PRODUCT PILOT

Health Innovation Hub Ireland

Hygiene Audits

In 2019, Glenda Hahn and Yvonne O'Loughlin, two nurses with expertise in infection prevention and control founded Irish company Hygiene Audits. From their clinical experience the duo identified that healthcare managers were burdened with time consuming paper-based systems for hygiene workflows and that there was a real need for this process to be automated. In response, Glenda and Yvonne developed Hygiene Audit's technology solution. The software delivers full hygiene oversight and is receiving recognition as a cost-saving system that creates efficiencies and is easy to use with minimal training required. The company is supported by Health Innovation Hub Ireland, as a HIHI annual call 2020 winner and Enterprise Ireland.

https://hygieneaudits.ie

About Health Innovation Hub Ireland

Health Innovation Hub Ireland (HIHI) was established by the Department of Business, Enterprise and Innovation and the Department of Health, supported by Enterprise Ireland (EI) and the Health Service Executive (HSE) to drive collaboration between the health service and enterprise. We offer companies the opportunity for pilot and clinical validation studies and the health service access to innovative products, services and devices that they may not otherwise be exposed to. HIHI is built on the recognition that collaboration with enterprise can benefit patient care, patient pathways and outcomes. We assess all concepts for healthcare innovation from those on the frontline – from clinician to porter. We encourage healthcare professionals to get in touch with HIHI if they have an idea or solution to how something in your job might work better.

The Healthcare Challenge

It can be challenging for those in healthcare management to keep up to date with changing guidelines whilst maintaining hygiene oversight. Hygiene documentation and environmental hygiene auditing are commonly paper based. Paper trails provide a point in time solution with limited oversight and are error prone. Due to high staff turnover, there is often a lack of specialist knowledge to maintain up to date audits and cleaning protocols. Furthermore, a decline in hygiene standards can lead to healthcare associated infection risks and associated costs for the healthcare institution. The Covid-19 pandemic illustrated the vulnerability of healthcare systems world-wide and reinforced the importance of infection prevention and control and effective decontamination of surfaces. In response to the severity of the pandemic and the rapid spread of infection best practice guidelines were reviewed and enhanced worldwide.

The Healthcare Solution

Hygiene Audits is a cloud-based hygiene and facilities software solution which helps clinical sites to track and trace infection risks and measure compliance with HIQA National Standards for IPC and World Health Guidelines. Using RFID (radio-frequency identification technology) smart tags the system allows care staff to view, record and evidence location-based actions right down to room level.

This includes workflows for housekeeping and maintenance which is monitored by a hygiene auditing system. The Hygiene Audits platform gathers, monitors, and displays the data on a management dashboard. With it, managers are better equipped to quickly identify problem areas and assign the corrective action needed to reduce risks of infection transmission.

HIHI Role

Hygiene Audits entered the HIHI 2020 annual call. The annual HIHI call brings finalists together for a national dragon's den style pitch, with the winning products fast tracked into Ireland's health service for study. The HIHI pilot was designed with clinical partner UPMC Kildare Hospital, a private provider which is part of the global UPMC network, to evaluate the use of the Hygiene Audits software system for a two month pilot. The focus for the management team in UPMC was to pilot the Hygiene Audits system to digitise their cleaning, maintenance and hygiene auditing system. The pilot objective was to save staff time and reduce infection risks by automating hygiene processes. Measures to be tracked in the HIHI pilot included:

- To measure and elevate standards to achieve >85% hygiene audit score.
- To digitise cleaning schedules and audit systems to evidence compliance with real time reports.
- To calculate the time saving comparisons of the paper based versus automated digital system.
- To electronically document and update hygiene processes in line with HIQA National Standards.

HIHI worked with both Hygiene Audits and the UPMC hospital management team and facilitated initial scoping meetings to map out the details of the pilot which was incorporated into the HIHI Project Agreement Document (PAD). As part of every HIHI pilot, the HIHI project manager works with both parties draws up a PAD that underpins all HIHI pilots. A legal agreement, it covers areas from insurance, to ethics (if required), commitments and responsibilities of all parties and key tracking measures for the HIHI study outcomes report. HIHI facilitated weekly project meetings throughout the pilot to track progress and outcomes and address any issues or feedback. Upon pilot completion, a HIHI pilot report was compiled assessing outcomes, and was provided to both parties and the National Oversight Group of HIHI, the government team tasked with delivering HIHI. The HIHI pilot report recorded significant value add and impact across:

- Financial – cost savings
- Efficiencies and time saving
- Operational benefit
- Clinical benefits

Outcome Report

The Hygiene Audits system was successfully installed and piloted in UPMC Kildare Hospital. Overall, a number of clear benefits of the system were demonstrated through the HIHI pilot, including clinical and hygiene improvements, productivity and associated cost savings and staff satisfaction.

- **Cost savings of €64,735 annually.** The efficiencies and time saving associated with moving from a paper-based system to an automated digital system was significant, with overall yearly savings for the hospital estimated at €64,735.

- **Efficiencies and timesaving's.** Using the software system, up to 11 hours overall every day was saved by UPMC staff through the automation or digitisation of tasks which would normally have been completed using manual or paper based processes.

- **Operational benefits.** Auditing processes were 66% faster and the use of photographic evidence enhanced the quality. Management oversight was improved with the functionality for real time review of the hygiene status of locations hospital wide. The instant

cleaning and maintenance alerts for all relevant staff significantly improved communication. Digital auditing facilitated real time instant reports, in addition to a complete audit trail for compliance.

- **Clinical benefits** were demonstrated through the improvement in hygiene audit scores over the pilot period. The improvement in the hygiene audit scores were complemented by adenosine triphosphate bioluminescence (ATP) scores. These scores are an objective measure of cleanliness of commonly used items and surfaces and showed a significant improvement after the introduction of the Hygiene Audits system.

Feedback from UPMC management was very positive. Key benefits they identified were:

- Standardising of hygiene practices.
- Data - immediate access to audit results and accurate reporting.
- System is efficient and time saving.
- Provided useful oversight of relevant services which allowed management to restructure or address any service gaps or inefficiencies.