ADMC Quality Improvement Project

Project Charter Presentation

Title: Digitizing Hand Hygiene Audit in Ara Damansara Medical Centre

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Department: Infection Control, Nursing Admin
Date : 16th November 2023

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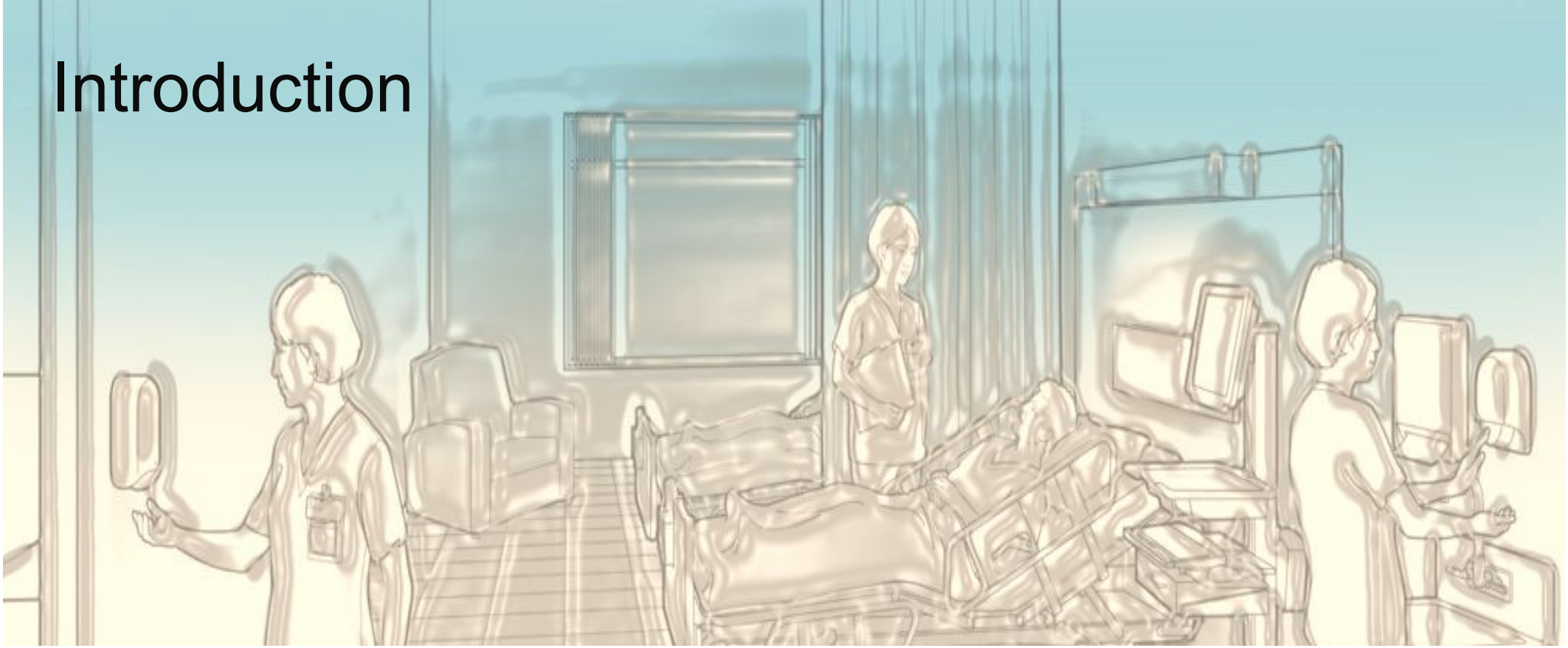
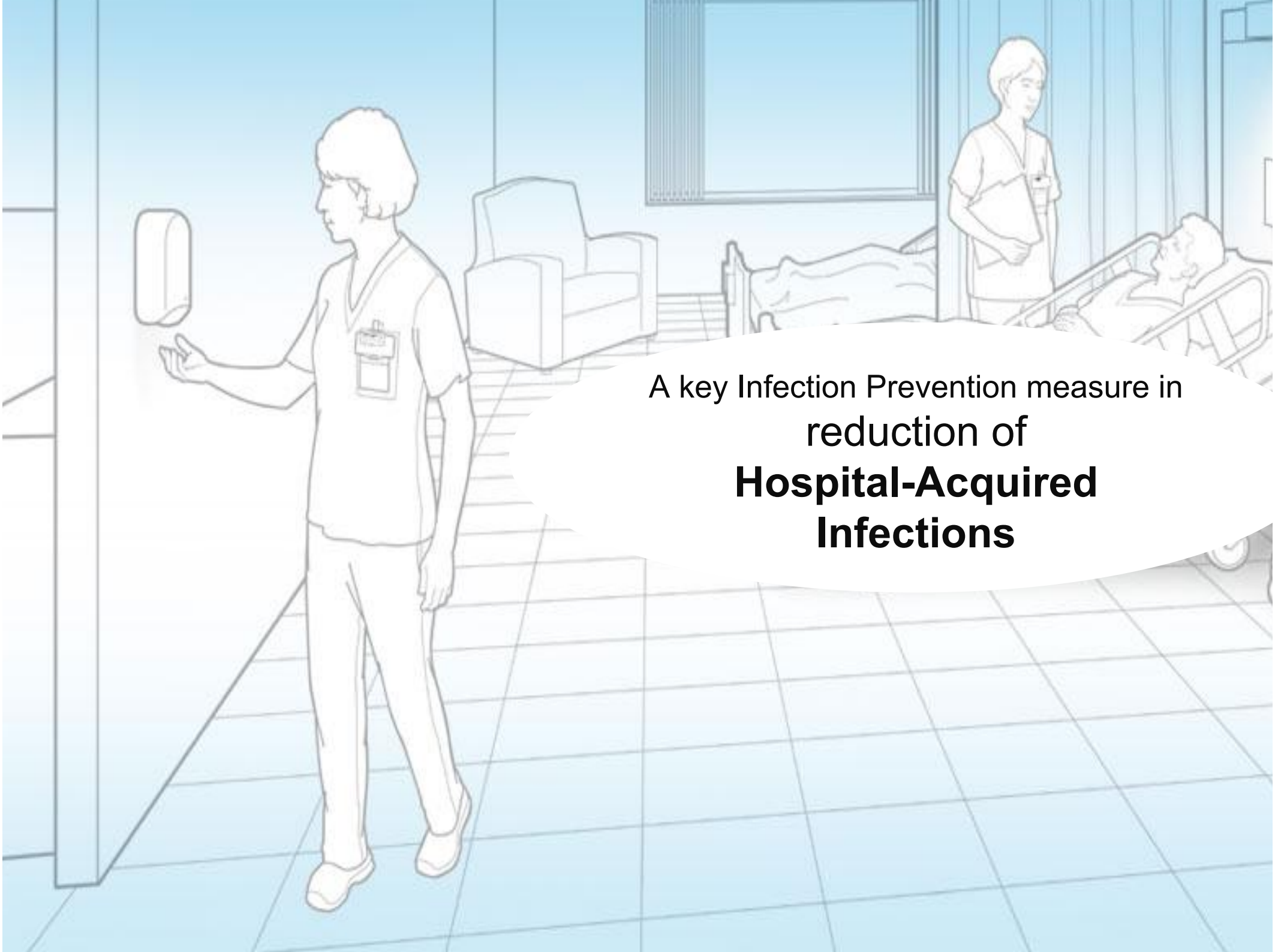
Introduction



Hand Hygiene performance is the only one node in a **causal tree leading to the two major infectious outcomes**

<u>Healthcare associated infection</u>
(HCAI/HAI)

