



Hospital-Wide Healthcare-associated Bloodstream Infections

Surveillance results: 2015-2016

From April 1st, 2015, to March 31st, 2016, 87 healthcare facilities took part in the hospital-wide surveillance of bloodstream infections (BSIs), for a combined total of 4,770,053 patient-days (Table 1). Participating facilities reported 3,173 BSIs in 2,948 patients. The total 2015-2016 incidence rate is 5.45 cases per 10,000 patient-days for all facilities participating in 2015-2016, and it is 5.35 for facilities that participated in 2015-2016 as well as in at least one year between 2011-2012 and 2014-2015. No non-catheter-related primary bloodstream infection (non-CRBSI) with a mucosal barrier injury (MBI) is observed in 2015-2016. The 2015-2016 incidence rate shows a decrease compared to the 2011-2015 incidence rate. A minimum of 11 periods of data are to be provided for facilities' data to be included in this surveillance report. Data were extracted on May 31st, 2016.

Updated : March 3, 2017

Version française [1]**Table 1—Participation of Healthcare Facilities in the Hospital-Wide Surveillance of BSIs, Québec, 2011-2012 to 2015-2016**

	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Participating facilities (N)	59	64	73	89	87
Admissions (N)	409,435	482,354	520,772	633,252	649,388
Patient-days (N)	3,226,042	3,791,482	3,998,173	4,740,371	4,770,053
BSIs (cat. 1a, 1b and 1c, N)	2,250	2,683	2,457	3,021	3,173

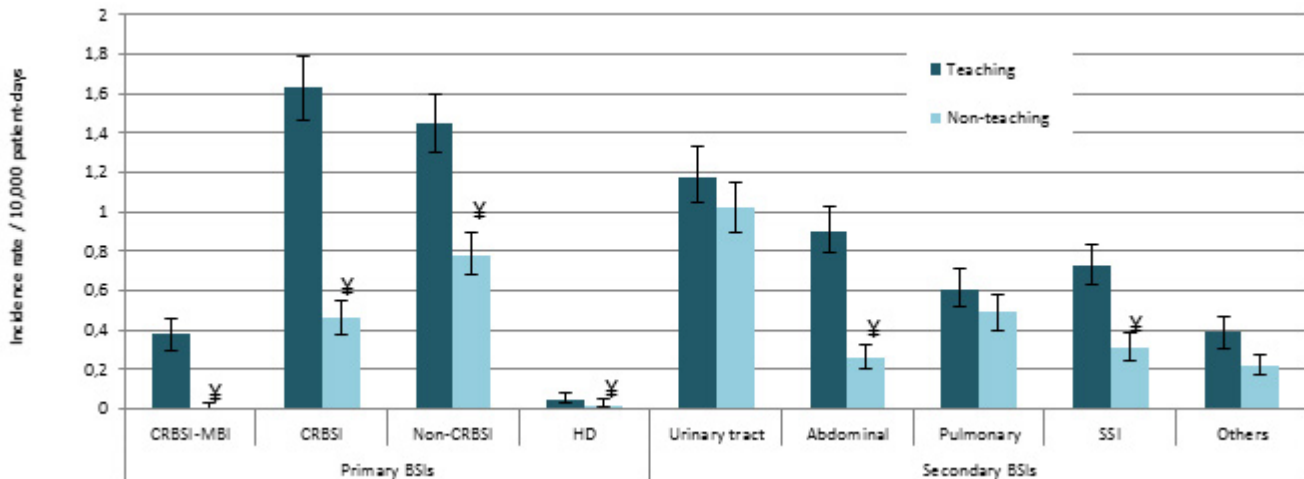
Infected patients (N)	2,147	2,567	2,295	2,819	2,948
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Incidence Rates

In 2015–2016, the total incidence rate is 5.45 BSIs per 10,000 patient-days. The incidence rates are much higher in intensive care units (ICUs) than in other units (Table 2), and they are higher in teaching compared to non-teaching facilities (Figure 1). Catheter-related bloodstream infections (CRBSIs) are the most common BSIs in ICUs (Table 2 and Figure 2). In other units, the incidence rates vary depending on the type of healthcare facility: non-CRBSI are the most common primary BSIs in teaching facilities, while BSIs secondary to urinary tract infections are the most common in non-teaching facilities (Table 2 and Figure 3).

Figure 1—BSI Incidence Rate for Each Type of Infection, by Type of Healthcare Facility, Québec, 2015-2016 (Incidence Rate per 10,000 Patient-Days [95% CI])



¥ Significant difference ($p < 0,05$) between teaching and non-teaching facilities.

Figure 2—BSI Incidence Rate in ICUs, For Each Type of Infection, by Type of Healthcare Facility and Type of ICU, Québec, 2015-2016 (Incidence Rate per 10,000 Patient-Days [95% CI])

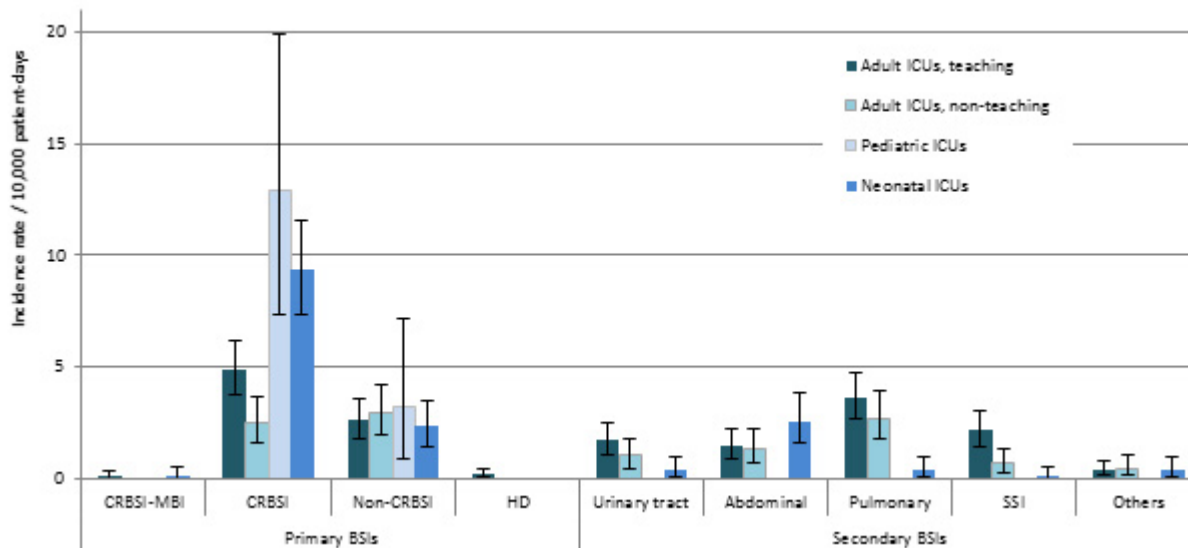
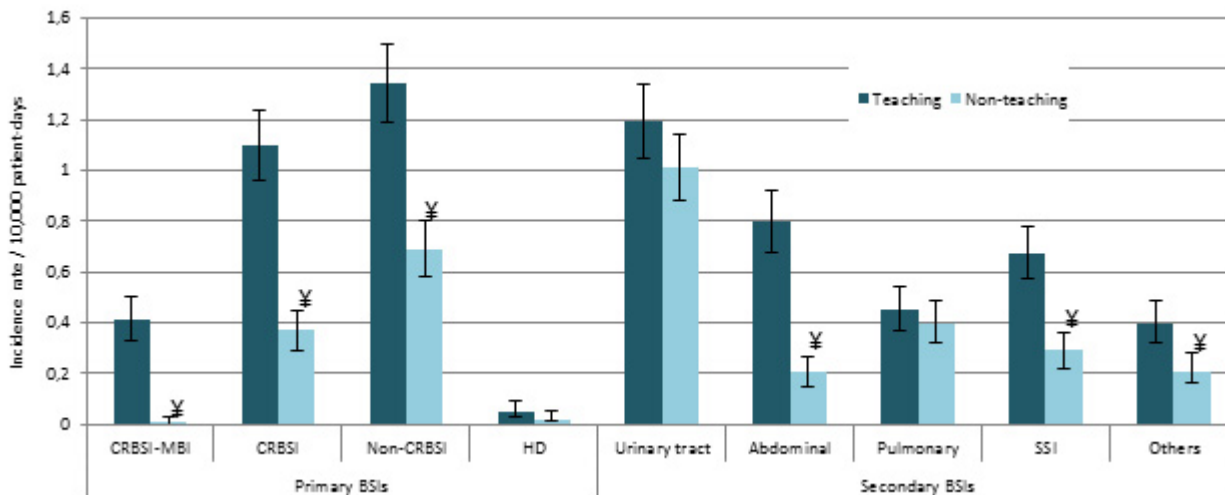


Figure 3—BSI Incidence Rate in Non-ICU Units, for Each Type of Infection, by Type of Healthcare Facility, Québec, 2015-2016 (Incidence Rate per 10,000 Patient-Days [95% CI])



¥ Significant difference ($p < 0,05$) between teaching and non-teaching facilities.

