

Randomized Embedded Multifactorial Adaptive Platform trial for Community-Acquired Pneumonia (REMAP-CAP)

Background

REMAP-CAP is a trial designed by clinicians who cared for patients and conducted research during the 2009 H1N1 pandemic, with planning beginning in 2011.

REMAP-CAP builds on the combined input of the world's leading ICU trial networks and experts in infectious disease, immunology, hematology, critical care, emergency medicine, Bayesian statistics, and clinical trial execution. These existing networks have enrolled tens of thousands of patients into trials, and have extensive experience designing, conducting, and reporting clinical trials that enroll patients who are severely ill.

Objective

Our goal is to generate evidence to *reduce mortality, reduce ICU and hospital use, and reduce morbidity* in severely ill patients with Community-Acquired Pneumonia (CAP), including CAP caused by COVID-19 infection.

Designed for the pandemic

Prior to 2020, REMAP-CAP had been recruiting patients with severe CAP in the inter-pandemic period. Since the beginning of the COVID-19 pandemic, REMAP-CAP has expanded rapidly to include more than 360 sites in 30 countries on five continents.

Designed to generate answers efficiently

REMAP-CAP is a Bayesian adaptive platform trial, designed to answer multiple clinical questions rapidly and efficiently. Participants are randomized to interventions within multiple domains, increasing efficiency and meaning that the interaction between interventions can be evaluated.

Frequent adaptive analyses are performed as data accumulates, meaning that results are available as soon as pre-specified statistical triggers are met. In addition, the results of these analyses are used to adjust randomization proportions, meaning that over time participants are more likely to be randomized to interventions that are most likely to be beneficial for them.

Domains and interventions

REMAP-CAP evaluated a number of clinical questions, including:

- Empiric antibiotic therapy for severe CAP
- Duration of macrolide therapy for severe CAP
- Antiviral therapies for severe influenza and COVID-19
- Immune modulating therapies for severe influenza and COVID-19
- Corticosteroid therapy for severe CAP and COVID-19
- Simvastatin for COVID-19
- Anticoagulation strategy for COVID-19
- Convalescent plasma for COVID-19
- Mechanical ventilation strategy for severe CAP
- Endothelial modulators for severe CAP