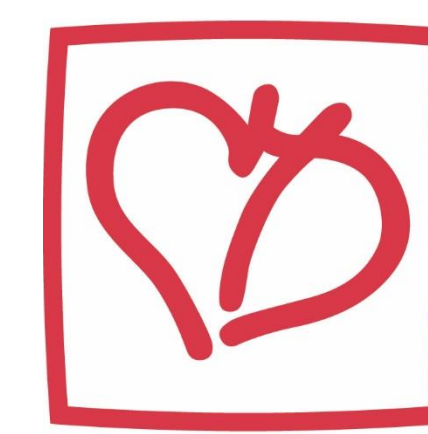




**Singapore Healthcare  
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# Streamlining Catheterisation Lab Procedure Workflow

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## Background

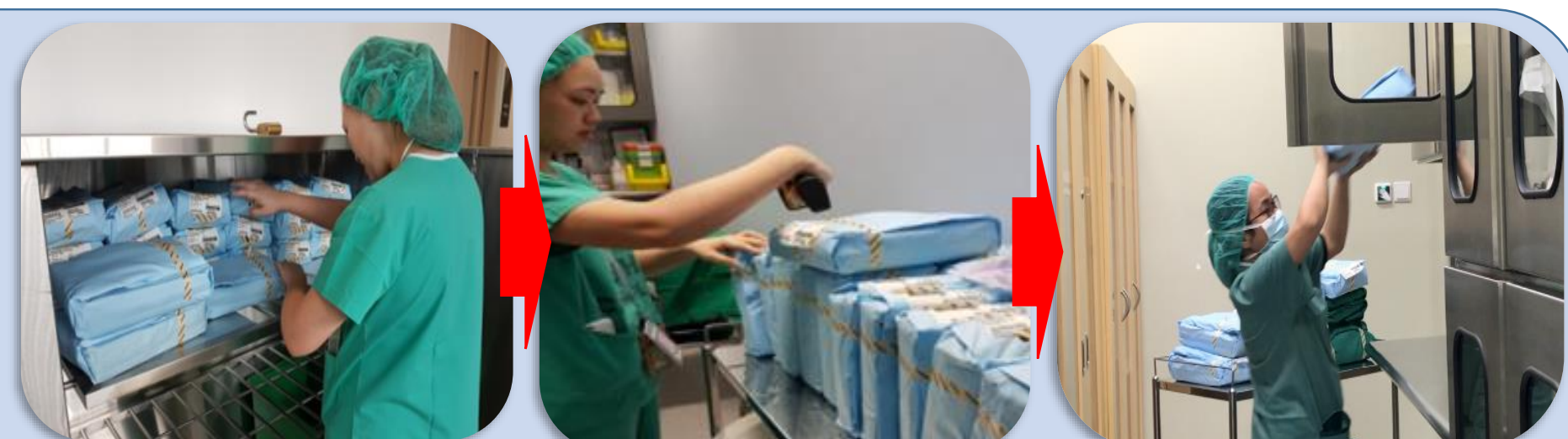
The Cardiac Catheterisation Lab in National Heart Centre Singapore sees an average of 5600 patients/year and it is on an upward trend due to the increased prevalence of cardiovascular disease.

To enhance efficiency and staff morale amidst the increasing number of patients for Cath Lab procedures, our team came up with the first ever disposable coronary angiogram set to improve our procedure workflow. This reduced time spent on pre and post procedure preparations so we can cater more time focusing on quality care for our patients.

## Problems Identified

### Time Consuming

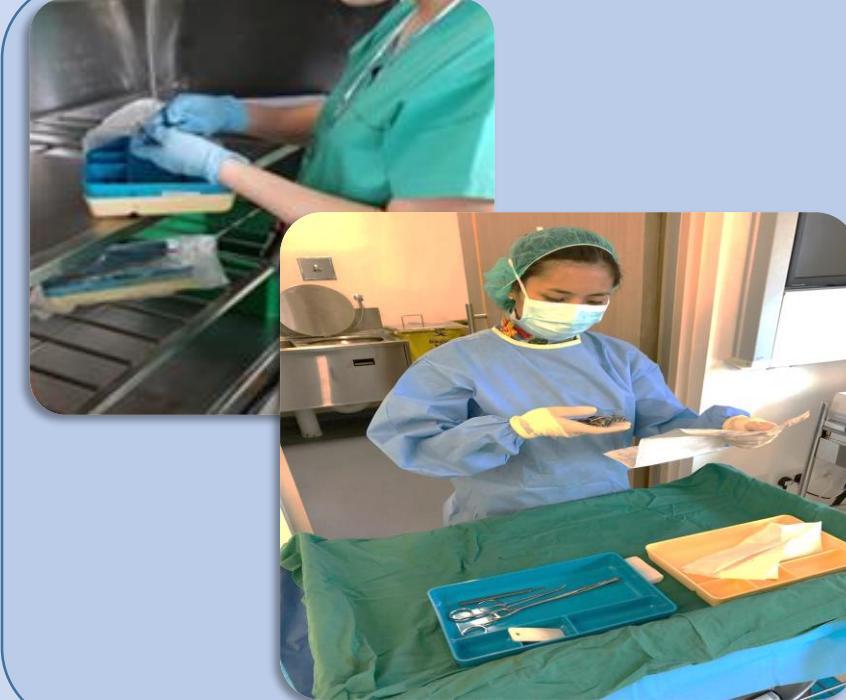
Receiving, scanning and topping up reusable procedure sets.