Table 2—BSI Incidence Rate for Each Type of Infection, by Type of Healthcare Facility, Type of Unit and Type of ICU, Québec, 2015-2016 (Incidence Rate per 10,000 Patient-Days [95% CI])

	Primary BSIs				Secondary BSIs					Total
	CRBSI-MBI	CRBSI	Non-CRBSI	HD	Urinary tract	Abdominal	Pulmonary	SSI	Others**	
Total hospitalized	0.20 [0.16 ; 0.24]	1.05 [0.96 ; 1.14]	1.12 [1.03 ; 1.22]	0.03 [0.02 ; 0.05]	1.10 [1.01 ; 1.20]	0.58 [0.51 ; 0.65]	0.55 [0.49 ; 0.62]	0.52 [0.46 ; 0.59]	0.31 [0.26 ; 0.36]	5.45 [5.24 ; 5.66]
Teaching	0.38 [0.31 ; 0.46]	1.63 [1.47 ; 1.80]	1.45 [1.30 ; 1.61]	0.05 [0.03 ; 0.08]	1.18 [1.05 ; 1.32]	0.90 [0.78 ; 1.02]	0.61 [0.52 ; 0.71]	0.73 [0.63 ; 0.84]	0.39 [0.31 ; 0.47]	7.32 [6.98 ; 7.67]

Non-teaching	0.01 [0 ; 0.03]	0.46 [0.38 ; 0.55]	0.78 [0.67 ; 0.90]	0.02 [0.01 ; 0.04]	1.02 [0.90 ; 1.15]	0.26 [0.20 ; 0.33]	0.49 [0.40 ; 0.58]	0.31 [0.24 ; 0.38]	0.22 [0.16 ; 0.28]	3.56 [3.32 ; 3.80]
ICUs	0.06 [0 ; 0.18]	5.64 [4.84 ; 6.51]	2.64 [2.10 ; 3.24]	0.06 [0 ; 0.18]	1.09 [0.75 ; 1.49]	1.67 [1.25 ; 2.16]	2.38 [1.87 ; 2.95]	1.13 [0.79 ; 1.53]	0.39 [0.20 ; 0.64]	15.07 [13.74 ; 16.47]
Adult teaching	0.08 [0 ; 0.31]	4.89 [3.77 ; 6.16]	2.60 [1.80 ; 3.55]	0.15 [0.01 ; 0.43]	1.68 [1.05 ; 2.46]	1.45 [0.87 ; 2.18]	3.59 [2.64 ; 4.69]	2.14 [1.42 ; 3.01]	0.38 [0.12 ; 0.79]	16.95 [14.79 ; 19.25]
Adult non-teaching	0	2.48 [1.55 ; 3.62]	2.93 [1.91 ; 4.16]	0	1.01 [0.46 ; 1.78]	1.35 [0.69 ; 2.22]	2.70 [1.73 ; 3.89]	0.68 [0.25 ; 1.33]	0.45 [0.12 ; 1.00]	11.60 [9.47 ; 13.95]
Pediatric	0	12.88 [7.34 ; 19.96]	3.22 [0.84 ; 7.15]	0	0	0	0	0	0	16.91 [10.45 ; 24.91]
Neonatal	0.13 [0 ; 0.51]	9.32 [7.30 ; 11.58]	2.30 [1.36 ; 3.48]	0	0.38 [0.07 ; 0.93]	2.55 [1.55 ; 3.79]	0.38 [0.07 ; 0.93]	0.13 [0 ; 0.51]	0.38 [0.07 ; 0.93]	15.58 [12.94 ; 18.47]
Non-ICU units	0.21 [0.17 ; 0.25]	0.73 [0.65 ; 0.81]	1.01 [0.92 ; 1.11]	0.03 [0.02 ; 0.05]	1.10 [1.00 ; 1.20]	0.50 [0.44 ; 0.57]	0.42 [0.36 ; 0.48]	0.48 [0.42 ; 0.55]	0.30 [0.25 ; 0.35]	4.78 [4.58 ; 4.98]
Teaching	0.41 [0.33 ; 0.50]	1.10 [0.97 ; 1.24]	1.34 [1.19 ; 1.50]	0.05 [0.02 ; 0.08]	1.19 [1.05 ; 1.34]	0.80 [0.69 ; 0.92]	0.45 [0.37 ; 0.54]	0.67 [0.57 ; 0.78]	0.40 [0.32 ; 0.49]	6.42 [6.09 ; 6.76]
Non-teaching	0.01 [0 ; 0.03]	0.37 [0.30 ; 0.45]	0.69 [0.59 ; 0.80]	0.02 [0.01 ; 0.04]	1.01 [0.88 ; 1.14]	0.21 [0.15 ; 0.27]	0.40 [0.32 ; 0.49]	0.29 [0.22 ; 0.36]	0.21 [0.15 ; 0.27]	3.22 [2.99 ; 3.45]

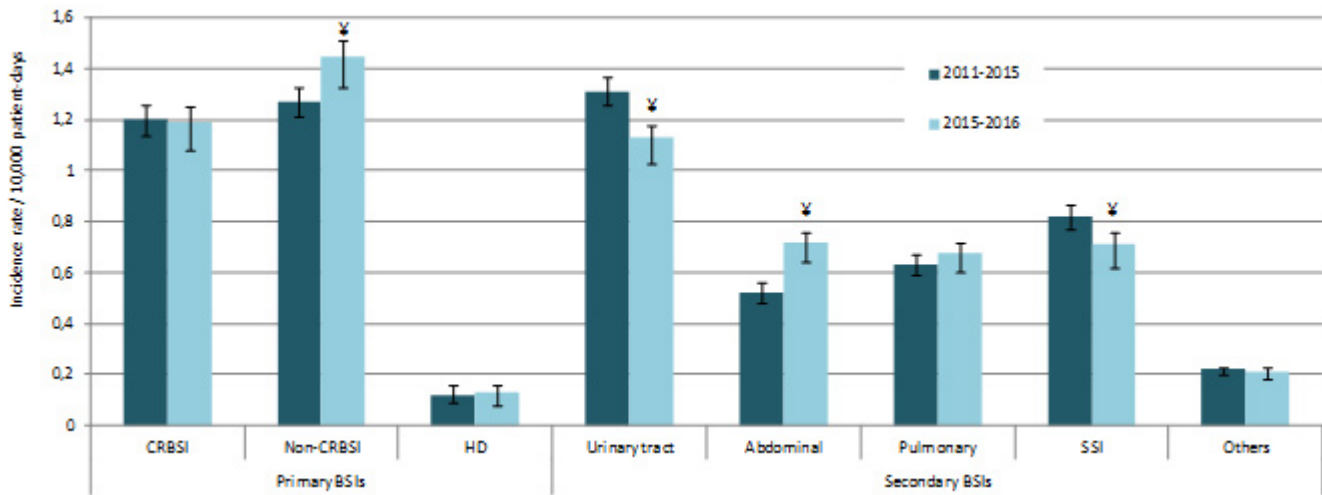
Note: When the incidence rate is 0, the confidence interval [CI] is not calculated.

** The "Others" column also includes secondary BSIs arising from a skin, soft tissue, bone or joint infection.

Incidence Rate Time Trend

The BSI incidence rate in 2015–2016 decreased compared with the 2011–2015 pooled rate (Table 3). This decrease was driven by certain types of bloodstream infections (Figure 4). The most important decreases in incidence rates are observed in BSIs secondary to urinary tract infections and to surgical site infections (SSIs).

Figure 4 - BSI Incidence Rate, by Type of Infection, in Facilities that Previously participated in Surveillance (N = 86) 1, Québec, 2011-2015 and 2015-2016 (Incidence Rate per 10,000 Patient-Days [95% CI])*, Québec, 2011-2015 and 2015-2016 (Incidence Rate per 10,000 Patient-Days [95% CI])



¥ Significant difference ($p < 0,05$) between 2011-2015 and 2015-2016.

