

## **Project Title**

Nurse-Led Anaesthetic Discharge in Post Anaesthesia Care Unit in Perioperative Settings

## **Project Lead and Members**

Project Lead(s): Dr Lye Soh Teng, Senior Consultant, Anaesthesia

Project Members:

- Lai Foon Wan Anne, Nurse Manager
- Dr Bin Wern Hsien Senior Consultant & Head, Anaesthesia
- Adj. A/Prof Edwin Seet, Senior Consultant, Anaesthesia
- Alice Leong Foong Wah, Deputy Director, Nursing Peri-Ops
- Jhoanna Napay Castillo, Senior Staff Nurse
- P. Sivamalar A/P Palaniappan, Nurse Clinician

## **Organisation(s) Involved**

Khoo Teck Puat Hospital

## **Healthcare Family Group(s) Involved in this Project**

Medical, Nursing

## **Applicable Specialty or Discipline**

Anaesthesiology, Peri-Operative

## **Project Period**

Start date: 2018

Completed date: 2022

## **Aim(s)**

To enhance quality and care experience to our surgical patients by transforming care via training & empowering nurses to discharge post-surgery patients from Post Anaesthesia Care Unit (PACU).

## **Background**

See poster appended/ below

## **Methods**

See poster appended/ below

## **Results**

See poster appended/ below

## **Lessons Learnt**

See poster appended/ below

## **Conclusion**

See poster appended/ below

## **Additional Information**

This project is related to a project titled Nurse-Led Anaesthetic Discharge in Post Anaesthesia Care Unit in Day Surgery Centre (NLAD).

## **Project Category**

Workforce Transformation, Job Redesign

Training & Education, Assessment, Workplace Based Assessment

## **Keywords**

Improvement Tools, Lean Six Sigma

## **Name and Email of Project Contact Person(s)**

Name: Dr Lye Soh Teng

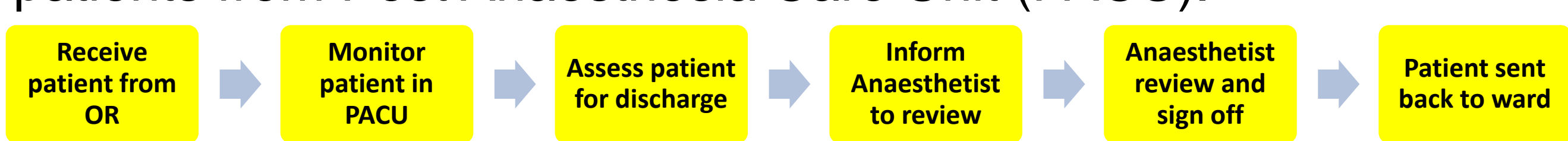
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# Nurse-Led Anaesthetic Discharge in Post Anaesthesia Care Unit in Perioperative Settings.

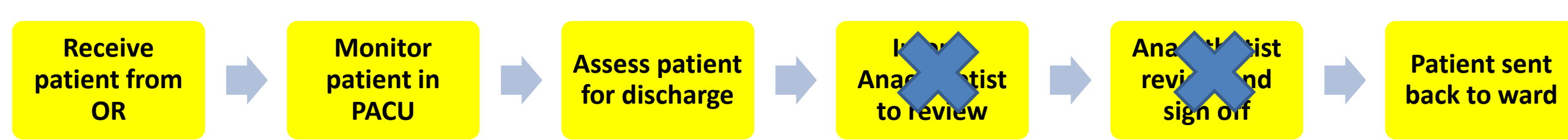
<sup>1</sup>Lai, F.W.; <sup>1</sup>Law, P.S.; <sup>1</sup>Leong, A.; <sup>1</sup>Shao, M.; <sup>1</sup>Castillo, J. N.; <sup>2</sup>Seet, E.; <sup>2</sup>Lye, S.T.; <sup>2</sup>Cheong, G.; <sup>2</sup>Bin, W.H.  
Day Surgery Centre<sup>1</sup>, Anaesthesia Department<sup>2</sup>  
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## Background and Aims

This is a collaborative project by Department of Anaesthesia and Perioperative Nursing Team. The **Nurse-Led Anesthetic Discharge (NLAD) initiative aims to enhance quality and care experience to our surgical patients** by transforming care via training & empowering nurses to discharge post-surgery patients from Post Anaesthesia Care Unit (PACU).