Gathering and opening 22 different consumables before each procedure.



Counting and loading of used reusable procedure sets for sterilisation



### Infection Control



Risk of cross-contamination in the Sterilisation process



Potential for blood splashes while rinsing used reusable sets

### Multiple consumables

Multiple consumables from different suppliers led to variable delivery time and multiple invoices and contracts.



## Methodology

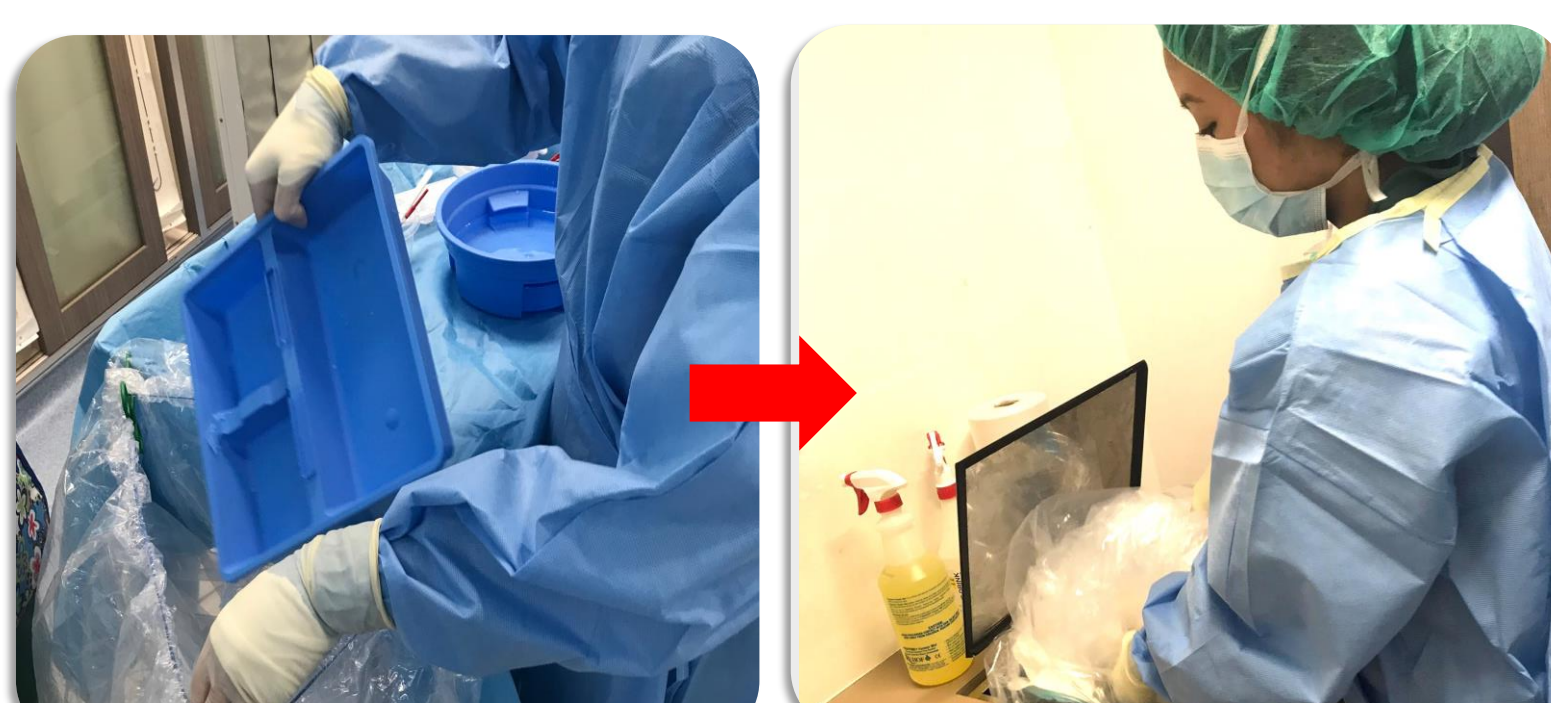
Disposable procedure sets are tallied against the invoice and are topped up twice a week. This eliminates the need to receive and scan in procedure sets from TSSU/CSSD daily



The disposable procedure set, contains all the consumables and instruments required. The lengthy process of gathering and opening the 22 consumables is eliminated.