Table 3—BSI Incidence Rate, by Type of Healthcare Facility, in Facilities that Previously participated in Surveillance (N = 86)*, Québec, 2011-2015 and 2015-2016 (Incidence Rate per 10,000 Patient-Days [95% CI])

Facilities	Number of Facilities	Incidence Rate	
		2011-2015	2015-2016
Teaching	25	7.49 [7.30 ; 7.68]	7.26 [6.91 ; 7.62]
Non-teaching	61	3.64 [3.51 ; 3.78]	3.56 [3.32 ; 3.80]
Total	86	5.57 [5.46 ; 5.69]	5.35 [5.14 ; 5.56]

* Analyses performed on data from facilities that participated in 2015-2016 as well as in at least one year between 2011-2012 and 2014-2015.

Description of cases

Although the incidence rates are higher in ICUs, most BSIs occurred in non-ICU units (67.2%, Table 4 and Figure 5), where 93% of patient-days are counted ($n = 4,459,543$ patient-days). CRBSIs are the most commonly encountered BSIs in ICUs, whereas BSIs secondary to urinary tract infections are the most common in non-ICU units.

Figure 5 - Breakdown of Cases Based on Type of Unit and Type of ICU, Québec, 2015-2016 (%)

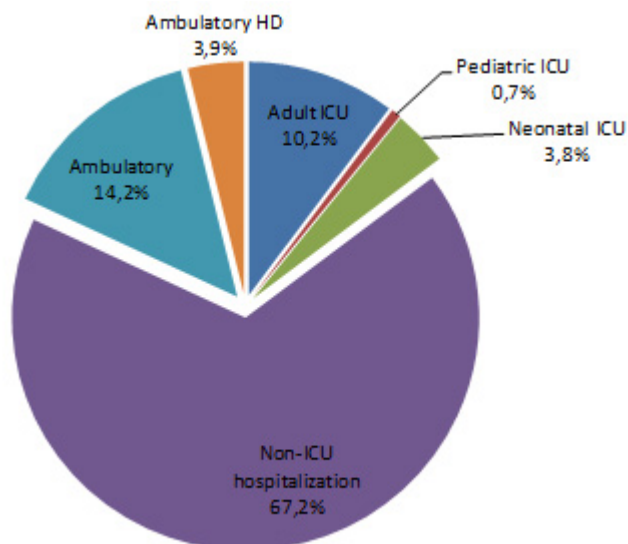


Figure 6 - Breakdown of Cases Based on Type of BSI, for Teaching and Non-Teaching Healthcare Facilities, Québec, 2015-2016 (%)

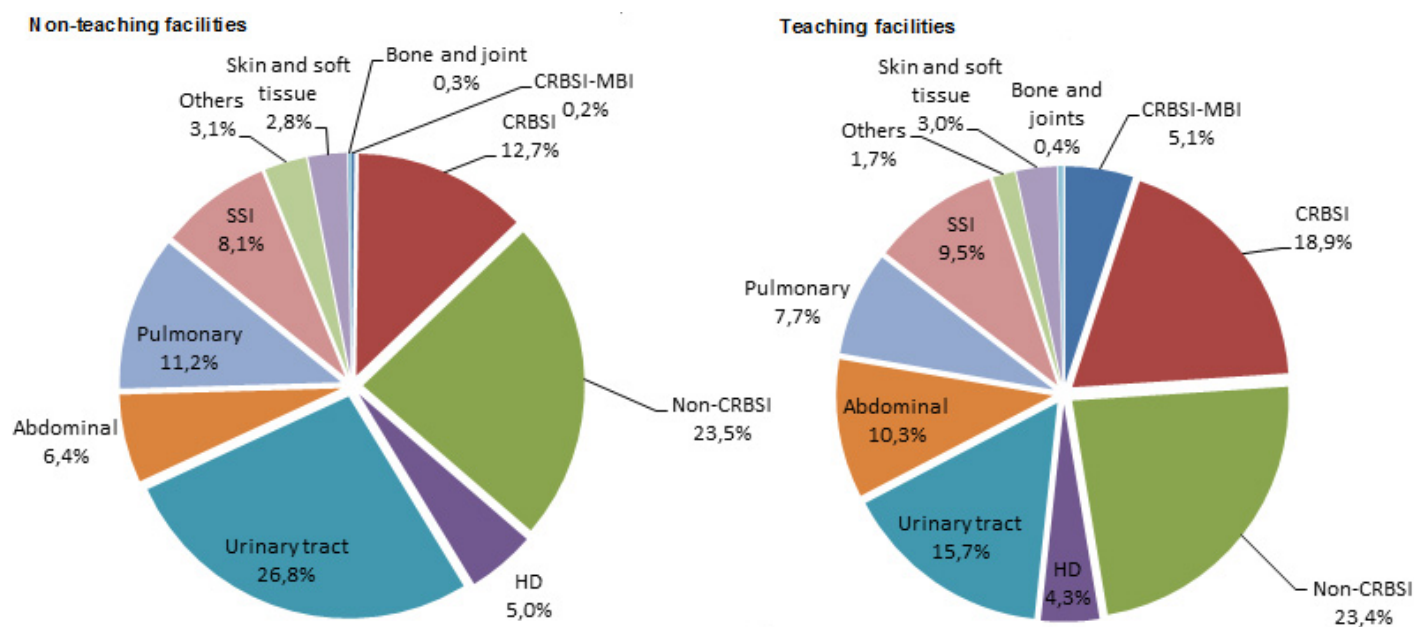


Table 4 - Number of Cases for Each Type of BSI, by Type of Healthcare Facility, Type of Unit and Type of ICU, Québec, 2015-2016 (N)

	Primary BSIs				Secondary BSIs					Total
	CRBSI-MBI	CRBSI	Non-CRBSI	HD	Urinary tract	Abdominal	Pulmonary	SSI	Others*	
Total hospitalized	94	500	532	16	524	276	263	248	146	2 599
Teaching	92	391	348	12	282	215	146	175	94	1 755
Non-teaching	2	109	184	4	242	61	117	73	52	844
ICU	2	175	82	2	34	52	74	35	12	468
Adult, teaching	1	64	34	2	22	19	47	28	5	222

Adult, non-teaching	0	22	26	0	9	12	24	6	4	103
Pediatric	0	16	4	0	0	1	0	0	0	21
Neonatal	1	73	18	0	3	20	3	1	3	122
Non-ICU hospitalization	92	325	450	14	490	224	189	213	134	2 131
Teaching	90	240	292	10	259	175	98	146	87	1 397
Non-teaching	2	85	158	4	231	49	91	67	47	734

* The "Others" column also includes BSIs secondary to skin, soft tissue, bone or joint infection.

Overall, 17.8% of BSI cases resulted in death within 30 days of bacteremia onset (Table 5). Case fatality is highest in patients with a BSI secondary to a pulmonary infection (Table 5).

Figure 7 - 30-Day Case Fatality for Each Type of Infection, Québec, 2015-2016 (%)

