Institute of Mental Health
NHG Health

UTILISING ROBOTIC AUTOMATION (RPA) FOR STAFF COMPETENCY TRACKING

Li Haiyan, Nursing

Mission Statement

To revolutionise staff competency tracking for IMH nursing supervisors, reducing administrative time by 80% within six months, thereby enhancing focus on patient care and staff development. This aligns with organisation and department's strategic aims and culture

Team Members

	Name	Designation	Department
Team Leader	Li Haiyan	Nurse Clinician	Nursing
Co- Team Leader	Lu Qiufen	Nurse Clinician	Nursing
Team Member	Camila Olais Suralta	Nurse Clinician	Nursing
	Cheng Seol Ling	Senior Executive	Nursing
	Iryanty Binte Ismail	Covering Nurse Clinician	Nursing
	Li Juanjuan	Nurse Clinician	Nursing
	Li Ziqiang	Assistant Director of Nursing	Nursing
	Ma Qiang	Nurse Clinician	Nursing
	Panirselvam Tanapal	Nurse Clinician	Nursing
Sponsor	Yuan Peng	Assistant Director of Nursing	Nursing

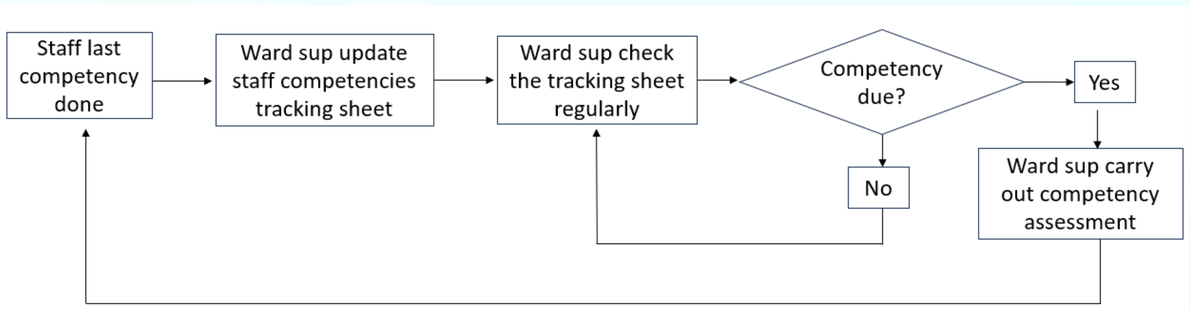
Evidence for a Problem Worth Solving

Manual competency tracking has long been a challenge in healthcare settings, often leading to inefficiencies and potential gaps in staff proficiency. The Institute for Healthcare Improvement (2023) reported that up to 15% of adverse events in hospitals could be attributed to staff working with outdated competencies. In early 2024, concerns about managing staff competencies were raised during a supervisor meeting. These included supervisors manually tracking competencies using various formats, resulting in the absence of a standardised process. Supervisors have traditionally tracked staff competencies manually, including Core+ training and ward-based competencies. On average, a supervisor spent 30 minutes updating and checking staff competencies. Across 62 hospital units, the total annual time spent on weekly competency updates and tracking was 1,612 hours.

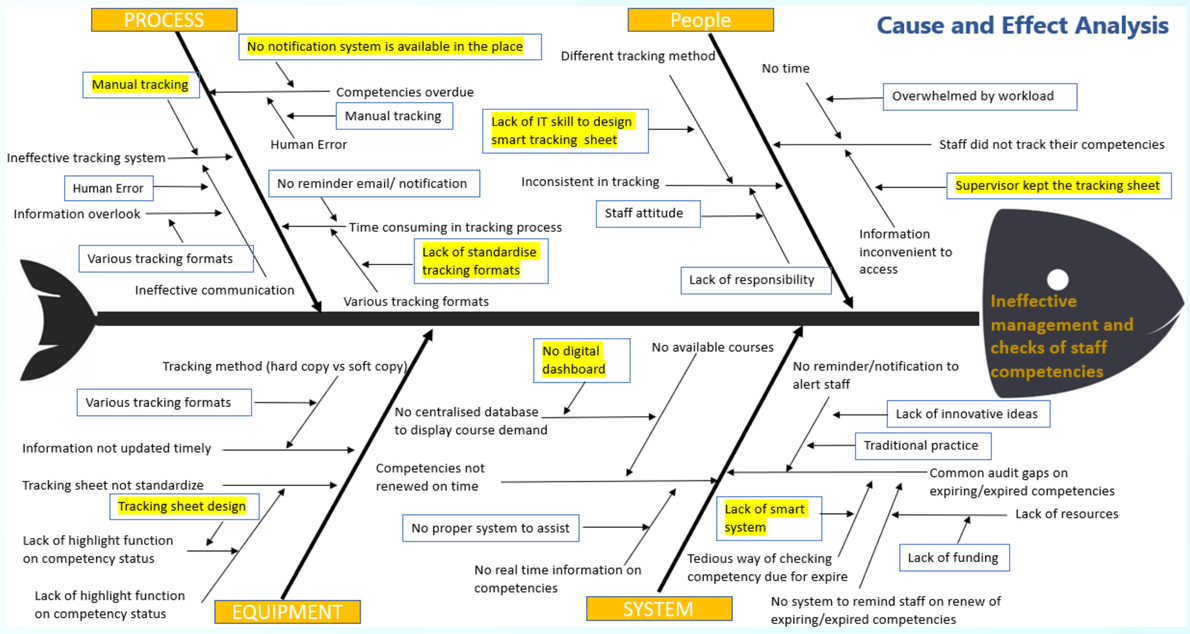
Current Performance of a Process

Ward supervisors currently rely on a manual process to track the validity of ward staff's ward-based competencies and Core+ training. On average, a supervisor spent 30 minutes updating and checking staff competencies. Across 62 hospital units, the total annual time spent on weekly competency updates and tracking was 1,612 hours. The process is not only time-consuming and repetitive but also lacks consistency, making it difficult to ensure accurate and timely tracking across all staff members.