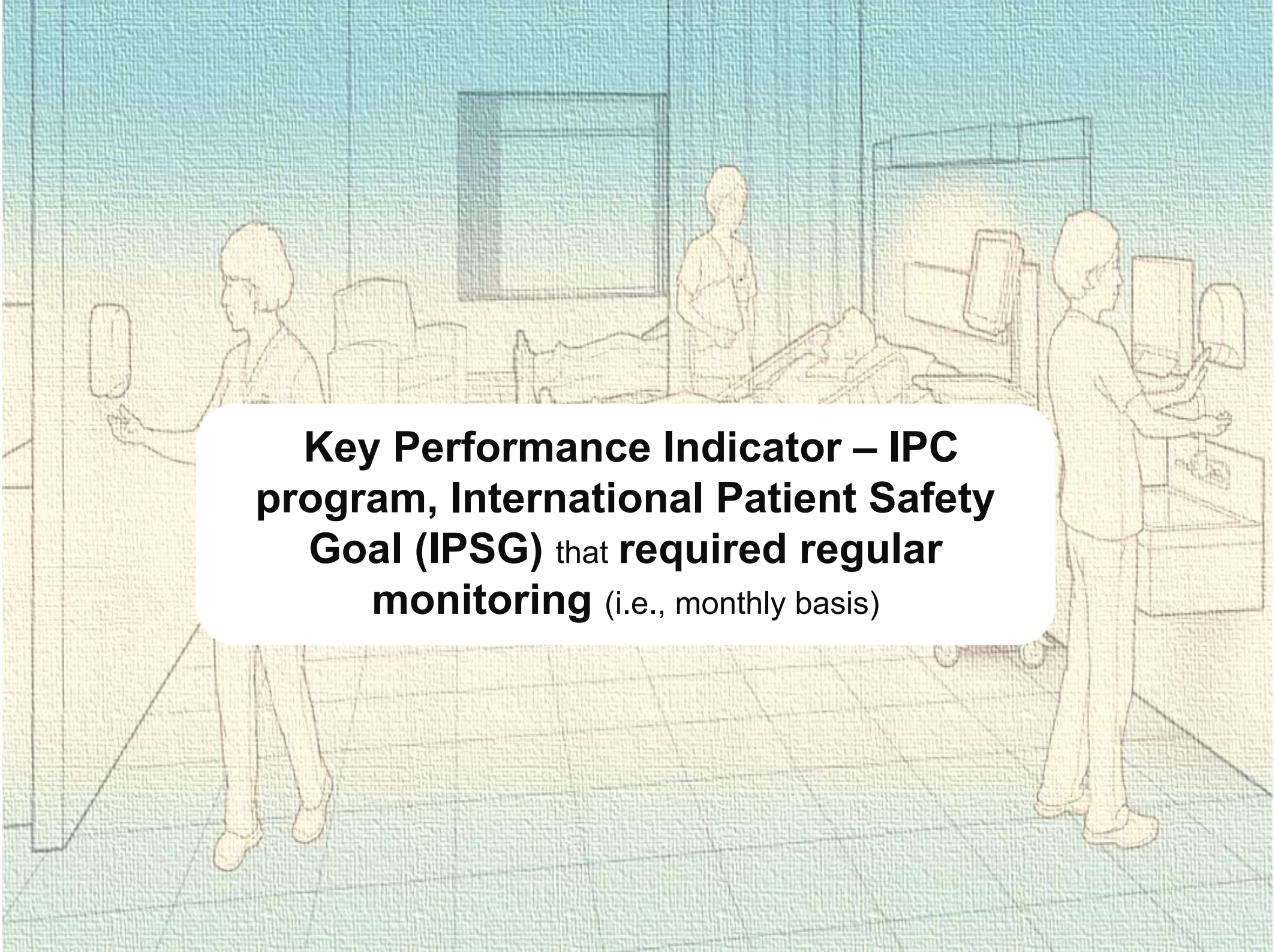
Health Care-associated
<u>Colonization</u> with
Multi-Resistant
Microorganisms



A key Infection Prevention measure in

reduction of

Hospital-Acquired Infections



Key Performance Indicator – IPC program, International Patient Safety Goal (IPSG) that **required regular monitoring** (i.e., monthly basis)

Adopted the WHO's

Five Moments of Hand Hygiene

Capturing meaningful Hand Hygiene compliance audits can be **challenging**

Hand Hygiene audit is primarily conducted using **paper and pen**

Contents

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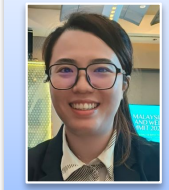
Team structure



Project Leader

Sponsor

Member

Member

Member

Member

Selection of project

1. Hand Hygiene compliance – **International Patient Safety Goal (IPSG) performance indicators**

2. **Time consuming (Traditional method by using pen and paper)**– This makes the process of tabulating and analysis of results a laborious task and is also prone to higher risk of errors if is using the traditional methods.

3. **Data accuracy** – **Calculation** and **Sample size** was not well defined, and the **Hawthorne Effect** occurs when the staff using pen-and-paper methods during the hand hygiene observation

Hawthorne effect: When a person is **being watched/observed by someone**, they will **act differently**

Problem Statement

It takes **about 42 manhours** for data collection and collation, analysis and reporting for the number of sample size **(180 – 330/month)** leading to delay in implementing corrective actions.

With the current number of hours spent – sample size is smaller.

Timeline

	Project Phase	April 2023	May 2023	June 2023	July 2023	Aug 2023	September 2023
1	Project Charter						
2	Define						
3	Measure						
4	Analyze						
5	Improve						
6	Control						
7	Sustainability						
8	Countify Benefits and Savings						
9	Project Closure						