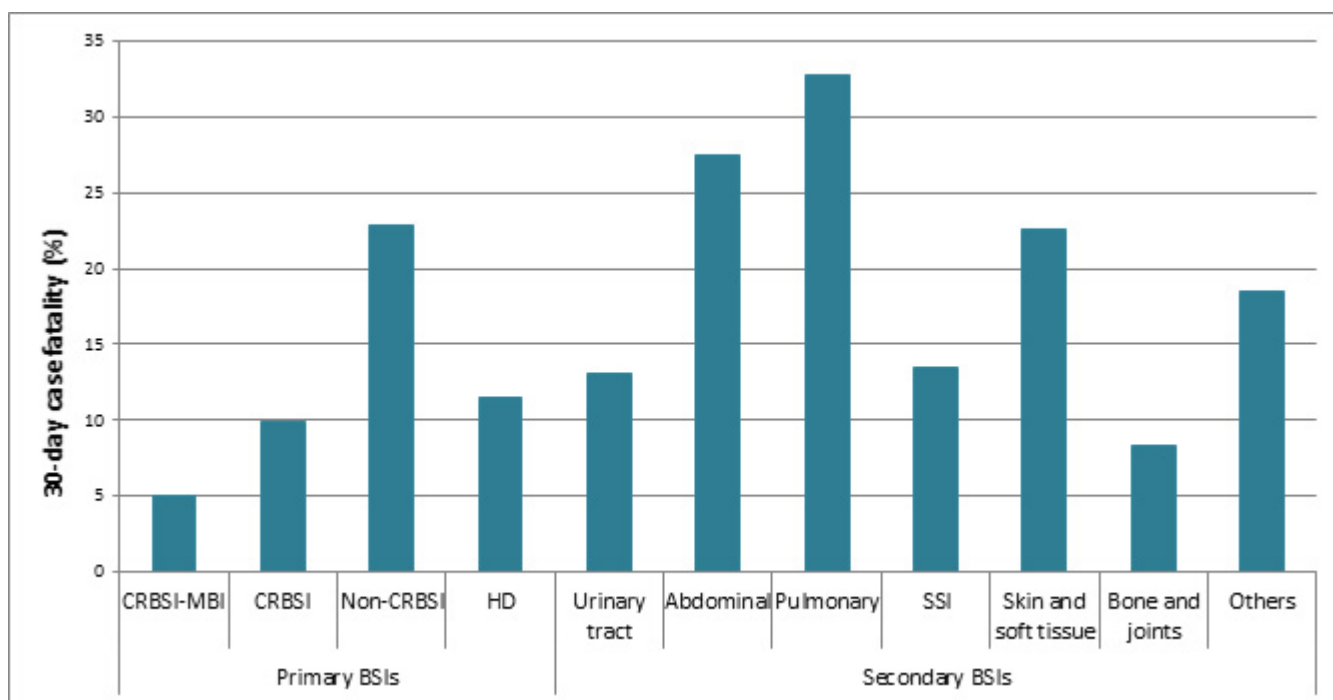


Table 5 - 10-Day and 30-Day Case Fatality for Each Type of Infection, 2015-2016 (N, %)

	BSIs (N)	10-day case fatality		30-day case fatality	
		N	%	N	%
Primary BSIs					
CRBSI-MBI	101	2	2.0	5	5.0
CRBSI	603	33	5.5	60	10.0
Non-CRBSI	728	119	16.3	166	22.8
HD	139	9	6.5	16	11.5

Secondary BSIs

Urinary tract	597	45	7.5	78	13.1
Abdominal	291	59	20.3	80	27.5
Pulmonary	269	60	22.3	88	32.7
SSI	275	19	6.9	37	13.5
Skin and soft tissues	93	13	14.0	21	22.6
Bone and joints	12	1	8.3	1	8.3
Others	65	9	13.8	12	18.5
Total	3,173	369	11.6	564	17.8

Microbiology

Escherichia coli is the most frequently isolated microorganism in reported cases (22% of BSIs, Table 6). *Candida* sp. and *Pseudomonas* sp. are the microorganisms associated with the higher case fatality. *Staphylococcus aureus* is the most frequently isolated microorganism in CRBSI, hemodialysis-related BSIs and in BSIs secondary to a pulmonary infection or a SSI. In patients with a non-CRBSI, CRBSI-MBI or a BSI secondary to a urinary tract or abdominal infection, enterobacteria are the most common microorganisms.

Figure 8 - Breakdown of Categories of Isolated Microorganisms in All Cases (N = 3,501) and Cases of Fatality Within 30 Days (N = 645), Québec, 2015-2016 (%)

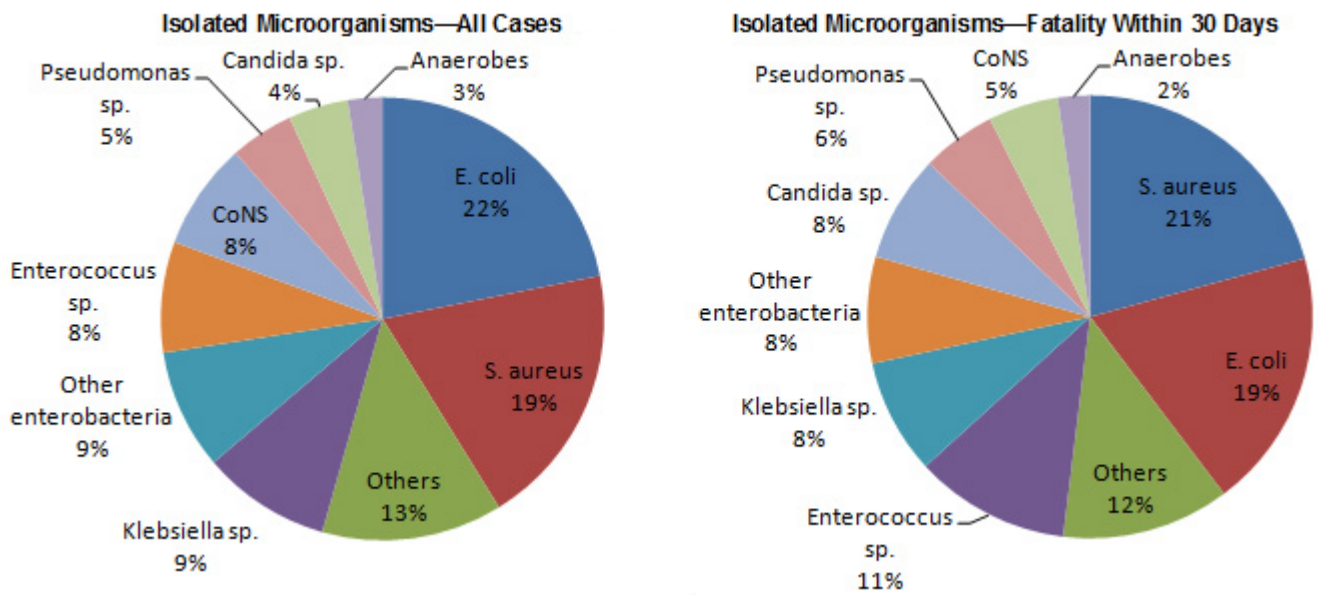
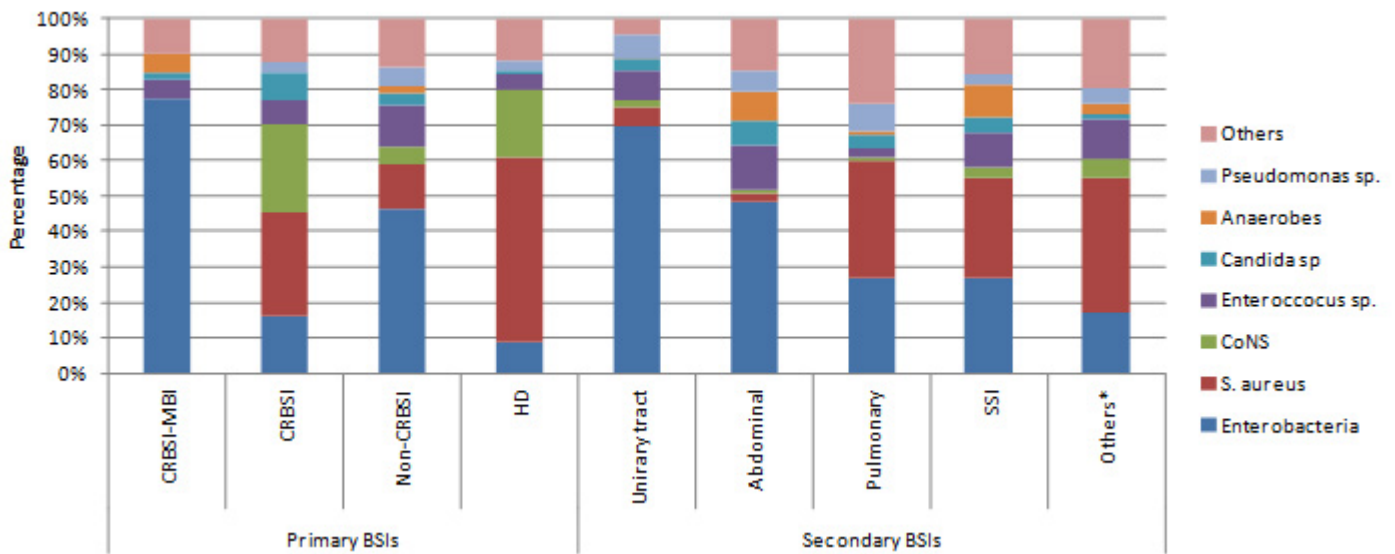


Figure 9 - Breakdown of Categories of Isolated Microorganisms, for Each Type of BSI, Québec, 2015-2016 (%)



* This column includes the sum of the other columns as well as secondary BSIs arising from a skin, soft tissue, bone or joint infection, or another source.

