

# National Quality Improvement Conference

## Reducing Cast and back-slab related pressure injuries at Yishun Health

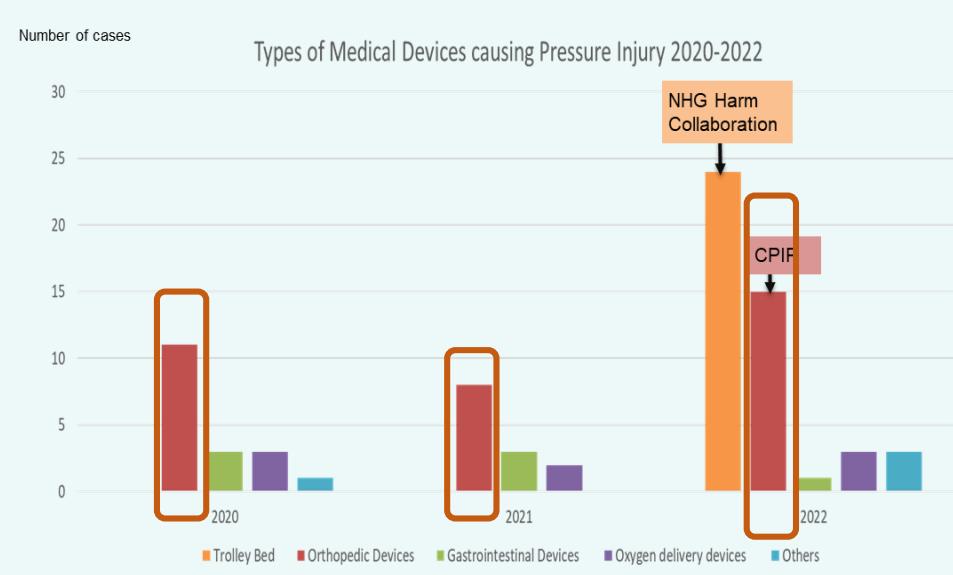
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### Problem Statement

Cast and back-slab medical device related pressure injuries (MDRPIs) have been increasing in numbers over the years and > 50 % are potentially preventable.