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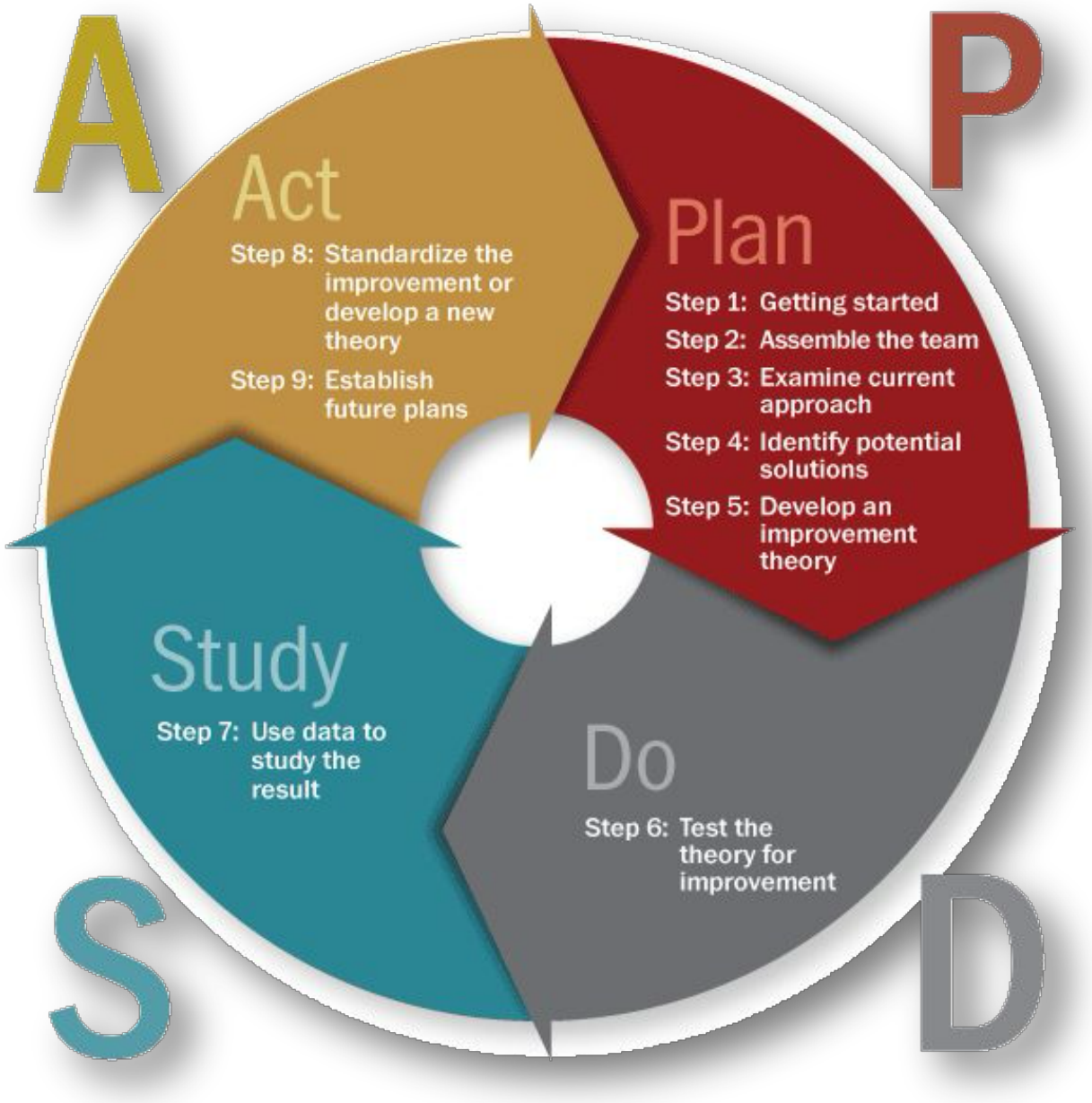
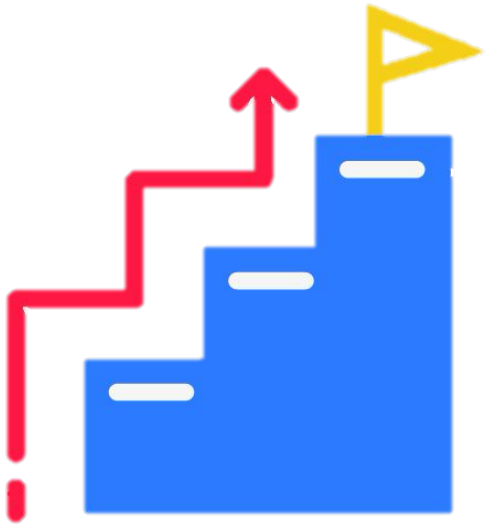
Methodology



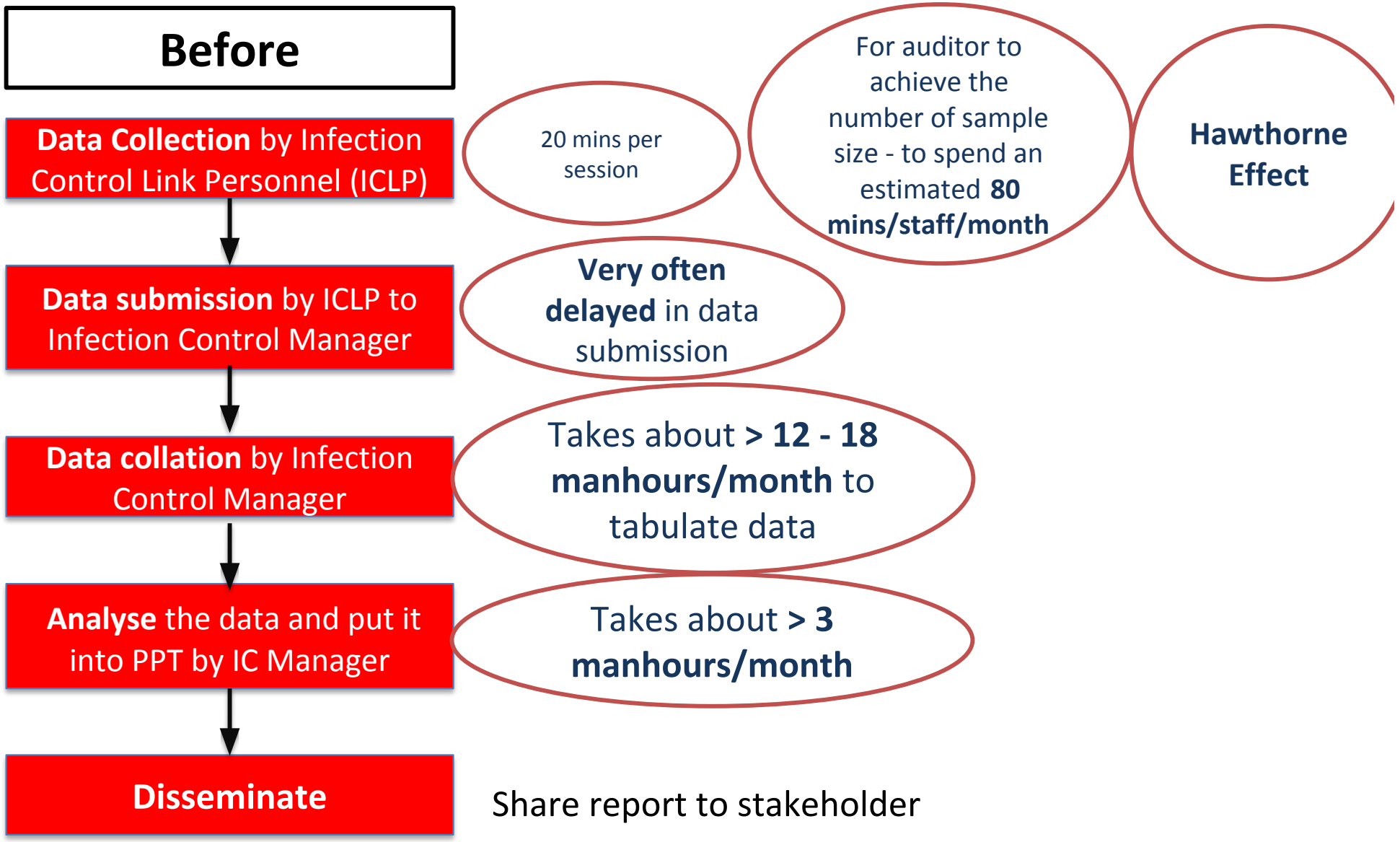
Goals and Objectives

To enhance the efficiency and accuracy of hand hygiene data collection, collation and reporting.

We aim to **reduce** the Turnaround Time of Hand Hygiene Audit results from **31.5 manhours** to **real-time data** in **one month.**



