

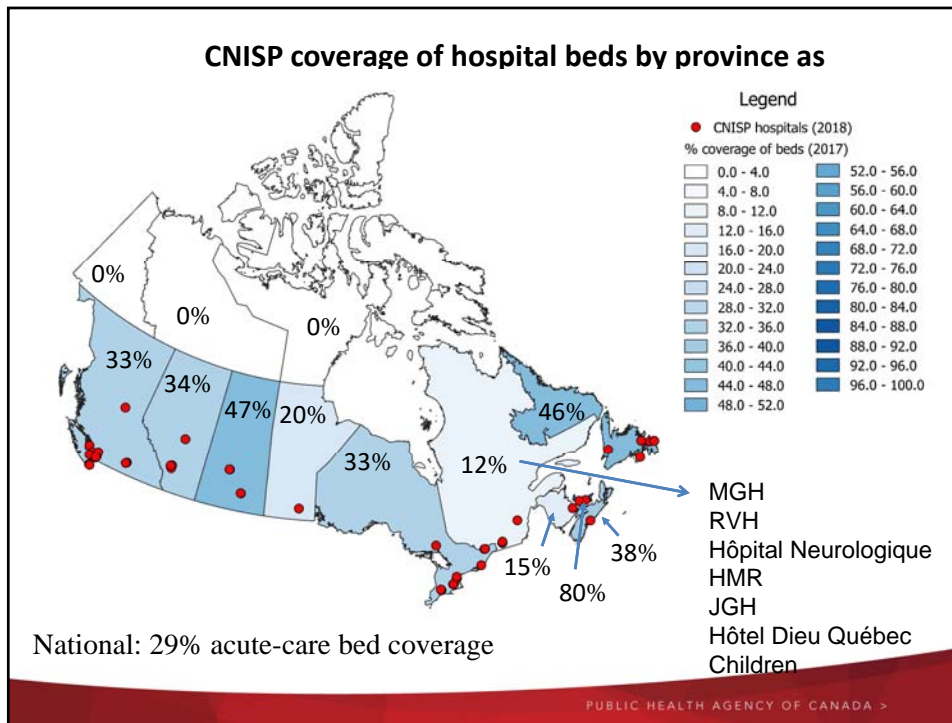
**23^{es} JOURNÉES ANNUELLES
DE SANTÉ PUBLIQUE**
HÔTEL BONAVENTURE, MONTRÉAL

CNISP / PCSIN
**État de situation des Infections
Nosocomiales dans le reste du
Canada**

Charles Frenette
Co-Président PCSIN
Nov 2019

Conflits

- ▶ Aucun



Programmes Actuels

SEMBLABLE SPIN

- BACC aux SI
- Bactériémie SARM/MSSA
- Bactériémie ERV
- C.difficile
- OPC / EPC

• Mais Pas :

- Colonisation ERV
- Colonisation SARM
- BACTOT

AUTRES PROGRAMMES

- Étude de prévalence des Infections Nosocomiales
- ISO Hanche / Genou prothèse
- ISO dérivation LCR
- *C.auris*
- Usage Antimicrobiens

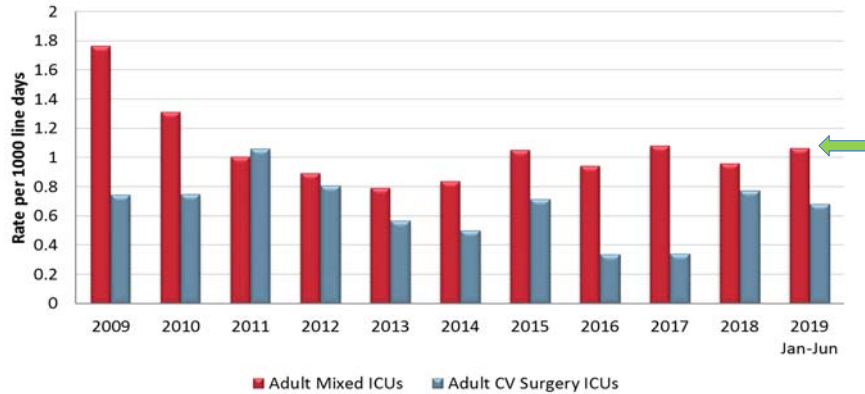
• AntibioGramme (LSPQ)

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Adult ICUs CLABSI rate per 1,000 line days

Bactériémie BACC SI

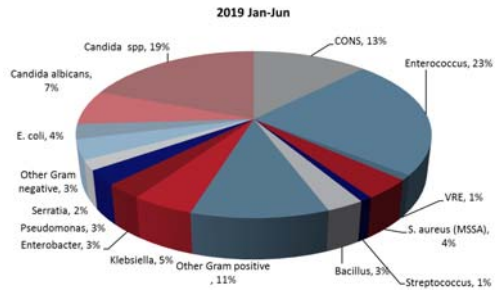
Quebec SI Univ = 1.14



2019 data is preliminary

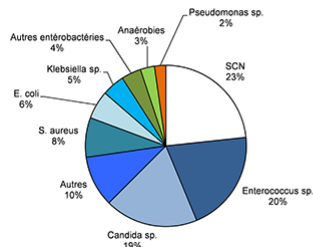
Adult ICUs – % of all organisms 2009 vs 2019 Jan-Jun

PCSIN
Jan-juin 2019

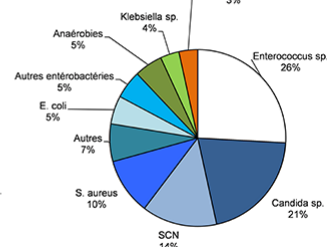


Spin

Tous les microorganismes isolés

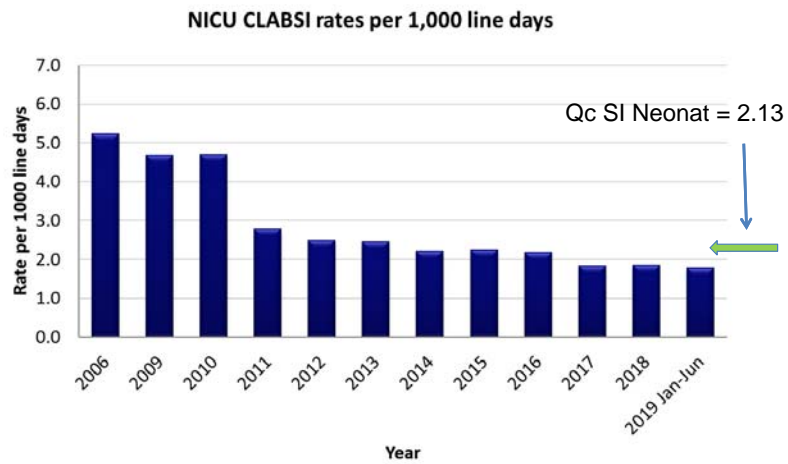


Microorganismes isolés – décès à 30 jours



2019 data is preliminary

NICU CLABSI rate per 1,000 line days



NICUs 2018 - 65% decrease in rate since 2009

2019 data is preliminary

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 Public Health Agency of Canada / Agence de la santé publique du Canada