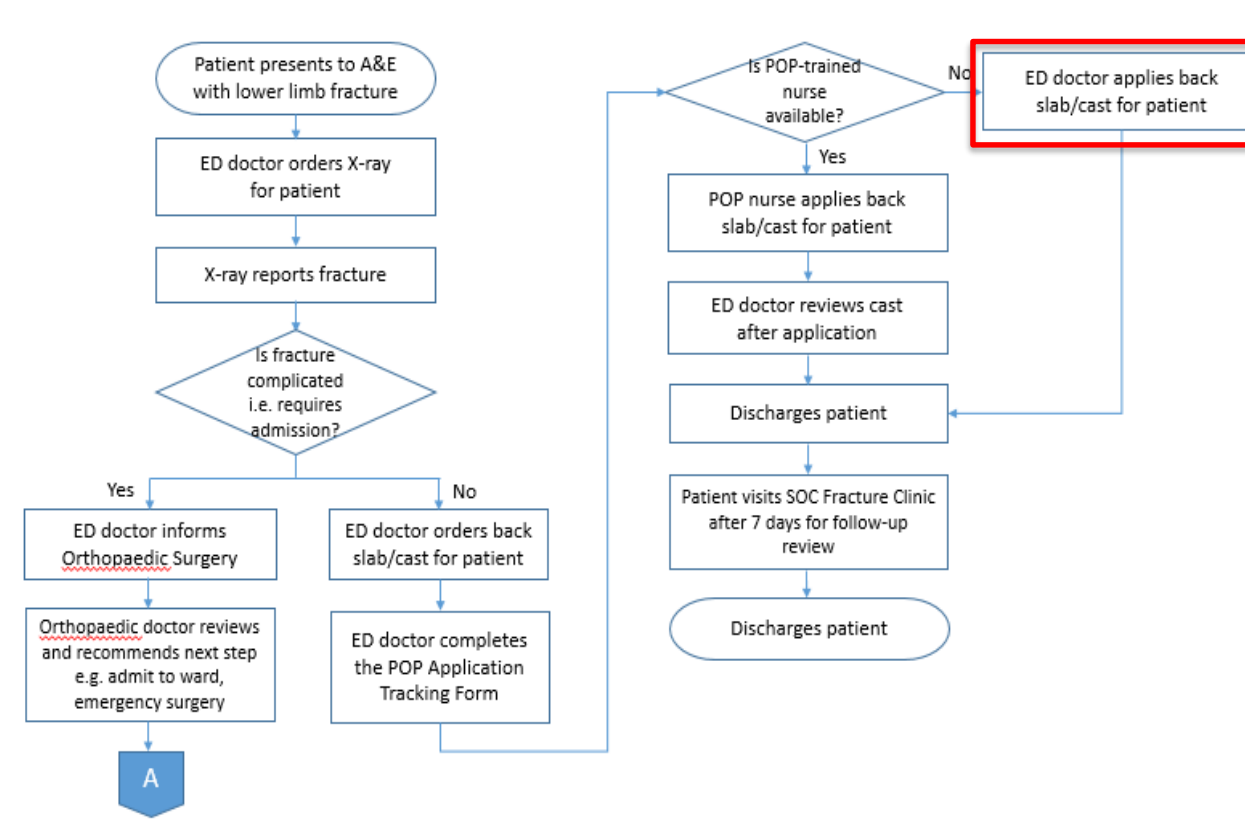


Cast & back-slab MDRPIs may be more difficult to treat because they cannot always be moved or removed. Devices are also often rigid or require to be secured tightly. Heat and humidity of the skin contributes to worsening of pressure injury.

Emergency Department (ED) is the most common location where casts / back slabs are applied.

### Potential Solutions

#### ED Cast & Backslab Process Flow:



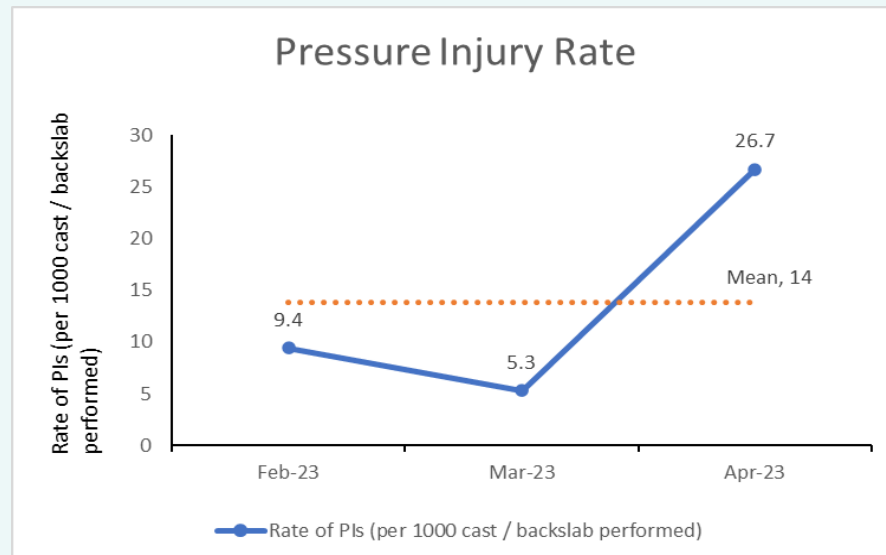
- Neurovascular assessment + look for any open wounds
- Stockinette application to joint above and below #
- Apply felt/ padding to bony prominence
- Apply orthoban to limb
- Apply 6-8 layers of plaster of paris, immerse in water
- Lift the wet splint out of water, smoothen on flat surface
- With limb still in position of function, place wet splint over the affected area
- Mould the wet splint using palm of hands and fold back excess padding/stockinette from both ends
- Allow splint to dry and then apply crepe bandage

