

Pseudo-outbreak of Coagulase-negative *Staphylococcus* Species from Blood Cultures Highlights Unique Challenges in Care of Critically Ill Patients with COVID-19



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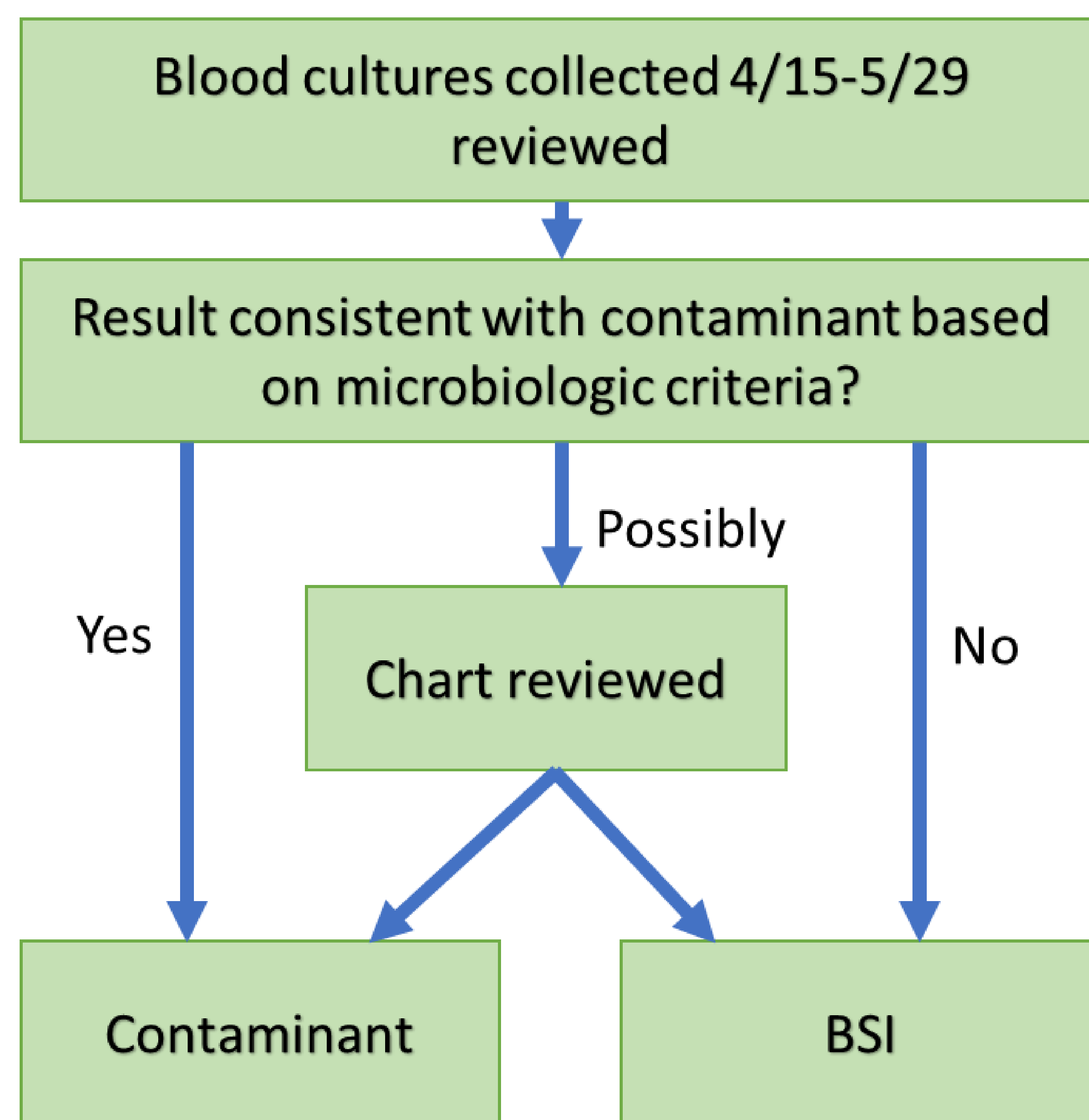
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Background

- A dedicated intensive care unit for patients with COVID-19 was established in April 2020
- A marked increase in the number of blood cultures positive for coagulase-negative *Staphylococcus* species was noted
- Other studies have noted high utilization of blood cultures in the care of patients with COVID-19 and frequent isolation of coagulase-negative *Staphylococcus* species (CONS) [1-2]

