

## **Project Title**

Improving Accuracy & Consistency of Pricing Methodology for Customised  
Prostheses & Orthoses

## **Project Lead and Members**

- Khalid Anuar
- Michelle Lai Shi Eu

## **Organisation(s) Involved**

Tan Tock Seng Hospital

## **Project Period**

Start date: Oct 2014

Completed date: Oct 2015

## **Background**

The Prosthetics & Orthotics Service provides an extensive variety of customised products ranging from a few hundred dollars to more than \$50,000. Due to the complicated nature of highly customizable products, the P&Os' main challenge lies in estimating the exact amount of manpower time or componentry required in the course of fabrication. The aim of this project is to improve the accuracy and consistency of pricing methodology within the service.

## **Lessons Learnt**

- A continuous PDCA cycle can help the team to identify and resolved other gaps and challenges that may not have been highlighted earlier.
- A seemingly complicated process can be made simpler with appropriate guidelines and standardization put in place.

### **Additional Information**

Received Merit Prize under Finance Category @ Singapore Healthcare Management  
2016 Poster Competition

### **Project Category**

Process Improvement

### **Keywords**

Process Improvement, Tan Tock Seng Hospital, Allied Health, Prosthetics & Orthotics,  
Customized Prostheses & Orthoses, Plan-Do-Check-Act, Standardized Methodology,  
Pricing Methodology, Cost Formulation, Standardization, Pricing Accuracy, Pricing  
Consistency, Billing Framework, Billing Guidelines

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## BACKGROUND

The Prosthetics and Orthotics (P&O) department at Tan Tock Seng Hospital's (TTSH) Foot Care & Limb Design Centre provides an extensive variety of customised prostheses and orthoses. These prostheses/orthoses can be costly, ranging from a few hundred dollars to more than \$50,000.

Prosthetists/Orthotists (P&Os) are required to provide simple financial counselling to patients during consultation before the start of fabrication and collection of payment.

Due to the complicated nature of highly customizable products, the P&Os' main challenge lies in estimating the exact amount of manpower time or componentry required in the course of fabrication.

The aim of this project is to improve the accuracy and consistency of pricing methodology among all P&Os.

**% of Prosthetist/Orthotist Providing Accurate Billing & Pricing Information**

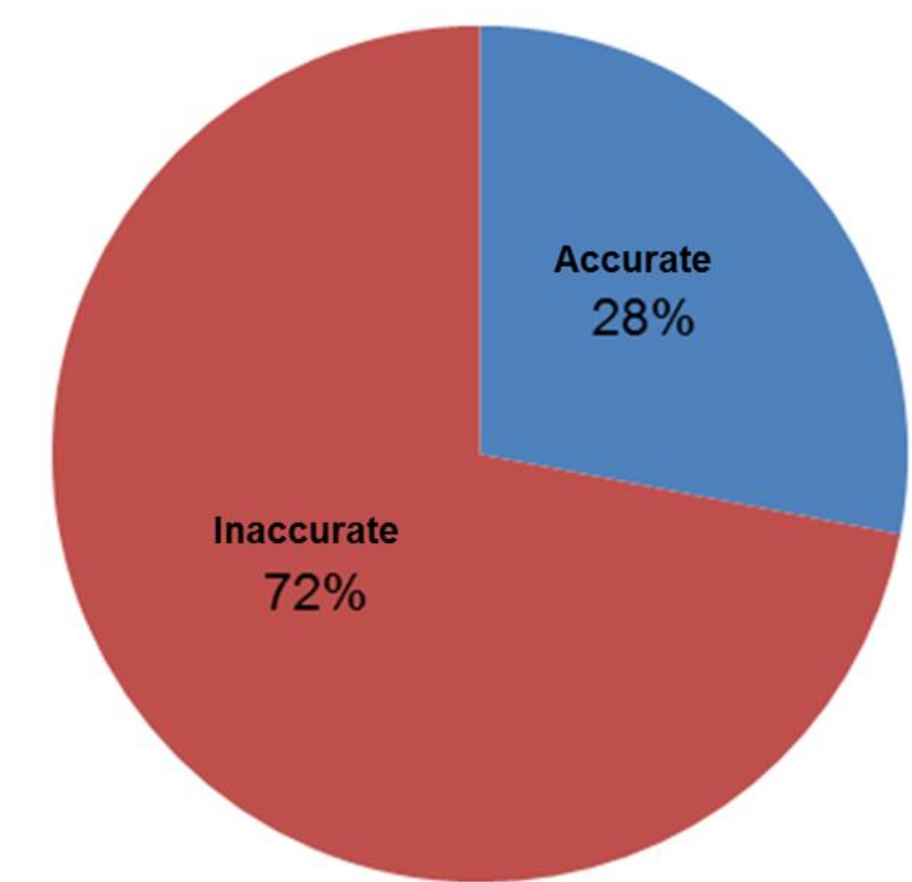
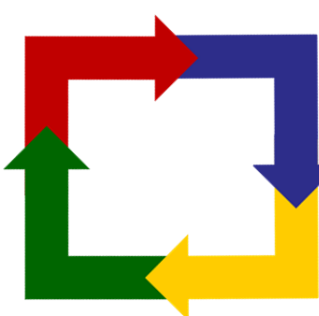


