Polyhexamethylene biguanide discs for central line-associated infection in the intensive care unit
A pilot randomised controlled trial

India Pearse¹ ² ³, Nicole Marsh² ³, Emily Larsen² ³, Amanda Ullman² ³, Claire Rickard² ³, Amanda Corley¹ ³
¹Critical Care Research Group, TPCH; ²Nursing & Midwifery Research Centre, RBWH; ³School of Nursing & Midwifery, Griffith University

BACKGROUND
Central venous catheters (CVCs) are prone to infection, which affects morbidity, mortality and healthcare costs. Polyhexamethylene biguanide (PHMB)-impregnated discs may reduce the risk of local and bloodstream infection.

This single-centre, pilot randomised controlled trial assessed protocol feasibility in preparation for a definitive trial comparing PHMB-impregnated discs to standard care for CVC infection prevention.

METHODS
Adult participants anticipated to have a CVC for >72 hours were approached in pre-operative/intensive care settings. Patients with current BSI, concurrent CVCs, PHMB allergies or sensitive skin were excluded.

After consent, 80 patients were randomised to receive standard CVC securement dressings, with/without PHMB discs. CVCs were inserted and maintained as per standard care, and checked daily by research nurses.

RESULTS
Retention, protocol fidelity & missing data criteria were met
Eligibility and recruitment criteria were not met
Staff acceptability criteria was met
Dressing application (intervention 9/10, control 9/10)
Dressing removal (intervention 10/10, control 10/10)
No CLABSI
Primary BSI (n=2)
Secondary BSI (n=1)
No local CVC infections
Skin reactions (itch)
intervention n=3, control n=0
Insertion site pain
intervention n=13, control n=11
Insertion site tenderness
intervention n=16, control n=19

CONCLUSIONS
PHMB discs appear safe to use for CVC infection prevention
The protocol is feasible
Minor protocol alterations may be required to improve eligibility/recruitment in the definitive trial