Project Title

Digitalization Of Hand Hygiene Audit Form

Project Lead and Members

Project lead: SEA Bharathi Balakrishnan

Project members: ANC Poh Lishi, SSN Yvonne Sii, SNC Sarathamani Rethenam

Organisation(s) Involved

Ng Teng Fong General Hospital

Healthcare Family Group Involved in this Project

Nursing

Applicable Specialty or Discipline

Infectious Diseases

Project Period

Start date: Jan 2023

Completed date: Apr 2023

Aims

To reduce the time spent on data collection to an average of 50% by July 2023. To improve the efficiency and effectiveness of Hand Hygiene data collation and extraction. To provide accurate and timely Hand Hygiene data to management dashboard and MOH. To improve staff morale

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

We learnt and successfully spread this change across the organisation. Digitalization allowed us to troubleshoot the online form and diligently solve the issue. Additionally, we managed to implement this change in the SOC, enabling all data to be collected on one platform. The flexibility of the digitalization of the hand hygiene audit form allows auditors to easily access the online form thus saving their precious time and allow more time for patient care. Data collection method is now fast and effective for a better data accuracy. This change enabled us to promote green environment and contribute to the reduction of paper usage.

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign

Operational Management, Data Analytics

Keywords

Hand Hygiene, Audit, Form, KPI, Data Collection

Name and Email of Project Contact Person(s)

Name: Bharathi Balakrishnan

Email: Bharathi_Balakrishnan@nuhs.edu.sg

DIGITALIZATION OF HAND HYGIENE AUDIT FORM

MEMBERS: SEA BHARATHI BALAKRISHNAN (LEAD), ANC POH LISHI & SSN YVONNE SII
ADVISOR: SNC SARATHAMANI RETHENAM

☐ **SAFETY**   ☑ **PRODUCTIVITY**
☐ **QUALITY**   ☑ **COST**
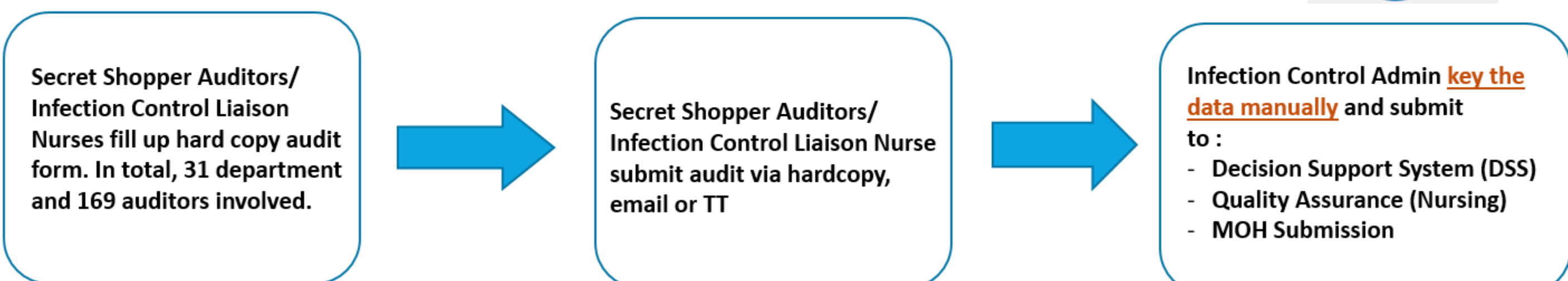☐ **PATIENT EXPERIENCE**

