



Catheter-related *Staphylococcus aureus* bloodstream infections in a Norwegian university hospital: a one-year observational study

Lise H Høvik 1, Lise T. Gustad 2, Jan Egil Afset 1,3, Birgitta Ehrnstrøm 1,3, Nicola I. Kols 1, Andreas Radtke 1

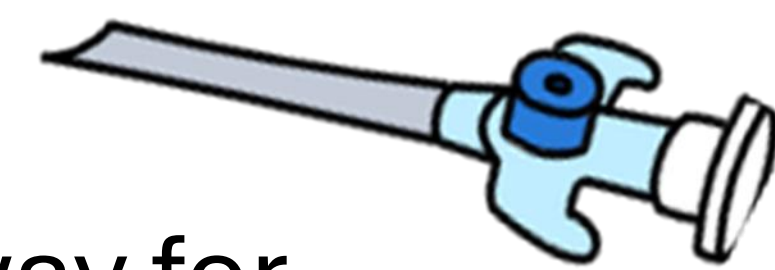
1. St. Olavs Hospital (Trondheim University Hospital), 2. Nord university, 3. Norwegian University of Science and Technology (NTNU)

Background

- Intravascular catheters are a possible gateway for *Staphylococcus aureus* bloodstream infections (SA-BSI)
- The burden of SA-BSI in Norway remains poorly characterized
- Current surveillance methods—mainly point-prevalence surveys—provide limited and variable estimates.

Aim

To estimate the proportion of catheter-related SA-BSI (CRBSI) and assess whether CRBSI can be used as a quality indicator in Norwegian hospitals

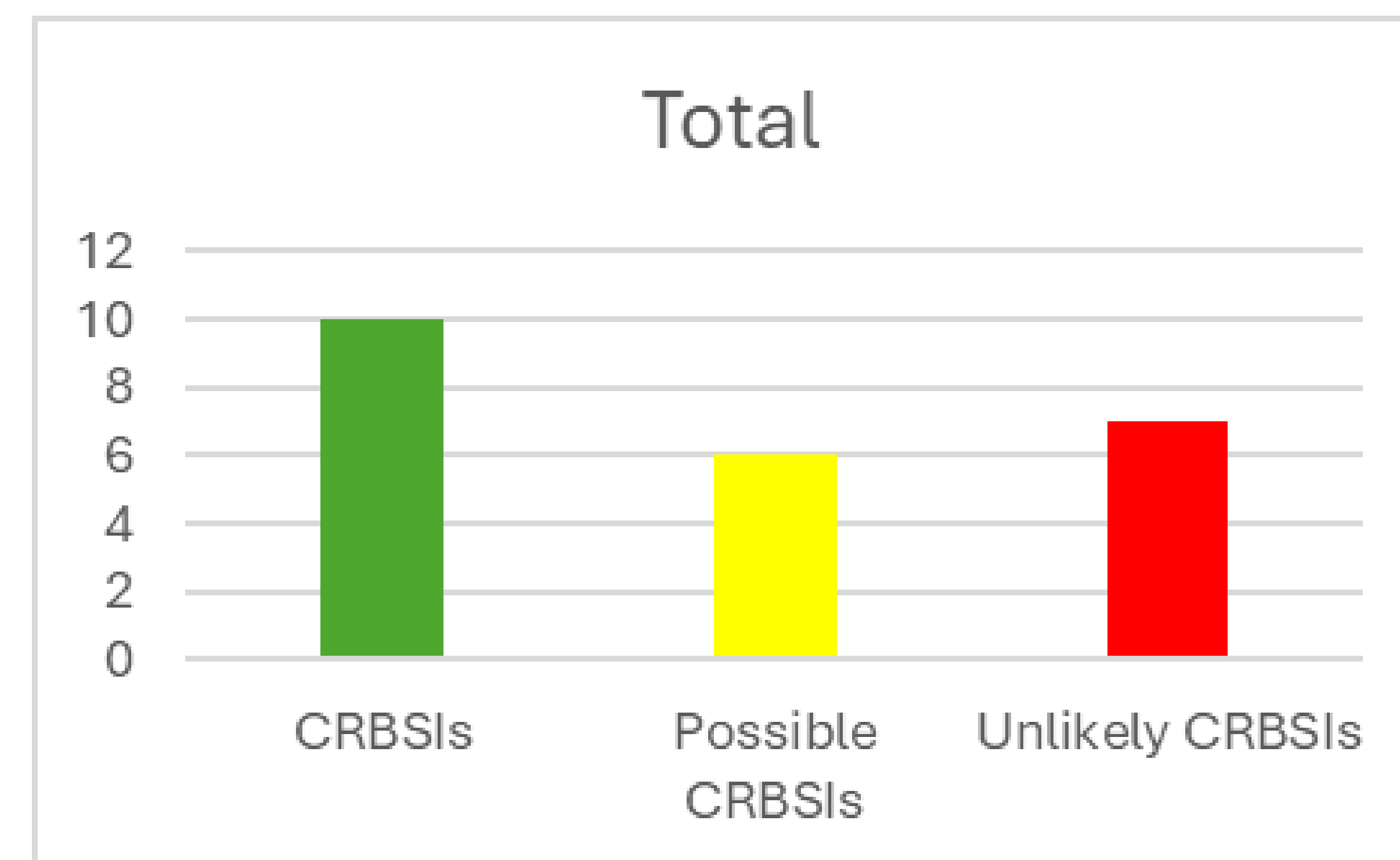


Methods

- One-year observational study (2022-2023) at a university hospital including all patients with at least one blood culture positive for *S. aureus*.
- Study nurses performed systematic medical record reviews to identify episodes potentially related to CRBSI.
- Episodes were evaluated by infection control or infectious disease consultants.
- CRBSI was considered likely when no other infection source was found and catheter-site abnormalities (i.e. phlebitis) were documented, or when the patient record explicitly or explicit documentation identified the catheter as the presumed source.