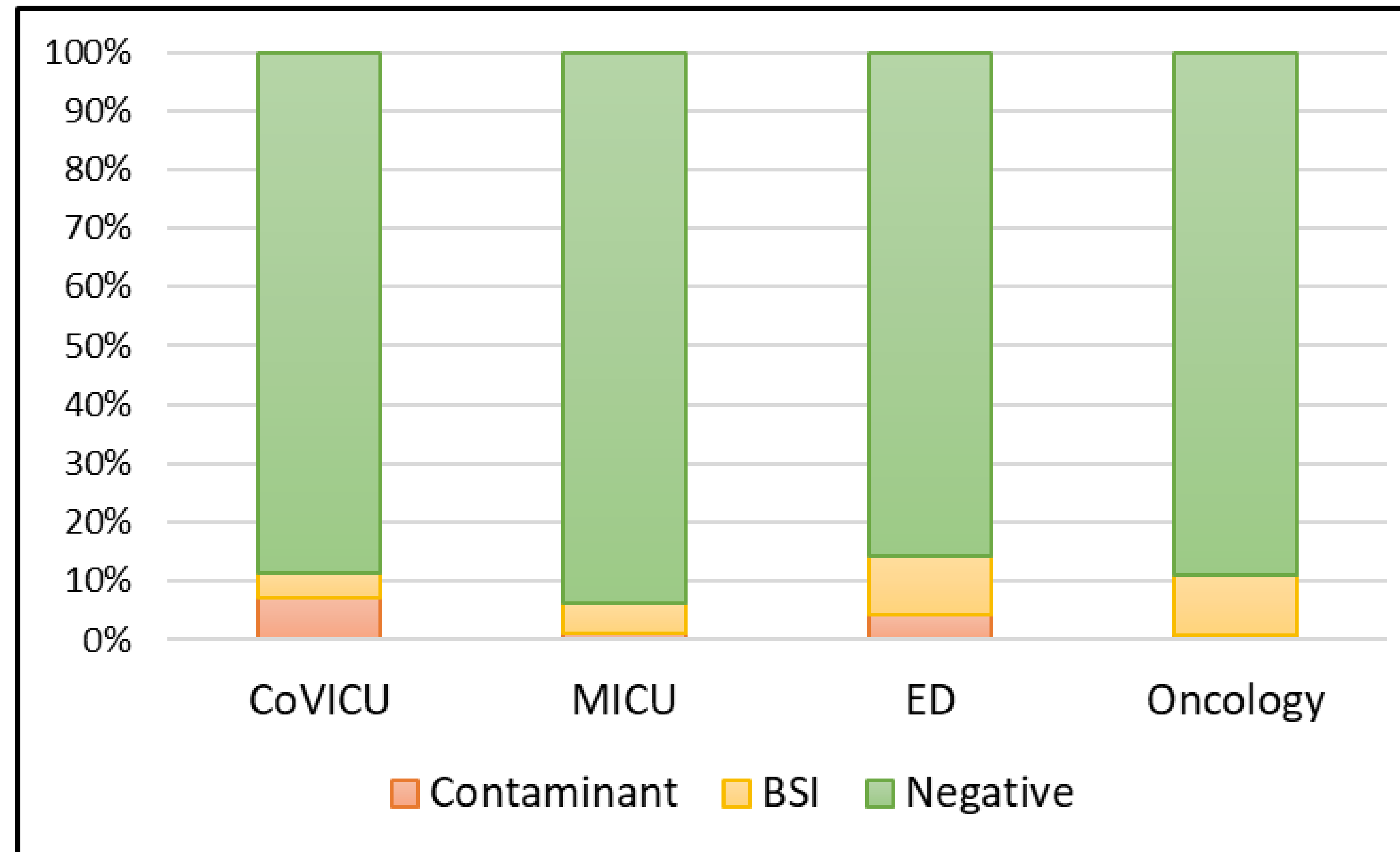
Methods



- Included results from COVID-19 intensive care unit (CoVICU), medical ICU (MICU), oncology unit, and emergency department (ED)

