

### **Project Title**

Transformation of routine Work processes with MS Visual Basic for Application (VBA)

### **Project Lead and Members**

Project lead: Mr Teo Kok Leng

Project members: Ms Hoo Hui Chyn, Ang Chen Hwee Kristine, James Ganesan S/O

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### **Organisation(s) Involved**

Ren Ci Hospital

### **Healthcare Family Group Involved in this Project**

Healthcare Administration

### **Applicable Specialty or Discipline**

Healthcare Administrator

### **Project Period**

Start date: Nil

Completed date: Nil

### **Aims**

To reduce time taken to generate and verify complex Excel reports to submit ILTC quarterly subvention reports to AIC.

### **Background**

See poster appended/ below

### **Methods**

See poster appended/ below

## **Results**

See poster appended/ below

## **Conclusion**

See poster appended/ below

## **Project Category**

Technology

Digitalisation, Automation

## **Keywords**

Excel VBA, Macro, Script, Automation, Repetitive

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# Transformation of routine Work processes with MS Visual Basic for Application (VBA)

## INTRODUCTION

About 4.5 days each quarter on repetitive non-value add work is now better spent on value-added work such as invoicing and operations related tasks. Staff's overtime is also reduced. In total, time cost of nearly \$1.8k is saved per year. Importantly, waste is eradicated permanently.

### TEAM LEADER & MEMBERS

No	Name	Designation	Department	Role
1	Dennis	Operations Manager	Operations	LEADER
2	Josephine	Operations Executive Assistant	Operations	MEMBER
3	Kristine	Admin Executive	Admin	MEMBER
4	James Ganesan	Snr Exec Asst.	Operations	MEMBER
5	Ramona Ng	Senior Manager	QSM	IMPROVEMENT COACH
6	Eng Hua	Executive Director	Administration	SPONSOR

## EVIDENCE OF PROBLEM WORTH SOLVING

### Manpower time

It took nearly 4 hours per quarter to delete empty cells across 4 reports (subject to clients' attendance across services) and ≈ 4 days per quarter to verify complex reports.

## OBJECTIVES

To reduce time taken to generate and verify complex Excel reports to submit ILTC quarterly subvention reports to AIC.

