Streamlining Catheterisation Lab Procedure Workflow

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.

#### 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

<table>
<thead>
<tr>
<th>Before implementation</th>
<th>After implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total time saved</td>
<td>1205 hours/year</td>
</tr>
<tr>
<td>Mean time saved</td>
<td>802 hours/year</td>
</tr>
</tbody>
</table>

#### Patient Cost Savings

<table>
<thead>
<tr>
<th>Cost of Reusable Set</th>
<th>Cost of Disposable Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>$191.30</td>
<td>$40.60</td>
</tr>
</tbody>
</table>

#### Improved Door-to-Balloon Time

- **BEFORE**: Fluctuate up to 75 minutes
- **AFTER**: Stabilised @ 58 minutes

#### Workplace Safety

- 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%.