Define Problem, Set Aim

Problem/Opportunity for Improvement

Hand Hygiene audit is conducted through observational inspection of handwashing technique by infection control nurse/ liaison nurses and secret shoppers. It is one of Infection Control core programme and hospital KPI. Data collected will be submitted to MOH half yearly. Data are collected via hardcopy which is time consuming and laborious.
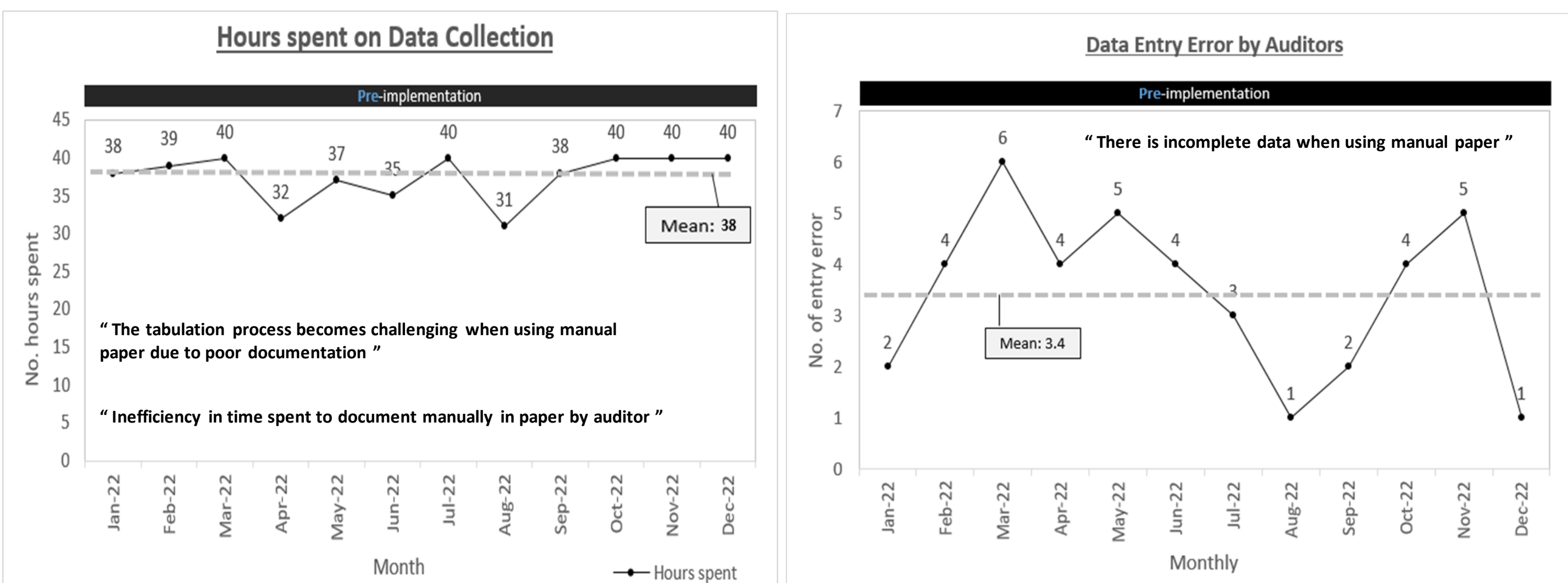
Aim
- To reduce the time spent on data collection to an average of 50% by July 2023.
- To improve the efficiency and effectiveness of Hand Hygiene data collation and extraction.
- To provide accurate and timely Hand Hygiene data to management dashboard and MOH
- To improve staff morale
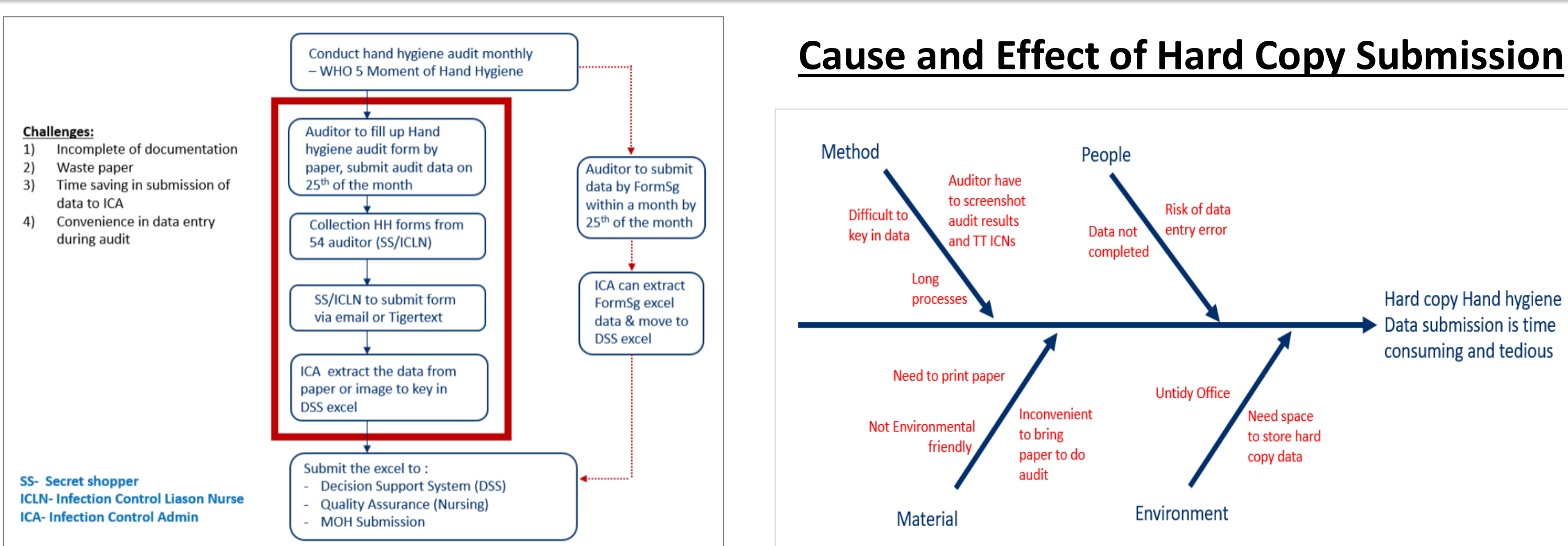
Current Workflow (Only Inpatient wards)

