



ST VINCENT'S  
HOSPITAL  
SYDNEY

A FACILITY OF ST VINCENT'S HEALTH AUSTRALIA

# Decreasing Length of Stay Following Routine Percutaneous Coronary Intervention (PCI)

23 May 2014

Dr Stephanie Wilson, Director Coronary Care Unit  
St Vincent's Hospital, Sydney

# Aim Statement

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To decrease the length of stay following routine PCI from 28.4 hours to 10 hours within 6 months.

# Project Team

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## **Guidance team:**

Dr Brett Gardiner (Director of Clinical Governance)  
Mr Dominic Le Lievre (Heart Lung Program Manager)  
Professor Michael Feneley (Heart Lung Program Director)

## **Project team:**

Dr Stephanie Wilson (Cardiologist, project lead)  
Dr Paul Bhamra-Ariza, Dr Jonathon Michel (Interventional fellows)  
Dr Christopher Anthony (Cath lab registrar)  
Rosemary Walton, Yvette Payne (Cath lab NUMS)  
Dominique Pennington (Day Procedure NUM)  
Kristal Alken (Day Procedure Unit Clinical Nurse Educator)  
Emma Cable (Quality Coordinator)

# Evidence for a problem worth solving

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- Approximately 400 patients undergo PCI per year at St Vincent's General Hospital
- At present, daystay patients undergoing routine diagnostic coronary angiography who are deemed suitable for PCI require overnight admission to the Coronary Care Unit
- As the hospital operates at near maximum bed occupancy a bed may not be available

# Evidence for a problem worth solving

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- At present, all PCI patients have an overnight hospital stay subjecting some low risk patients to an unnecessary admission (potential for infection, adverse events)
- Discharge on the following morning may also be delayed

## If no bed available on first admission:

- Anxiety/discomfort for patient waiting for second procedure
- Risk of cardiac event while waiting for second procedure
- Additional bed and staffing costs

# Who else wants to solve the problem

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- All cath lab consultants would be happy to send patients home the same day if system was set up and expressed frustration at unnecessary cancellation of patients due to lack of beds
- Anecdotally some patients were already being sent home the same day following PCI in an “ad hoc” manner
- Patients are consistently unhappy about procedure being cancelled and rebooked on another occasion

# Safety Evidence

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- All current evidence suggests radial day case PCI is non-inferior in terms of patient safety (1-3)
- Post procedural complications tend to occur <6 hrs or >24 hours

