPITAL SAINT-LUC DU CHUM	0.83 [0.36-1.50]	0.52 [0.17-1.07]	0.50 [0.16-1.03]	0.18 [0.0-0.70]	0.29 [0.05-0.72]
22	HÔTEL-DIEU DU CHUM	0.13 [0-0.51]	0.76 [0.27-1.49]	1.12 [0.51-1.97]	0.64 [0.20-1.32]	0.81 [0.29-1.59]
25	HÔPITAL DU SACRÉ-COEUR DE MONTRÉAL	1.06 [0.62-1.62]	0.76 [0.39-1.25]	0.52 [0.22-0.94]	0.20 [0.04-0.49]	0.21 [0.04-0.51]
26	HÔPITAL DE VERDUN	0.54 [0.14-1.20]	0.79 [0.29-1.55]	0.27 [0.03-0.77]	0.28 [0.03-0.80]	0.14 [0-0.54]
29	HÔPITAL GÉNÉRAL DE MONTRÉAL	1.16 [0.61-1.88]	0.73 [0.31-1.32]	0.77 [0.33-1.40]	0.90 [0.39-1.63]	0.35 [0.07-0.86]
34	HÔPITAL SANTA CABRINI	0.21 [0.02-0.60]	0.30 [0.06-0.73]	0.66 [0.26-1.24]	0.19 [0.02-0.54]	0.19 [0.02-0.55]
36	HÔPITAL GÉNÉRAL DU LAKESHORE	0.30 [0.03-0.86]	0.61 [0.16-1.35]	0.72 [0.23-1.49]	0.29 [0.03-0.84]	0.29 [0.03-0.83]
38	HÔPITAL JEAN-TALON	0.53 [0.10-1.30]	0.18 [0-0.70]	0.57 [0.11-1.39]	0.39 [0.04-1.11]	0.19 [0-0.75]
48	CENTRE HOSPITALIER DE ST. MARY	1.01 [0.43-1.83]	0.25 [0.02-0.72]	1.12 [0.51-1.97]	0	0.62 [0.19-1.29]*
76	HÔPITAL DE LACHINE	2.22 [0.70-4.59]	0	0	0.52 [0-2.03]	0*

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80	HÔPITAL FERRY	0.50 [0.05-1.3]	0.46 [0.04-1.32]	0.23 [0-0.90]	0.46 [0.04-1.32]	0*
83	HÔPITAL DE LA SALLE	0.28 [0.1-0.9]	0.83 [0.0-2.38]	0.83 [0.08-2.38]	0	0
116	INSTITUT THORACIQUE DE MONTRÉAL	0.43 [0-1.60]	0.45 [0-1.76]	0.45 [0-1.76]		
118	HÔPITAL NEUROLOGIQUE DE MONTRÉAL	0.83 [0.08-3.7]	0	0	0	0
	MONTRÉAL	0.64 [0.03-1.7]	0.5 [0.3-1.76]	0.47 [0.07-0.58]		