Secret Shopper Auditors/ Infection Control Liaison Nurses fill up hard copy audit form. In total, 31 department and 169 auditors involved. → Secret Shopper Auditors/ Infection Control Liaison Nurse submit audit via hardcopy, email or TT → Infection Control Admin **key the data manually** and submit to:
- Decision Support System (DSS)
- Quality Assurance (Nursing)
- MOH Submission

Establish Measures

Hours spent on Data Collection (Pre-implementation) — Mean: 38

Data Entry Error by Auditors (Pre-implementation) — "There is incomplete data when using manual paper" — Mean: 3.4

"The tabulation process becomes challenging when using manual paper due to poor documentation"

"Inefficiency in time spent to document manually in paper by auditor"

Key measurements
- On average of 38 hours per month spent on collation and data entry by 169 Hand Hygiene auditors within 31 areas.
- On average of 3 incomplete data entry submitted by auditors per month. This leads to time spent on clarifications
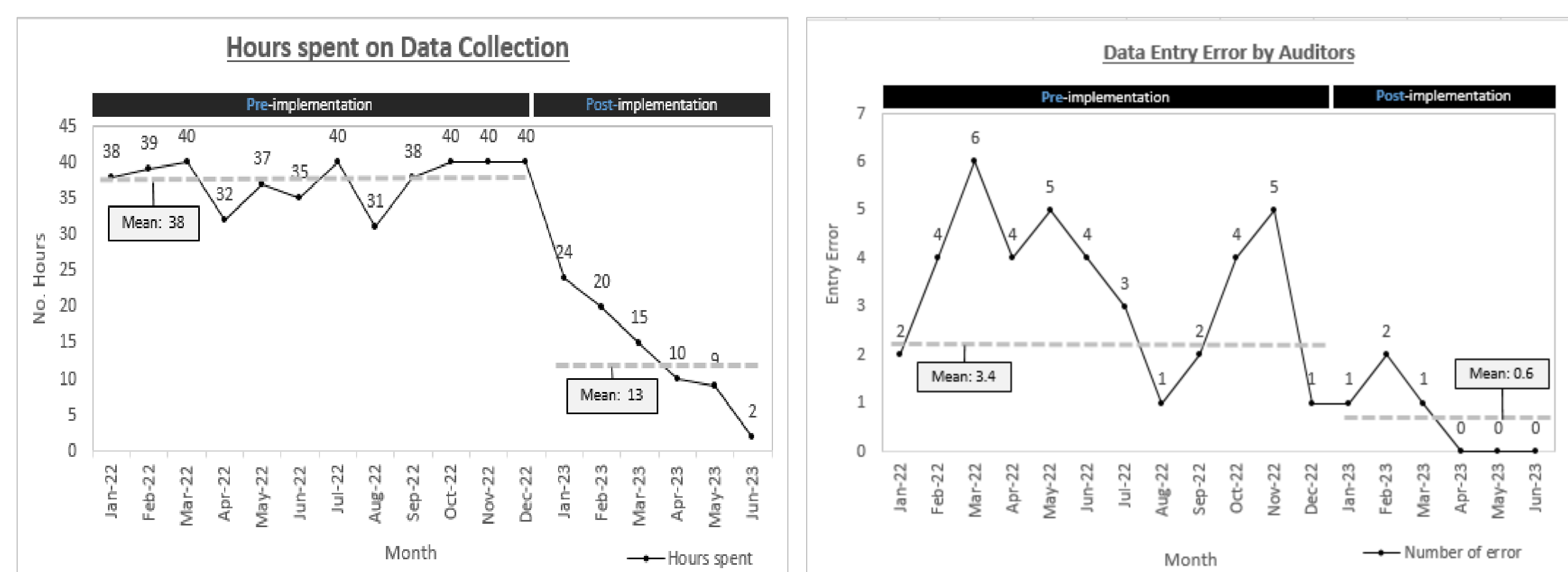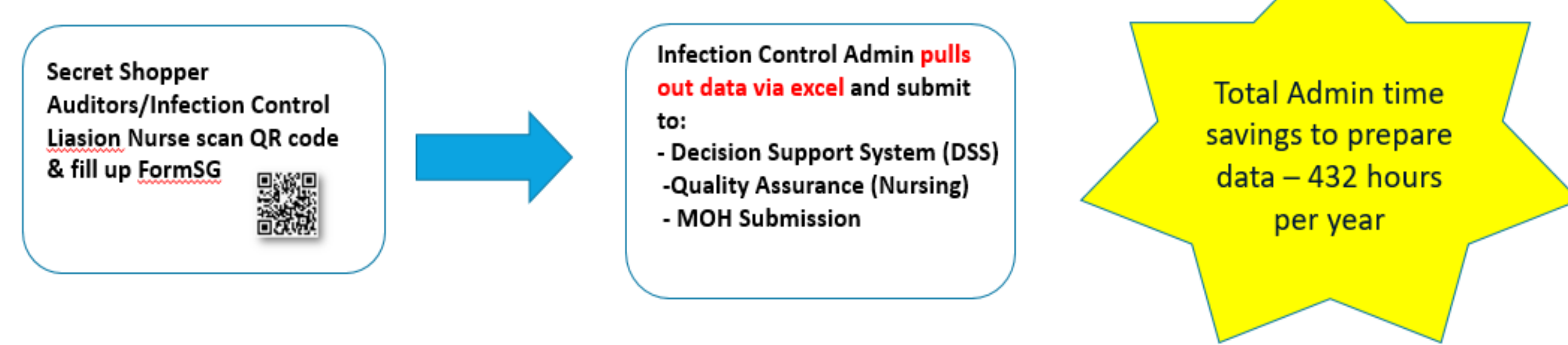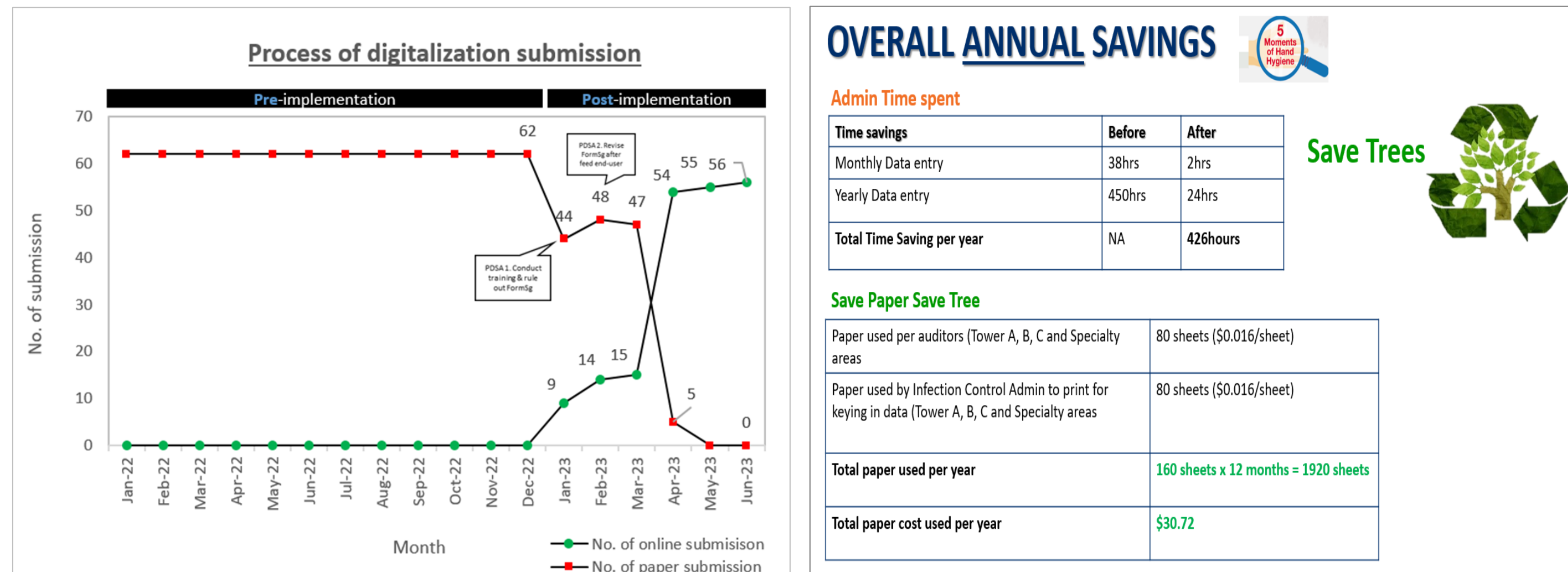
Analyse Problem