**As-was process** involves a lot of coordination, communication and hand-over of cases.



**To-be process**, NLAD utilized a trained nurse to provide post-operative anesthetic care and authorized them to discharge patient under their care, supported by protocol guidance and Anaesthetist supervision.

Target SpO2 >=	95	%
Discharge Checklist	<input type="checkbox"/> Patient alert & oriented <input type="checkbox"/> Stable vital signs <input type="checkbox"/> No active bleeding <input type="checkbox"/> Minimal nausea / vomiting <input type="checkbox"/> Sustained heart rate > 5s <input type="checkbox"/> SpO2 > 94% on room air > 5min or return to baseline <input type="checkbox"/> Wound instructions / Handing over <input type="checkbox"/> Spinal / Epidural given <input type="checkbox"/> Upper / Lower limb block given <input type="checkbox"/> PCA	
HR	60-95bpm	
BP	SBP 100-145, DBP <100	
Resp Rate	10-22	
Basic Requirements of NLAD Nurse	BCLS Certified  LSCN Certified Simulation Resuscitation Course Venepuncture and IV Cannulation Pain management Airway management Basic training of 136 hours	

## Methodology

Nurses are trained in **Basic Modules 136hours** and **specific structured curriculum of 13 hours** with E-learning as yearly competency. **Basic training** - Anaesthesia nurse trained with BCLS, ECG interpretation, Life support course for nurses (LSCN), Simulation Resuscitation, Venepuncture and IV Cannulation, Pain and airway management (66hours) and 70 hours of on-the-job training.

**Specific training** - Structured curriculums (2 hours E-lecture modules were co-developed to train and certify the nurses for the expanded job scopes, 4 hours of NLAD lectures and 7 hours of NLAD OJT, making it 13 hours of specific training. E-learn lectures and modules are formulated and established in the training system.



(Specific Structured Curriculum)



(Lewin's Change Methodology)

## Sustainability and Follow-Up

Control and sustainability plan is via **Lean Six-Sigma** and **Lewin's Change Methodology** to continuous monitor and evaluate the changed process.



<b>Process Standardization</b>	<ul style="list-style-type: none"> <li>Standardized Training Structure</li> <li>Standardized workflow</li> </ul>
<b>Focused Improvement</b>	<ul style="list-style-type: none"> <li>Team members empowered to identify &amp; resolve problem(s) themselves. Problem-solving can be shared retrospectively for case-learning.</li> </ul>
<b>Mistake Proofing the Process</b>	<ul style="list-style-type: none"> <li>Standardised Operating Procedures</li> <li>Standardised Training Methodology</li> <li>Simulation Exercises</li> </ul>
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>Control Charts to monitor progress</li> </ul>

## Conclusion

NLAD success is accredited to 4 main supports namely, **leadership support, robust training and accreditation system, standardized workflow** and **acceptance of change**. NLAD has consistently achieved optimal operational efficiency, manpower productivity and enhanced nurses' professional standing.

## Methodology

**Unfreeze Process** – For new staff, we apply unfreeze to prepare them for change.

**Change Process**– For existing staff, we encourage and provide continuous support and recognition through completion of their re-accreditation.

**Refreeze Process** – Continuous monitoring of process is carried out to ensure potential gaps were closed. Competencies were reviewed yearly to ensure new training requirements are included. Cases will be audited retrospectively for tracking NLAD performance.

## Results and Project Impact

Since implementation, a total of **7956 NLAD cases** were successfully carried out uneventfully.

### Improved Discharge Times

Patient's stay in the PACU is effectively preventing bottleneck.