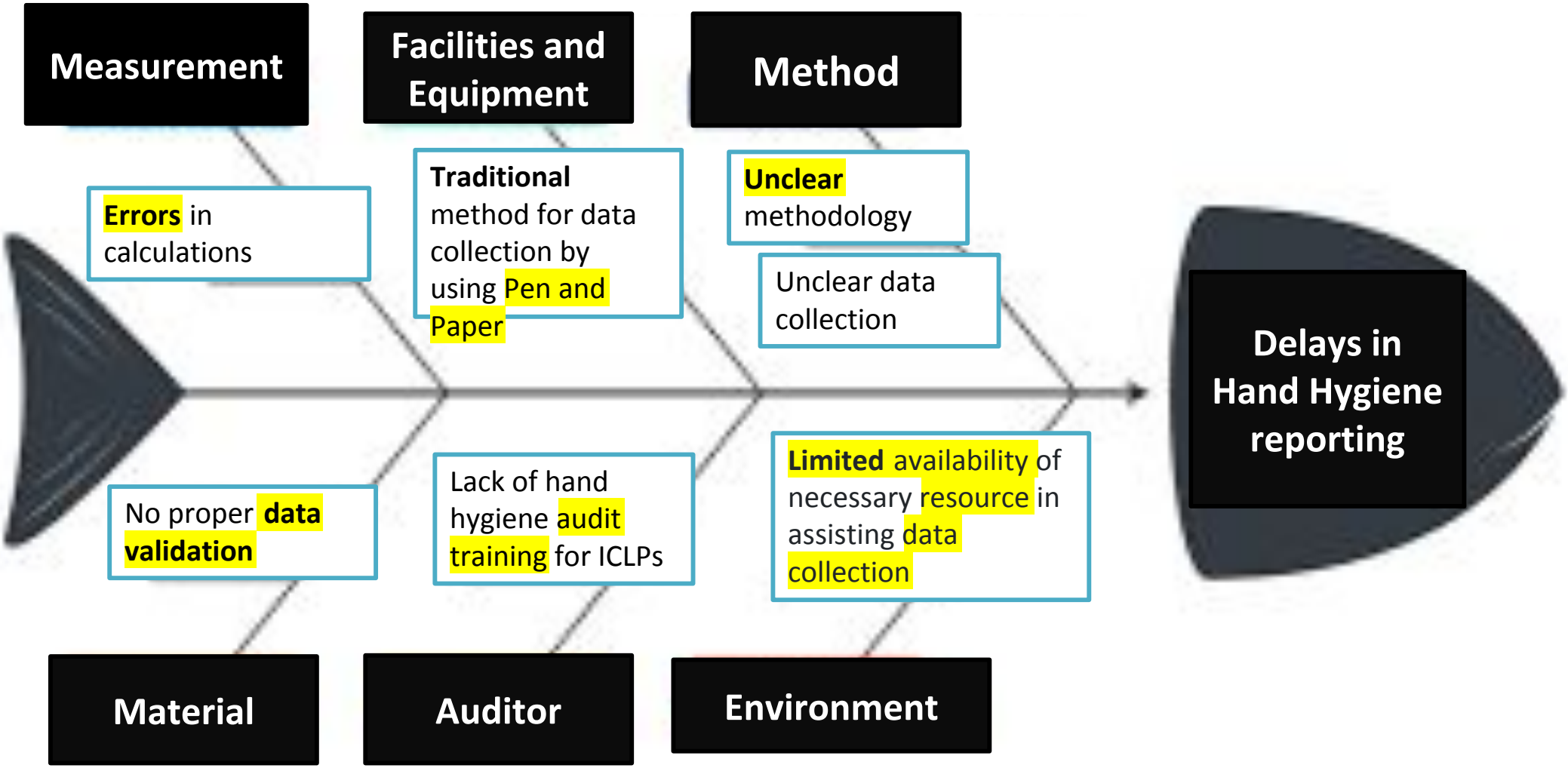
Process flow – Hand Hygiene Audit (Before)



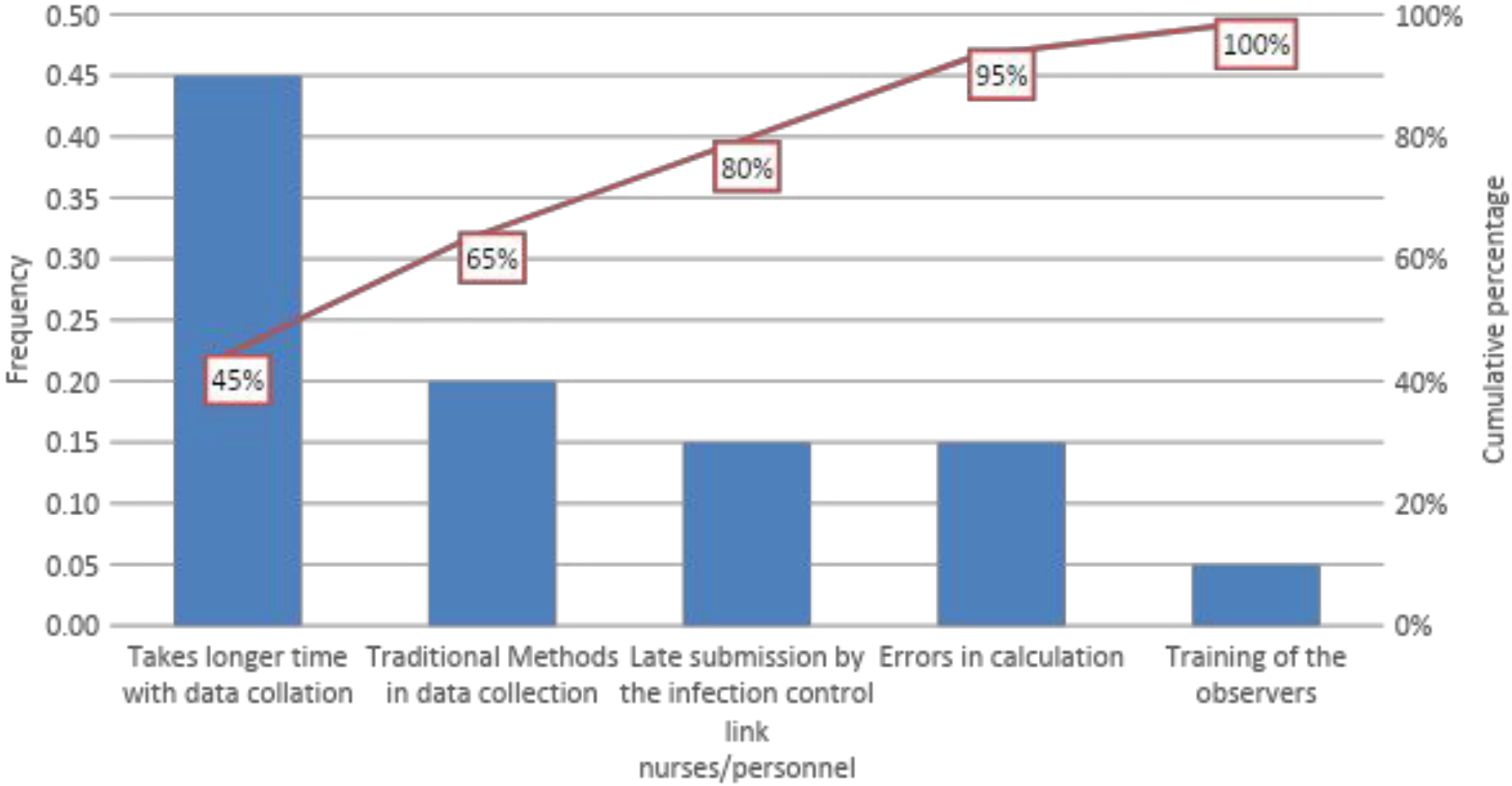
Quantitative analysis of the manhours spent

Items	Before implementation	
Manhours spent (collection) & in dollar	21 hours/month 80 mins per staff x 16 staff	RM 525/month An average RM 25.00 / hour x 21 hours spent
Manhours spent (collation)	21 hours/month 1 staff per month for sample size of 180 – 330/month	RM 630.00/month Staff rate RM 30.00/hour x 21 hours
Total manhours spent	42 hours/month	RM 1,155.00/month
Paper usage	An average of 40 pieces/month 0.5 cent per piece = **RM 20.00/Month**	

Cause-and-effect diagrams (Ishikawa diagram)



Pareto Chart for Contributing Factors To Delays of Hand Hygiene Report



This Pareto chart shows that data collation takes the longest time which leads to delay in hand hygiene reports

Quality Indicator (QI) for Improvement

Note: *The Quality Indicator can be an existing indicator that is mandatorily required by MSQH, JCI, MOH, IPSG, MPSG, RSD Group or Department KPI or an indicator for the purpose of the project either a leading (process) or lagging (result) indicator).*