Tableau 6 - Breakdown of Microorganisms associated with BSIs, for each Type of BSI, for all BSIs and for those associated with a Fatality Within 30 Days, Québec, 2015-2016 (N, %)

Microorganism	Primary BSIs				Secondary BSIs					Total	30-day Case Fatality	
	CRBSI - MBI	CRBSI	Non-CRBSI	HD	Urinary tract	Abdominal	Pulmonary	ISO	Others*		n	%
Enterobacteria	86	108	369	13	442	166	80	83	31	1 378	226	16.4
<i>E. coli</i>	39	22	219	5	298	95	29	42	17	766	122	15.9
<i>Klebsiella sp.</i>	33	35	89	2	83	37	25	17	8	329	54	16.4

Other enterobacteriaceae	14	51	61	6	61	34	26	24	6	283	50	17.7
<i>S. aureus</i>	0	199	100	79	33	9	99	87	70	676	134	19.8
CoNS	0	168	41	29	13	2	2	9	10	274	33	12.0
<i>Enterococcus sp.</i>	6	45	93	6	54	45	8	30	20	307	73	23.8
<i>Candida sp.</i>	2	53	26	2	20	22	12	13	3	153	50	32.7
Anaerobic	6	0	15	0	1	29	3	29	5	88	15	17.0
<i>Pseudomonas sp.</i>	0	18	42	4	41	20	22	8	8	163	35	21.5
Others	11	84	111	18	30	51	72	49	36	462	79	17.1
Total	111	675	797	151	634	344	298	308	183	3 501	645	18.4

* This column includes the sum of the other columns as well as secondary BSIs arising from a skin, soft tissue, bone or joint infection, or another source.

Methicillin-resistant *S. aureus* (MRSA) accounted for 12.3% (83 / 676) of *S. aureus* BSIs in all healthcare units (Table 7 and Figure 10).

Table 7 - Proportion of Strains Tested and Proportion of Resistance to Antibiotics for Selected Isolated Microorganisms, Québec, 2015-2016 (N, %)

Microorganism	Antibiotic	Isolated	Tested		Resistant	
		N	N	%	N	%
<i>Staphylococcus aureus</i>	Oxacilline	676	676	100.0	83	12.3
<i>Enterococcus</i>	Vancomycine	261	260	99.6	16	6.2
<i>Enterococcus faecalis</i>	Vancomycine	157	156	99.4	0	0.0
<i>Enterococcus faecium</i>	Vancomycine	104	104	100.0	16	15.4
	CSE 4	315	295	93.7	18	6.1
<i>Klebsiella sp.</i>	Imipenem or meropenem	315	207	65.7	0	0.0
	Multiresistant 1	315	310	98.4	8	2.6
	CSE 4	728	607	83.4	78	12.9
<i>Escherichia coli</i>	Fluoroquinolones 3	728	666	91.5	182	27.3
	Imipenem or méropenem	728	457	62.8	0	0.0
	Multiresistant 1	728	673	92.4	27	4.0
	CSE 4	112	107	95.5	28	26.2
<i>Enterobacter sp.</i>	Imipenem or meropenem	112	87	77.7	2	2.3
	Multiresistant 1	112	107	95.5	0	0.0
	Carbapénèmes	112	98	87.5	4	4.1

	Amikacine. gentamicine ou tobramycine	157	129	82.2	8	6.2
	CSE 2	157	147	93.6	9	6.1
<i>Pseudomonas sp.</i>	Fluoroquinolones 2	157	152	96.8	11	7.2
	Imipénem ou méropénem	157	146	93.0	27	18.5
	Pipéracilline-tazobactam	157	113	72.0	5	4.4
	Multirésistant 2	157	155	98.7	9	5.8
<i>Acinetobacter sp.</i>	Imipénem ou méropénem	12	12	100.0	0	0.0
	Multirésistant 3	12	5	41.7	0	0.0

CSE 4 : cefepime, cefotaxime, ceftazidime or ceftriaxone;

CSE 2 : cefepime or ceftazidime;

Fluoroquinolones 2 : ciprofloxacine ou levofloxacine;

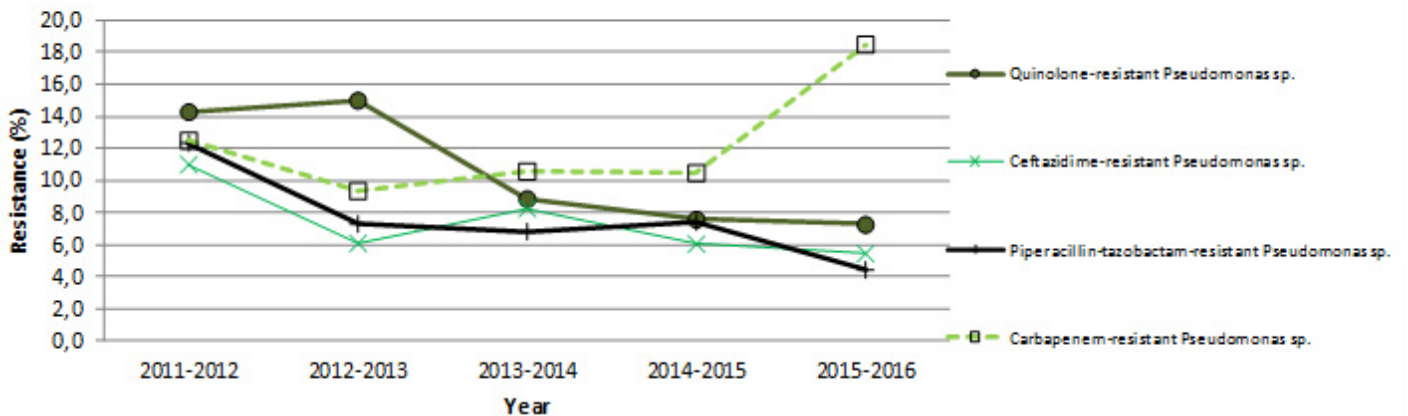
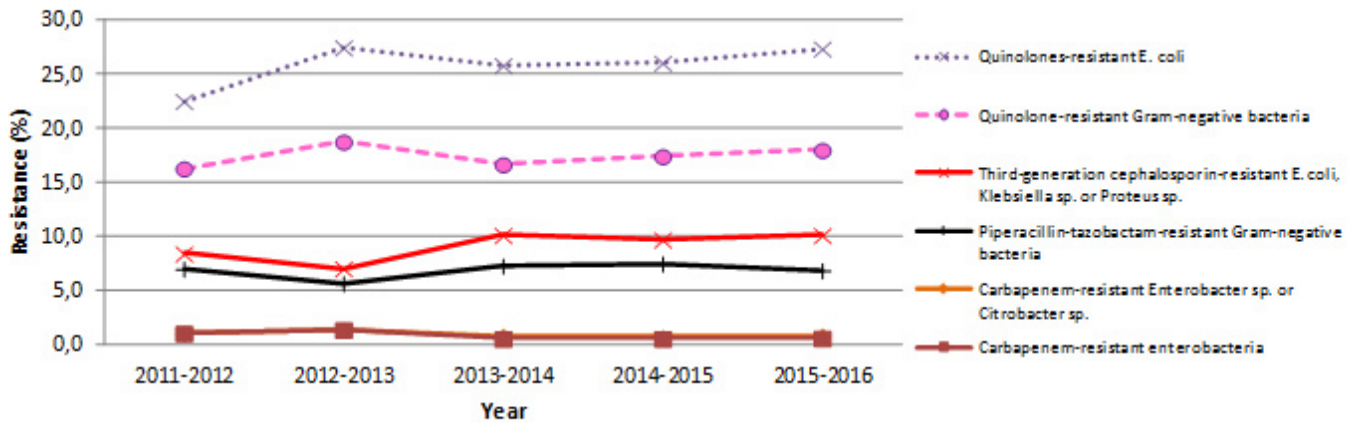
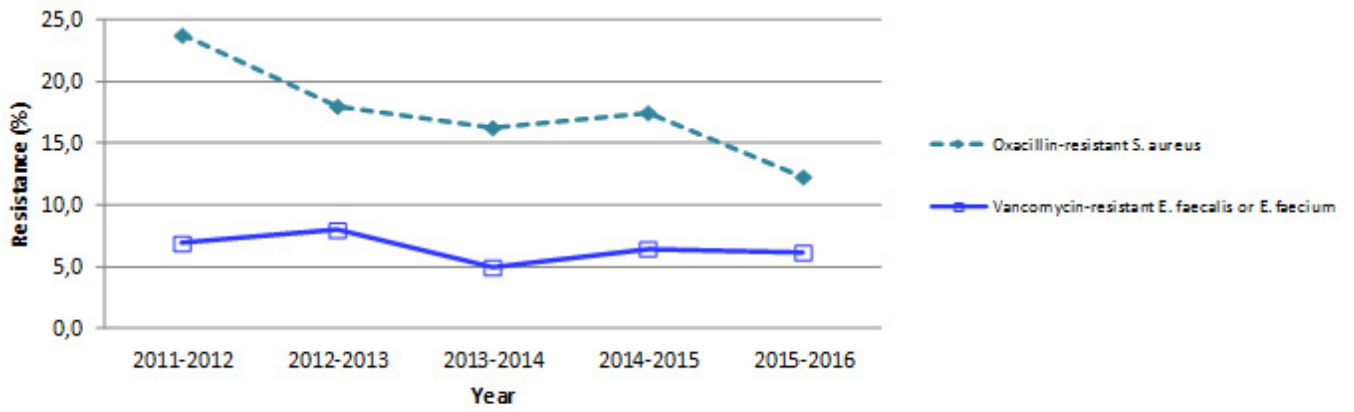
Fluoroquinolones 3 : ciprofloxacine, levofloxacine or moxifloxacine;

