Optimization of *Staphylococcus Aureus* Bacteremia Management

Medicine Strategic Clinical Network

Background

Staphylococcus aureus bacteremia (SAB) is a common bloodstream infection associated with high morbidity and mortality which can approach 40%. This infection is challenging to treat and requires multifaceted, comprehensive, and collaborative specialist management.

Opportunity or Issue

The literature confirms that a number of quality-of-care parameters are required to optimize patient outcomes. These include repeating blood cultures to document clearance of blood stream infection, appropriate antibiotics for the appropriate duration, assessment for endocarditis with echocardiogram, evaluating for source(s) of infection and metastatic seeding which may require aggressive source control, and infectious diseases (ID) consultation. Adherence to these standards of care, supported by ID consultation, has been shown in numerous studies to be associated with improved mortality and other important clinical outcomes (Jenkins et al. CID. 2008 and Lopez-Cortes et al. CID. 2013) including in Alberta (Lam et al. JAMMI. 2019 and Remtulla et al. OFID. 2019). This practice is increasingly becoming the standard of care across the world.

Justification for the Project

In Alberta, the incidence of SAB based on laboratory data is estimated to be 100 patients/month. Local data demonstrates that formal ID consultation only occurs in 56% to 78% of SAB cases within the Edmonton and Calgary zones. Furthermore, many of these consultations occur late in the disease course limiting the potential for patient benefit. Although data is not available for other zones, ID consult rate is expected to be much lower as there is no on-site ID consultation services in the North, Central, or South zones.

The Initiative

The primary objective is to ensure optimized, standardized, and equitable care for patients with SAB across the province. This will be accomplished through a provincial (centralized) SAB management team that will:

- Be available 7 days a week.
- Receive automated notification of all adult SAB cases in the province.
- Include a SAB Clinical Coordinator who:
 - Triages patients
 - Reviews cases and provide preliminary recommendations to optimize care according to an evidence-based bundle, of which one of the key components is linking ID into care.

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