Colonisation of people who inject drugs in Melbourne, Victoria with *Staphylococcus aureus* and *Streptococcus pyogenes*

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Introduction: Colonisation with *Staphylococcus aureus* and *Streptococcus pyogenes* increases the risk of invasive infections. We sought to determine the prevalence of, and risk factors for, colonisation by these bacteria amongst people who inject drugs in Melbourne.

Method: We conducted a community-based cross-sectional survey of people who inject drugs in Melbourne, Australia, nested within the Melbourne Injecting Drug User Cohort (SuperMIX) Study. SuperMIX participants aged ≥18 years who reported injecting drug use within the previous six months were eligible. Participants were recruited between June 2022-March 2023 and self-collected a combined throat-nasal swab and an axilla swab. Consent was obtained to analyse SuperMIX interview responses related to risk factors associated with methicillin-resistant *S. aureus* (MRSA) colonisation. Swabs were cultured on selective media for *S. aureus* and *S. pyogenes*, with MRSA isolates presumptively identified by oxacillin screening agar.

Results: Of 305 participants, 235 (77%) were male, with a median age of 41 (IQR 31–48). Sixty-eight participants (22%) identified as Aboriginal and/or Torres Strait Islander and 84 (28%) experienced unstable housing. One-hundred and twenty-four participants (40.6%) were colonised by *S. aureus*, nine (3.0%) by MRSA, and three (1.0%) by *S. pyogenes*. MRSA colonisation was predicted by hospital contact since last review (OR 4.21, 95% CI 1.08-16.4).

Discussions and Conclusions: The prevalence of *S. aureus* colonisation amongst people who inject drugs in Melbourne, Australia, is higher than expected compared to the general population. Hospital contact is a significant risk factor for the development of MRSA colonisation.

Implications for Practice or Policy: Harm minimisation and early intervention for skin and soft tissue infections in this population may help reduce hospital admissions, reducing the risk of MRSA colonisation. Further research could explore the effectiveness of interventions such as *S. aureus* decolonisation to reduce the risk of invasive infections in this population.

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