## METHODOLOGY

### VSM/LEAN

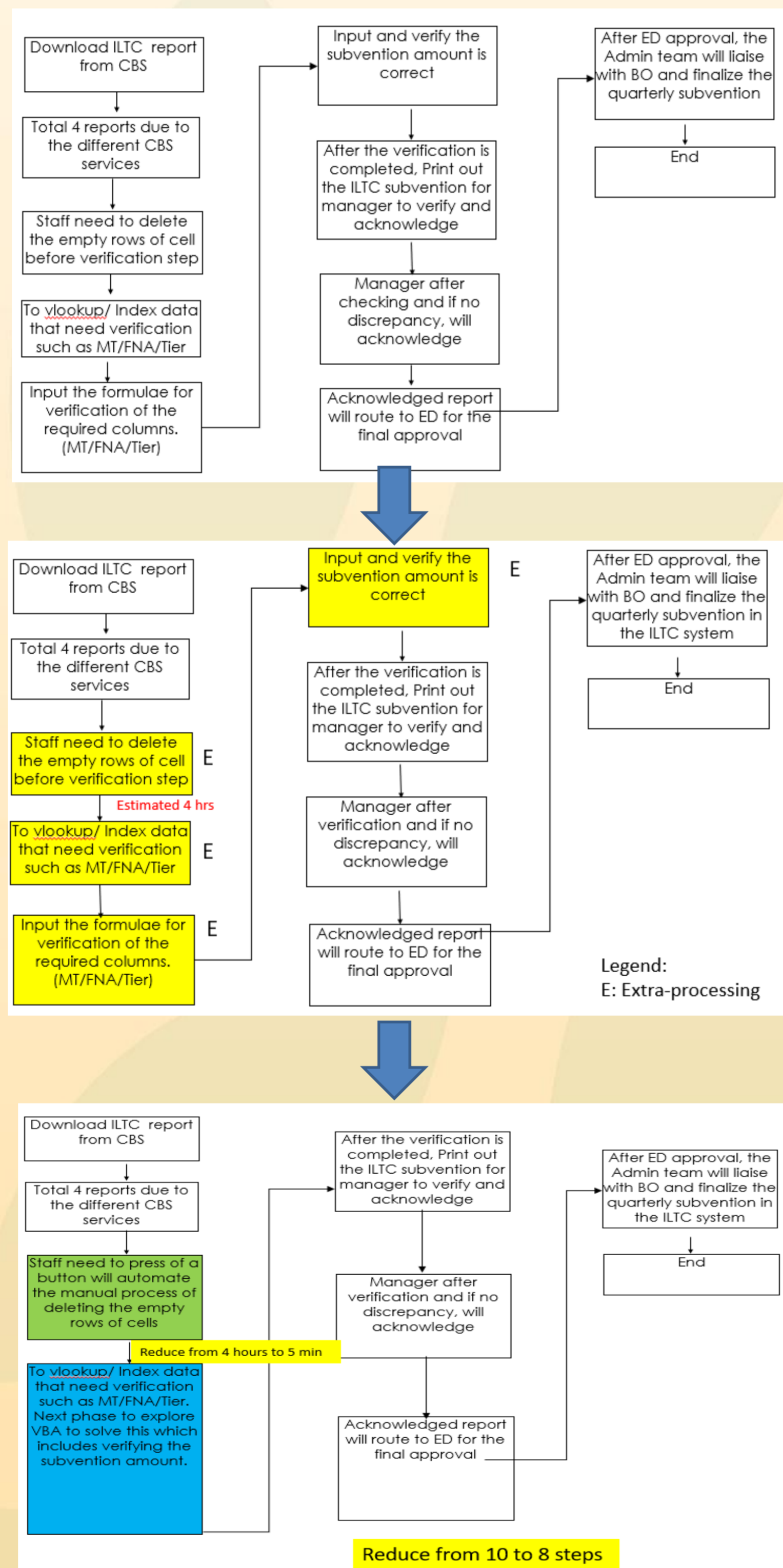
- Gathered staff feedback.
- Mapped steps taken to identify waste e.g. delete redundant cells and propose ideal state work flow.
- Brainstormed on interventions.
- Measured the time taken pre- and post-interventions.
- Trialled to give the team opportunities to run-in, get buy-in and refine operationalisation of the project.

### Root Cause

- The exported report contained empty cells that hinder computation of data verification.
- In order to process the data verification, we need to "treat" the exported Excel report.
- This step is "extra-processing" and is "Waste"
- The time saved can be used for other tasks.
- There are more effective and efficient ways.

### Intervention

- Created a VBA to delete empty cells.
- Steps were cut from 10 to 8, these including time-consuming and manual steps which were subject to human error.



