

Statistical Analysis Plan

Official Title:

Effectiveness of a Multimodal Information Technology-enhanced Hand Hygiene Improvement Strategy on Healthcare-associated Infections in Nursing Homes

NCT Number:

NCT06925620

Document Date:

January 27, 2022

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Study Title:

Effectiveness of a Multimodal Information Technology-enhanced Hand Hygiene Improvement Strategy on Healthcare-associated Infections in Nursing Homes

Objectives:

1. To determine whether the multimodal hand hygiene program improves knowledge, compliance, and technique accuracy.
2. To evaluate the reduction in HAI density following the intervention.

Analysis Population: All participants enrolled and completing baseline assessments.

Statistical Methods:

1. **Descriptive Statistics:** Means, standard deviations, frequencies, and percentages for baseline characteristics.
2. **Comparative Analysis:**
 - (1) Generalized Estimating Equations (GEE) to compare compliance, accuracy, and knowledge scores over time between groups.
 - (2) Incidence density of HAI compared using rate ratios.
3. **Significance Level:** Two-tailed p-value < 0.05 will be considered statistically significant.

Handling of Missing Data: Missing data will be addressed using multiple imputation if applicable.

Software: IBM SPSS Statistics Version 26.0.