07	39	HÔPITAL DE GATINEAU	0.17 [0-0.66]	0	0	0	0.33 [0.03-0.95]*
	40	HÔPITAL DE HULL	0.28 [0.03-0.80]	0	0	0.16 [0-0.62]	0.15 [0-0.60]
	51	HÔPITAL DE MANIWAKI	0	0.68 [0-2.67]	0	0	0
	95	CENTRE HOSPITALIER DU PONTIAC	0	0	0.72 [0-2.82]	0	0.81 [0-3.18]
	111	HÔPITAL DE PAPINEAU	0	0	0	0	0
		OUTAOUAIS	0.17 [0.03-0.41]	0.05 [0-0.20]	0.05 [0-0.21]	0.06 [0-0.23]	0.23 [0.06-0.51]
08	47	HÔPITAL DE ROUYN-NORANDA	0.92 [0.09-2.63]	0	0	1.29 [0.24-3.16]	0.40 [0-1.56]
	52	CENTRE HOSPITALIER HÔTEL-DIEU D'AMOS	0	0.40 [0-1.57]	0	0	0
	65	HÔPITAL ET CLSC DE VAL-D'OR	0.33 [0-1.30]	0	0	0.34 [0-1.33]	0.35 [0-1.38]
	70	CENTRE DE SOINS DE COURTE DURÉE LA SARRE	0	0	0	0	0
	82	PAVILLON SAINTE-FAMILLE	0	0	2.69 [0.25-7.71]	0	0
		ABITIBI-TÉMISCAMINGUE	0.31 [0.06-0.76]	0.10 [0-0.40]	0.21 [0.02-0.60]	0.43 [0.11-0.96]	0.21 [0.02-0.61]
09	64	HÔPITAL LE ROYER	0	0	0.72 [0.07-2.06]	0	0
	72	HÔPITAL ET CENTRE D'HÉBERGEMENT DE SEPT-ÎLES	0	0	0	0.41 [0-1.61]	0
		CÔTE-NORD	0	0	0.40 [0.04-1.15]	0.20 [0-0.78]	0
10	96	CENTRE DE SANTÉ DE CHIBOUGAMAU	0	0	0	0	0
		NORD-DU-QUÉBEC	0	0	0	0	0
11	53	HÔPITAL DE CHANDLER	0	0.67 [0-2.63]	0	0	0
	91	HÔPITAL HÔTEL-DIEU DE GASPÉ	0.81 [0-3.17]	0	0.97 [0-3.80]	0.96 [0-3.77]	1.00 [0-3.93]
	97	HÔPITAL DE MARIA	0	0	0	0	0
	107	HÔPITAL DE L'ARCHIPEL ^a	0	0	0	0	0
	119	HÔPITAL DE MONTE-ANNE DES MONTS	0	0	0	0	0
		GASPÉSIE-ÎLES-DE-LA-MADELÈNE	0.17 [0-0.66]	0.16 [0-0.66]	0.17 [0-0.66]	0.17 [0-0.67]	0.17 [0-0.66]
12	18	HÔTEL-DIEU DE LÉVIS	0.39 [0.07-0.95]	0.37 [0.07-0.91]	0.13 [0-0.50]		
	63	HÔPITAL DE SAINT-GEORGES	0	0.21 [0-0.83]	0	0	0
	89	HÔPITAL DE MONTMAGNAN	0	0.47 [0.08-2.15]	0.47 [0-1.65]		

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113	HÔPITAL DE THETFORD MINES	1.12 [0.21-2.75]	0.75 [0.07-2.15]	1.09 [0.2-2.67]	0.40 [0-1.56]	0
	CHAUDIÈRE-APPALACHES	0.35 [0.13-0.69]	0.45 [0.19-0.82]	0.29 [0.09-0.60]	0.19 [0.04-0.46]	0*
13 19	HÔPITAL CITÉ DE LA SANTÉ	0.32 [0.1-0.66]	0.06 [0-0.24]	0.52 [0.24-0.92]	0.35 [0.13-0.69]	0.17 [0.03-0.42]
	LAVAL	0.32 [0.1-0.66]	0.06 [0-0.24]	0.52 [0.24-0.92]	0.35 [0.13-0.69]	0.17 [0.03-0.42]
14 11	HÔPITAL PIERRE-LE GARDEUR	0.10 [0-0.39]	0.20 [0.02-0.58]	0	0.19 [0.02-0.54]	0.18 [0.02-0.52]
14	CENTRE HOSPITALIER RÉGIONAL DE LANAUDIÈRE	0	0.23 [0.02-0.66]	0.34 [0.06-0.84]	0.23 [0.02-0.66]	0.21 [0.02-0.60]
	LANAUDIÈRE	0.05 [0-0.20]	0.21 [0.05-0.47]	0.16 [0.03-0.39]	0.21 [0.06-0.46]	0.19 [0.05-0.43]
15 45	HÔPITAL DE SAINT-EUSTACHE	0.15 [0-0.60]	0	0.12 [0-0.47]	0	0.33 [0.06-0.81]*
56	CENTRE DE SANTÉ ET DE SERVICES SOCIAUX D'ARGENTEUIL	0	1.32 [0.13-3.78]	0	0.71 [0-2.79]	0
81	HÔPITAL DE MONT-LAURIER	0.59 [0-2.31]	0	0	0	0
101	HÔPITAL RÉGIONAL DE SAINT-JÉRÔME	0.59 [0.21-1.16]	1.00 [0.48-1.72]	0.29 [0.06-0.71]	0.19 [0.02-0.54]	0.35 [0.09-0.78]
103	HÔPITAL LAURENTIEN	0.34 [0-1.33]	0	0	0	0
	LAURENTIDES	0.40 [0.18-0.70]	0.51 [0.26-0.84]	0.16 [0.04-0.36]	0.12 [0.02-0.29]	0.27 [0.11-0.51]
16 1	HÔPITAL CHARLES-LEMOYNE	0.15 [0.01-0.44]	0.56 [0.22-1.05]	0	0.24 [0.05-0.59]	0*
9	HÔPITAL DU HAUT-RICHELIEU	0.12 [0-0.48]	0.12 [0-0.47]	0.43 [0.11-0.96]	0.22 [0.02-0.63]	0.12 [0-0.46]
10	HÔPITAL PIERRE-BOUCHER	0.19 [0.02-0.54]	0.20 [0.02-0.57]	0	0.19 [0.02-0.55]	0.19 [0.02-0.54]
35	HÔPITAL HONORÉ-MERCIER	0	0.15 [0-0.59]	0.44 [0.08-1.08]	0	0.58 [0.15-1.29]*
37	HÔTEL-DIEU DE SOREL	0.20 [0-0.78]	0.39 [0.04-1.12]	0.20 [0-0.78]	0	0.21 [0-0.82]
42	HÔPITAL ANNA-LABERGE	0.42 [0.08-1.03]	0.28 [0.03-0.80]	0.13 [0-0.51]	0.39 [0.07-0.95]	0.54 [0.14-1.20]
44	HÔPITAL DE L'ÉCRAN	0.46 [0.04-1.32]	0.94 [0.24-2.09]	0	0	0
58	HÔPITAL DU CIRCUIT	0.24 [0.01-0.93]	0.34 [0.01-0.98]	0	0.16 [0-0.62]	0.53 [0.10-1.30]
99	HÔPITAL BROME-MISSISQUOI-PERKINS	0	0	0		
130	HÔPITAL MARRIE MÉGARDAL	0.92 [0.16-1.68]	0	0	0	0
	MONTÉRÉGIE	0.19 [0.10-0.28]	0.19 [0.10-0.28]	0.19 [0.10-0.28]	0.19 [0.10-0.28]	0.19 [0.10-0.28]