## INTERVENTIONS (PDSA)

### PDSA

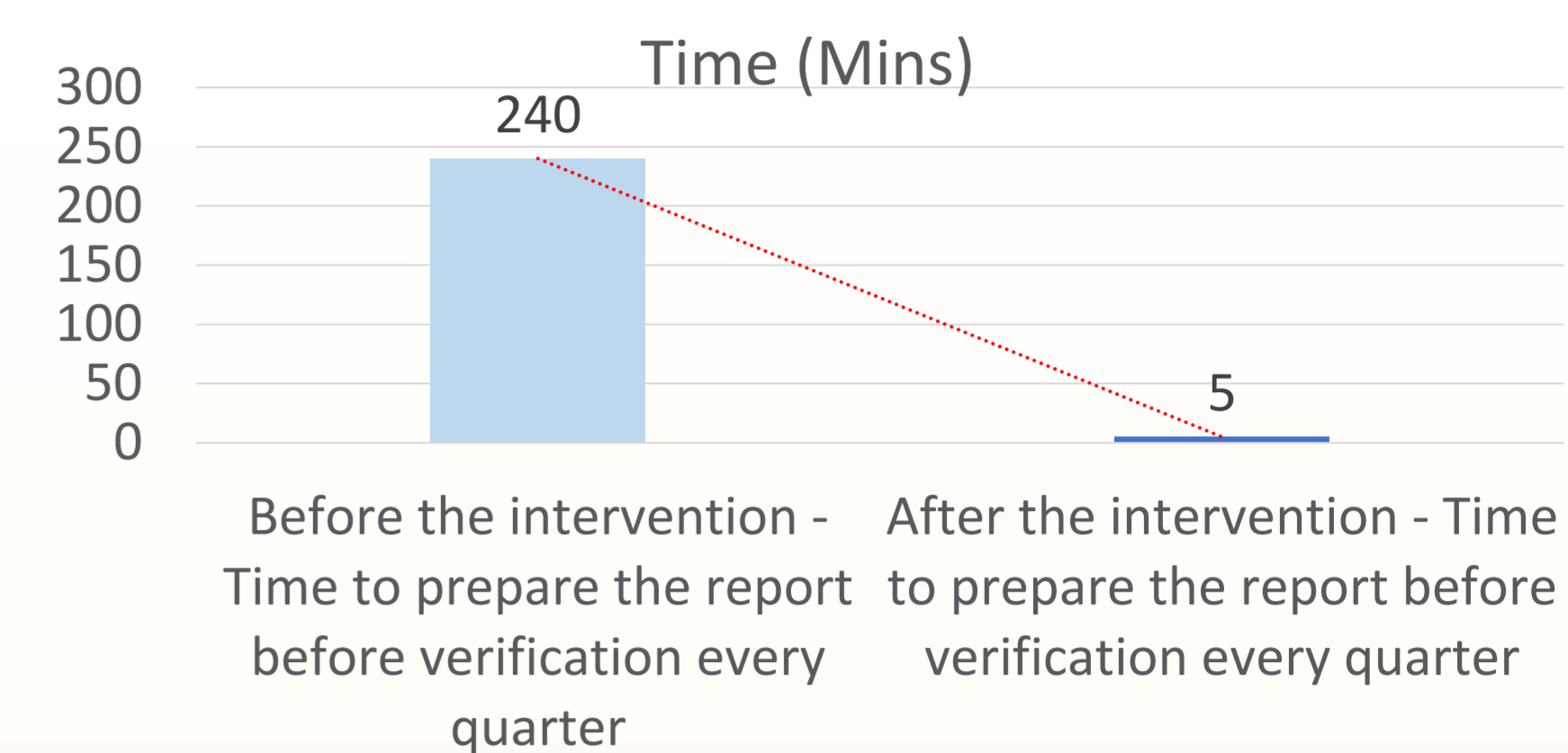
- After mapping the important process of keying, verifying and comparing data across reports which have a huge impact on clients and families' financial outlay e.g. means test results, subvention amounts etc., the team removed redundant cells.
- After getting successful buy-in from colleagues, a second round of team review resulted in streamlining verification using VBA.