Following brainstorming, affinity diagram and Pareto Chart, the following interventions were implemented

PDSA	ROOT CAUSE	INTERVENTION
PDSA 1	Not aware of standardized teaching/ importance of proper cast/ back slab techniques	<ul style="list-style-type: none"> <li>Improve awareness of cast/ back slab pressure injuries among the ED doctors</li> <li>Bring awareness to the online resources/ videos and training modules available</li> </ul>
PDSA 2.1 and 2.2	Inadequate experience/ hands on back slab training for new Drs	<ul style="list-style-type: none"> <li>Hands on training sessions for ED MOs</li> <li>Feedback for improvement to be given directly to the doctors and any questions that doctors may have will be answered during the session/ workshop</li> </ul>

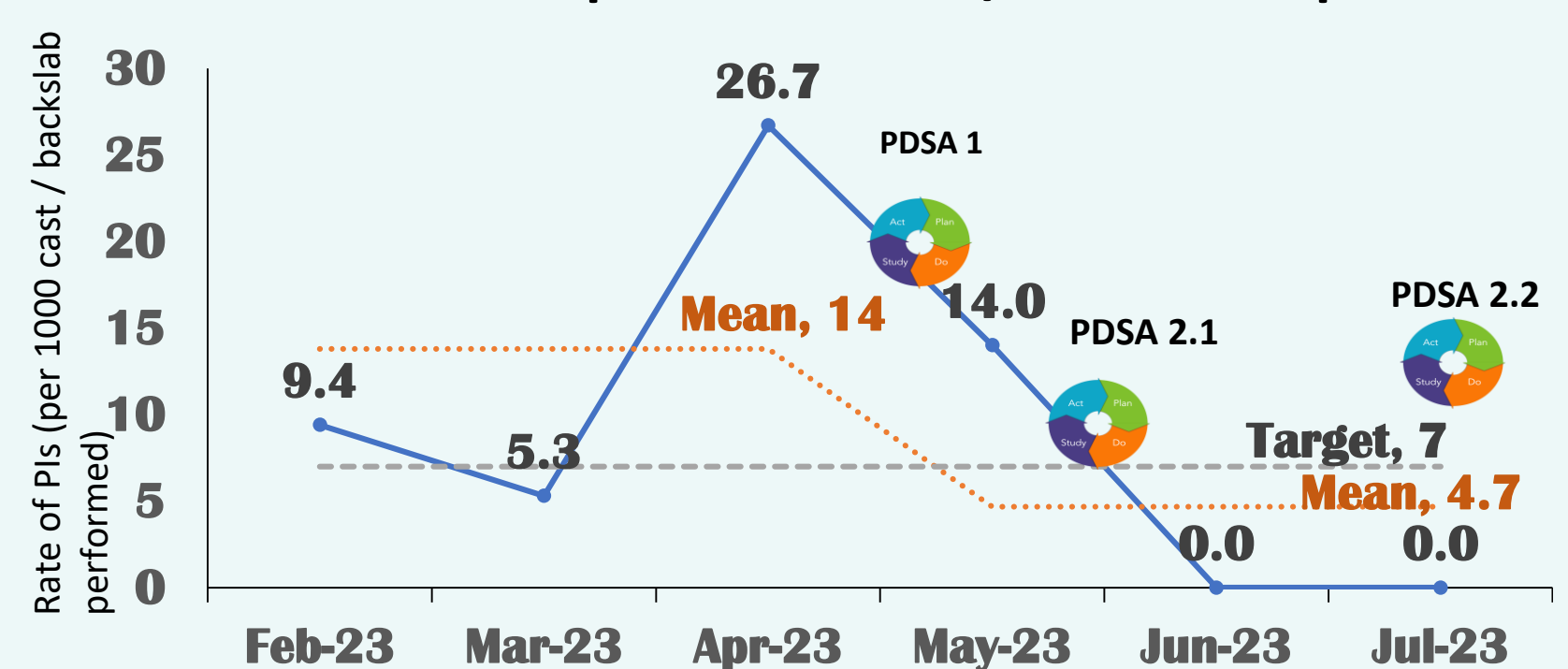
### Project Aim

To reduce monthly cast /back slab pressure injury (PI) rate by 50 % from mean of 14 to 7 per 1000 casts and back-slabs performed at KTPH over 6 months

