

## Economic analysis plan for the cost-effectiveness of an Ambient Intelligent Geriatric Management System (AmbIGeM) to prevent falls in older people in hospitals: a stepped wedge pragmatic trial

A detailed description of the trial is provided in the statistical analysis plan.

A cost-effectiveness analysis will be performed from the perspective of the health care system. Direct costs for the intervention (e.g. BLE device, technology support and training) and total inpatient costs for the control and intervention groups will be compared. A generalised linear regression model with the same covariate adjustments specified in the primary outcome model will be used to estimate the costs in the intervention and control groups. The mean costs and outcomes for each treatment group will then be compared. All three outcomes (falls rate, rate of injurious falls and proportion of participants falling) will be analysed separately with the costs. The incremental cost-effectiveness ratio (ICER) per fall prevented and the 95% confidence interval will be calculated by dividing the difference in total costs by the difference in outcome between the two groups. Bootstrapping (using 5,000 resamples) will be used to represent the joint uncertainty around the differences in costs and outcomes. A cost-effectiveness plane will be generated to graphically represent the joint differences in costs and outcomes between the intervention and control groups. Cost-effectiveness acceptability curves will be generated to indicate the probability that the intervention is cost-effective compared with usual care at different monetary values for improvements in each of the analysed outcomes.