### Intervention

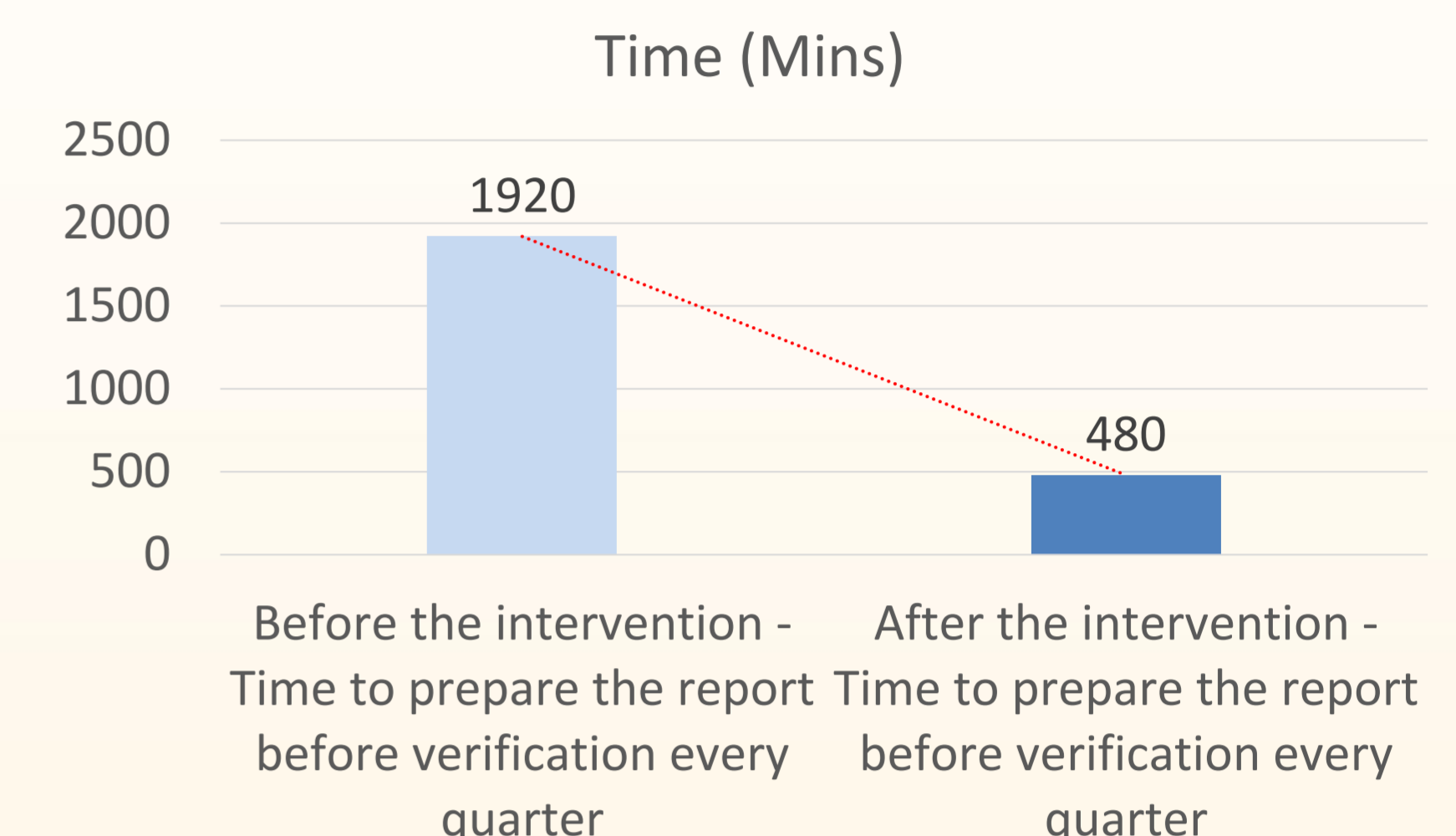
- Created a VBA to automate the manual & repetitive process.
- Gathered feedback, go through the VBA creation process with the end users to create the full cycle of the processes.
- Measure the result pre- and post-intervention.

## RESULTS

The deletion process after the intervention became more efficient and time taken reduced from **240 minutes to 5 minutes** for each quarter.