	As Is Workflow	To Be Workflow
Discharge Time (when patient is ready for discharge)	10 to 15mins	0 mins (no need for Anaesthetist to review)

### Dedicated Trained Staff

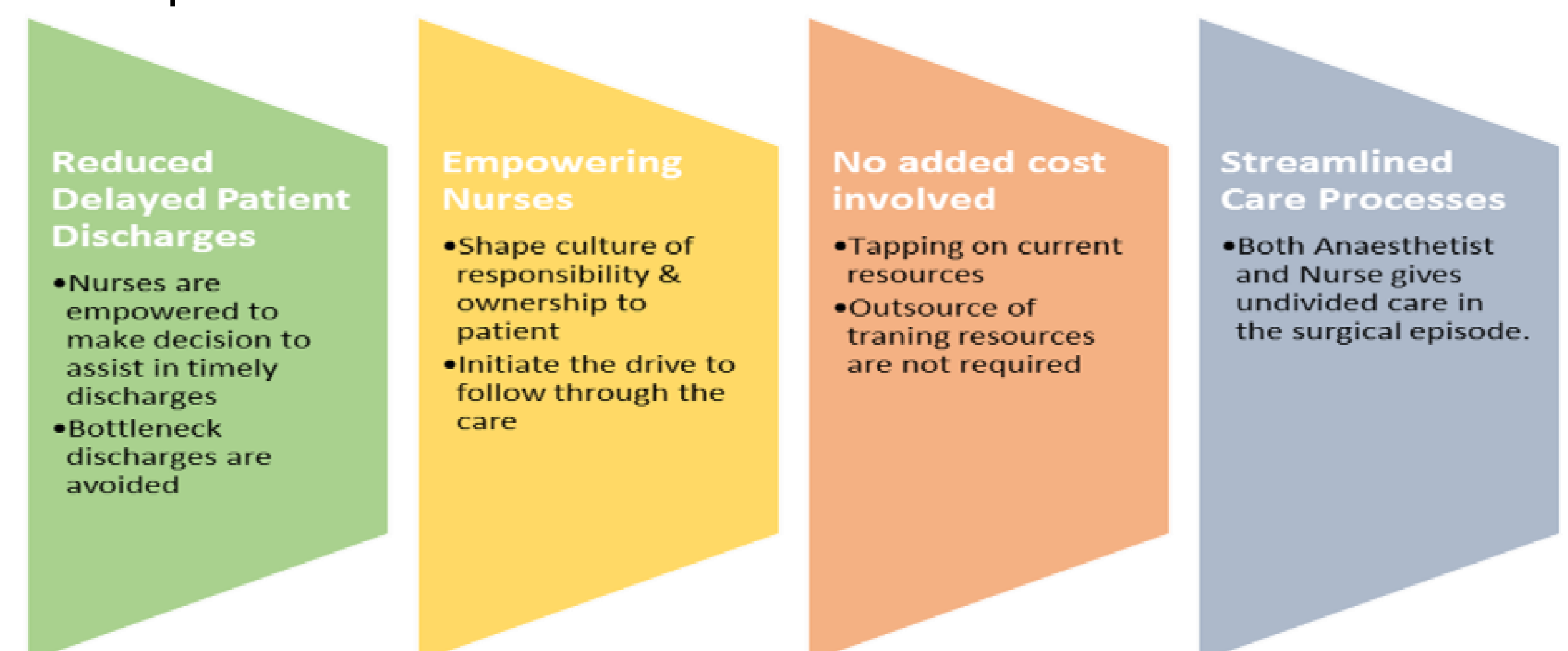
To date, **19 AU nurses** are trained competent to carry out NLAD.

### Time Savings:

Initiatives / Measurement and Impact	Hospital savings	Patient savings and care	Productivity
Nurse-led Discharge of Post Anaesthesia Care Patients in Day Surgery Centre	Time-Savings: Time needed to review patient is negated. <b>GA Time Savings: 40 Mins</b> <b>MAC Time savings: 10mins</b>	<b>Care process is streamlined.</b> Patient Savings Patients do not need to stay longer in recovery unit resulting in faster discharges. Cost avoidance of additional charges to prolonged stay in recovery	Productivity savings Anaesthetist do not need to come out from OT to review the case in PACU. <b>Total time savings for 7956 patients: 119,340 mins = 83 days</b>

**Positive Feedback from Stakeholders:** Nurses are more confident in their work.

**Project impact included:** Reduced delayed patient discharges, empowering nurses, no added cost involved and streamlined care processes.



This project involves the integration and coordination to become a standardised care path, communication is done among team members founded on **mutual respect and professionalism, collaborative approach and collective leadership, value-add, patient-centric, coordinated care**.