# 100% Sterile Surgical Instruments issued for patient care

Singapore Healthcare Management 2018

KK Women's and Children's Hospital
SingHealth

Chee Li Li, Chia Soon Noi, Phua Lay Peng, Tay Bee Choo, Nur Aishah Yang

## Introduction

To ensure the completeness of the sterilisation process in the KKH CSSU, we have been performing the daily Biological indicator (BI) Test which is a quality assurance test used to ascertain the effectiveness of the steam sterilization in destroying the most resistant bacterial spores. The BI Test, which renders instruments 100% safe for patient use has all along been carried out by the CSSU once a day on the first sterilization load. We also have a recall procedure in place. However, our main concern during recalls is that there is no certainty that instruments suspected of not being properly sterilised can be traced and totally accounted for. As a result, we were not able to achieve the aim of "Zero Harm " for patient safety. Therefore, we set out to identify the root cause of the problem and came up with a solution to resolve the issue.

## Methodology

We used the KKH 3-Step Quality Improvement Model to:

- Identify problems
- Identify root cause of problems
- Develop solutions to address root cause of problems

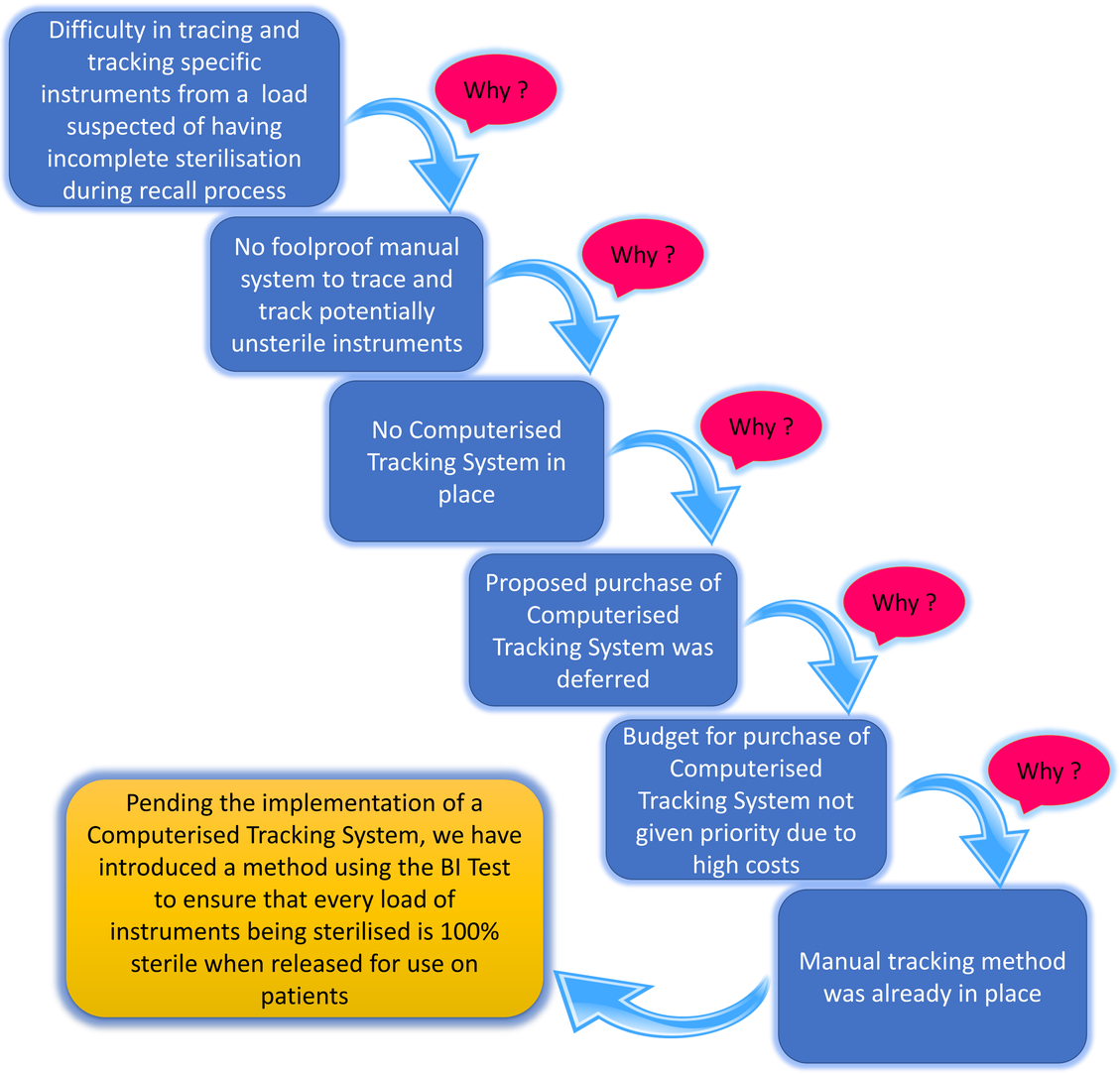
## Step 1: Problems

Problems identified:

- Difficulty in tracing and tracking specific instruments from a load that is suspected of incomplete sterilisation during recall process.
- Patient safety is potentially at risk.

## Step 2: Root Cause

The 5 Whys process workflow was created by CSSU staff to identify the root cause of the problem:




In short, the root cause of the problem is that by using a manual tracking process instead of the highly efficient Computerised Tracking System has made it difficult to trace and track potentially unsterile instruments.

## Step 3: Solution

- Solutions were subsequently developed by comparing sterilization practices of various hospitals, searching journals for evidence-based guidelines and adopting best AAMI practices.
- We then adopted the practice of releasing each sterilised load based on BI Test results, which will ensure the completeness of the sterilisation process.

**BEFORE Implementation**

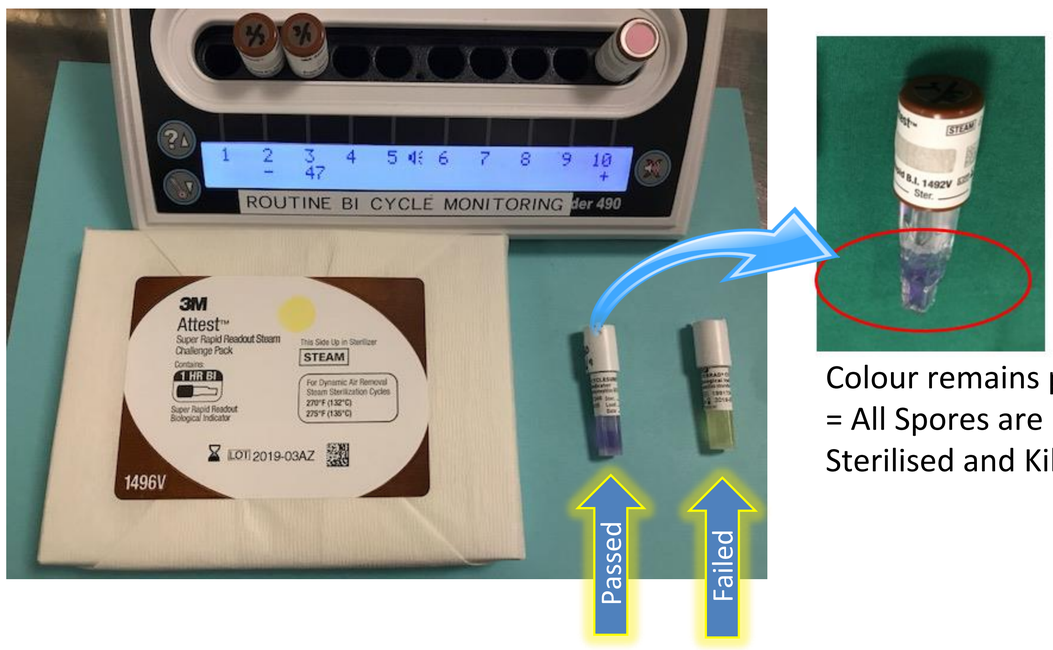
BI Test
Once a day
(1st load of day)

**AFTER Implementation**

**BI Test**
**Every Single Load**

Each load of sterile items is released based on the BI Test result

**BI Testing for every sterilization load in CSSU**




Colour remains purple = All Spores are Sterilised and Killed

## Result

With the implementation of BI testing for every load, we are assured that each instrument set processed in the CSSU sterilizer is 100% safe for patient use.


Benefits :
**Zero Harm !**

Impact on patient care :
- 100% Guaranteed Sterile items issued
- No recall is needed

## Conclusion

- After implementation of the BI Test procedure for every load, we are assured that all instruments sterilised and released are 100% Guaranteed Sterile and safe for patient use.
- No recall is needed since the implementation of BI Test in Sept 2017.
- Patient Safety and "Zero Harm" to patients are assured.