Canada



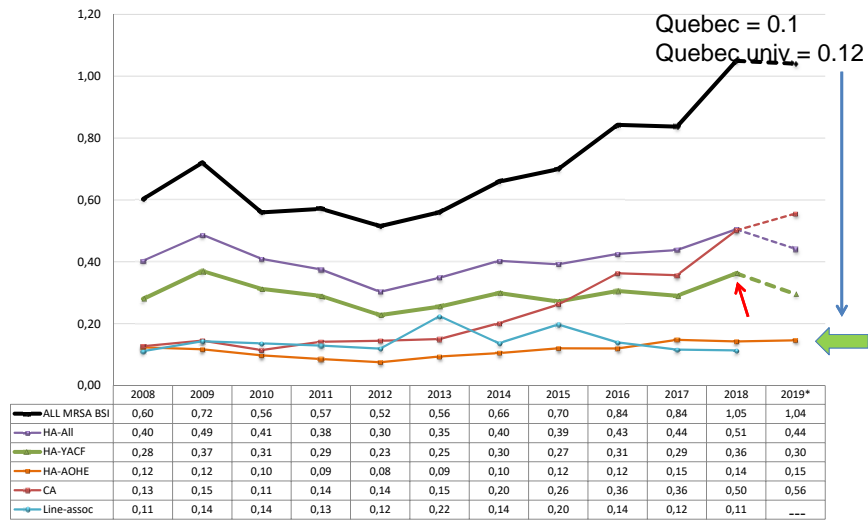
CNISP MRSA MSSA

CNISP Meeting
Monday, October 28, 2019
Ottawa, Ontario

PROTECTING AND EMPOWERING CANADIANS
TO IMPROVE THEIR HEALTH



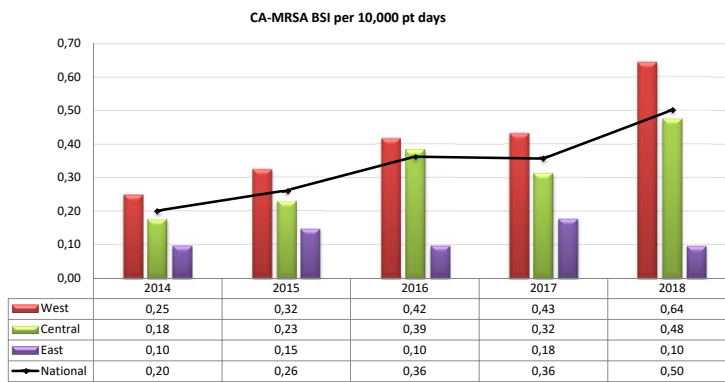
MRSA BSI per 10,000 patient days



Line-associated rates are part of all other categories

*2019 preliminary

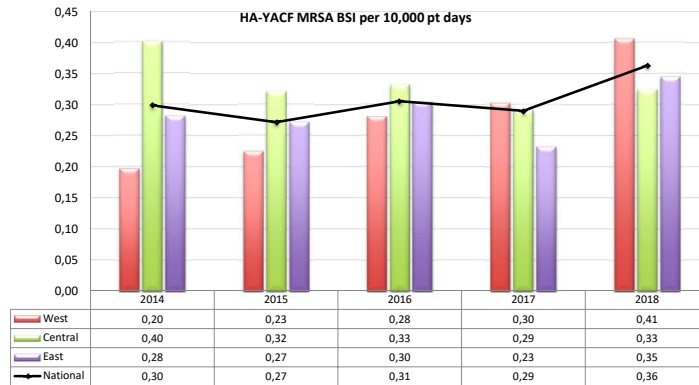
CA-MRSA BSI



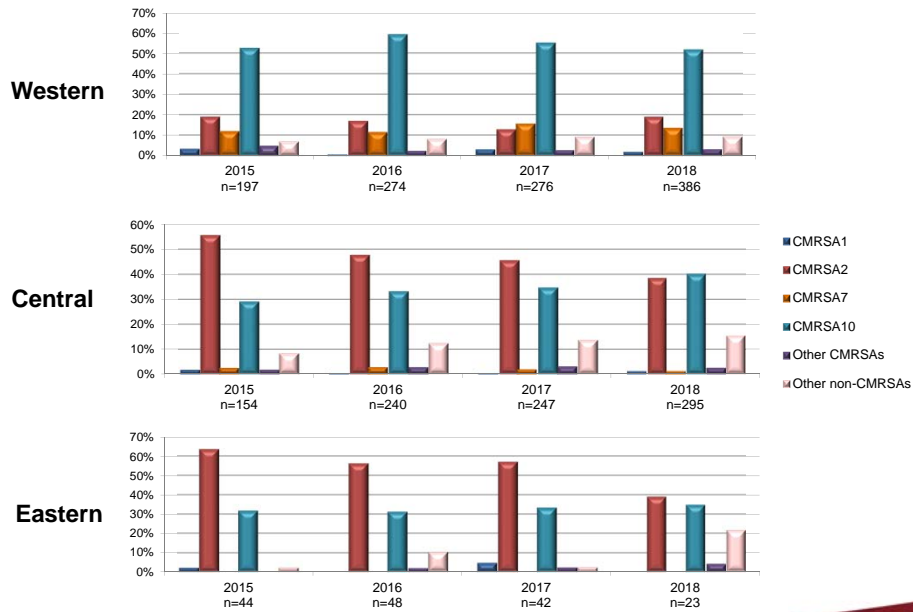
2019 prelim to be added

HA-MRSA BSI

Qc UNIV = 0.12



Regional Distribution – BSI Cases - % of CNISP MRSA Epidemic Type Strains



CNISP surveillance for Vancomycin Resistant *Enterococci* Bloodstream Infections

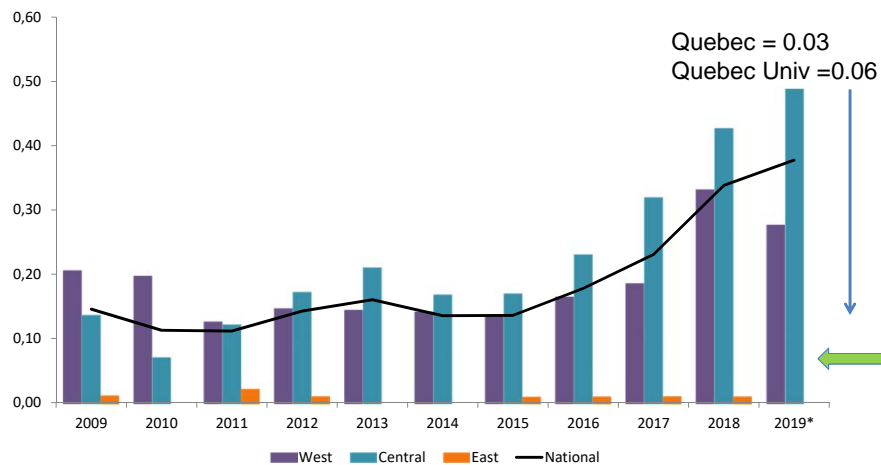
Presented by Robyn Mitchell, Melissa McCracken and Stephanie Smith on behalf of the CNISP VRE Working Group

CNISP Meeting
October 28-29, 2019

PROTECTING AND EMPOWERING CANADIANS TO IMPROVE THEIR HEALTH

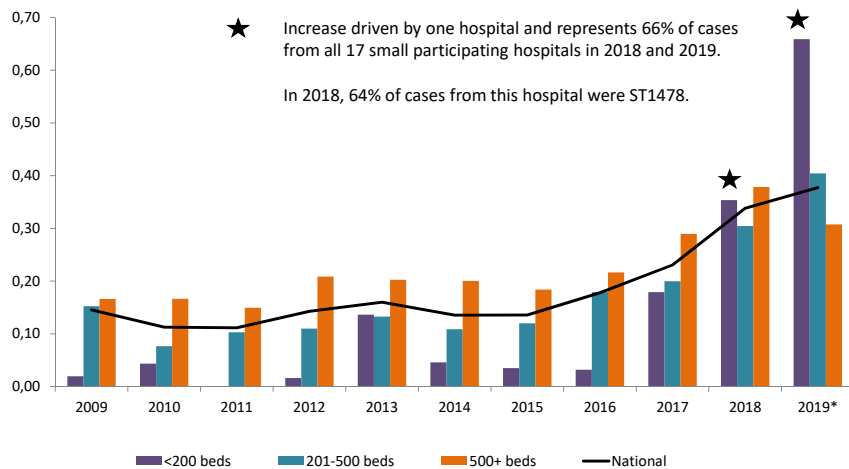


VRE BSI rates per 10,000 patient-days, 2009–2019



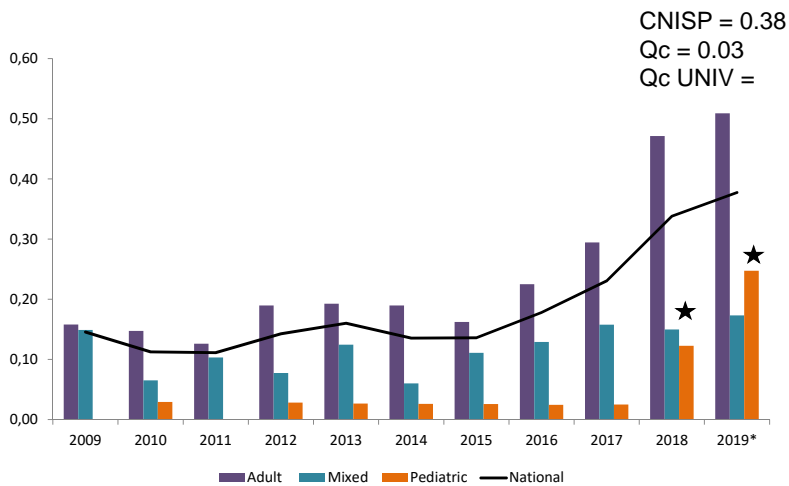
*2019 preliminary based on data from 45/63 (71%) participating hospitals