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Total	0.34 [0.29-0.39]	0.29 [0.24-0.34]	0.29 [0.24-0.34]	0.20 [0.16-0.24]	0.20 [0.16-0.24]
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HR: Heath region.

* Significant statistical difference (p < 0.05) between healthcare-associated MRSA bloodstream infections of 2013-2014 and 2014-2015.

When the incidence rate is 0, the confidence interval [CI] is not calculated.

^aFacility participating in the surveillance of bloodstream infections due to *S. aureus* as of Period 1 of 2011-2012.

Table 8 - Number of Healthcare-associated MRSA Bloodstream Infections and Proportion of Resistance to Methicillin by Healthcare-Associated *S. aureus* Bloodstream Infection (cat. 1a and 1b) by Facility, Québec, 2010-2011 to 2014-2015 (Number, [%])

HR	Facility		Number of healthcare-associated MRSA infections and proportion of resistance to methicillin by healthcare-associated <i>S. aureus</i> bloodstream infections (N [%])				
	Number	Name	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
01	16	HÔPITAL RÉGIONAL DE RIMOUSKI	1 (16.7%)	1 (16.7%)	0	0	1 (25.0%)
	32	CENTRE HOSPITALIER RÉGIONAL DU GRAND-PORTAGE	0	1 (16.7%)	1 (50.0%)	0	0
	61	CENTRE NOTRE-DAME-DE-FATIMA	1 (100.0%)	1 (100.0%)	0	0	0
	71	HÔPITAL DE MATANE	0	0	0	0	0
	77	HÔPITAL D'AMQUI	0	0	0	0	0
	84	HÔPITAL DE NOTRE-DAME-DU-LAC	0	0	0	0	0
		BAS-SAINT-LAURENT	2 (25.0%)	3 (23.1%)	1 (12.5%)	0	1 (20.0%)
02	20	HÔPITAL DE CHICOUTIMI	1 (10.0%)	1 (25.0%)	2 (11.1%)	0	1 (8.3%)
	67	HÔPITAL ET CENTRE DE RÉADAPTATION DE JONQUIÈRE	1 (25.0%)	0	1 (100.0%)	0	0
	74	HÔPITAL DE DOLBEAU-MISTASSINI	1 (50.0%)	0	0	0	1 (50.0%)
	88	HÔPITAL, CLSC ET CENTRE D'HÉBERGEMENT DE ROBERVAL	0	0	0	0	1 (33.3%)
	112	HÔPITAL D'ALMA	1 (25.0%)	0	0	0	0
		SAGUENAY-LAC-SAINT-JEAN	4 (18.2%)	1 (5.9%)	3 (13.6%)	1 (4.3%)	3 (14.3%)
03	2	HÔPITAL DE L'ENFANT-JÉSUS	1 (4.2%)	5 (17.2%)	1 (3.2%)	6 (26.1%)	1 (5.9%)
	7	PAVILLON L'HÔTEL-DIEU DE QUÉBEC	3 (14.3%)	2 (7.4%)	4 (13.8%)	3 (13.6%)	6 (30.0%)
	24	HÔPITAL DU SAINT-SACREMENT	0	0	1 (25.0%)	0	0
	27	PAVILLON CENTRE HOPITALIER DE L'UNIVERSITÉ LAVAL	0	2 (22.2%)	0	0	0
2	PAVILLON SAINT-FRANÇOIS D'ASSISE	4 (4.0%)	1 (2.0%)	6 (66.7%)	2 (14.3%)	2 (20.0%)	
33	INSTITUT UNIVERSITAIRE DE CARDIOLOGIE ET DE PNEUMOLOGIE DE QUÉBEC	2 (11.1%)	3 (33.3%)	2 (25.0%)			
59	HÔPITAL DE BAIE SAINT-JAUL	0	0	0			
86	HÔPITAL DE LA MALBAIE	0	0	0			
	CAPITALE-NATIONALE	10 (11.5%)	13 (16.3%)	14 (16.1%)	13 (13.6%)	9 (14.3%)	