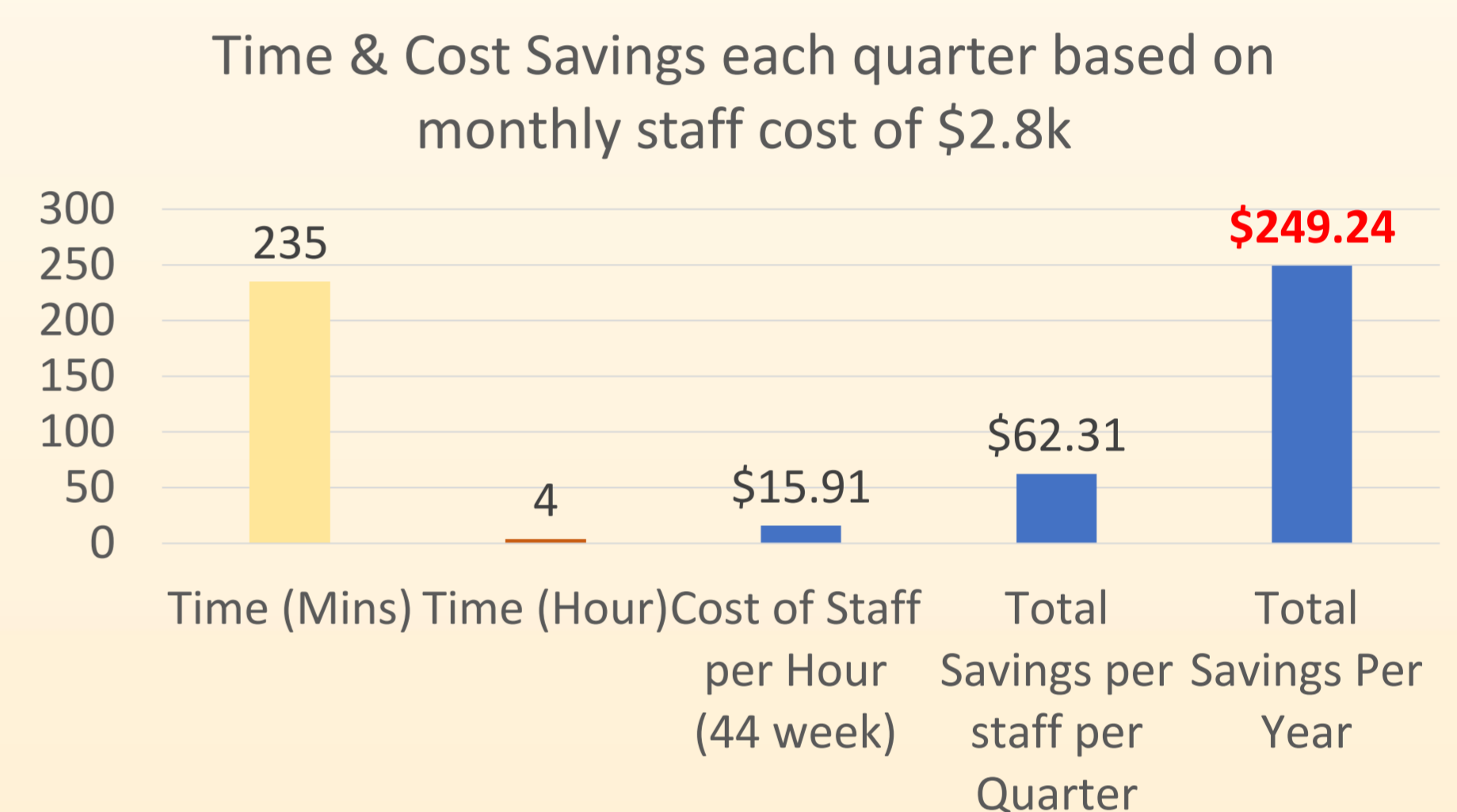


The second intervention created after the PDSA cycle streamlined the tedious and repetitive tasks of report verifications. This resulting in time saving of 1440 minutes i.e. time taken was reduced from **1920 to 480 minutes** for each quarter.