VRE BSI rates by bed size per 10,000 patient-days



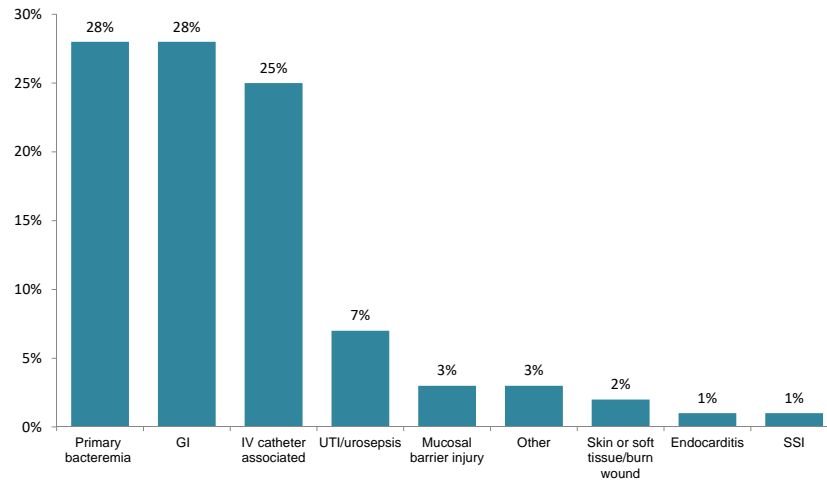
*2019 preliminary data

VRE BSI rates by facility type, per 10,000 patient-days

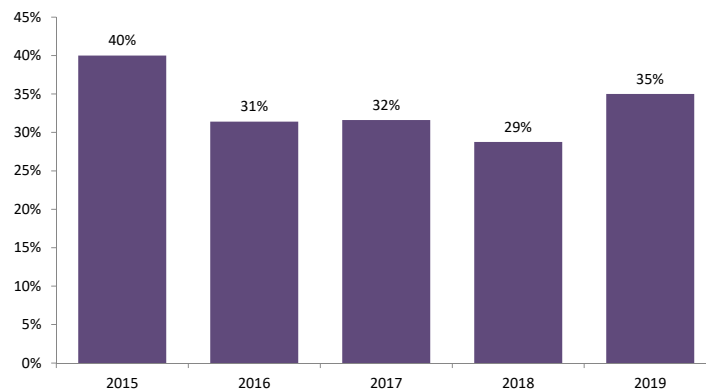


*2019 preliminary data

Source of blood infection, 2018-2019

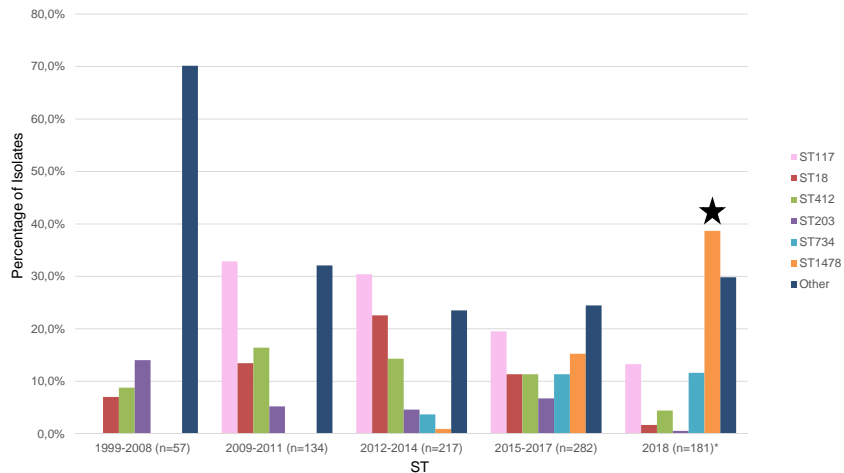


30 day all-cause mortality for VRE BSI patients is 32%



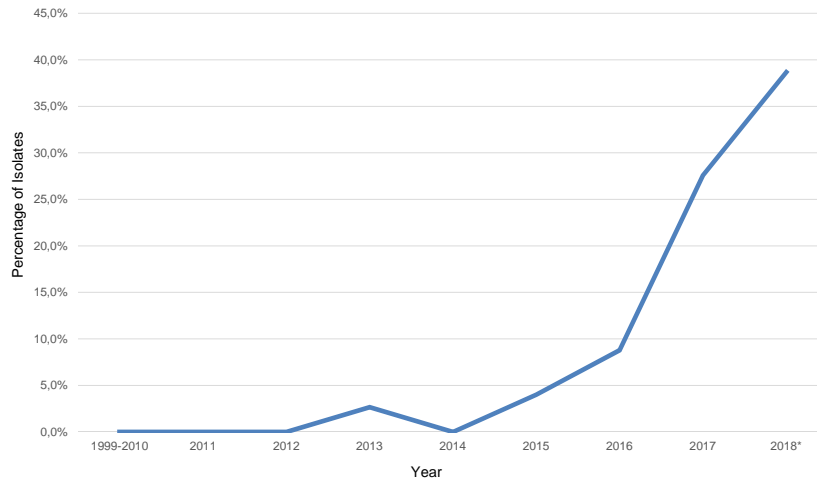
Lab Highlights

Distribution of Sequence Type by Year, 1999-2018



Note: *Other* include ST16, ST17, ST56, ST78, ST80, ST154, ST192, ST233, ST252, ST262, ST280, ST282, ST375, ST414, ST494, ST584, ST612, ST662, ST663, ST664, ST665, ST721, ST736, ST750, ST761, ST772, ST787, ST802, ST835, ST836, ST912, ST982, ST983, ST984, ST992, ST1032, ST1112, ST1113, ST1265, ST1421, ST1424, ST1497, ST1587, ST1612.

Annual Distribution of ST1478



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Epidemiology of ST1478 vs. non ST1478 VRE BSI

	ST1478	Non-ST1478	P value
Healthcare-associated	96%	95%	0.89
SOT	25%	13%	0.006
Hemodialysis	21%	21%	0.95
Chemotherapy	17%	25%	0.16
CVC	70%	74%	0.49
ICU admission	12%	18%	0.13
30 day all-cause mortality	32%	30%	0.77
Daptomycin resistant	13%	3%	<0.001
HL-Gentamicin resistant	81%	15%	<0.001

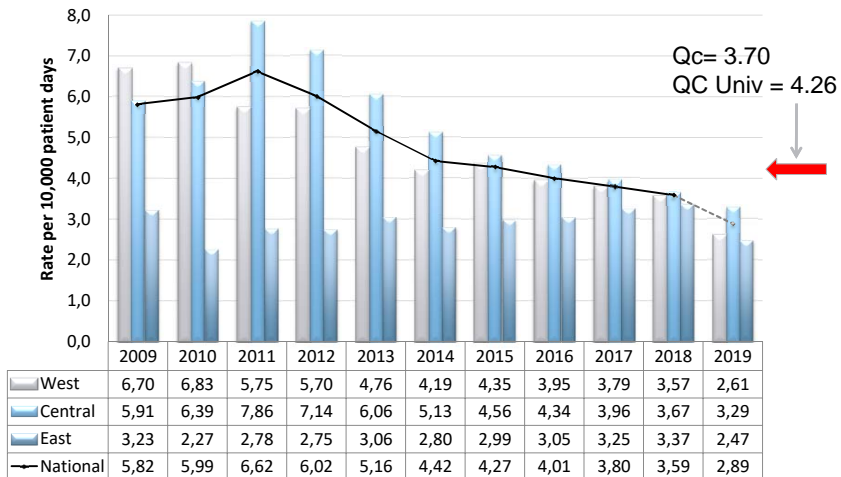
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CNISP surveillance of *Clostridioides difficile* infection