Cause and Effect of Hard Copy Submission

Implement Changes

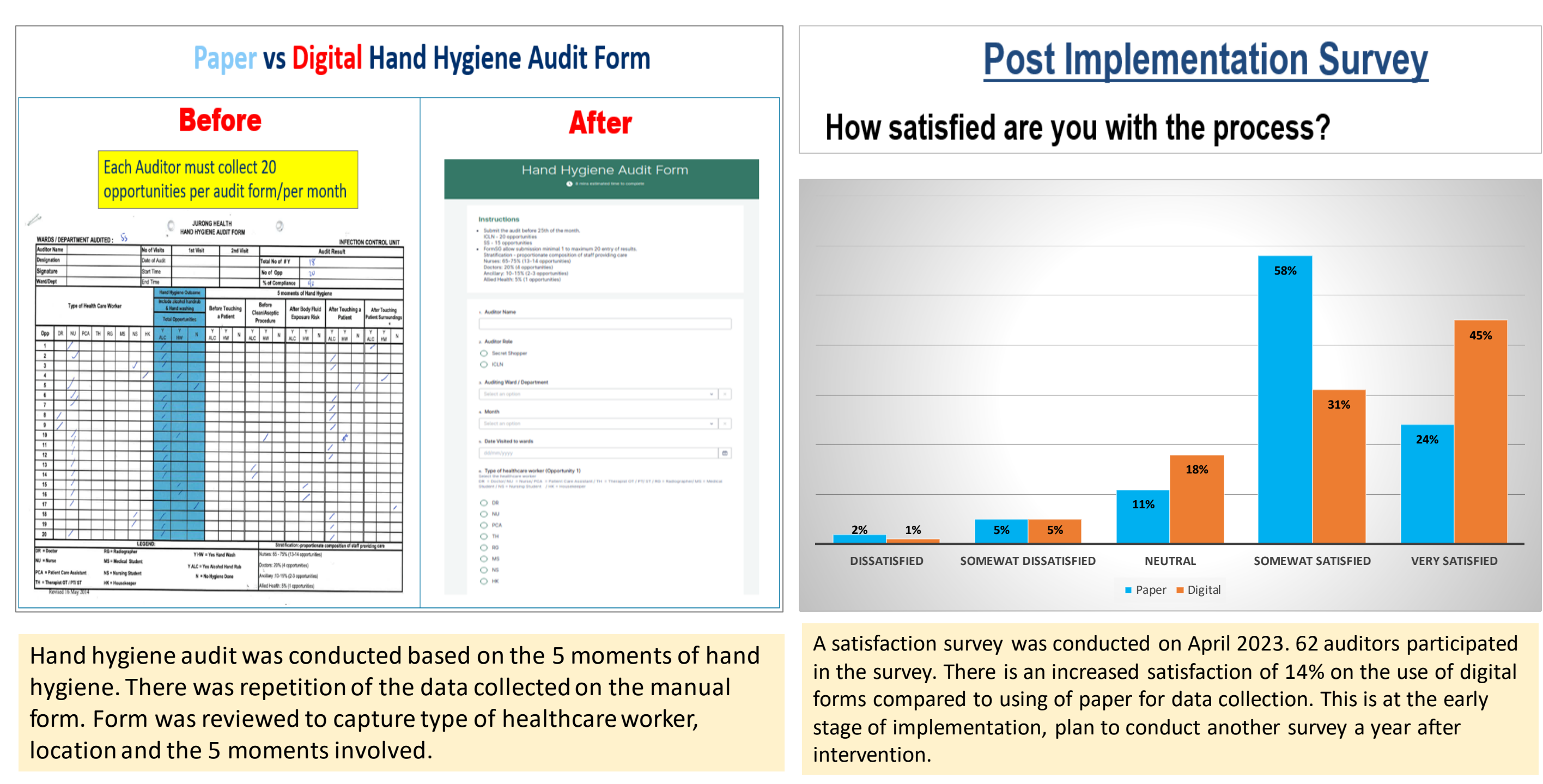| CYCLE	PLAN	DO	STUDY	ACT
1 (Jan 2023)	• IC members created hand hygiene audit form via FormSG with minimum knowledge on FormSG instead of using hard copy Hand hygiene audit forms. • Pilot to a small group auditors	• Communicate changes to secret shopper • Educate secret shoppers • Started trial to JCH secret shoppers Online submission for 5 opportunities in 1 form, auditors have to submit a few times to met 20 opportunities.	Auditors feedback that it is not user friendly and need frequent submission to complete 20 opportunities.	As it is time consuming to key in the data, IC members relooked into revamping the FormSG to suits auditor feedback.
1.1 (Feb 2023)	• Revised to hand hygiene audit FormSG to allow options of 5 to 20 opportunities submissions	• Started trial to JCH secret shoppers with options to submit 20 opportunities in one online form.	No other feedback from auditors	Roll out to ICLNs
1.2 (Apr 2023)	• Go live to JHC campus	• Communicate changes and educate ICLNs • Post implementation survey conducted • Roll out to SOC	• Staff satisfied with the new implementation	• Adopt the changes in cycle • Roll out to SOC