Figure 1: Percentage of Prosthetists/Orthotists Providing Accurate Billing & Pricing Information (Pre-intervention)

## METHODOLOGY

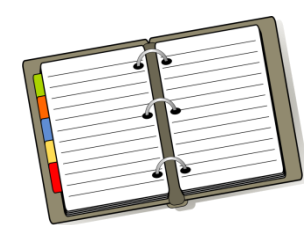


Baseline survey was first conducted to investigate the level of accuracy, competency and understanding of pricing information among the P&Os



Recognizing that there was no existing methodology, workflow or guidelines in place, a Plan-Do-Check-Act (PDCA) approach was used.

## INTERVENTION



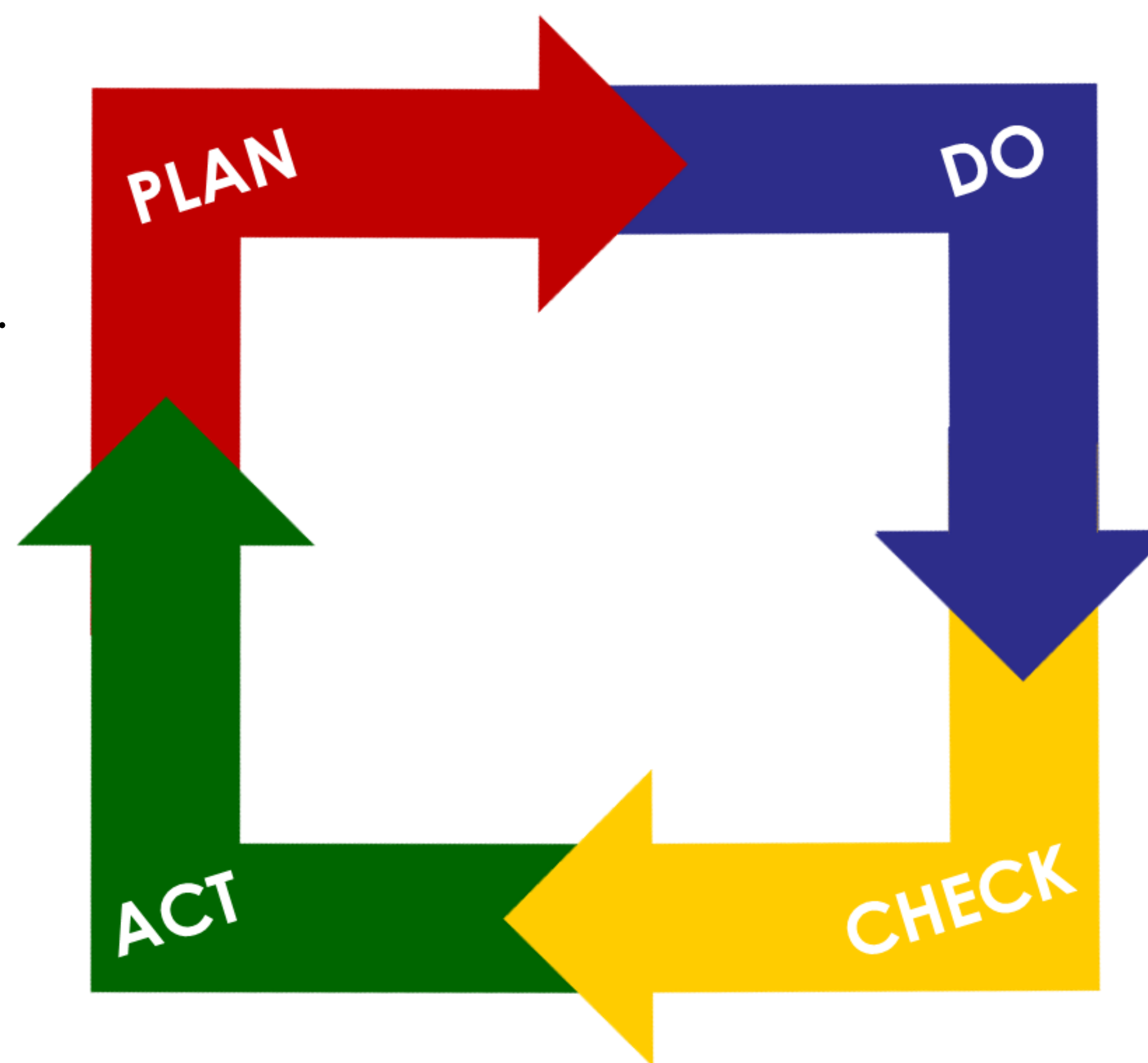
### PLAN

1. Aim: To improve accuracy and consistency of pricing methodology.
2. Process: Conduct baseline survey to understand level of accuracy, competency & understand of staff.