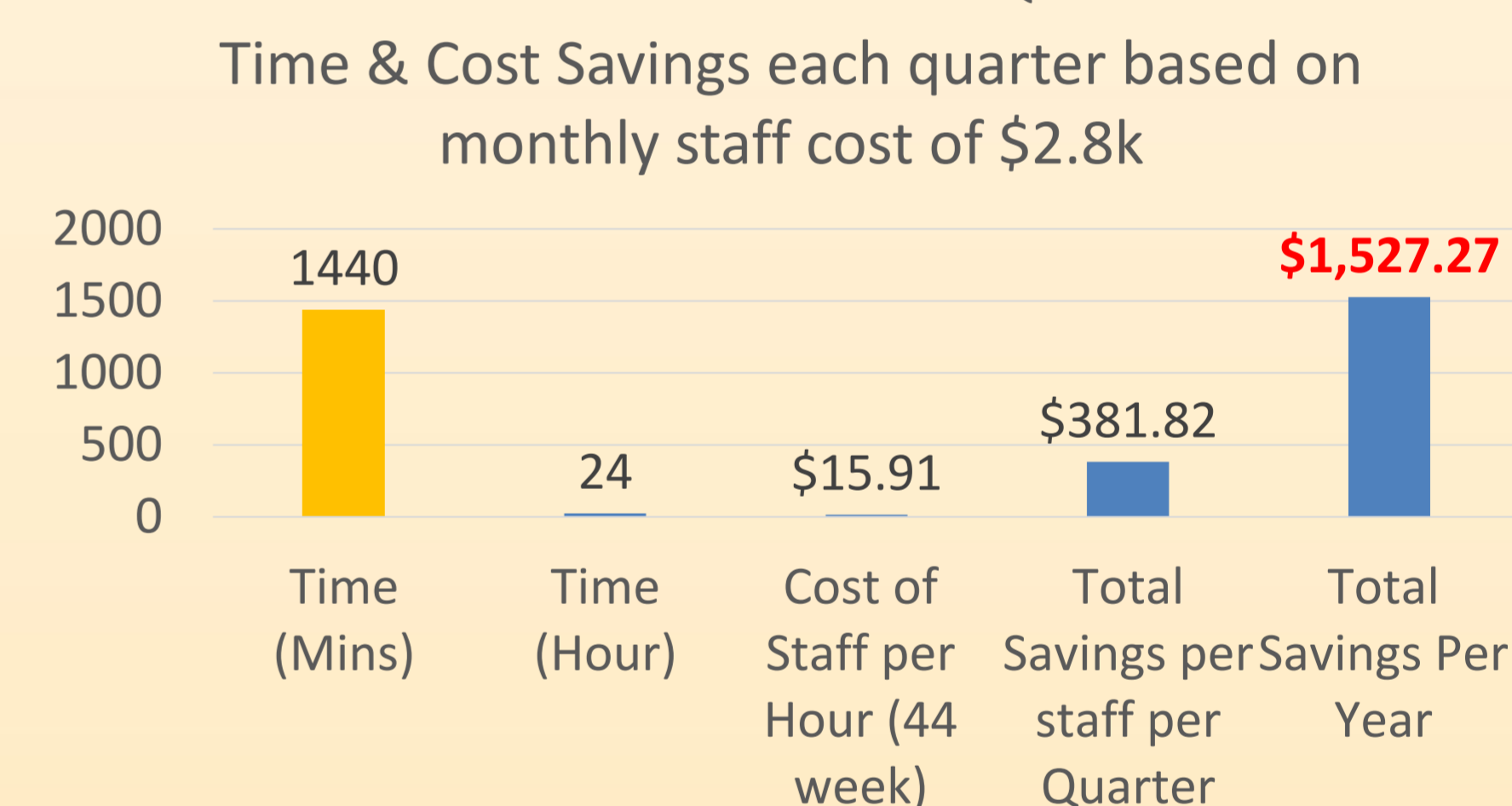


## COST SAVINGS

Derived from the time savings of 235 minutes each quarter, this translates into yearly cost savings of **\$249.24**.



Derived from the time savings of 24 hours/3 days each quarter, this translates into yearly cost savings of **\$1527.27** based on 1 facility. Potential to translate into huge savings by the number of reports that can be automated.



\* Please note the staff cost of \$2.8k is a ballpark figure.

## PROBLEMS ENCOUNTERED

- Resistance to change, and doubt on success of intervention.
- Team had to invest time to brainstorm, research and upskill on IT – VBA, amidst managing BAU while flexing changes due to COVID.

## STRATEGIES TO SUSTAIN THE GAINS

- Provide staff with the relevant training to upskill their Excel knowledge.
- Cultivate the mind-set of continuous improvement and equip staff with QI knowledge to apply during their daily work; not to continue as always.
- Invited feedback from end users: saved time and became more efficient. Direct impact on work performance and life outside work.

## LESSONS LEARNT

- The engagement and trial were useful (apart from users experiencing pain pre-intervention) in managing resistance, and ignited the spark for change. Stakeholders personally experienced that an initial investment of time spent on research and staying open-minded yielded long-term benefits.
- The trial stage and involvement also gave the team opportunities to refine operationalisation of the project, learn and explore ideas out of the box.
- Conducting the PDSA helped to uncover the potential for further improvement which led to further time and cost savings.

## CONCLUSION

- The concept can be spread to other admin/CBS where they do similar reports.
- The team is now more open to QI and leveraging on technology to help us in our daily work. It is no longer such a foreign and alien concept.
- This pilot approach to leverage on IT (VBA) to automate routine work processes has great potential to transform many similar routines reporting, elevate and multiply the success for an organization level or beyond.