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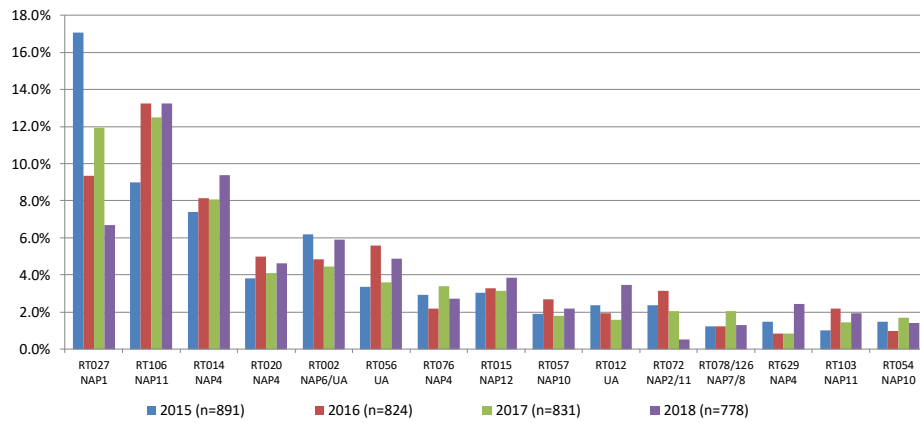


HA-CDI (YACF) rates, 2009 to 2019*



*2019 data from Jan-Jun

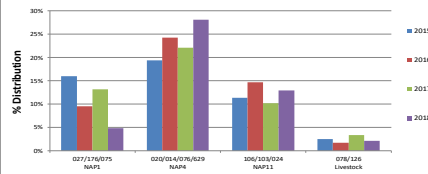
% Distribution of most common Ribotypes (All Cases)



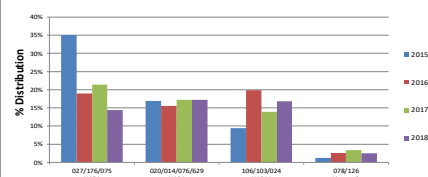
Top 15 RTs make up ~ 65% samples tested. Seen ~ 260 unique RTs.

Decrease in NAP1 and NAP2.
 Increase in NAP4, NAP11, and sporadic NAP types.
 Low levels of livestock associated RT 78/126
 RT 078/126 more problematic in EU. Incidence rates ~30% in EU.

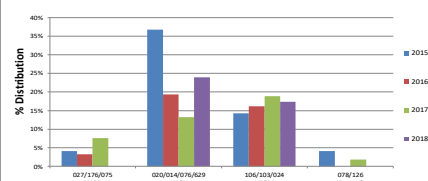
Distribution of Select Ribotypes in the Western Region



Distribution of Select Ribotypes in the Central Region



Distribution of Select Ribotypes in the Eastern Region



Diminution NAP 1 dans toutes les régions.

NAP1 plus élevée dans le centre .

Augmentation NAP4 et NAP11

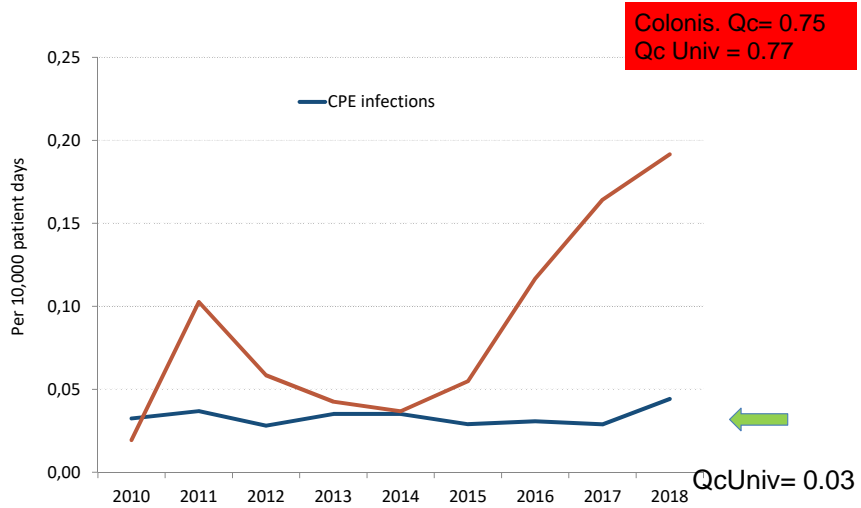
CNISP surveillance for Carbapenemase-Producing Organisms

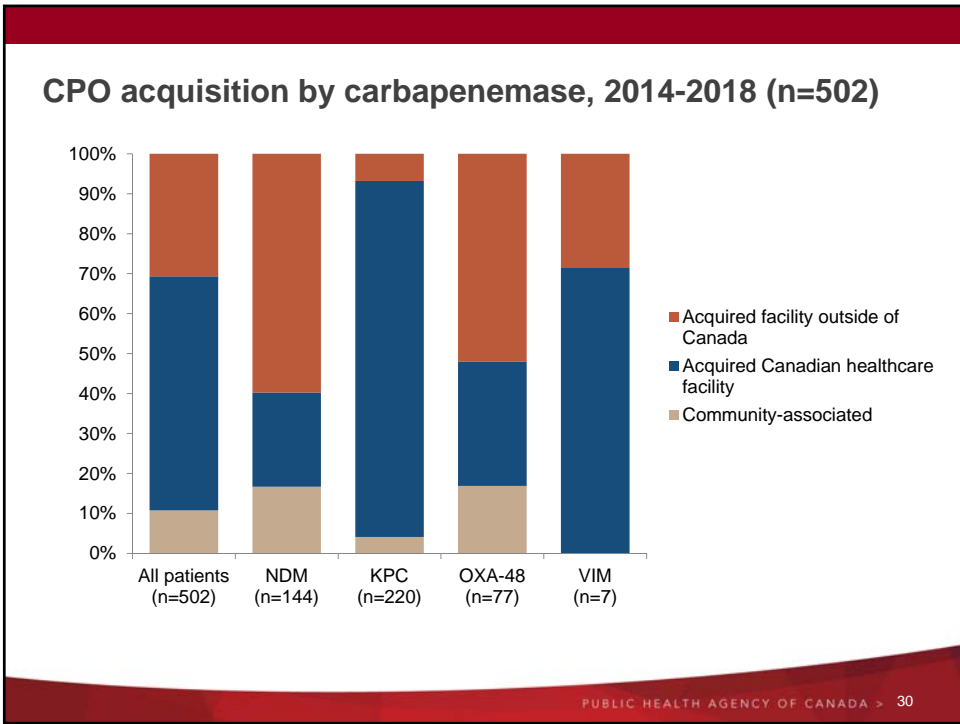
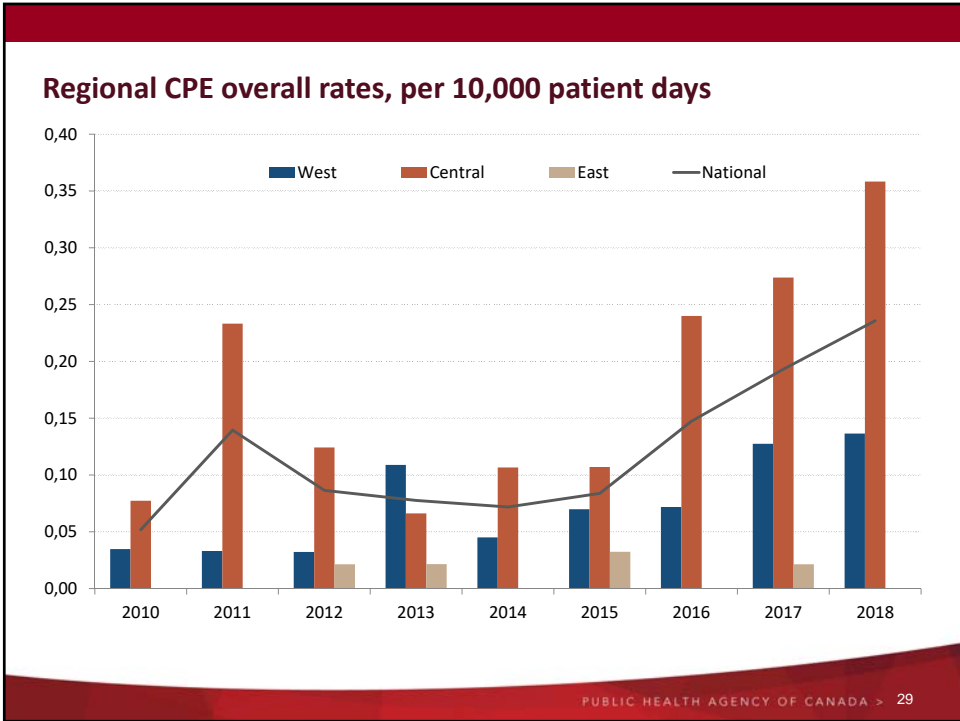
CNISP Meeting
October 28-29, 2019