### ACT

1. Scope and content of the P&OBG was expanded and improved to eliminate gaps identified during the 'CHECK' phase.



### DO

1. Creation of the 'Prosthetics & Orthotics Billing Guidelines' (P&OBG).
  - A billing framework that provides essential costing, billing and pricing information and procedures.
2. Grouping of various customised procedure into common tracks to standardize the costing methodology.



### CHECK

1. A first review was conducted six-month post intervention to measure the impact of the P&OBG.

## RESULTS

Following a six-month user evaluation period, a first review was conducted to measure the impact of the P&OBG.

With only a slight 18% improvement, existing gaps were identified and eliminated through improving and expanding the scope and content of the P&OBG.

A second six-month review indicated that 97.5% of the P&Os are able to provide accurate pricing information to patients, a 69.5% improvement from the initial baseline survey results.

**% of Prosthetist/Orthotist Providing Accurate Billing & Pricing Information**

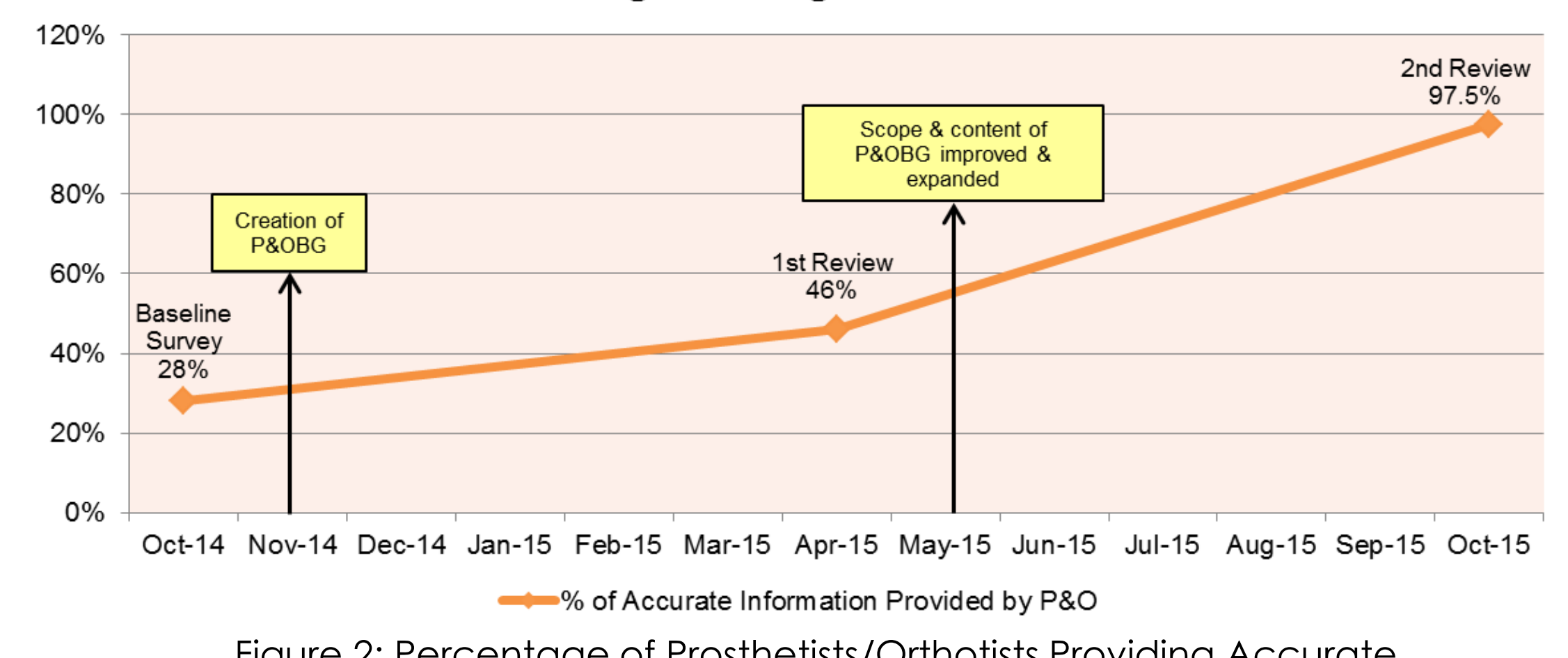


Figure 2: Percentage of Prosthetists/Orthotists Providing Accurate Billing & Pricing Information (Post-intervention)

## CONCLUSION

With standardised methodology for cost formulation and a common information database provided through the P&OBG, patients can be assured with consistent, fair and appropriate charges for all customized prostheses/orthoses.

Positive results from this project may be spread to other work areas which require a large degree of standardization within a seemingly unpredictable process.