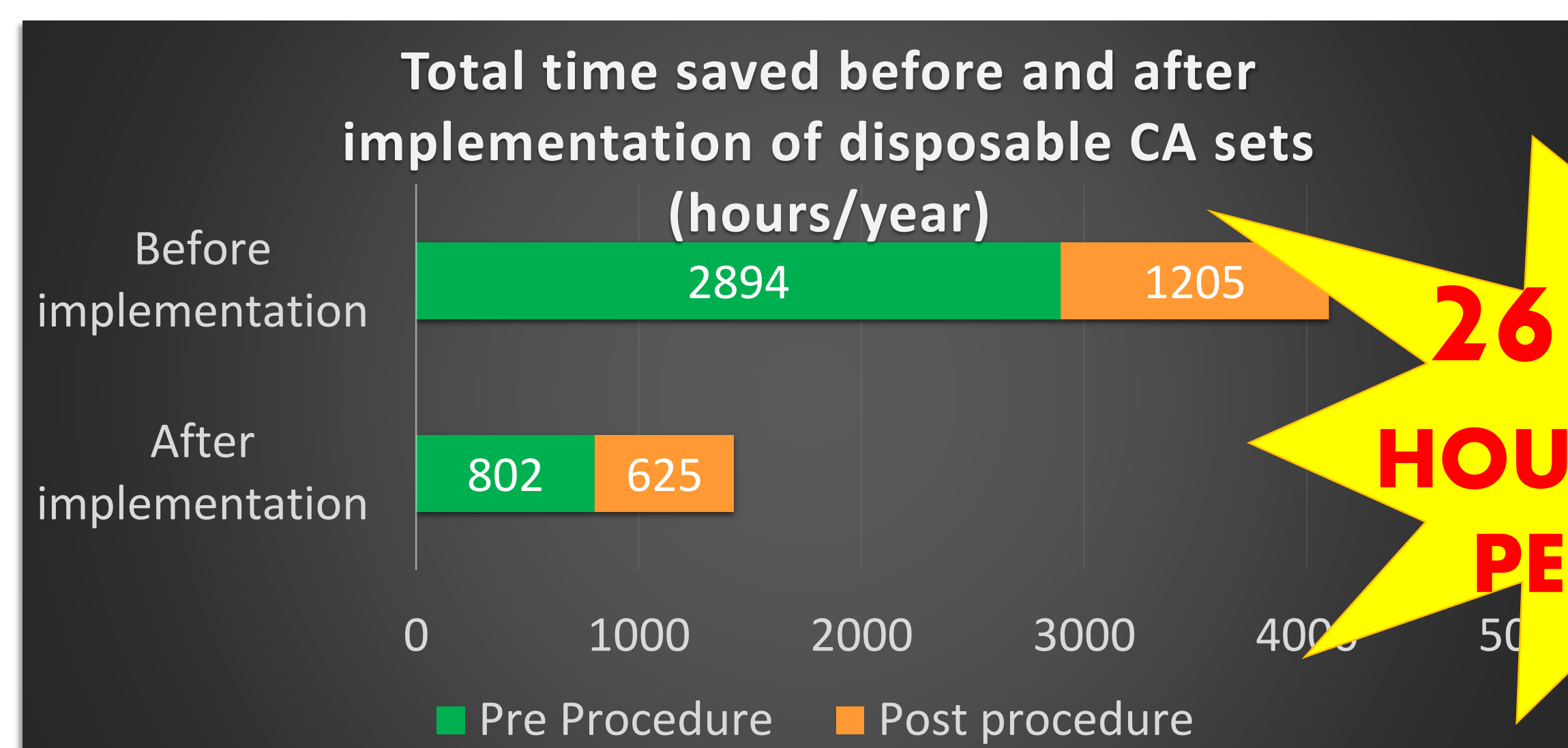


Post-procedure, the sets are wrapped and is disposed. Risk of blood splash and time used to rinse and count the instruments is reduced. Sets are no longer sent for sterilization.