No	Parameters	Indicators
1.	Quality Indicator	Turnaround time of Hand Hygiene Audit Results
2.	Method of Obtaining the Q. I.	Real-time Hand Hygiene Audit App
3.	Source of **other data**	Observations
4.	Staff collecting/computing the QI and other Data	Link Nurses/Personnel
5.	Scope	No exclusions

Brainstorming with the team

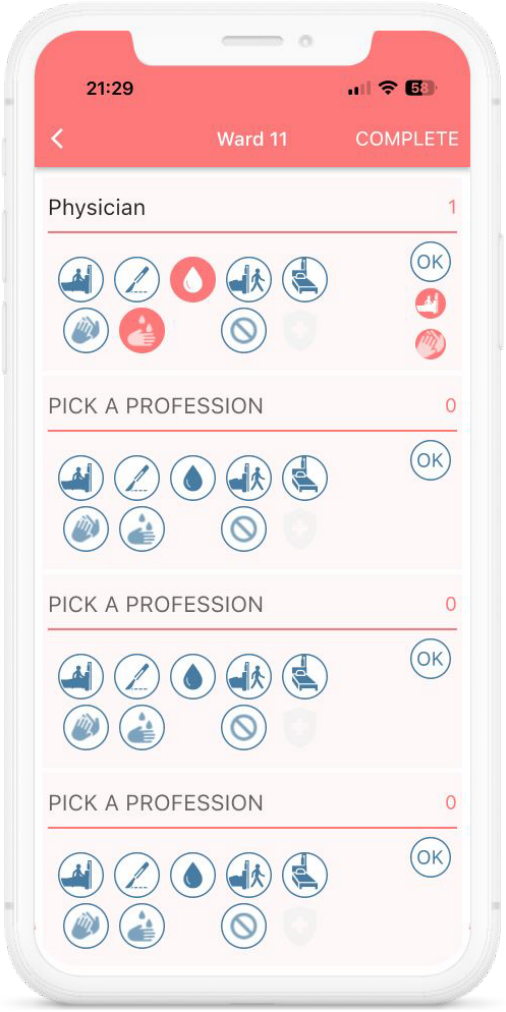
Plan: We explored various ways of **streamlining the process** and eventually came up with the **idea of digitizing the audit using a digital system.**

Solution: A few mobile audit application available in the market and **we agreed for a trial.**

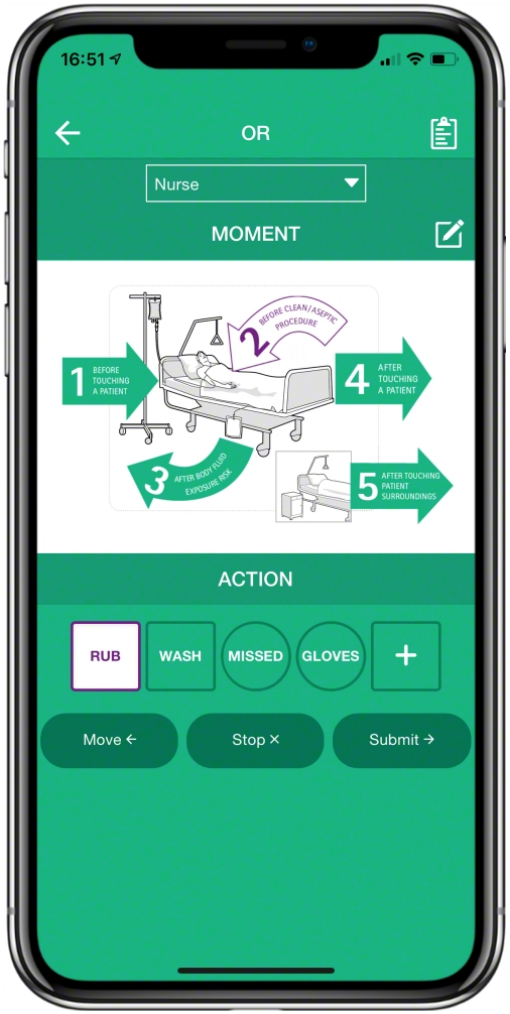
Action Plan

Trial on few mobile app for Hand Hygiene audit

Digital system 1



Digital system 2



Digital system 3

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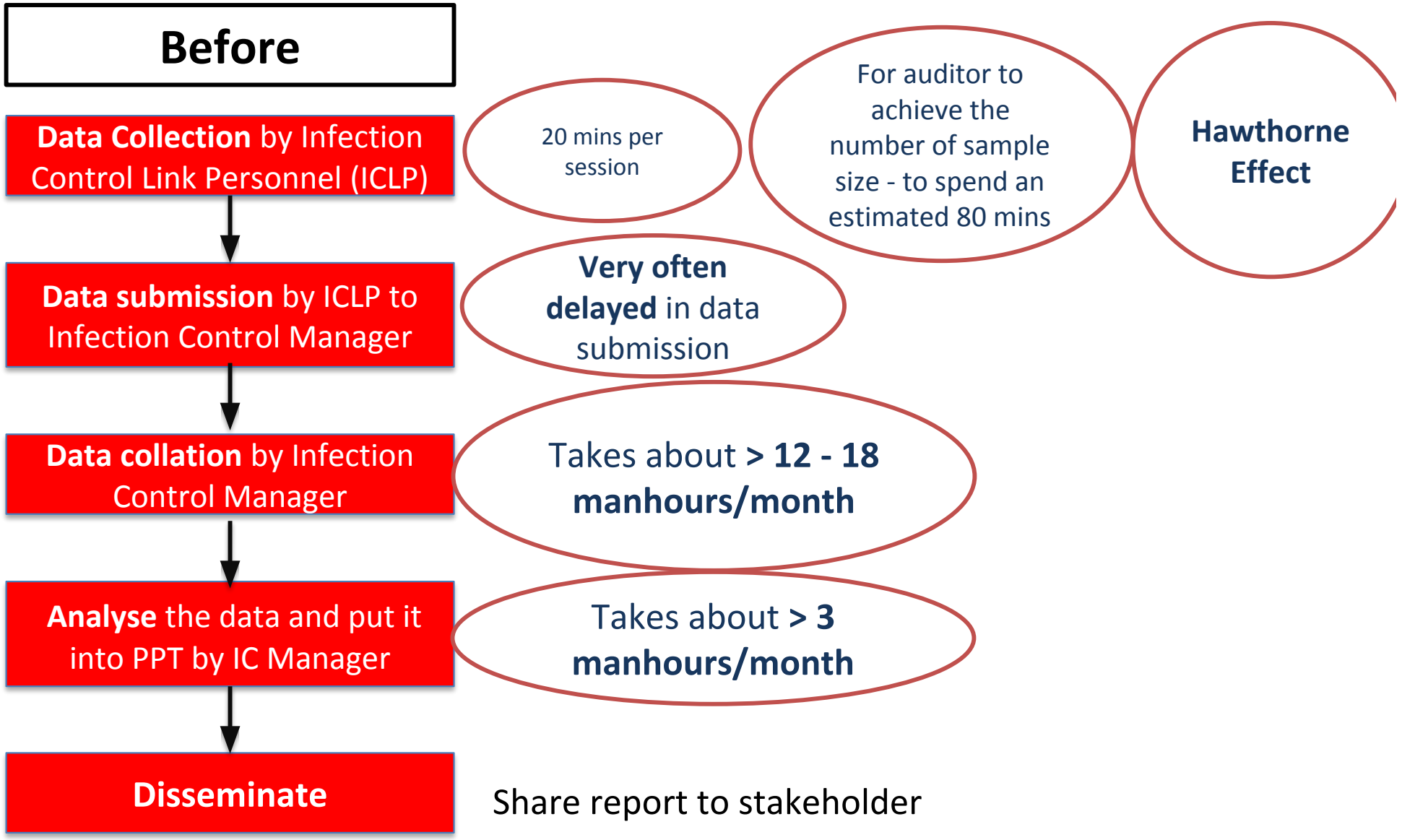
Process flow – Hand Hygiene Audit (Before)



