To determine whether the application of the SDD strategy reduces hospital mortality in mechanically ventilated patients in Intensive Care Units (ICUs).

To determine whether the use of SDD is associated with the development of antimicrobial resistance in participating hospitals.

**Aims:**

- To determine whether the application of the SDD strategy reduces hospital mortality in mechanically ventilated patients in Intensive Care Units (ICUs).
- To determine whether the use of SDD is associated with the development of antimicrobial resistance in participating hospitals.

**Methods:**

- SuDDICU will recruit 12,000 eligible patients in 28 ICUs for two 12-month interventional trial periods in Australia, UK and Canada.
- Participating ICUs will be randomised to either implement SDD or continue standard practice (control) for the first 12 months, followed by a crossover to the other arm for the second 12-month period. The two periods will be separated by a three-month gap. Detailed data will be collected in three-month periods before and following the intervention periods.

**Impact:**

- The results of SuDDICU will have major global impact, regardless of the result, and address a fundamental question in the management of critically ill patients that has perplexed clinicians for over 50 years: does the application of SDD improve outcomes for critically ill patients without an associated increase in antimicrobial resistance?
- If positive, the manufacturing of a tested SDD drug kit may have substantive commercial and health economic implications and opportunities.

**Background:**

- Sepsis, the body’s life-threatening response to infection, is a common cause of death in critically ill patients. A quarter of patients that develop severe sepsis die during their hospitalisation.
- Selective Decontamination of the Digestive Tract (SDD) is an infection-control strategy involving the use of antibiotics that is designed to reduce the risk of infection and improve survival for critically ill patients.
- Although many trials suggest that SDD reduces mortality, its uptake has been constrained globally by concerns that SDD will increase antibiotic resistance.