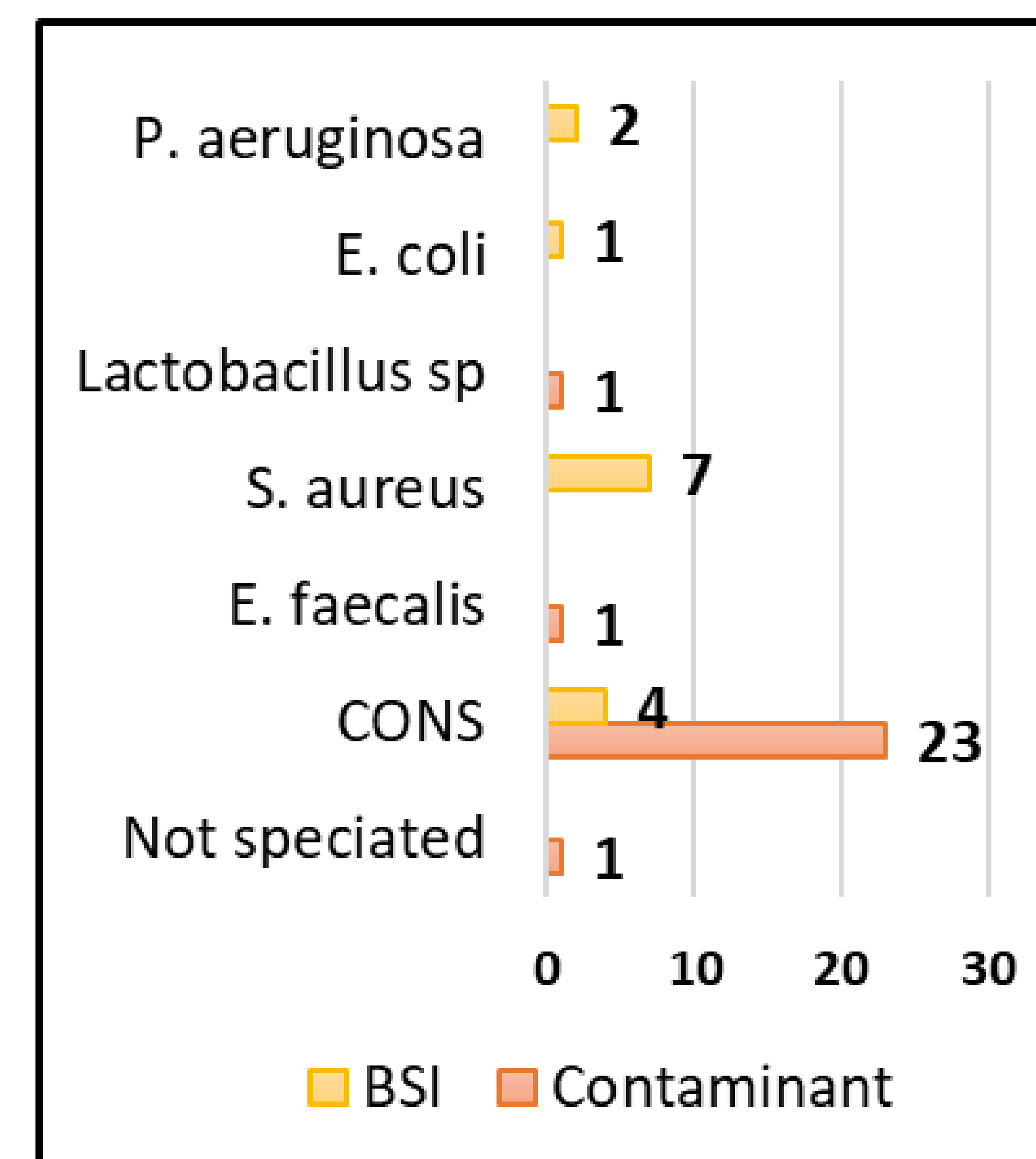
Results

Figure 1. Blood culture results by hospital unit



| Unit | Contaminant (%) | Total |
|----------|-----------------|-------|
| CoVICU | 23 (7.1%) | 324 |
| MICU | 2 (1.0%) | 197 |
| ED | 33 (4.4%) | 747 |
| Oncology | 2 (0.6%) | 334 |

Figure 2. Organisms isolated from blood cultures among CoVICU patients



Discussion

- Review of blood culture results revealed a high rate of contamination among patients in the CoVICU compared with other units
- Notably, CoVICU and MICU providers represent the same pool of caregivers, suggesting a process issue specific to the CoVICU environment
- Certain components of standard work for blood culture collection not feasible in context of isolation precautions
- Peripheral blood draw kits were not stocked in the CoVICU

Future Directions

- Implementation of quality improvement interventions and interval assessment of contamination rates
- New standard work with “glove hygiene” in place of hand hygiene
- Role for diagnostic stewardship efforts regarding blood culture utilization in patients with COVID-19
- Assessment of antibiotic utilization related to contaminated blood cultures

Selected References

1. Giacobbe DR, Battaglini D, Ball L, Brunetti I, BSepeveda J, Westblade LF, Whittier S, et al. Bacteremia and Blood Culture Utilization during COVID-19 Surge in New York City. *J Clin Microbiol.* 2020;58(8):e00875-20. Published 2020 Jul 23. doi:10.1128/JCM.00875-20.
2. Bruzzone B, Codda G, Crea F, De Maria A, Dentone C, Di Biagio A, Icardi G, Magnasco L, Marchese A, Mikulska M, Orsi A, Patroniti N, Robba C, Signori A, Taramasso L, Vena A, Pelosi P, Bassetti M. Bloodstream infections in critically ill patients with COVID-19. *Eur J Clin Invest.* 2020 Oct;50(10):e13319. doi: 10.1111/eci.13319. Epub 2020 Aug 11. PMID:32535894; PMCID: PMC7323143.