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04	23	HÔTEL-DIEU D'ARTHABASKA	0	0	1 (50.0%)	0	0
	31	PAVILLON SAINT-JOSEPH	3 (37.5%)	1 (6.3%)	2 (15.4%)	0	1 (6.7%)
	41	HÔPITAL DU CENTRE-DE-LA-MAURICIE	0	0	0	0	1 (20.0%)
	44	HÔPITAL SAINTE-CROIX	0	1 (16.7%)	2 (40.0%)	2 (40.0%)	1 (33.3%)
	85	CENTRE DE SANTÉ ET DE SERVICES SOCIAUX DU HAUT-SAINT-AURICE	0	0	0	0	0
		MAURICIE ET CENTRE-DU-QUÉBEC	3 (14.3%)	2 (6.5%)	5 (23.8%)	2 (7.4%)	3 (12.0%)
05	15	HÔPITAL FLEURIMONT	1 (4.2%)	1 (7.7%)	2 (10.0%)	3 (13.0%)	2 (6.9%)
	30	HÔTEL-DIEU DE SHERBROOKE	0	1 (33.3%)	1 (14.3%)	2 (33.3%)	1 (16.7%)
	49	CENTRE DE SANTÉ ET DE SERVICES SOCIAUX MEMPHRÉMAGOG	0	0	0	0	0
	75	CENTRE DE SANTÉ ET DE SERVICES SOCIAUX DU GRANIT	0	0	0	0	2 (100.0%)
		ESTRIE	1 (2.9%)	2 (12.5%)	3 (10.3%)	5 (16.7%)	5 (13.2%)
06	3	HÔPITAL ROYAL VICTORIA	9 (26.5%)	5 (20.0%)	8 (22.2%)	8 (23.5%)	3 (14.3%)
	4	HÔPITAL NOTRE-DAME DU CHUM	11 (31.4%)	14 (35.9%)	6 (25.0%)	7 (20.6%)	2 (7.1%)
	5	HÔPITAL GÉNÉRAL JUIF	13 (32.5%)	8 (30.8%)	5 (17.2%)	7 (23.3%)	8 (25.0%)
	6	HÔPITAL DE MONTRÉAL POUR ENFANTS	0	1 (10.0%)	4 (36.4%)	0	0
	8	PAV. MAISONNEUVE / PAV. MARCEL-LAMOUREUX	10 (21.7%)	8 (21.6%)	2 (5.6%)	3 (12.5%)	4 (57.1%)
	12	CENTRE HOSPITALIER UNIVERSITAIRE SAINTE-JUSTINE	0	0	0	0	1 (12.5%)
	13	INSTITUT DE CARDIOLOGIE DE MONTRÉAL	1 (20.0%)	0	1 (25.0%)	1 (12.5%)	0
	21	HÔPITAL SAINT-LUC DU CHUM	8 (27.6%)	5 (15.2%)	6 (23.1%)	2 (18.2%)	3 (23.1%)
	22	HÔTEL-DIEU DU CHUM	1 (7.1%)	6 (40.0%)	9 (33.3%)	5 (19.2%)	6 (25.0%)
	25	HÔPITAL DU SACRÉ-COEUR DE MONTRÉAL	19 (30.6%)	16 (30.8%)	10 (16.7%)	4 (15.4%)	5 (12.2%)
	26	HÔPITAL DE VERDUN	6 (26.1%)	6 (42.9%)	4 (33.3%)	2 (20.0%)	1 (10.0%)
	29	HÔPITAL GÉNÉRAL DE MONTRÉAL	19 (54.3%)	11 (36.7%)	10 (27.8%)	9 (32.1%)	8 (21.1%)
	34	HÔPITAL SANTA CABRINI	2 (20.0%)	3 (17.6%)	8 (47.1%)	3 (50.0%)	2 (40.0%)
	36	HÔPITAL GÉNÉRAL DU LAKESHORE	3 (21.4%)	5 (33.3%)	7 (63.6%)	2 (33.3%)	2 (28.6%)
	38	HÔPITAL JEAN-TALON	3 (50.0%)	1 (9.1%)	3 (50.0%)	2 (28.6%)	1 (16.7%)
	48	CENTRE HOSPITALIER DE ST-MARY	8 (50.0%)	2 (18.2%)	10 (35.7%)	0	5 (23.8%)
	76	HÔPITAL DE LACHINE	5 (83.3%)	1 (50.0%)	0	1 (100.0%)	0
	80	HÔPITAL FLEURY	2 (28.6%)	2 (18.2%)	1 (25.0%)	2 (33.3%)	0
	85	HÔPITAL DE LASALLE	1 (33.3%)	3 (60.0%)	2 (40.0%)	0	0
	116	INSTITUT THORACIQUE DE MONTRÉAL	1 (50.0%)	1 (100.0%)	1 (100.0%)		
	118	HÔPITAL NEUROLOGIQUE DE MONTRÉAL	2 (6.6%)	0	0		
		MONTRÉAL	97 (30.3%)	98 (26.3%)	97 (24.9%)	20 (20.3%)	51 (18.3%)

