

Provincial Laboratory Services



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Health PEI
One Island Health System

Blood Culture Utilization and Quality 2015-2017

June 18, 2018

This information applies to: Physicians, Nurse Practitioners, Directors of Nursing, Nurse Managers, Clinical Instructors/Educators, Enterostomal Nurses, and Infection Control Practitioners

In 2017, over 6,800 blood cultures were drawn from patients across the Island. Blood cultures are one of the most important microbiological tests available to the clinician and utilization of this diagnostic tool is a quality indicator. Island-wide data for 2015, 2016, and 2017 is provided below.

To interpret, consider the following:

1. True positivity is the percentage of positive blood cultures excluding contamination over all blood cultures collected.
2. The goal rate for true positivity is 5 – 15%:
 - A true positivity of less than 5% indicates that blood cultures are being collected too often.
 - A true positivity of greater than 15% indicates that blood cultures are not being collected often enough.

The target rate for contamination is $\leq 3\%$:

- Sites throughout the province are **doing very well** with regard to collection technique.

3. Where a low number of blood cultures are collected, rates may fluctuate greatly over time which is why results for multiple years are provided.
4. Optimal blood volume collection in adult aerobic/anaerobic culture vials is 8-10mL. **Collection of blood volumes that are too high or too low may cause falsely negative cultures.** Most sites within the province are collecting blood volumes that are too high.

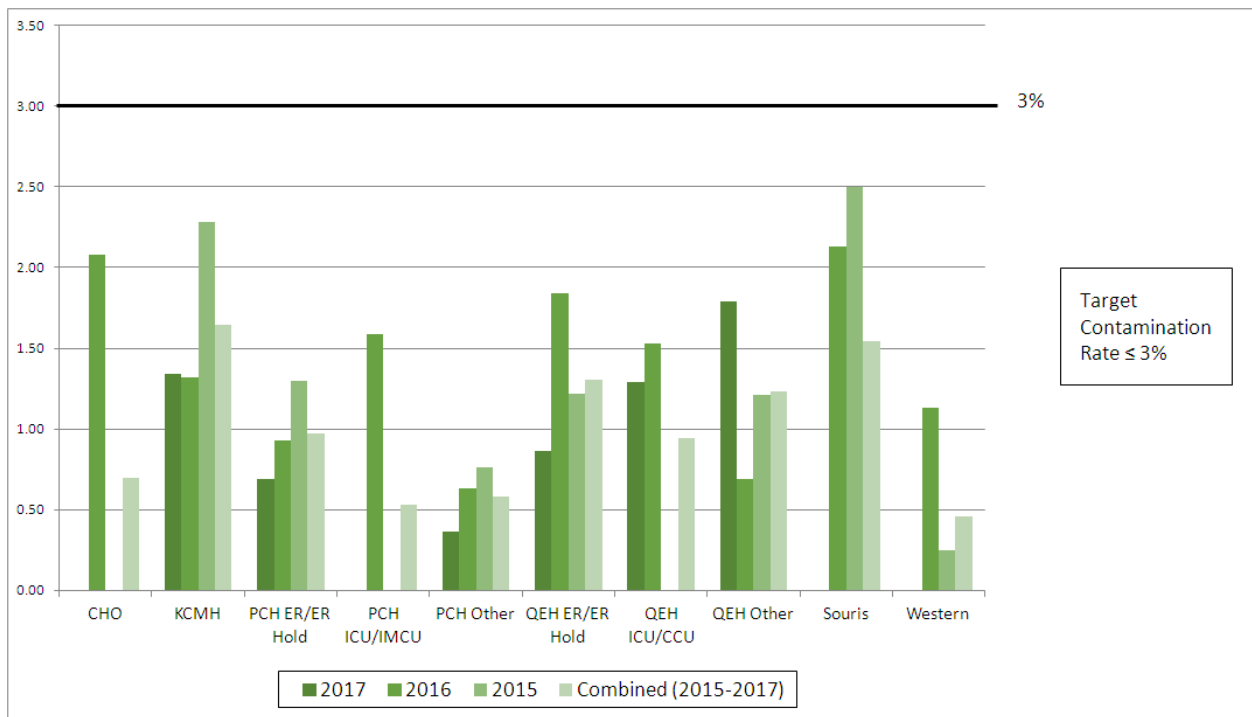
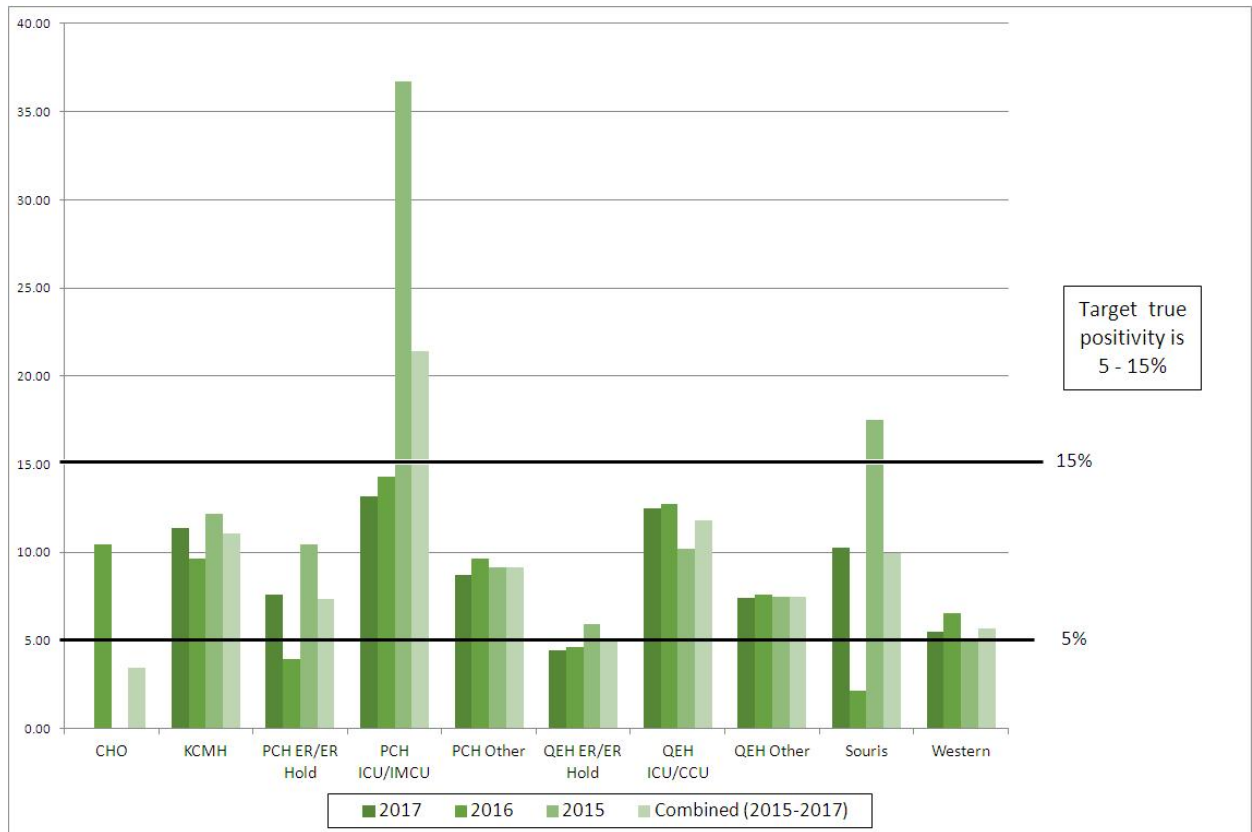
This Quality information is located on the Health PEI Microbiology website at www.healthpei.ca/src/microbiology.