Results

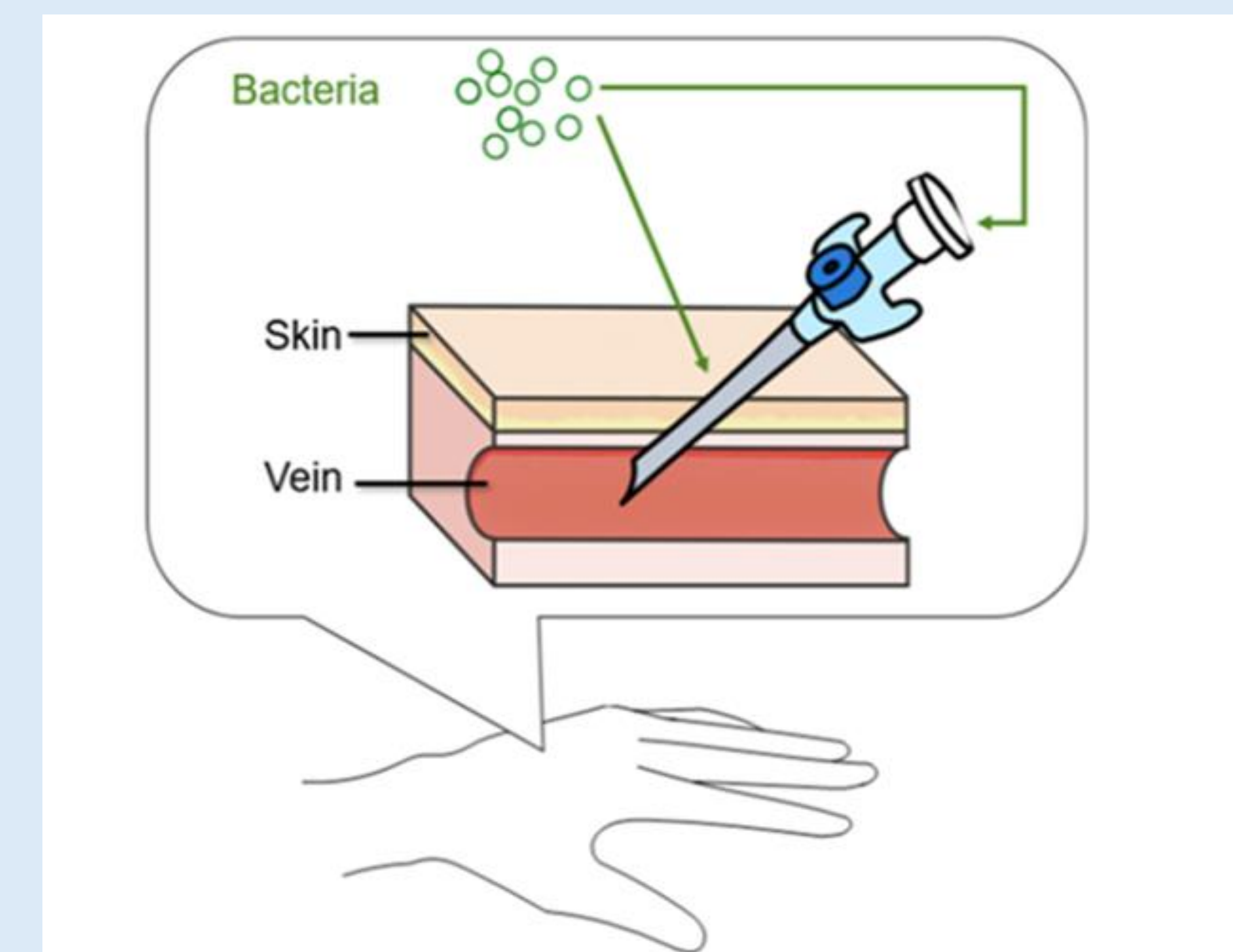
- Among 153 patients with *S. aureus* positive blood culture, 23 episodes (15.0%) were initially identified as possible CRBSI.
- Clinicians categorised 10 episodes as a likely or highly likely CRBSI (7% of all SA-BSIs; 43% of evaluated) cases; 1 central venous, 1 arterial and 8 peripheral intravenous catheters.
- Six cases were considered possible CRBSI, and 7 as unlikely CRBSI.



Abbreviations: CRBSI= catheter related Blood Stream Infection (only *S. Aureus* infections evaluated)

Conclusion

- A substantial proportion of SA-BSIs cases were catheter-related, mainly linked to peripheral intravenous catheters.
- These findings support targeted systematic surveillance of CRBSI to inform quality improvement and vascular access safety initiatives.
- A larger multi-centre study is needed to assess feasibility across different systems for laboratory and patient journals, as well as hospitals' resources allocated to infection specialists.



Drawings: Melissa Yan

Corresponding author: lise.husby.hovik@stolav.no