

Minimizing Risk of Patient Head Injury in Cardiac Catheterisation Laboratory (Cath Lab)

Tina Teo Poh Tin, Juraihah Bte Haji Mohd Saleh, Sharity Tan Man Wei, Naw Julia Thwin Oo, Paul Lim Chun Yih, Sylvia Azalia Satyana, Felix Frias, Lay Sock Yee, Jacqueline Huo



Problem Statement

There have been incidences of 3 - 4 head injuries occurring during invasive cardiac catheterisation procedures caused by impact with angiographic machines between 2018-2019 in NHCS.

Although the figure might seem insignificant, the incidents affects the Cath lab staff and the hospital when the patients sustained significant injuries.



Potential Solutions



PDCA1

Customed protective foam shield made in collaboration with students of Singapore Institute of Technology.

The shield effectively protect patients from hitting the projector again.

However, the lack of raw materials drove up production cost and lead time.

PDCA2



Off-the-shelf rubber sponge tubes best met the criteria for ease of accessibility, cost effectiveness and ease of cleaning and replacement.

The sponge tubes are cut to length and secured to the circumference of the projector. It is a low-cost alternative which covers all the angles that patients can potentially hit their head on.

Project Aim

Minimizing head injuries during Cardiac Catherisation procedure. Head injuries put patient safety at risk of:

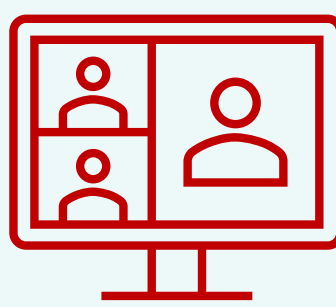
- Unnecessary pain
- Delay in recovery and extended hospital stay
- Increased medical cost.



Lessons Learnt

Lack of In-house Expertise

The healthcare team lacked technical expertise to produce a padded shield for the image projector. Collaboration with schools/institutes with engineering courses led to a win-win collaboration.



Rising Cost of Raw Materials

Price of raw materials may increase over time or due to shortages which will affect the production cost. This led to PDCA2 to relook at possible alternative to cushion the hard corners of the angiographic machines.



Outcomes & Impacts

Zero incidence of head injury caused by head collision with the Image intensifier

Estimated Time Savings: 6 hours x 4 patients = 24 Hours Annually	Estimated Bed Days Saved: 2 days x 4 patients = 8 Bed Days Annually
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Estimated Patient Cost Savings: \$1,946
(Ward Charge + CT Scan + Dressing) x 4 patients
= \$7,784 Annually

Intangible benefits



- Reduced risk of injury
- Avoid unnecessary hospital stay
- Faster recovery
- Avoid anxiety and pain
- Greater patient satisfaction

Healthcare Team can focus on performing their roles in the procedure lab. Patients face a lower risk of injury and safe from unnecessary harm.