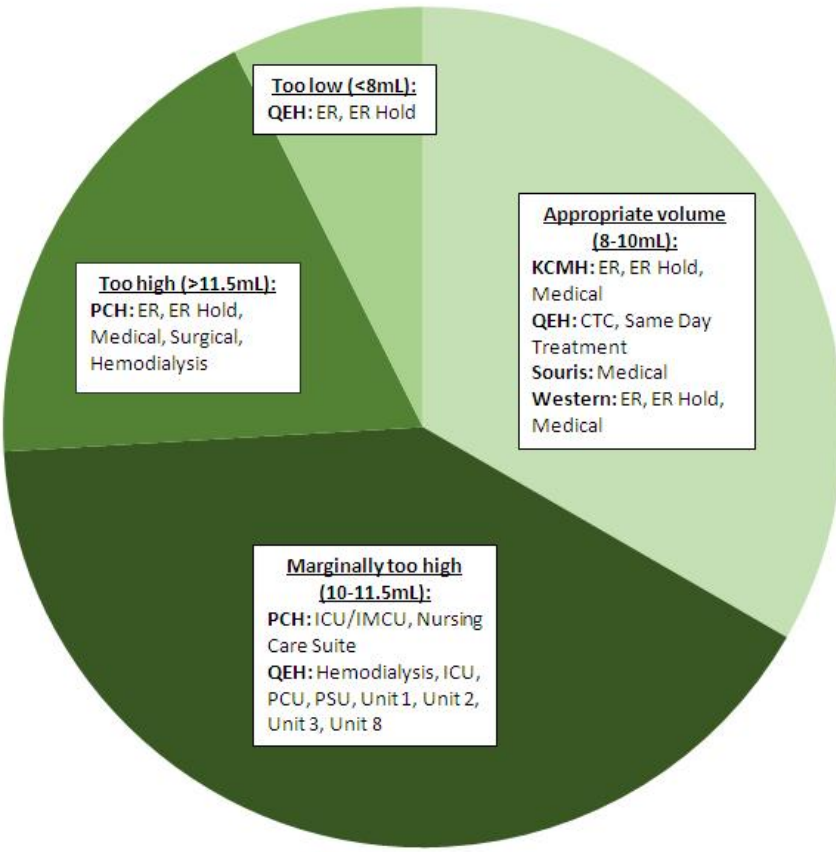
REFERENCE: Baron, E. J. *et al.* (2005). Blood Cultures IV. In E. J. Baron (Ed.), *Cumitech: Cumulative Techniques and Procedures in Clinical Microbiology* (pp. 1-25). Washington, DC: ASM Press.

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Target blood volume for adult aerobic/anaerobic culture vials is 8-10mL/vial.

Locations collecting <25 adult aerobic vials/year could not be included in the blood volume audit.