Multiresistant 1 : intermediate or resistant to an agent in three of the following five categories: cephalosporins 4, fluoroquinolones 3, aminoglycosides, carbapenems, piperacillin or piperacillin/tazobactam;

Multiresistant 2 : intermediate or resistant to an agent in three of the following five categories: cephalosporins 2, fluoroquinolones 2, aminoglycosides, carbapenems, piperacillin or piperacillin/tazobactam;

Multiresistant 3 : intermediate or resistant to an agent in three of the following six categories: cephalosporins 2, fluoroquinolones 2, aminoglycosides, carbapenems, piperacillin or piperacillin/tazobactam, ampicillin/sulbactam.

Figure 10 - Antibiotic Resistance in Gram-Positive Bacteria, Gram-Negative Bacteria and *Pseudomonas sp.*, Québec, 2011-2015 to 2015-2016 (%)



Results Per Healthcare Facility

Table 8 presents 2015-2016 rates of CRBSI and of BSIs secondary to urinary tract and pulmonary infections, per healthcare facility.

Figure 11 - BSI Incidence Rate per Facility (2015-2016) and Percentile Ranking (2011-2012 to 2014-2015) for Teaching Healthcare Facilities, Québec, 2015-2016

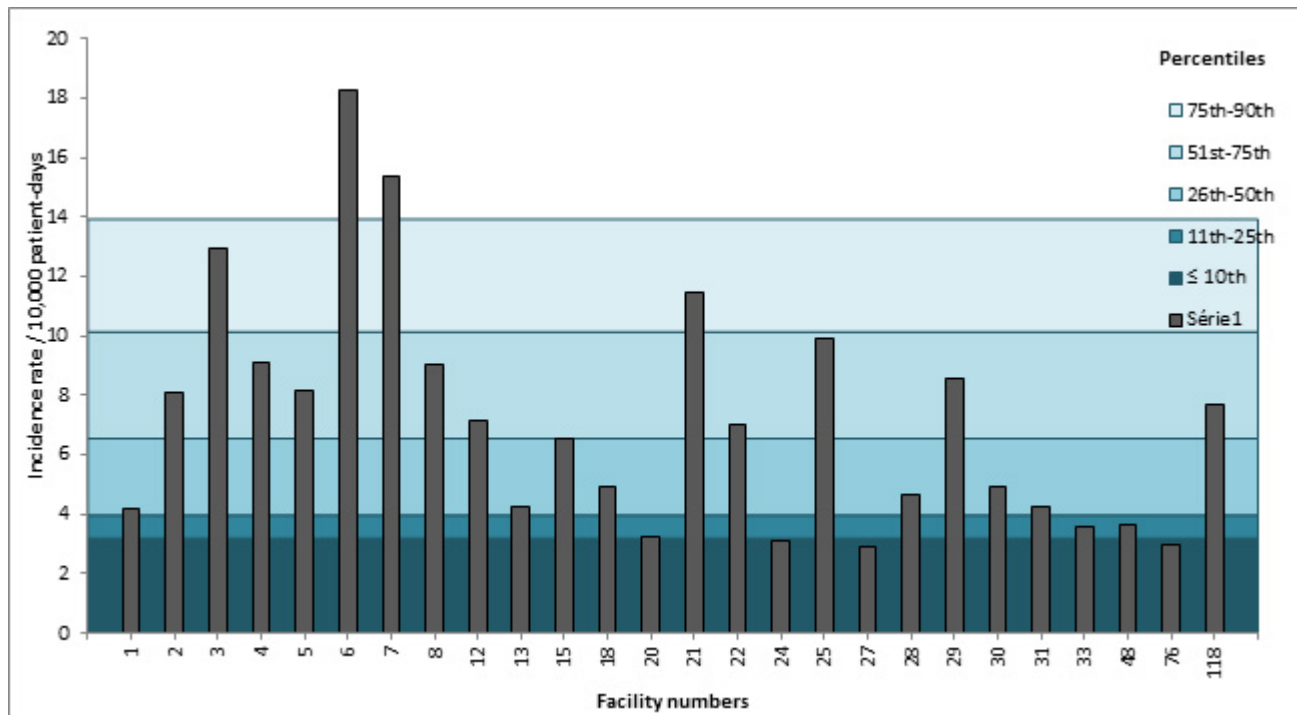
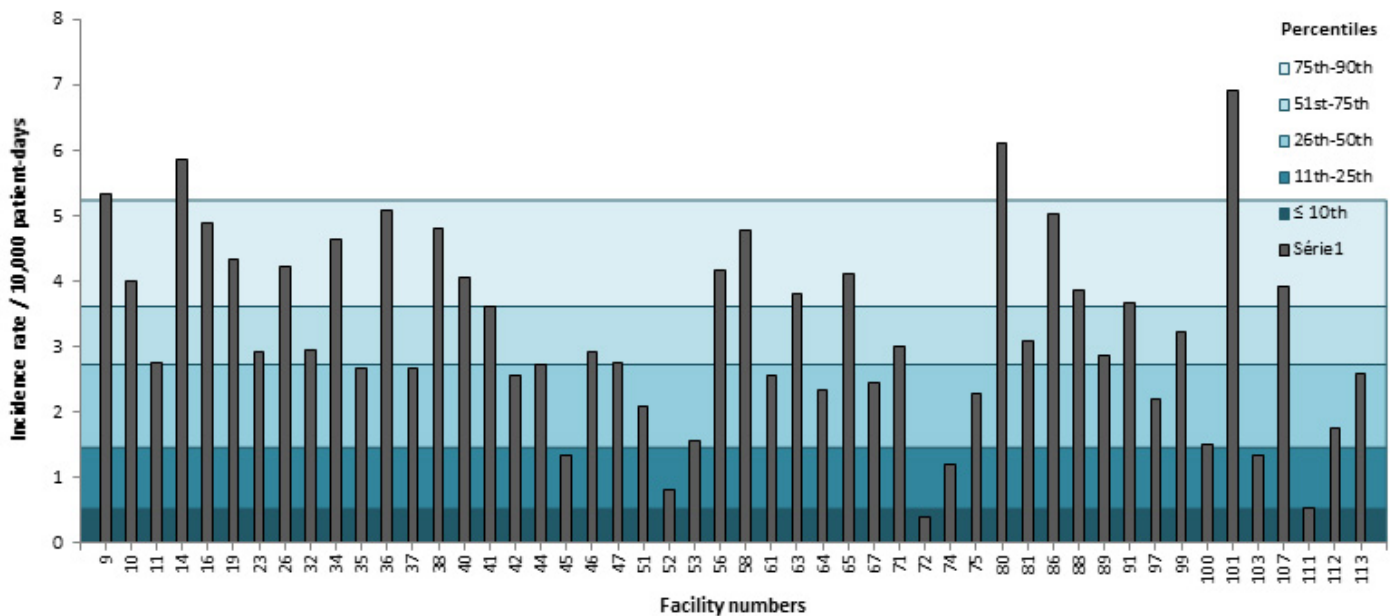


Figure 12 - BSI Incidence Rate per Facility (2015-2016) and Percentile Ranking (2011-2012 to 2014-2015) for Non-Teaching Healthcare Facilities, Québec, 2015-2016



Note: facilities 49, 59, 70, 77, 82, 83, 84, 85, 95, 96 and 109 reported no admitted case of BSI in 2015-2016.