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07	39	HÔPITAL DE GATINEAU	1 (20.0%)	0	0	0	2 (40.0%)
	40	HÔPITAL DE HULL	2 (28.6%)	0	0	1 (10.0%)	1 (6.3%)
	51	HÔPITAL DE MANIWAKI	0	1 (33.3%)	0	0	1 (50.0%)
	95	CENTRE HOSPITALIER DU PONTIAC	0	0	1 (100.0%)	1 (100.0%)	1 (100.0%)
	111	HÔPITAL DE PAPINEAU	1 (100.0%)	0	0	0	0
		OUTAOUAIS	4 (30.8%)	1 (5.0%)	1 (10.0%)	2 (12.5%)	5 (20.0%)
08	47	HÔPITAL DE ROUYN-NORANDA	2 (50.0%)	0	0	3 (50.0%)	1 (33.3%)
	52	CENTRE HOSPITALIER HÔTEL-DIEU D'AMOS	0	1 (100.0%)	0	0	0
	65	HÔPITAL ET CLSC DE VAL-D'OR	2 (40.0%)	0	1 (11.1%)	1 (50.0%)	2 (50.0%)
	70	CENTRE DE SOINS DE COURTE DURÉE LA SARRE	0	0	0	0	0
	82	PAVILLON SAINTE-FAMILLE	0	0	2 (66.7%)	0	0
		ABITIBI-TÉMISCAMINGUE	4 (33.3%)	1 (12.5%)	3 (23.1%)	4 (50.0%)	3 (37.5%)
09	64	HÔPITAL LE ROYER	0	0	2 (66.7%)	0	1 (50.0%)
	72	HÔPITAL ET CENTRE D'HÉBERGEMENT DE SEPT-ÎLES	0	0	0	1 (100.0%)	0
		CÔTE-NORD	0	0	2 (33.3%)	1 (25.0%)	1 (33.3%)
10	96	CENTRE DE SANTÉ DE CHIBOUGAMAU	0	0	0	0	0
		NORD-DU-QUÉBEC	0	0	0	0	0
11	53	HÔPITAL DE CHANDLER	0	1 (50.0%)	0	0	0
	91	HÔPITAL HÔTEL-DIEU DE GASPÉ	1 (50.0%)	0	1 (50.0%)	1 (50.0%)	1 (100.0%)
	97	HÔPITAL DE MARIA	0	0	0	0	0
	107	HÔPITAL DE L'ARCHIPEL ^a	0	0	0	0	0
	109	HÔPITAL DE SAINTE-ANNE-DES-MONTS	0	0	0	0	0
		GASPÉSIE-ÎLES-DE-LA-MADELEINE	1 (20.0%)	1 (33.3%)	1 (33.3%)	1 (11.1%)	1 (50.0%)
12	18	HÔTEL-DIEU DE LÉVIS	4 (30.8%)	3 (16.7%)	3 (14.3%)	2 (12.5%)	0
	63	HÔPITAL DE SAINT-GEORGES	1 (50.0%)	1 (33.3%)	0	0	0
	89	HÔPITAL DE MONTMAGNY	0	2 (66.7%)	1 (33.3%)	1 (50.0%)	0
	113	HÔPITAL DE THETFORD MINES	3 (75%)	2 (40.0%)	3 (27.3%)	1 (20.0%)	0
		LAU-CHAUDIERE-APPALACHES	8 (40.0%)	8 (27.6%)	7 (18.4%)	4 (13.8%)	0
13	1	HÔPITAL CÔTE DE LA SAINTE	3 (33.3%)	3 (9.7%)	11 (19.3%)	7 (17.1%)	5 (15.6%)
		LAVAL	6 (13.6%)	3 (9.7%)	11 (19.3%)	7 (17.1%)	5 (15.6%)
14	1	HÔPITAL HENRI-LE-GARDEUR	3 (33.3%)	5 (55.6%)	1 (7.7%)	3 (15.0%)	2 (15.4%)
	14	CENTRE HOSPITALIER REGIONAL DE LANAUDIÈRE	0	2 (18.2%)	5 (26.3%)		
		LANAUDIÈRE	0	7 (28.0%)	6 (18.8%)	6 (16.2%)	4 (12.5%)
15	45	HÔPITAL DE SAINT-EUSTACHE	1 (12.5%)	0	1 (16.7%)		
	56	CENTRE DE SANTÉ ET DE SERVICES SOCIAUX D'ARGENTVILLE	0	2 (33.3%)	0	0	0

