The determined incidence of BSI will increase with increased culturing in a population. Further studies are needed to explore optimal BSI culturing rates in other populations” Laupland et al (2018).

Abstract:

Objectives: Diagnosis of a bloodstream infection (BSI) requires a positive blood culture. However, low culturing rates will underestimate the true incidence of BSI and high rates may increase the risk of false-positive results. We sought to investigate the relationship between culturing rates and the incidence of BSI at the population level.

Methods: Population-based surveillance was conducted in the western interior of British Columbia, Canada, between 1 April 2010 and 31 March 2017.

Results: Among 60 243 blood culture sets drawn, 5591 isolates were obtained, of which 2303 were incident, 1929 were repeat positive and 1359 were contaminants. Overall annual rates of culturing, incident, repeat positive and contaminant isolates were 4832, 185, 155 and 109 per 100 000 population, respectively. During the 84-month study, there was an increase in the culturing rate that reached a plateau at 48 months (5403 cultures per 100 000 per year). The rate of both repeat isolates and contaminants increased linearly with an increasing culturing rate. However, the incident isolate rate reached an inflection point at a rate of approximately 5550 per 100 000 annually, at which point the increase in incident isolates per culture sample was diminished. At a culturing rate above 6123 per 100 000 per year, the number of repeat isolates exceeded that of incident isolates.

Conclusions: The determined incidence of BSI will increase with increased culturing in a population. Further studies are needed to explore optimal BSI culturing rates in other populations.

Reference:

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