Table 8 - Incidence Rates of CRBSI and of BSIs Secondary to Urinary Tract and Pulmonary Infections per Facility, for Teaching Healthcare Facilities, Québec, 2015-2016 (Incidence Rate per 10,000 Patient-Days [95% CI])

Facility	CRBSI		Urinary Tract		Pulmonary	
	Case (n)	Incidence rates	Case (n)	Incidence rates	Case (n)	Incidence rates
1 HÔPITAL CHARLES LEMOYNE	9	0.70 [0.32 ; 1.23]	4	0.31 [0.08 ; 0.69]	3	0.23 [0.04 ; 0.57]
2 HÔPITAL DE L'ENFANT-JÉSUS	16	1.25 [0.71 ; 1.94]	17	1.32 [0.77 ; 2.02]	11	0.86 [0.43 ; 1.44]

Facility	CRBSI		Urinary Tract		Pulmonary	
	Case (n)	Incidence rates	Case (n)	Incidence rates	Case (n)	Incidence rates
3 GLEN - ROYAL VICTORIA	38	3.46 [2.45 ; 4.65]	16	1.46 [0.83 ; 2.26]	19	1.73 [1.04 ; 2.60]
4 HÔPITAL NOTRE-DAME DU CHUM	37	3.61 [2.54 ; 4.87]	17	1.66 [0.97 ; 2.54]	11	1.07 [0.53 ; 1.80]
5 HÔPITAL GÉNÉRAL JUIF	32	1.90 [1.30 ; 2.62]	34	2.02 [1.40 ; 2.76]	15	0.89 [0.50 ; 1.40]
6 GLEN - ENFANTS	63	14.95 [11.49 ; 18.87]	1	0.24 [0 ; 0.94]	0	0
7 PAVILLON L'HÔTEL-DIEU DE QUÉBEC	8	0.93 [0.40 ; 1.69]	21	2.45 [1.51 ; 3.61]	7	0.82 [0.33 ; 1.54]
8 PAVILLON MAISONNEUVE/PAVILLON MARCEL-LAMOUREUX	33	1.76 [1.21 ; 2.41]	32	1.71 [1.17 ; 2.35]	10	0.53 [0.25 ; 0.91]
9 HÔPITAL DU HAUT-RICHELIEU	5	0.61 [0.19 ; 1.26]	13	1.58 [0.84 ; 2.56]	4	0.49 [0.13 ; 1.09]
10 HÔPITAL PIERRE-BOUCHER	5	0.46 [0.15 ; 0.95]	11	1.00 [0.50 ; 1.68]	7	0.64 [0.25 ; 1.20]
11 HÔPITAL PIERRE-LE GARDEUR	5	0.45 [0.14 ; 0.93]	19	1.69 [1.01 ; 2.54]	5	0.45 [0.14 ; 0.93]
12 CENTRE HOSPITALIER UNIVERSITAIRE SAINTE-JUSTINE	36	4.02 [2.81 ; 5.44]	3	0.33 [0.06 ; 0.81]	1	0.11 [0 ; 0.43]
13 INSTITUT DE CARDIOLOGIE DE MONTRÉAL	2	0.47 [0.04 ; 1.35]	1	0.24 [0 ; 0.93]	4	0.95 [0.25 ; 2.11]
14 CENTRE HOSPITALIER RÉGIONAL DE LANAUDIÈRE	7	0.72 [0.29 ; 1.35]	13	1.34 [0.71 ; 2.17]	8	0.82 [0.35 ; 1.49]
15 HÔPITAL FLEURIMONT	24	2.30 [1.47 ; 3.31]	14	1.34 [0.73 ; 2.13]	3	0.29 [0.06 ; 0.71]
16 HÔPITAL RÉGIONAL DE RIMOUSKI	2	0.36 [0.03 ; 1.03]	7	1.27 [0.50 ; 2.38]	4	0.73 [0.19 ; 1.62]
18 HÔTEL-DIEU DE LÉVIS	4	0.54 [0.14 ; 1.20]	17	2.28 [1.33 ; 3.49]	6	0.80 [0.29 ; 1.57]
19 HÔPITAL CITÉ DE LA SANTÉ	24	1.41 [0.90 ; 2.03]	20	1.17 [0.71 ; 1.74]	4	0.23 [0.06 ; 0.51]
20 HÔPITAL DE CHICOUTIMI	6	0.78 [0.28 ; 1.53]	6	0.78 [0.28 ; 1.53]	0	0
21 HÔPITAL SAINT-LUC DU CHUM	17	1.68 [0.98 ; 2.57]	12	1.19 [0.61 ; 1.96]	4	0.40 [0.11 ; 0.88]
22 HÔTEL-DIEU DU CHUM	12	1.76 [0.91 ; 2.90]	11	1.61 [0.80 ; 2.70]	8	1.17 [0.50 ; 2.12]
23 HÔTEL-DIEU D'ARTHABASKA	0	0	0	0	6	1.16 [0.42 ; 2.28]
24 HÔPITAL DU SAINT-SACREMENT	4	0.74 [0.19 ; 1.64]	4	0.74 [0.19 ; 1.64]	2	0.37 [0.04 ; 1.06]
25 HÔPITAL DU SACRÉ-COEUR DE MONTRÉAL	47	3.26 [2.39 ; 4.26]	28	1.94 [1.29 ; 2.73]	9	0.63 [0.29 ; 1.11]
26 HÔPITAL DE VERDUN	10	1.28 [0.61 ; 2.20]	8	1.03 [0.44 ; 1.87]	6	0.77 [0.28 ; 1.51]
27 PAVILLON CENTRE HOSPITALIER DE L'UNIVERSITÉ LAVAL	14	1.18 [0.64 ; 1.88]	2	0.17 [0.02 ; 0.49]	3	0.25 [0.05 ; 0.62]
28 PAVILLON SAINT-FRANCOIS D'ASSISE	9	1.02 [0.46 ; 1.80]	18	2.04 [1.21 ; 3.09]	6	0.68 [0.24 ; 1.33]
29 HÔPITAL GÉNÉRAL DE MONTRÉAL	17	2.20 [1.28 ; 3.37]	10	1.29 [0.61 ; 2.22]	12	1.55 [0.80 ; 2.55]
30 HOTEL-DIEU DE SHERBROOKE	8	1.22 [0.52 ; 2.21]	6	0.92 [0.33 ; 1.80]	2	0.31 [0.03 ; 0.88]
31 PAVILLON SAINTE-MARIE	2	0.16 [0.02 ; 0.46]	8	0.64 [0.27 ; 1.16]	7	0.56 [0.22 ; 1.05]
32 CENTRE HOSPITALIER RÉGIONAL DU GRAND-PORTAGE	1	0.37 [0 ; 1.45]	2	0.74 [0.07 ; 2.12]	1	0.37 [0 ; 1.45]
33 INSTITUT UNIVERSITAIRE DE CARDIOLOGIE ET DE PNEUMOLOGIE DE QUÉBEC	15	1.57 [0.88 ; 2.47]	4	0.42 [0.11 ; 0.93]	0	0
34 HÔPITAL SANTA CABRINI	1	0.09 [0 ; 0.36]	20	1.90 [1.16 ; 2.82]	7	0.66 [0.26 ; 1.24]
35 HÔPITAL HONORÉ-MERCIER	1	0.15 [0 ; 0.59]	7	1.04 [0.41 ; 1.95]	3	0.45 [0.09 ; 1.10]
36 HÔPITAL GÉNÉRAL DU LAKESHORE	2	0.28 [0.03 ; 0.80]	14	1.93 [1.05 ; 3.07]	8	1.10 [0.47 ; 2.00]
37 HÔTEL-DIEU DE SOREL	4	0.89 [0.23 ; 1.98]	6	1.33 [0.48 ; 2.61]	3	0.67 [0.13 ; 1.64]
38 HÔPITAL JEAN-TALON	3	0.60 [0.11 ; 1.47]	10	2.00 [0.95 ; 3.43]	9	1.80 [0.82 ; 3.17]
39 HOPITAL DE GATINEAU	-	-	-	-	-	-
40 HÔPITAL DE HULL	4	0.60 [0.16 ; 1.33]	14	2.11 [1.15 ; 3.36]	6	0.90 [0.32 ; 1.77]
41 HÔPITAL DU CENTRE-DE-LA-MAURICIE	2	0.43 [0.04 ; 1.23]	9	1.92 [0.87 ; 3.38]	0	0
42 CENTRE HOSPITALIER ANNA-LABERGE	1	0.14 [0 ; 0.54]	10	1.35 [0.64 ; 2.32]	5	0.68 [0.22 ; 1.4]
44 HÔPITAL SAINTE-CROIX	1	0.18 [0 ; 0.71]	8	1.45 [0.62 ; 2.63]	1	0.18 [0 ; 0.71]
45 HÔPITAL DE SAINT-EUSTACHE	6	0.67 [0.24 ; 1.31]	4	0.45 [0.12 ; 1.00]	0	0
46 HÔPITAL DE GRANBY	3	0.63 [0.12 ; 1.54]	10	2.09 [1.00 ; 3.59]	1	0.21 [0 ; 0.82]
47 HÔPITAL DE ROUYN-NORANDA	1	0.40 [0 ; 1.56]	4	1.58 [0.41 ; 3.51]	0	0
48 CENTRE HOSPITALIER DE ST. MARY	7	0.88 [0.35 ; 1.65]	11	1.39 [0.69 ; 2.33]	1	0.13 [0 ; 0.50]
49 CENTRE DE SANTÉ ET DE SERVICES SOCIAUX MEMPHRÉMAGOG	0	0	0	0	0	0
51 HÔPITAL DE MANIWAKI	0	0	2	1.40 [0.13 ; 4.01]	0	0
52 HÔPITAL D'AMOS	0	0	1	0.41 [0 ; 1.61]	0	0
53 HÔPITAL DE CHANDLER	0	0	0	0	1	0.79 [0 ; 3.09]
56 CENTRE DE SANTÉ ET DE SERVICES SOCIAUX D'ARGENTEUIL	3	2.09 [0.39 ; 5.12]	1	0.70 [0 ; 2.74]	1	0.70 [0 ; 2.74]
58 HÔPITAL DU SUROÏT	6	0.99 [0.36 ; 1.94]	9	1.49 [0.68 ; 2.62]	2	0.33 [0.03 ; 0.95]
59 HÔPITAL DE BAIE-SAINT-PAUL	0	0	0	0	0	0
61 HÔPITAL NOTRE-DAME-DE-FATIMA	0	0	0	0	0	0
63 HÔPITAL DE SAINT-GEORGES	0	0	2	0.51 [0.05 ; 1.46]	0	0
64 HÔPITAL LE ROYER	0	0	3	1.17 [0.22 ; 2.86]	2	0.78 [0.07 ; 2.23]
65 HÔPITAL ET CLSC DE VAL-D'OR	3	1.23 [0.23 ; 3.02]	3	1.23 [0.23 ; 3.02]	3	1.23 [0.23 ; 3.02]
67 HÔPITAL ET CENTRE DE RÉADAPTATION DE JONQUIÈRE	0	0	5	1.36 [0.43 ; 2.82]	2	0.55 [0.05 ; 1.57]