## Results

### Time Savings



### Patient Cost Savings

**BEFORE**  
Cost of Reusable Set  
**\$191.30**



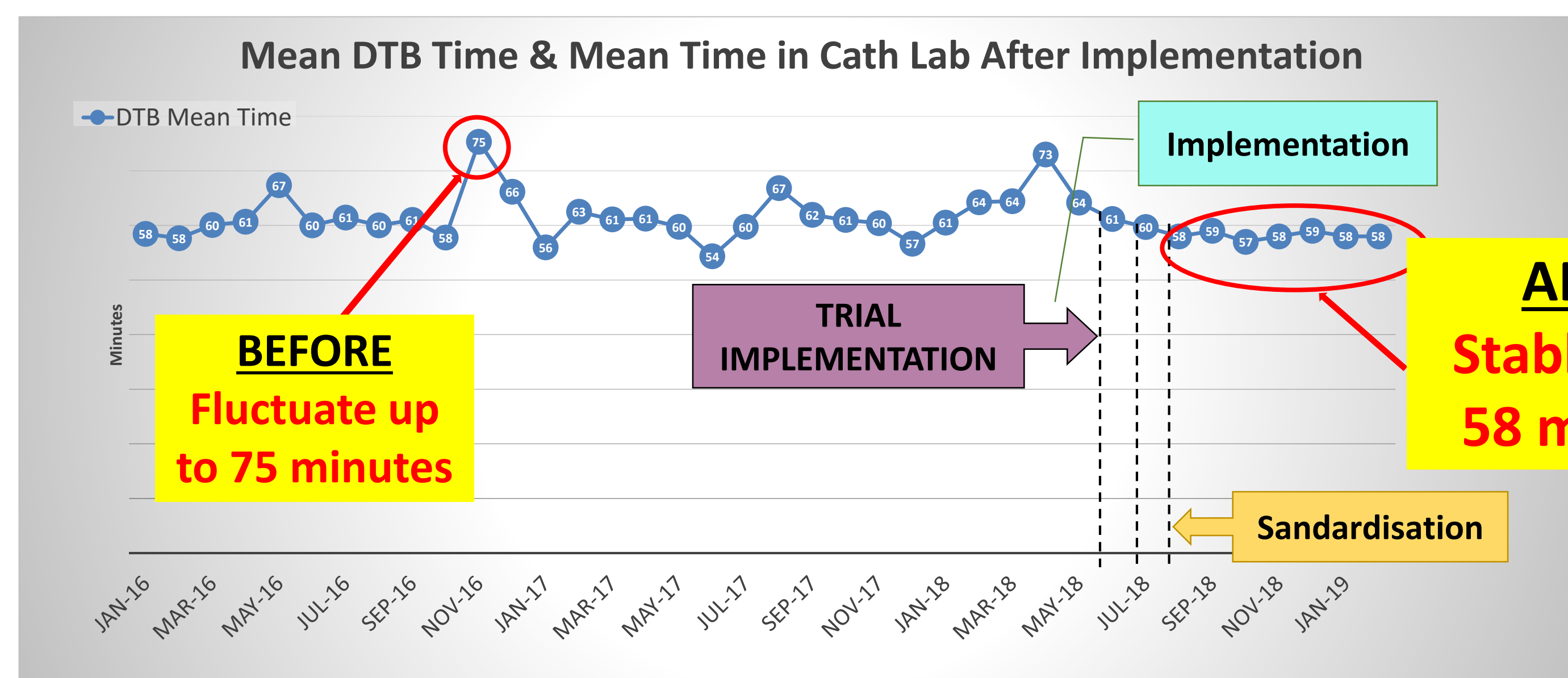
**AFTER**  
Cost of Disposable Set  
**\$40.60**



**Total Patient Savings/Annum**  
**\$843,808**

5600 Patients/annum

### Improved Door-to-Balloon Time

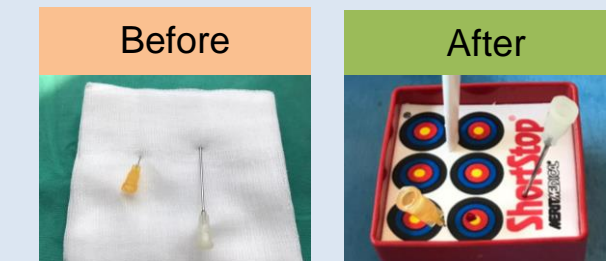


### Workplace Safety

Reduce Staff Exposure to Contaminated Instrument sets



Reduce Risk of Needle Stick Injury



Reduce Risk of Medication errors



Minimise Blood Spillage

- Decreased risk of exposure to contaminated procedure sets
- Safer and more efficient procedures are performed
- Greater Staff satisfaction with the improvement in work process.

## Conclusion

With the implemented disposable CA set, we achieved our target to reduce non-value adding work process by 65%. We have reduced the process steps from 11 to 5. The 73 days Items-to-Quote (ITQ) process taken for the multiple items in the past is now consolidated into 1 ITQ. Workplace safety has been improved and survey showed staff satisfaction improved significantly to 93%.