Process flow – Hand Hygiene Audit

Before

- **Data Collection** by Infection Control Link Personnel (ICLP)
- **Data submission** by ICLP to Infection Control Manager
- **Data collation** by Infection Control Manager
- **Analyse** the data and put it into PPT by IC Manager
- **Disseminate**

After

- **Data collection by ICLP**
- **Click complete and sync collected data by ICLP**
- **Analyse** the data and put it into PPT by IC Manager
- **Disseminate**

No need for data collation

No more delay in data submission

Benefits (Summary)

Tangible

1. Provide a detail report (real time)
2. Zero Paper Wastage
3. Reduce Hawthorne Effect
4. Save time = $$

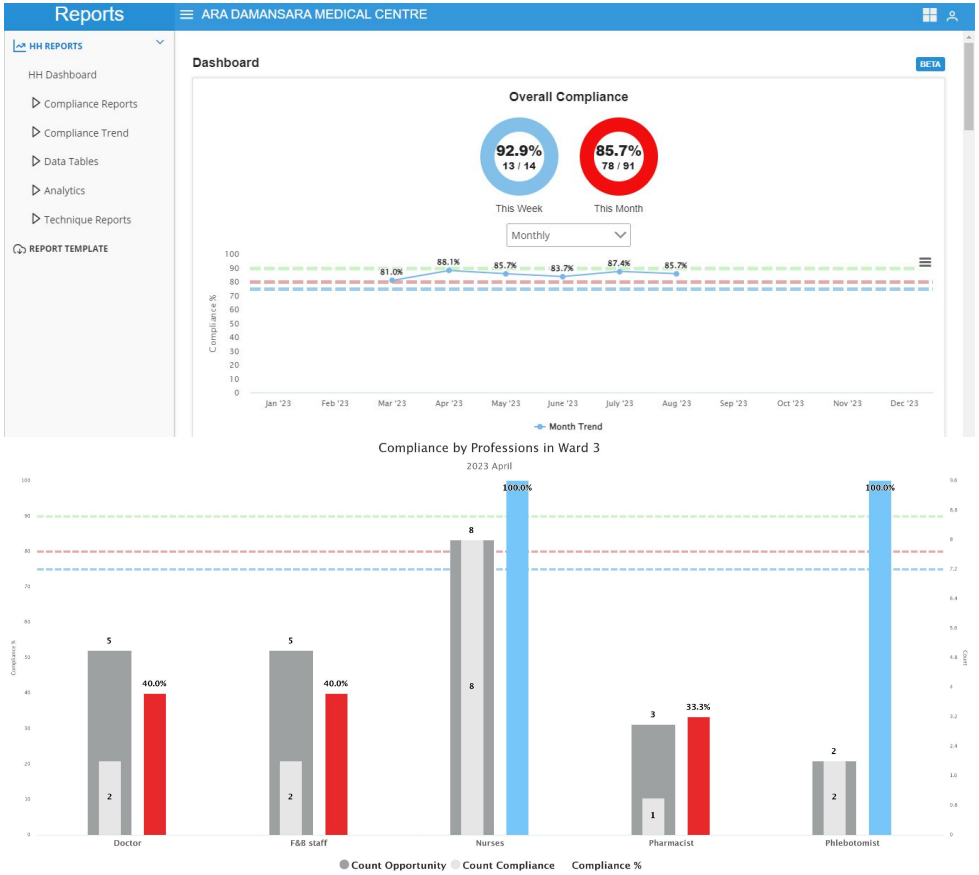
Intangible

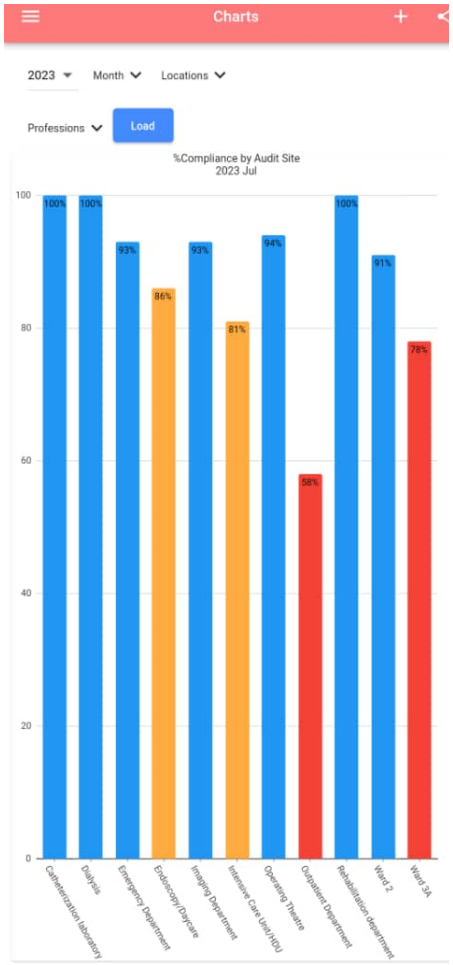
1. Be able to access at anytime/anywhere
2. Improved data quality
3. Automatic notification to complete hand hygiene audit
4. Able to achieve the required minimum samples

Tangible Benefit:

1. **Provide a detail report (real time)**

Data generation: Real time report





This digital system provides the details of compliance rate for each category based on the department/units as well as by discipline and the 5 moments of hand hygiene.

Tangible benefit:

2. **Zero Wastage of paper**

Total paper usage over 3 months (for the sample size of 180 - 330/month)

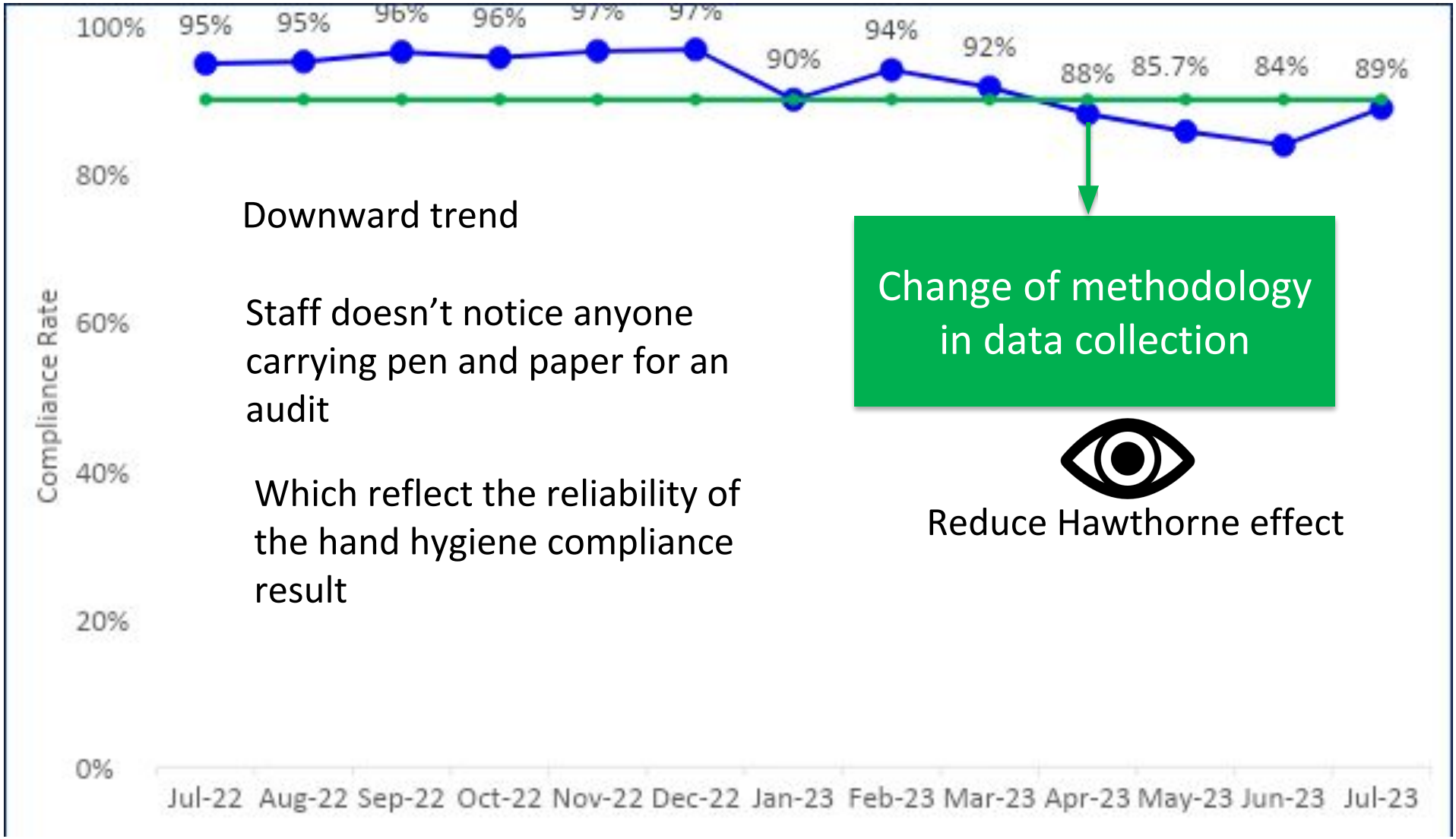
Month	Paper Usage
Month 1	32
Month 2	44
Month 3	40
Total paper use	**116**