Facility	CRBSI		Urinary Tract		Pulmonary		
	Case (n)	Incidence rates	Case (n)	Incidence rates	Case (n)	Incidence rates	
70	CENTRE DE SOINS DE COURTE DURÉE LA SARRE	0	0	0	0	0	0
71	HÔPITAL DE MATANE	0	0	2	1.50 [0.14 ; 4.30]	0	0
72	HÔPITAL ET CENTRE D'HÉBERGEMENT DE SEPT-ÎLES	0	0	0	0	0	0
74	HÔPITAL DE DOLBEAU-MISTASSINI	1	0.60 [0 ; 2.34]	1	0.60 [0 ; 2.34]	0	0
75	CENTRE DE SANTÉ ET DE SERVICES SOCIAUX DU GRANIT	0	0	1	1.14 [0 ; 4.47]	0	0
76	HÔPITAL DE LACHINE	1	0.59 [0 ; 2.32]	2	1.19 [0.11 ; 3.41]	2	1.19 [0.11 ; 3.41]
77	HÔPITAL D'AMQUI	0	0	0	0	0	0
80	HÔPITAL FLEURY	8	1.81 [0.77 ; 3.28]	10	2.27 [1.08 ; 3.89]	5	1.13 [0.36 ; 2.34]
81	HÔPITAL DE MONT-LAURIER	1	0.62 [0 ; 2.43]	1	0.62 [0 ; 2.43]	0	0
82	PAVILLON SAINTE-FAMILLE	0	0	0	0	0	0
83	HÔPITAL DE LASALLE	0	0	0	0	0	0
84	HÔPITAL DE NOTRE-DAME-DU-LAC	1	1.32 [0 ; 5.17]	0	0	0	0
85	CENTRE DE SANTÉ ET DE SERVICES SOCIAUX DU HAUT-SAINT-AURICE	0	0	0	0	0	0
86	HÔPITAL DE LA MALBAIE	0	0	4	4.03 [1.05 ; 8.95]	1	1.01 [0 ; 3.96]
88	HÔPITAL. CLSC ET CENTRE D'HÉBERGEMENT DE ROBERVAL	0	0	7	2.46 [0.98 ; 4.62]	0	0
89	HÔPITAL DE MONTMAGNY	2	1.15 [0.11 ; 3.30]	2	1.15 [0.11 ; 3.3]	0	0
91	HÔPITAL HÔTEL-DIEU DE GASPÉ	0	0	1	0.92 [0 ; 3.60]	0	0
95	HÔPITAL DU PONTIAC	0	0	0	0	0	0
96	CENTRE DE SANTÉ DE CHIBOUGAMAU	0	0	0	0	0	0
97	HÔPITAL DE MARIA	1	0.55 [0 ; 2.16]	2	1.10 [0.10 ; 3.15]	1	0.55 [0 ; 2.16]
99	HÔPITAL BROME-MISSISQUOI-PERKINS	2	0.72 [0.07 ; 2.06]	2	0.72 [0.07 ; 2.06]	1	0.36 [0 ; 1.41]
100	HÔPITAL DE LA BAIE	0	0	1	0.76 [0 ; 2.97]	0	0
101	HÔPITAL RÉGIONAL DE SAINT-JÉRÔME	17	1.55 [0.90 ; 2.37]	15	1.36 [0.76 ; 2.14]	10	0.91 [0.43 ; 1.56]
103	HÔPITAL LAURENTIEN	3	1.00 [0.19 ; 2.45]	1	0.33 [0 ; 1.30]	0	0
107	HÔPITAL DE L'ARCHIPEL	1	1.31 [0 ; 5.13]	1	1.31 [0 ; 5.13]	0	0
109	HÔPITAL DE SAINTE-ANNE-DES-MONTS	1	1.62 [0 ; 6.35]	0	0	0	0
111	HÔPITAL DE PAPINEAU	0	0	1	0.54 [0 ; 2.11]	0	0
112	HÔPITAL D'ALMA	1	0.35 [0 ; 1.38]	2	0.71 [0.07 ; 2.03]	1	0.35 [0 ; 1.38]
113	HÔPITAL DE THETFORD MINES	0	0	1	0.43 [0 ; 1.69]	0	0
118	HÔPITAL NEUROLOGIQUE DE MONTRÉAL	3	1.35 [0.25 ; 3.31]	8	3.61 [1.54 ; 6.55]	5	2.26 [0.71 ; 4.67]
130	HOPITAL BARRIE MEMORIAL	-	-	-	-	-	-

Abbreviations

95% CI: 95% confidence interval

BSI: bloodstream infection

CoNS: coagulase-negative *Staphylococcus*

CRBSI: catheter-related bloodstream infection

HD: hemodialysis

ICU: intensive care unit

MBI: mucosal barrier injury

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

SSI: surgical site infection

Author

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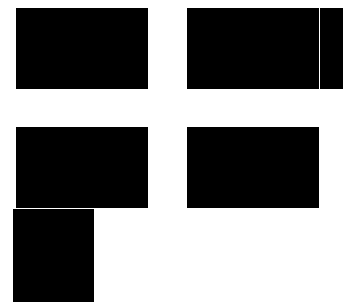
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