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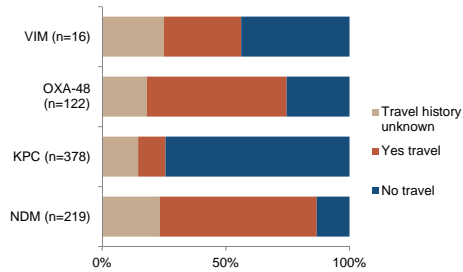


CPE infection and colonization rates

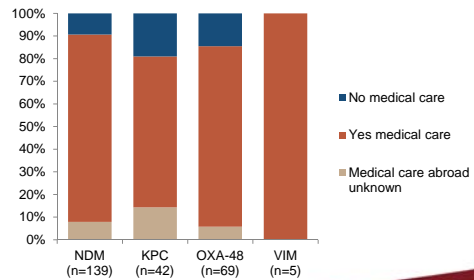




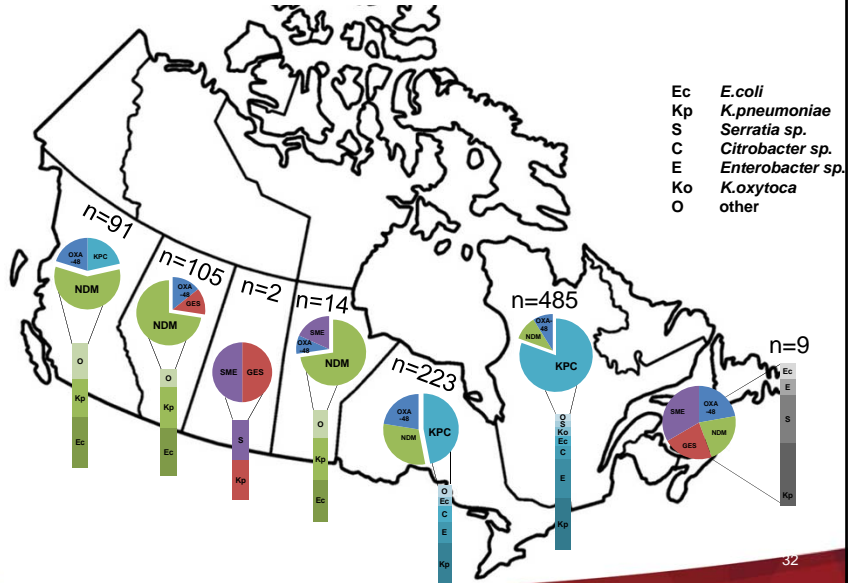
32% of CPO patients reported travel outside of Canada in the 12 months prior to positive culture



Of those who traveled, 81% received medical care outside of Canada



Distribution of top CPE within each province 2010-2018



Candida auris in Canada

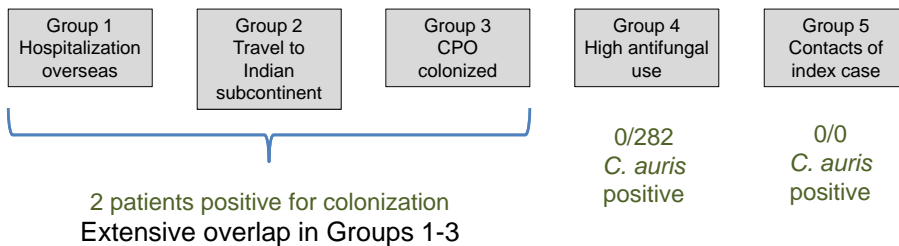
Amrita Bharat, Robyn Mitchell and Allison McGeer
on behalf of
CNISP *C. auris* Working Group

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TO IMPROVE THEIR HEALTH



Results of point prevalence screen of *C. auris*

- 488 patients total
- 23 acute-care hospitals in 6 Provinces
- Median Age: 64 years old (IR 42-74)
- Gender: 51.8% male



in 2019, three cases of *C. auris* have been identified through CNISP surveillance (BC)

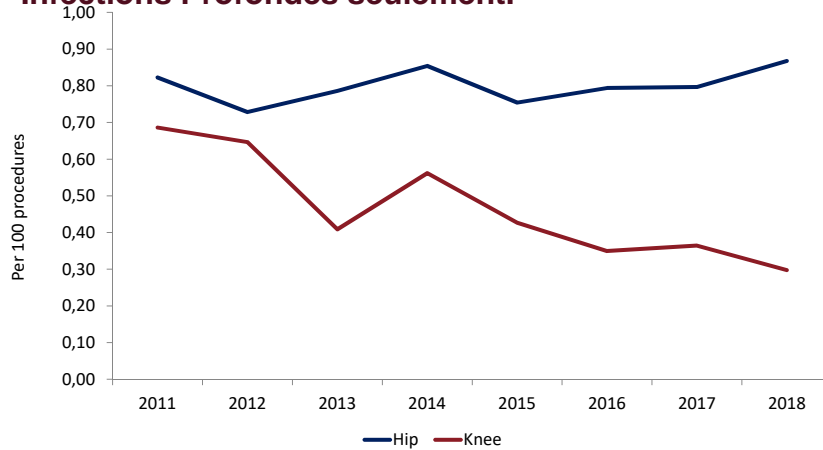
CNISP Surveillance for Hip and Knee Surgical Site Infections

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ISO Compliqué 2011 to 2018 Infections Profondes seulement.

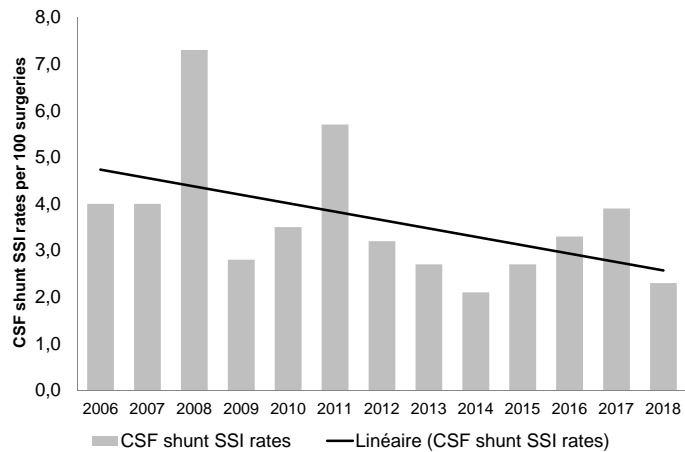


CNISP CSF Shunt associated infections, 2006-2018

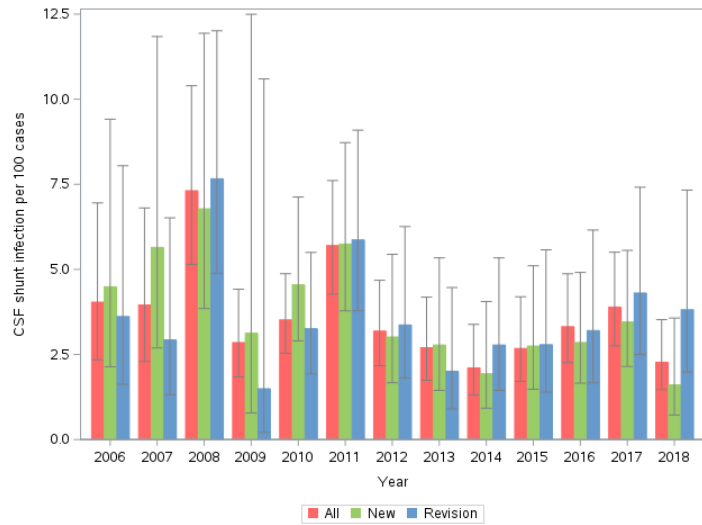
PROTECTING AND EMPOWERING CANADIANS
TO IMPROVE THEIR HEALTH