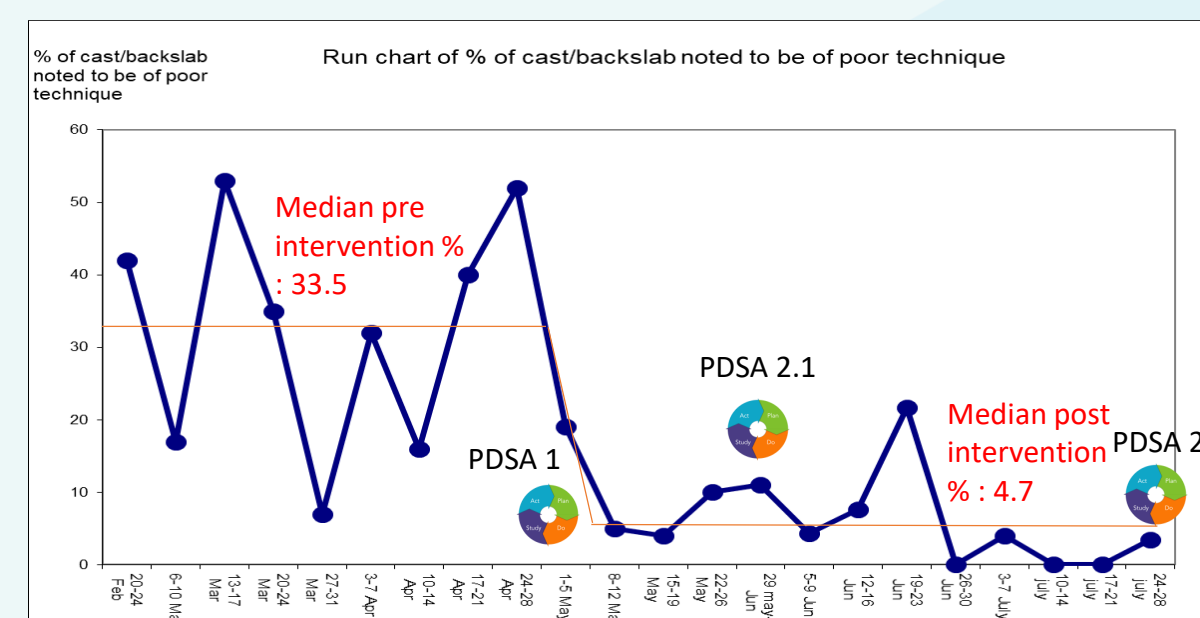


### Outcomes & Impacts

Overall run chart for PI rates looked promising – from baseline mean of 14 to mean of 4.7 per 1000 casts / back slabs performed



Secondary (Process) Measure: Reduction in % poor technique from median of 33.5% to 4.7%



**PDSA 2.2 Splinting Workshop with hands on practice (ED MO feedback)**

Confidence level pre and post workshop : **increased** from 0-5 pre workshop to 6-8 post workshop

Everyone found the practical/ hands on section most useful

Estimated cost avoidance :  
**\$2414 per patient and \$24000-36000/ year to hospital**

### Lessons Learnt

#### Top 2 challenges faced:

- Data collection based on online reporting alone was unreliable as many cases on the ground were noted but not reported online
- We were initially uncertain about how to best collect the data to show outcomes

#### Recommendations

- It is important to collect data on the ground. This process might be tedious but with teamwork and with process simplification, it is achievable
- It is important to collect feedback from all parties involved to ensure that the project is going on the correct track
- Teamwork and involvement of stakeholders from a multidisciplinary team is crucial
- Speak to the seniors and experts to seek advice early on how to proceed with the project when lost.