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81	HÔPITAL DE MONT-LAURIER	1 (50.0%)	0	0	0	0
101	HÔPITAL RÉGIONAL DE SAINT-JÉRÔME	6 (20.0%)	10 (29.4%)	3 (8.6%)	3 (17.6%)	5 (21.7%)
103	HÔPITAL LAURENTIEN	1 (33.3%)	0	0	0	0
	LAURENTIDES	9 (20.9%)	12 (26.7%)	4 (9.1%)	5 (16.7%)	8 (21.6%)
16	1 HÔPITAL CHARLES-LEMOYNE	2 (7.1%)	8 (27.6%)	0	5 (17.2%)	2 (6.7%)
9	HÔPITAL DU HAUT-RICHELIEU	1 (5.9%)	1 (5.9%)	4 (18.2%)	2 (18.2%)	2 (18.2%)
10	HÔPITAL PIERRE-BOUCHER	3 (27.3%)	3 (25.0%)	0	2 (28.6%)	2 (16.7%)
35	HÔPITAL HONORÉ-MERCIER	0	1 (16.7%)	3 (23.1%)	0	4 (57.1%)
37	HÔTEL-DIEU DE SOREL	1 (9.1%)	2 (18.2%)	1 (9.1%)	1 (10.0%)	1 (11.1%)
42	HÔPITAL ANNA-LABERGE	3 (37.5%)	2 (25.0%)	2 (20.0%)	4 (27.3%)	4 (50.0%)
46	HÔPITAL DE GRANBY	0	3 (50.0%)	4 (33.3%)	0	0
58	HÔPITAL DU SUROÎT	4 (57.1%)	2 (25.0%)	1 (12.5%)	1 (25.0%)	4 (40.0%)
99	HÔPITAL BROME-MISSISQUOI-PERKINS	0	0	0	0	2 (50.0%)
130	HÔPITAL BARRIE MEMORIAL	1 (20.0%)	0	0	0	0
	MONTÉRÉGIE	15 (13.4%)	22 (21.8%)	15 (14.2%)	14 (16.3%)	21 (22.3%)
	Total	194 (22.9%)	174 (21.9%)	173 (20.0%)	120 (16.8%)	120 (17.8%)

HR: Heath region

When the number of healthcare-associated MRSA bloodstream infection is 0, no percentage is calculated.

^a Facility participating in the surveillance of bloodstream infections due to *S. aureus* as of Period 1 of 2011-2012.

Author

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