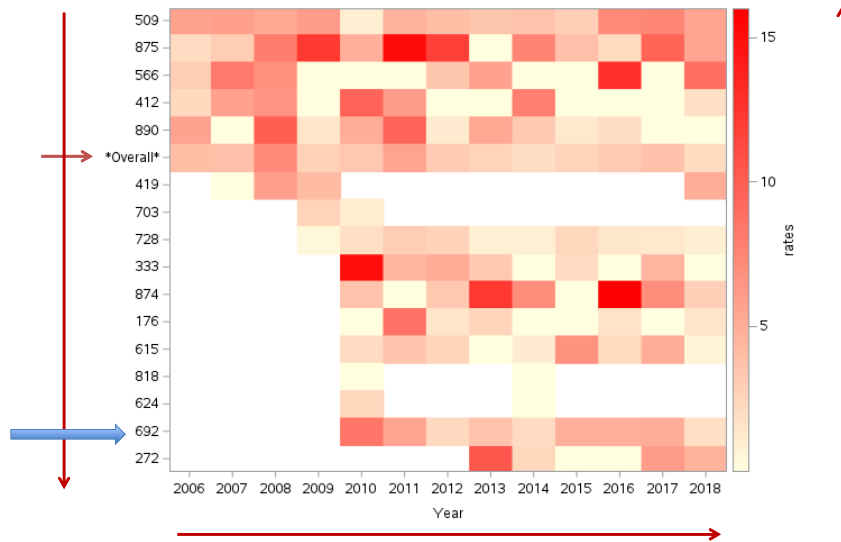
CSF shunt ISO Taux 2006-2018



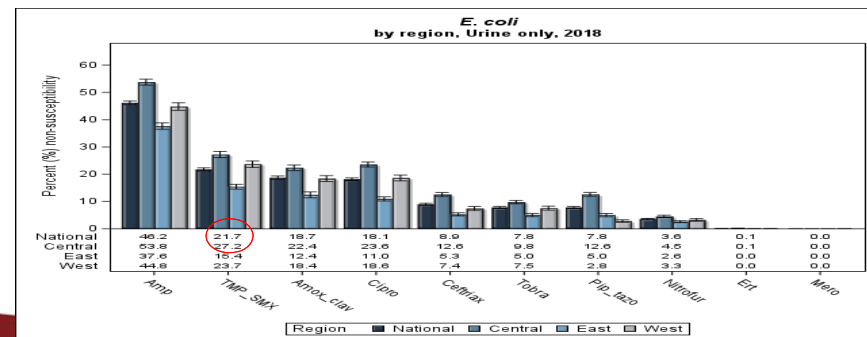
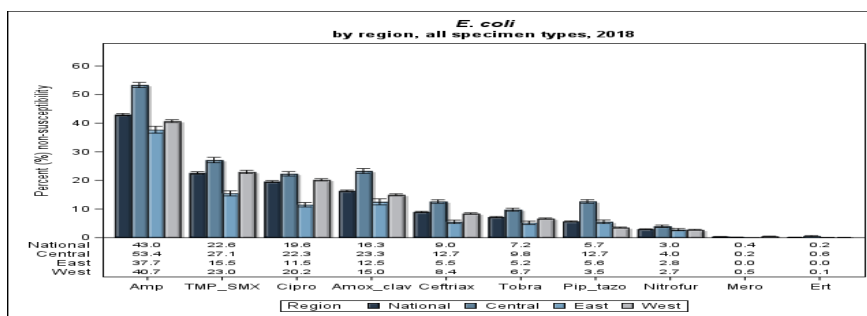
CSF shunt ISO Nouveau vs Révision



CSF shunt SSI rates

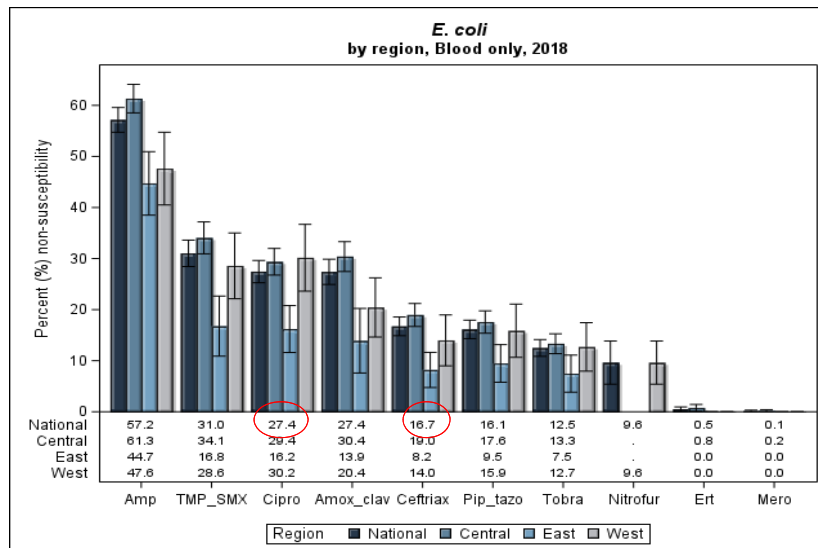


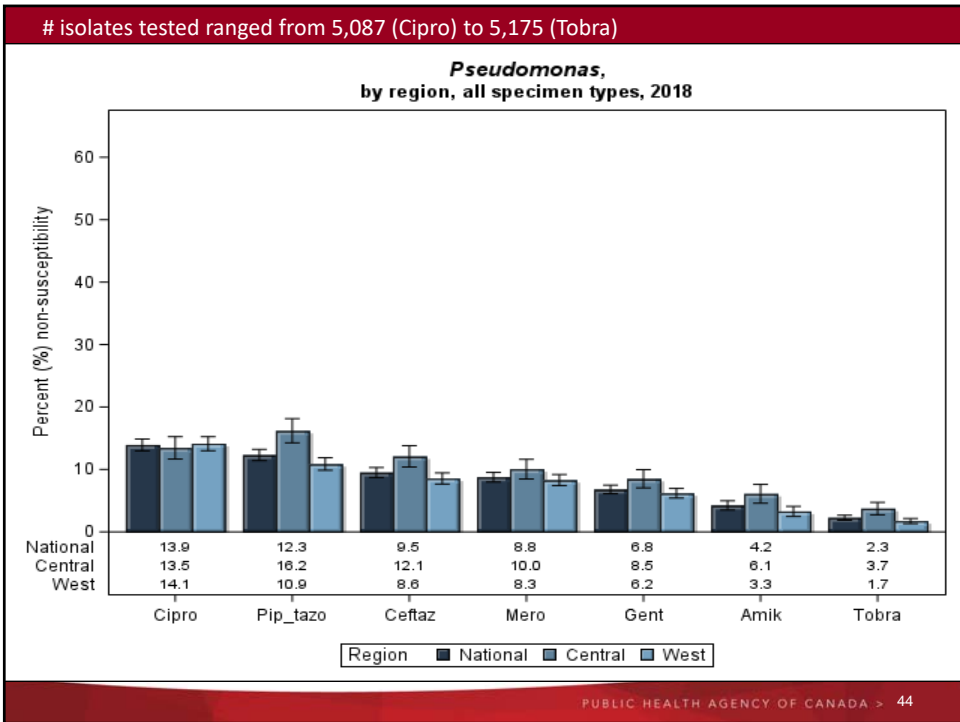
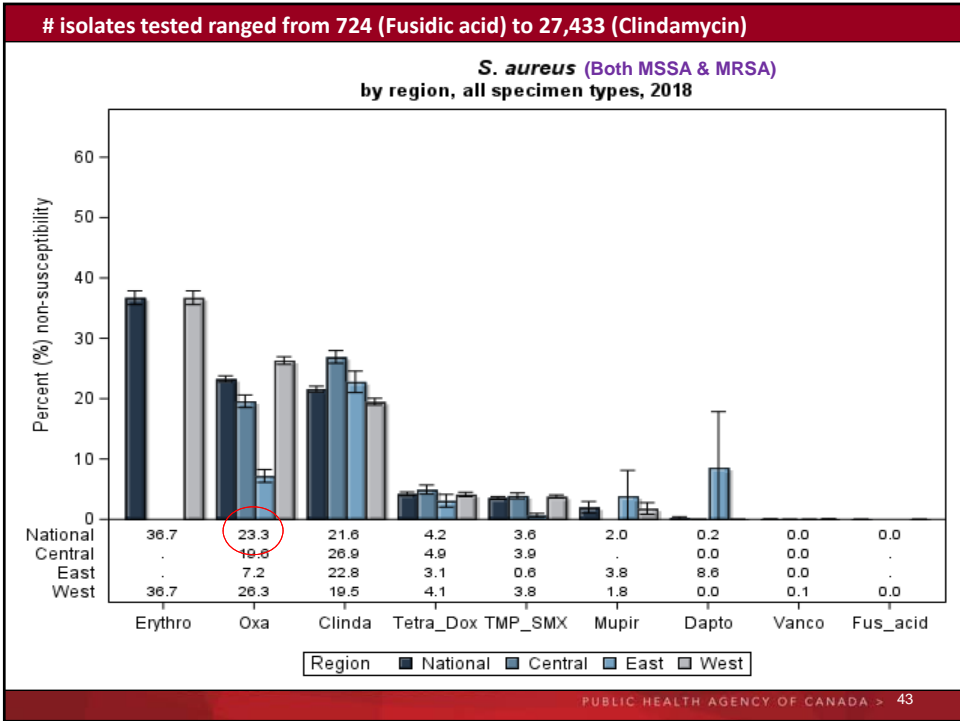
isolates tested ranged from 28,500 (Ertapenem) to 55,274 (Ampicillin)