Zero Wastage

After we have implemented using digital system:

Tangible Benefit:

3. **Reduce Hawthorne Effect**



Downward trend

Staff doesn't notice anyone carrying pen and paper for an audit

Which reflect the reliability of the hand hygiene compliance result

Change of methodology in data collection

Reduce Hawthorne effect

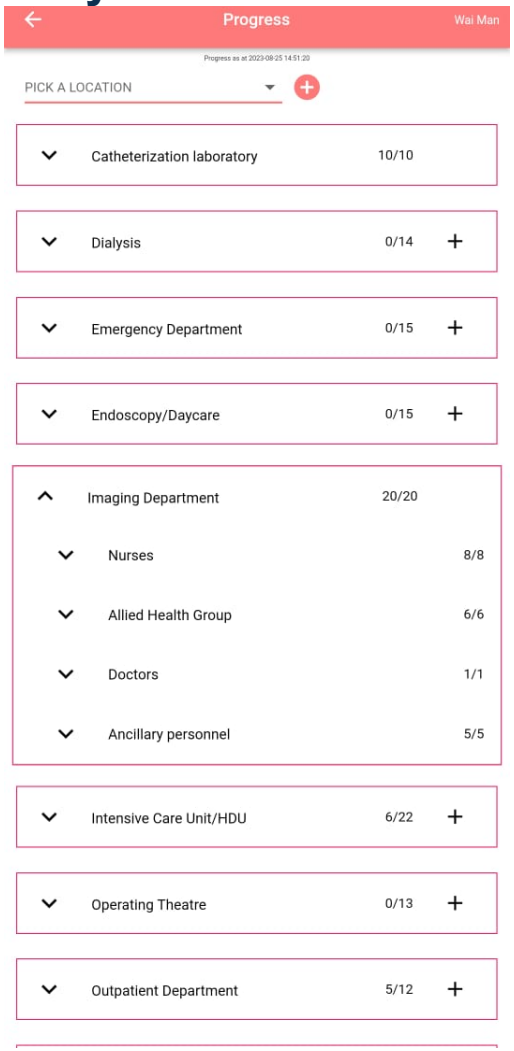
Tangible Benefit:

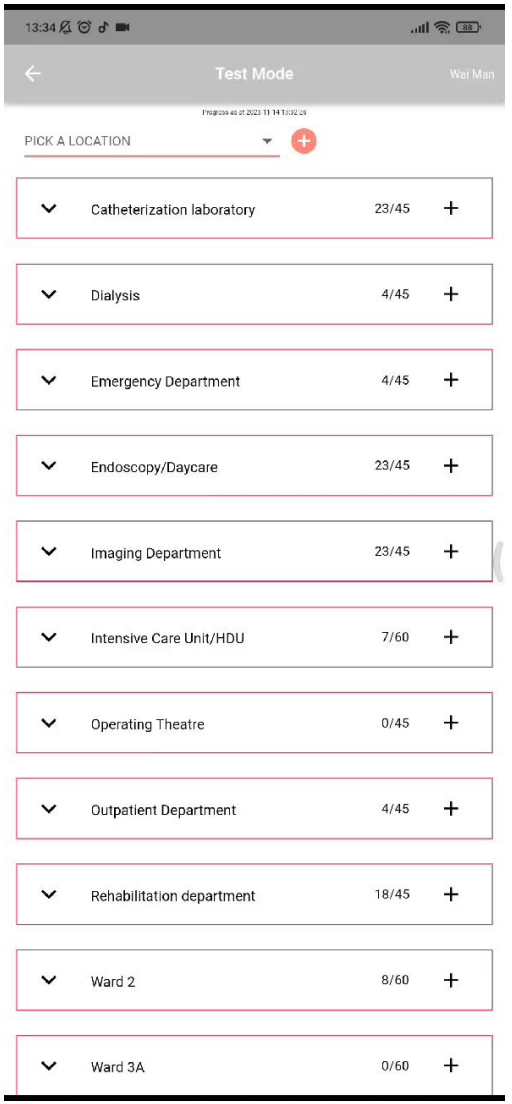
4. **Save time = $$**

Items	Before implementation		After implementation	
Manhours spent (collection) & in dollar	21 hours/month 80 mins per staff x 16 staff	RM 525/month An average RM 25.00 / hour x 21 hours spent	10.5hours/month 40mins per staff x 16 staff	RM 262.50/month An average RM 25.00 / hour x 10.5 hours spent
Manhours spent (collation)	21 hours/month 1 staff per month for sample size of 180 – 330/month	RM 630.00/month Staff rate RM 30.00/hour x 21 hours	0 hour	RM 0
Total manhours spent	42 hours/month	RM 1,155.00/month	10.5 hours/month	RM 262.5.00/month
Digital system (cost)	NA		RM380.00/month	
Paper usage	An average of 40 pieces/month 0.5 cent per piece = RM 20.00/Month		0 paper usage	
Total savings	**31.5 manhours/month** 42 manhours – 10.5 manhours (for data collection) = 31.5 manhours/month **RM 532.50/month = RM 6,390/year**			

Intangible benefit:

1. Be able to access at anytime/anywhere





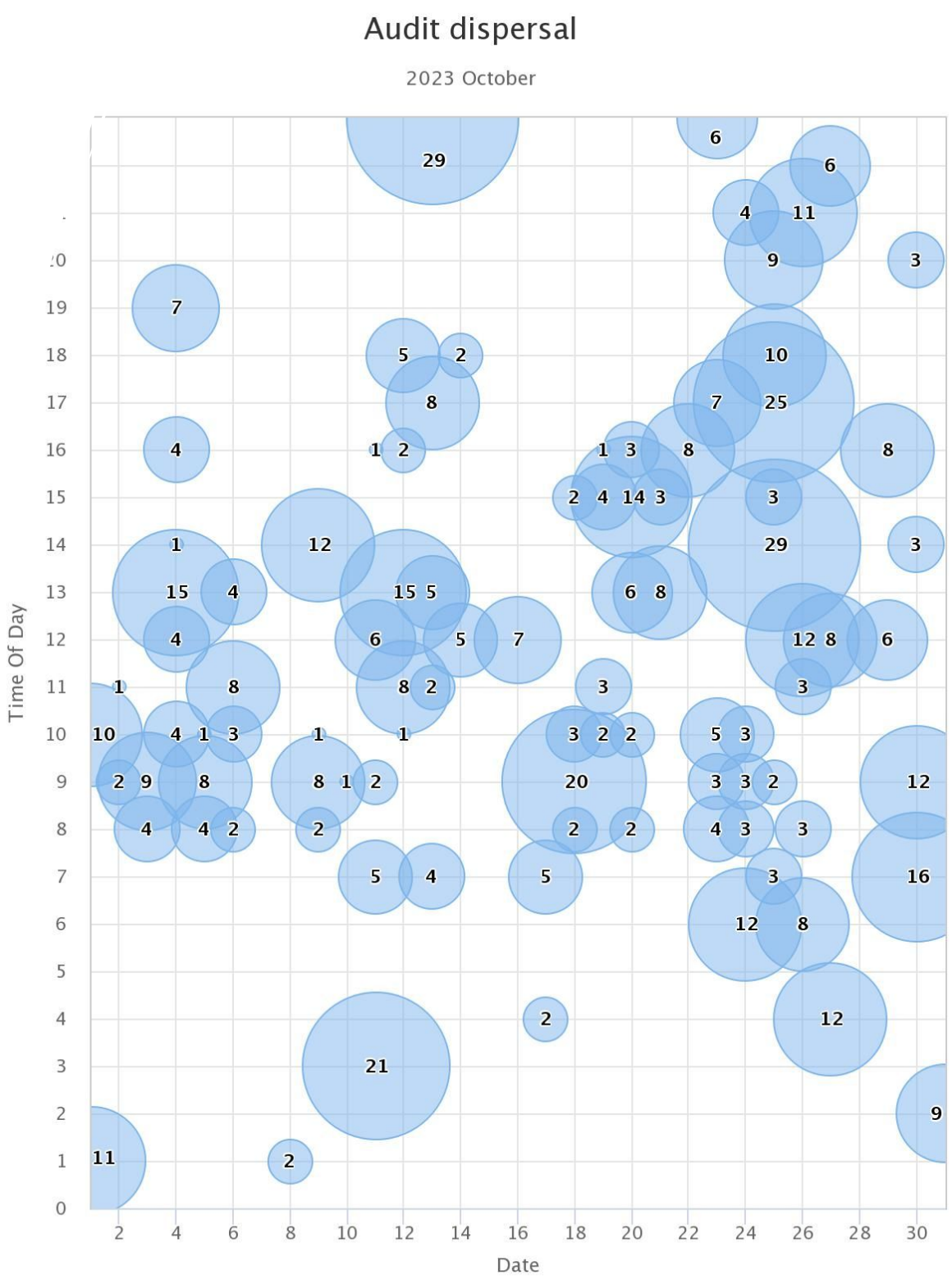
Access data from smartphone

- ✔ Audit – submitted timely
- ✔ Immediate feedback and monitoring by the administrator
- ✔ Prompt intervention based on the audit results

Intangible benefit :

2. Improved data quality

This chart shows the time with the highest number of audits conducted on a daily during working hours.

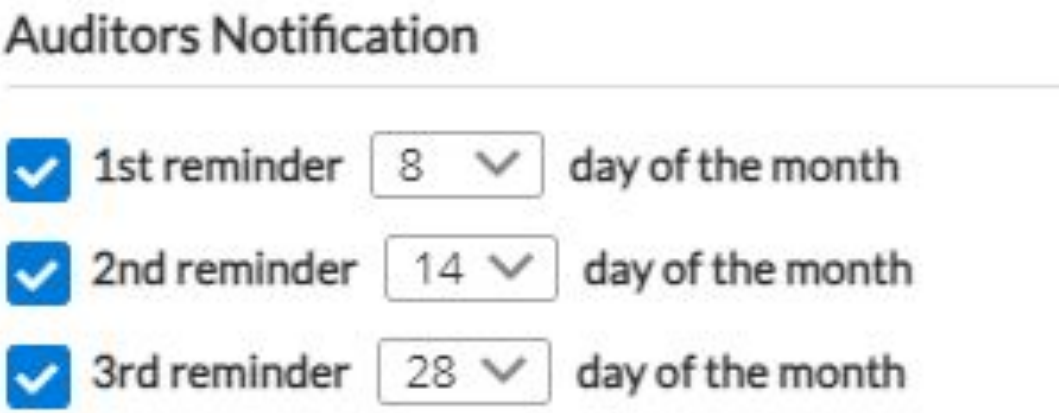


Intangible benefit :

3. Automatic notification to complete hand hygiene audit

a. No automated notification – before implementation of digital system

b. **Automated notification sent** by the system on a fixed date - to remind auditor to submit data



Intangible benefit :

4. Able to achieve the required minimum samples

Before:

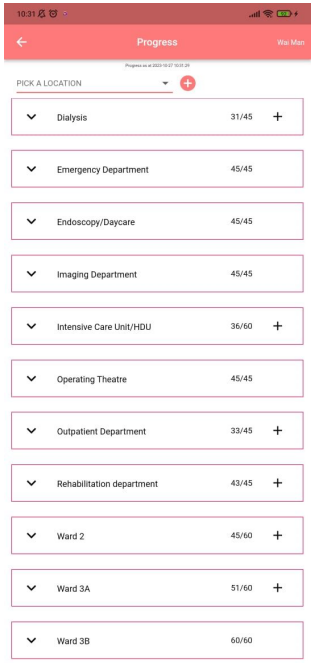
1. Sample size range from1800 - 330/month

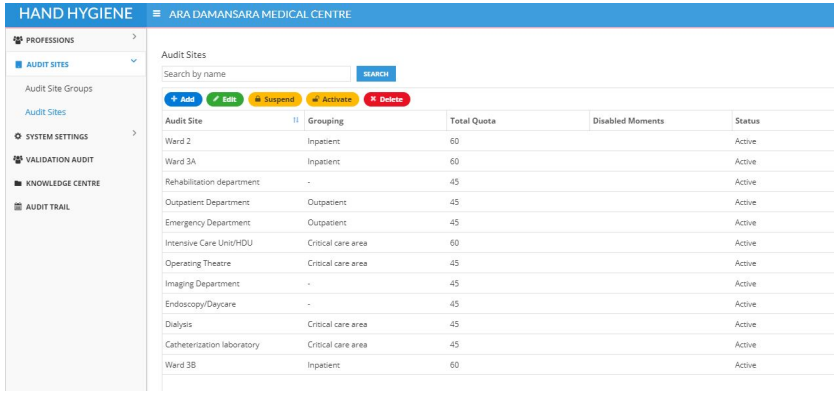
2. No fixed samples

After:

1. Sample size 600/month

2. Fixed sample size for each professional group





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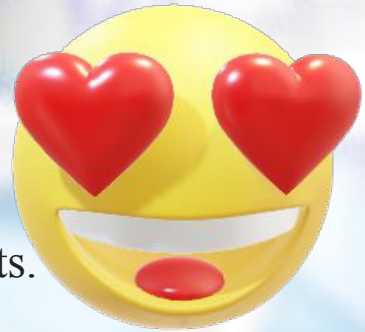
Conclusion

1. **Goal and Objective achieved.**

2. Turnaround time of Hand Hygiene audit report from **31.5 manhours to real-time data** in one month.

3. **Effort has been put in for Analysis and Gap closing.**

4. Work become more **efficient and productive.**



5. **Prompt intervention** – beneficial for all, including patients.

6. **Standardized** data collection and fixed sample size

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Thank you