Results

New Workflow (Inpatient Wards)

Secret Shopper Auditors/Infection Control Liaison Nurse scan QR code & fill up **FormSG** → Infection Control Admin **pulls out data via excel** and submit to:
- Decision Support System (DSS)
- Quality Assurance (Nursing)
- MOH Submission

Total Admin time savings to prepare data – 432 hours per year

Hours spent on Data Collection — Pre-implementation / Post-implementation — Mean: 38 / Mean: 13

A minimum of 2 hours spent per month for digital data entry and extraction.

Data Entry Error by Auditors — Pre-implementation / Post-implementation — Mean: 3.4 / Mean: 0.6

The data received had incomplete documentation. Risk of data entry errors submission by auditors were reduced significantly when submitted electronically.

Process of digitalization submission — Pre-implementation / Post-implementation

This graph shows the number of submission process of digitalization from paper submission to online FormSG submission.

OVERALL ANNUAL SAVINGS

Admin Time spent

Time savings	Before	After
Monthly Data entry	38hrs	2hrs
Yearly Data entry	450hrs	24hrs
Total Time Saving per year	NA	426hours

Save Paper Save Tree

Paper used per auditors (Tower A, B, C and Specialty areas	80 sheets ($0.016/sheet)
Paper used by Infection Control Admin to print for keying in data (Tower A, B, C and Specialty areas	80 sheets ($0.016/sheet)
Total paper used per year	160 sheets x 12 months = 1920 sheets
Total paper cost used per year	$30.72

Over all, precious time utilize for data collation and entry were reduced tremendously. Thus, contributed to the reduction of paper usage.

Paper vs Digital Hand Hygiene Audit Form — Before / After — Each Auditor must collect 20 opportunities per audit form/month

Hand hygiene audit was conducted based on the 5 moments of hand hygiene. There was repetition of the data collected on the manual form. Form was reviewed to capture type of healthcare worker, location and the 5 moments involved.

Post Implementation Survey — How satisfied are you with the process?

A satisfaction survey was conducted on April 2023. 62 auditors participated in the survey. There is an increased satisfaction of 14% on the use of digital forms compared to using of paper for data collection. This is at the early stage of implementation, plan to conduct another survey a year after intervention.

Spread Changes, Learning Points

At the initial stage of planning, we were required to have a change of mindset and gain buy-in from various auditors. Digitalization was not embraced by all, including some of our team members.

Fortunately, we learned and successfully spread this change across the organization. Digitalization allowed us to troubleshoot the online form and diligently solve the issue. Additionally, we managed to implement this change in the SOC, enabling all data to be collected on one platform.

The flexibility of the digitalization of the hand hygiene audit form allow auditors to easily access the online form thus saving their precious time and allow more time for patient care. Data collection method is now fast and effective for a better data accuracy.

This change enabled us to promote green environment and contribute to the reduction of paper usage.

Ng Teng Fong General Hospital

Jurong Community Hospital