41

isolates tested ranged from 187 (Nitrofurantoin) to 1,607(Ciprofloxacin)





Quantitative Antimicrobial Usage Surveillance Amongst Adult Inpatients at CNISP Hospital Sites across Canada

CNISP Meeting
October 29, 2019

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Overall AMU boxplot, 2009–2018

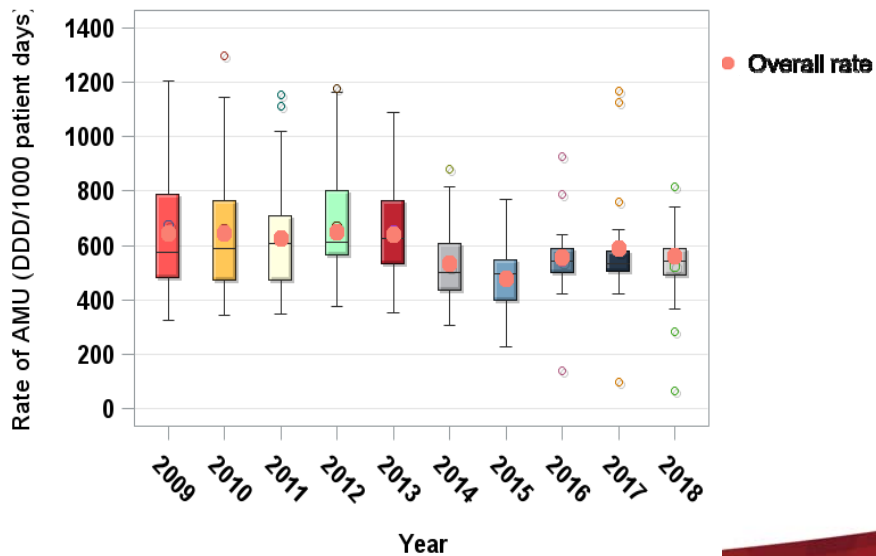


Figure 2: Total rate of antimicrobial classes/subclasses used (top classes/subclasses in 2016)

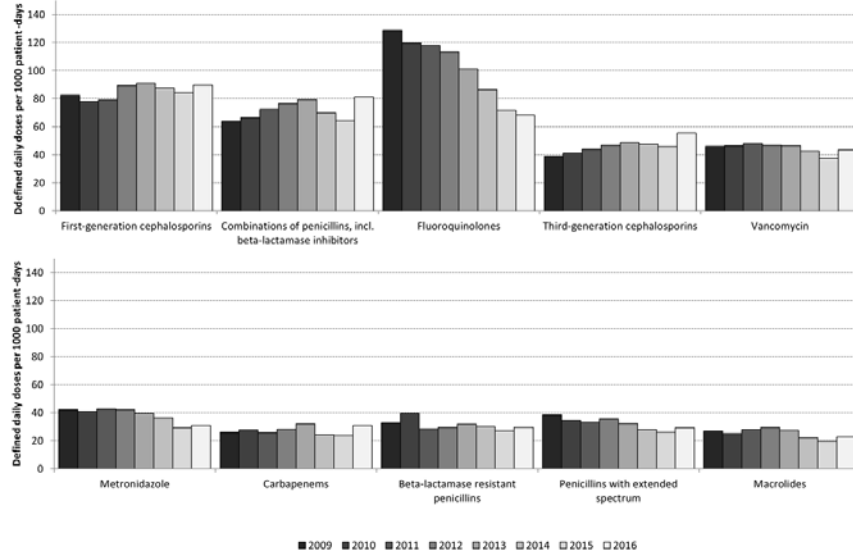
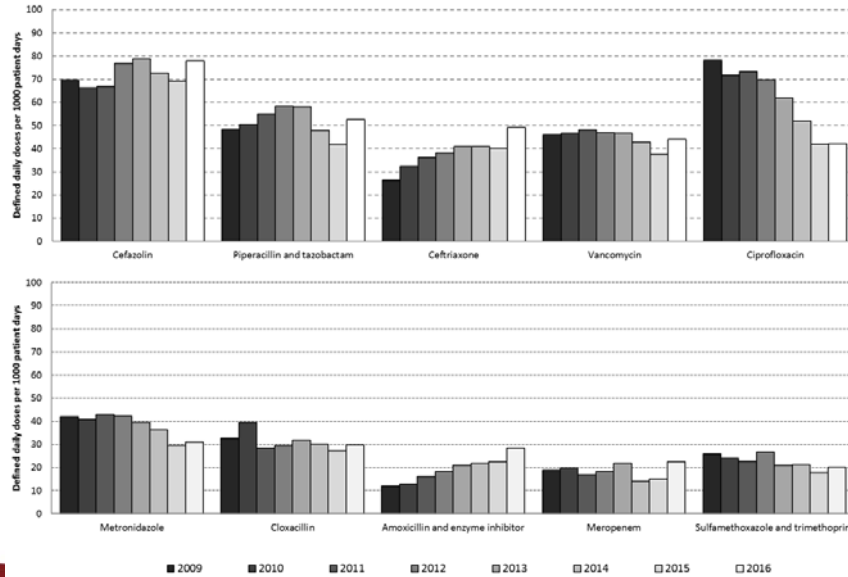
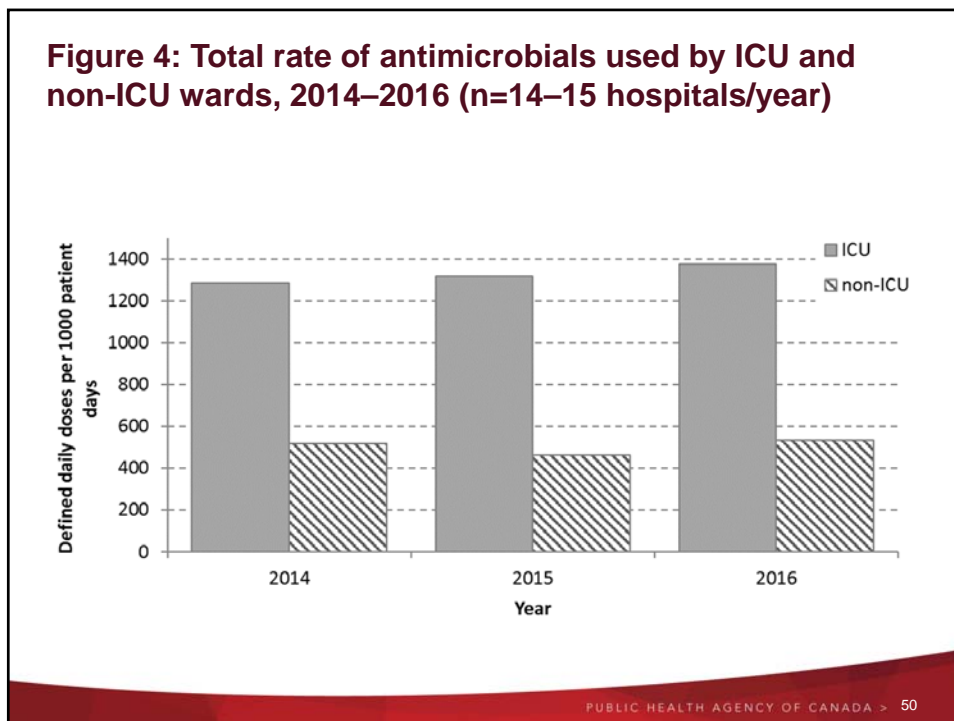
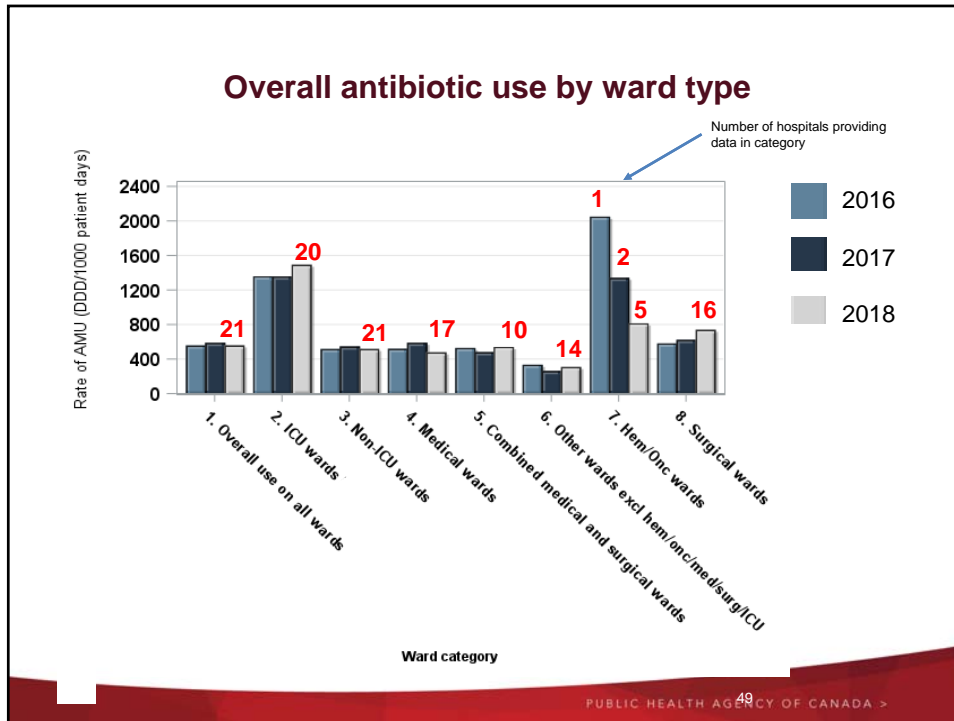


