

INCA_SUN: Inhaler Compliance Assessment of Severe Uncontrolled Asthma Led by Professor Richard Costello

Why did we conduct this research?

The INCA_SUN study sponsored by the Royal College of Surgeons in Ireland (RCSI) and led by Professor Richard Costello, offered patients with severe, uncontrolled asthma an opportunity to take part in a novel, digital, adherence clinical trial, which aimed to improve health and wellbeing. This study was already active in six large teaching hospitals in the Republic of Ireland and the UK. CHITIN funding enabled the INCA_SUN Study to be implemented in four smaller border region hospitals; Altnagelvin Area Hospital and Craigavon Hospital in Northern Ireland as well as Cavan General Hospital and Our Lady of Lourdes Hospital Drogheda in the Republic of Ireland. Where the opportunity for patients to take part in research was limited or non-existent.

What did we do?

- 1) A large randomised trial was conducted in regional border hospitals
- 2) Post- test survey analysis

What answer did we get?

In this randomized clinical trial that included 213 adults, intervention group patients were less likely to be prescribed biologic therapy (11% vs 21% in controls), had a lower ICS dose, significantly better adherence (65% vs 56% in controls), and lower healthcare costs, USD 9,791 for the control group and USD 6,559 for the active group. No safety differences observed. The post-test analysis results showed that, the staff surveyed can be considered experienced with median [inter-quartile range] years in current role of 5.5 [2-10]. Staff members surveyed were from research teams (73.7%), clinical teams (21.1%) and finance department (5.3%).

Of the staff, surveyed 73.7% had worked on grant-funded research projects before with 89.5% stating they were familiar with the requirements of grant-funded projects. All staff (n=19) surveyed stated they had appropriate training/education for this role and 84.2% stated their guidance and training was adequate for the supporting structure. 82.4% worked in an institution with a known process to implement grant-funded research. The main barriers encountered were; recruitment due to time constraints, execution of contracts, attaining ethics and delays due to GDPR changes. The enablers to conducting the study were, adequate training, good training materials, ongoing support and access to the primary trial team and the INCA_SUN web portal was easy to use. Please refer to the [Lancet publication](#) for further details.

What should be done now?

The results from the INCA_SUN study conclude that implementing evidence-based asthma management strategies using objective digital data on adherence, inhaler technique and lung function led to lower medication prescribing which effected in one third of patients and had a significant economic impact.

Results of the post-test analysis survey state, elements required to successfully implement future studies in border regions are; knowledge of the different jurisdictions, early and well-tailored ethics applications, suitable time frame to facilitate patient recruitment, support from and regular access to a primary trial research team and study specific training materials in multiple formats (video and paper versions).