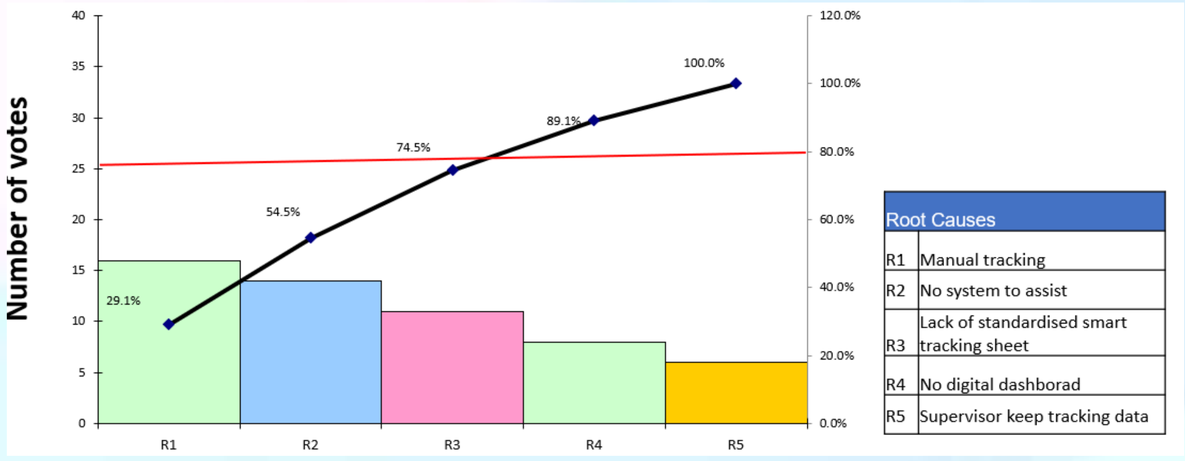
Flow Chart of Process



Cause and Effect Diagram



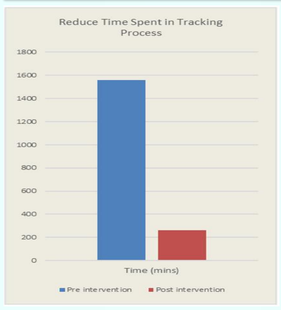
Pareto Chart

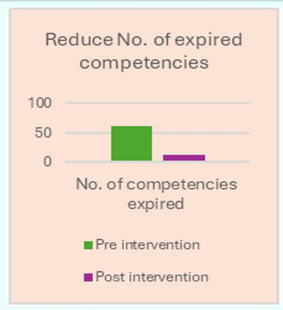


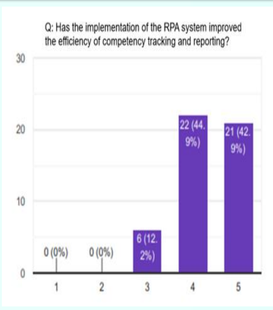
Implementation

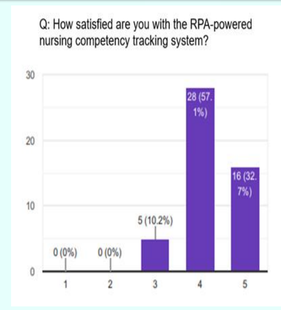
Problem	Intervention	Date of Implementation
Manual tracking	Robotic Process Automation (RPA) technology implementation for automated competency tracking and notifications	22/1/2025
No system to assist	Development and deployment of centralised RPA system with automated reminder functionality	22/1/2025
Lack of a standardised smart tracking sheet	Creation of unified digital tracking template integrated with RPA system	22/1/2025

Results









1. **Time Efficiency Improvements**:
• Annual time saved across hospital: 80,600 minutes (1,343 hours)
• Percentage improvement in processing time: 80%
2. **Reduction in the number** of expired competencies in % in POC wards: 80.3%
3. **Staff satisfaction** survey results
•Over 80% of anonymous respondents agreed that the RPA system improved the efficiency of competency tracking and reporting.
• Almost 90% of respondents are satisfaction with the RPA system.
4. **Environmental sustainability**
The digitizing records and automating processes, decreases reliance on printed documents, lowers energy consumption associated with traditional tracking methods, and enhances overall operational efficiency.

Cost Savings

Automating the competency tracking system across the hospital including 49 wards, 3 special services, 7 outpatient clinics and 3 community nursing teams resulted in a total time saving of 1,343 hours.
Total Cost Savings Per Annum ($): **57230**

Problems Encountered

The initial full-scale implementation created resource strain, highlighting the need for a phased block-by-block weekly rollout approach to better manage resources and support staff. Additionally, a limited proof-of-concept phase led to implementation issues, emphasizing the importance of an extended testing period to identify and resolve potential problems before full deployment.

Strategies to Sustain

1. The assigned RPA champion in the respective areas to act as a liaison conducts monthly checks on competency data entry completeness and gather feedback on the accuracy of the reminder emails triggered.
2. The RPA project team collect the user feedback through the Teams chat group.
3. Ward supervisors conducts monthly verification of automated report accuracy and against Trackers in the Teams
4. The PRA team collects the user feedback through the Teams chat group monthly and meet quarterly to discuss on the improvement and enhancement.