Figure 3: Total rate of antimicrobials used (2016)





UAM : Conclusions

- Plus grande collecte de données UAM chez les patients hospitalisés au Canada
- Entre 2009-2016, diminution de 12 %
- Diminution de 47 % usage des Quinolones
- Augmentation légère de la ceftriaxone et de amoxicillin-clavulin

RESEARCH ■ HEALTH SERVICES

Trends in health care–associated infections in acute care hospitals in Canada: an analysis of repeated point-prevalence surveys

Robyn Mitchell MSc, Geoffrey Taylor MD, Wallis Rudnick PhD, Stephanie Alexandre BSc, Kathryn Bush MSc, Leslie Forrester MSc, Charles Frenette MD, Bonny Granfield BScN, Denise Gravel-Tropper MSc, Jennifer Happe MSc, Michael John MD, Christian Lavalée MD, Allison McGeer MD, Dominik Mertz MD, Linda Pelude MSc, Michelle Science MD, Andrew Simor MD, Stephanie Smith MD, Kathryn N. Suh MD, Joseph Vayalumkal MD, Alice Wong MD, Kanchana Amaratunga MD; for the Canadian Nosocomial Infection Surveillance Program

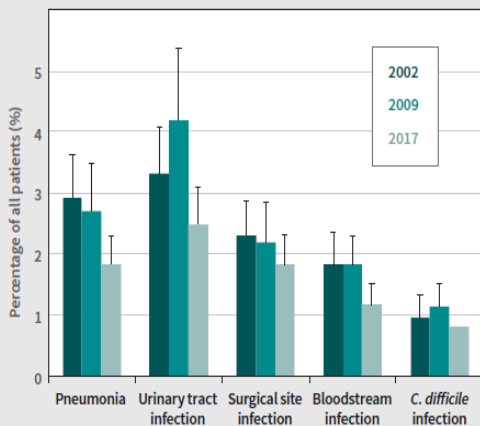
COMMENTARY ■ HEALTH SERVICES

Health care-associated infections in Canadian hospitals: still a major problem

Jennie Johnstone MD PhD, Gary Garber MD, Matthew Muller MD PhD

Prévalence = 7.9 % (vs 11.3 % en 2009 9.9 % en 2002)

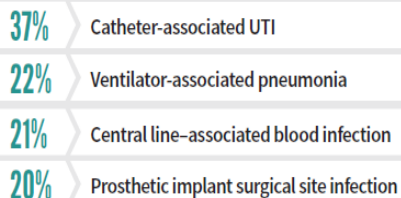
PREVALENCE OF HEALTH CARE-ASSOCIATED INFECTION TYPES



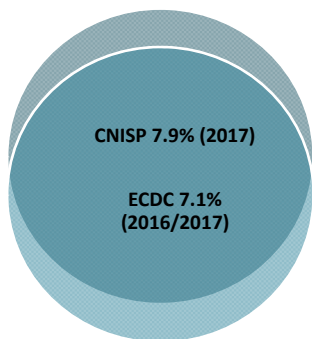
INFECTIONS DUE TO ANTIBIOTIC-RESISTANT ORGANISMS IN 2017



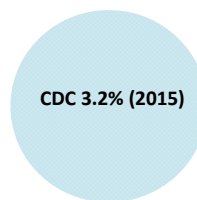
DEVICE-ASSOCIATED INFECTIONS IN 2017



RESULTS



Large, tertiary care hospitals;
high risk patient population;
exclusion of low risk units (e.g.
maternity)



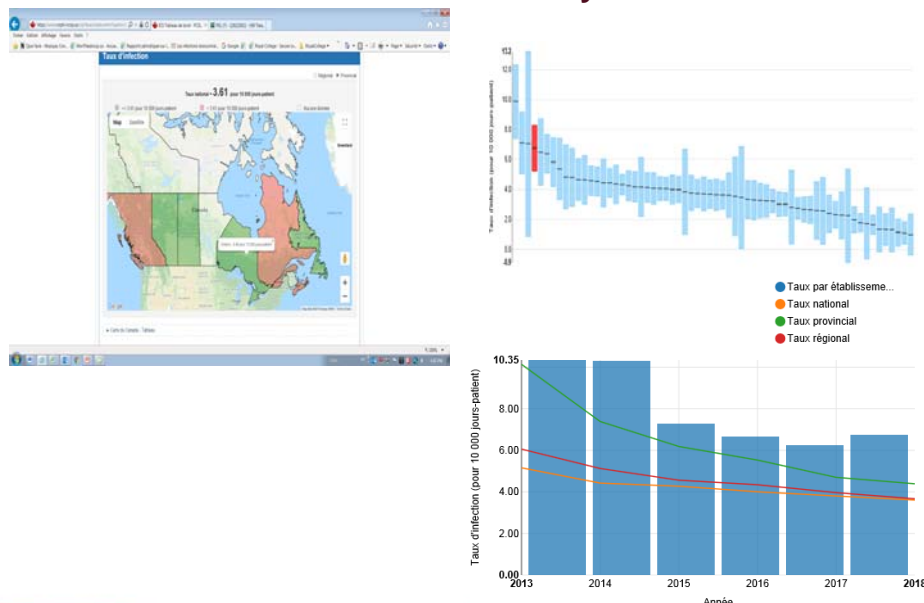
General hospitals; inclusion of
lower risk units (e.g. maternity)

PCSIN Objectifs 2020

- Nouveau projets
 - Virus respiratoires Noso
 - Cx cardiaque ISO
 - Profil hospitalier / Mesure Prévention / labo methode
- Meilleure représentation (+20 CH)
 - Hopital nordique et ruraux
 - Communautaire
 - More Qc / NB
 - Données de base minimum : ex C.difficile

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CNPHI CDI visual analytics



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