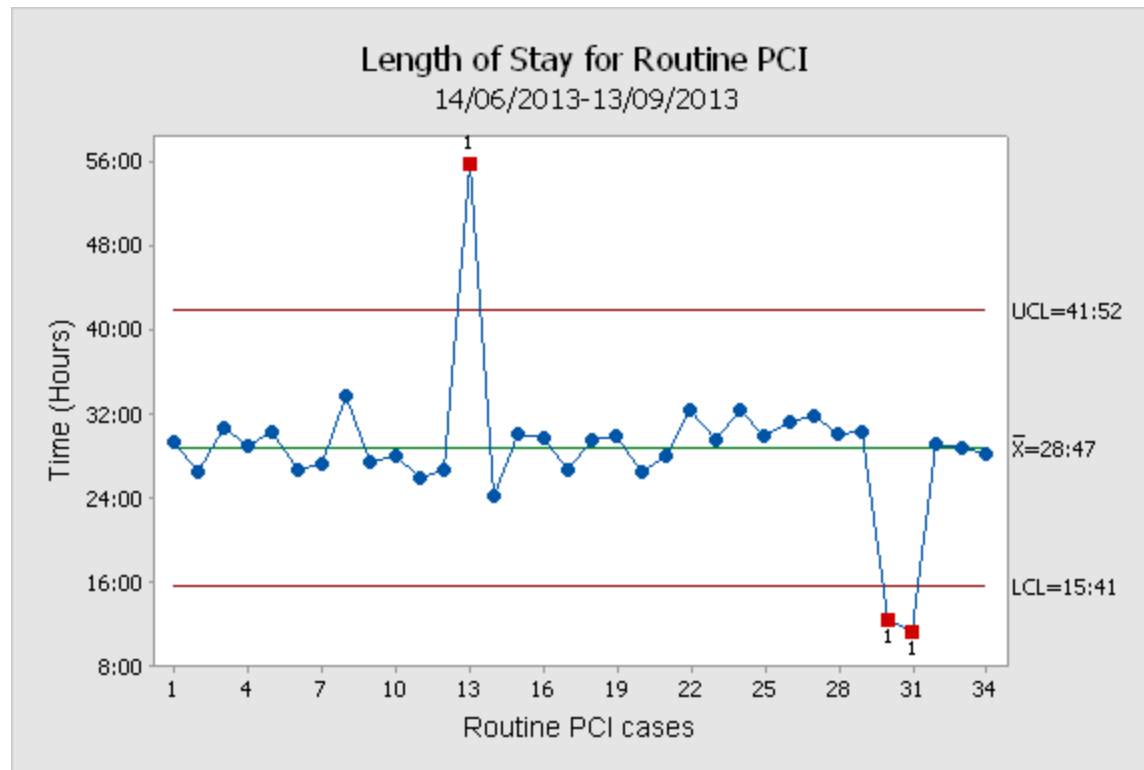
# Cost Effectiveness

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- Anticipated cost saving related to overnight bed and decrease in nursing requirements
- Canadian Study – saving of \$1,141/pt at 30 days with same day discharge when compared to overnight admission (4)
- Average cost following overnight stay for uncomplicated PCI at St Vincent's Hospital 2013 \$7707.
- Projected cost of day stay radial PCI \$6789 – cost saving of \$918.00/case

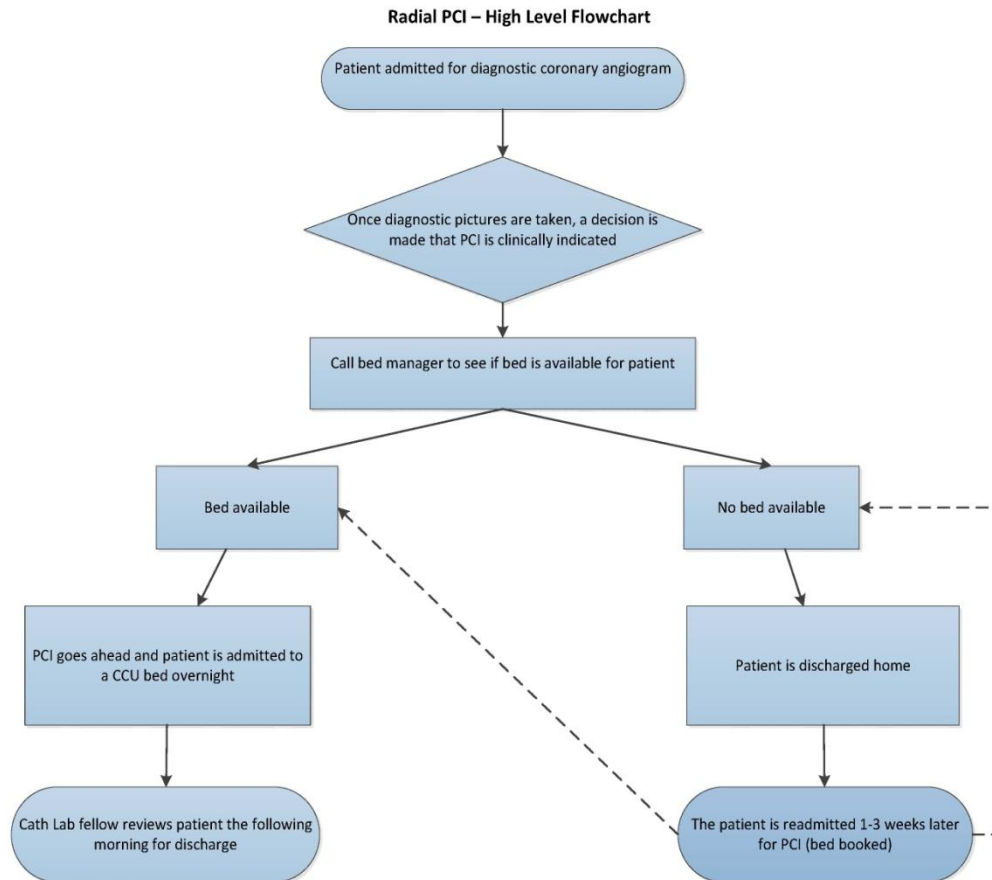


# Diagnostic phase

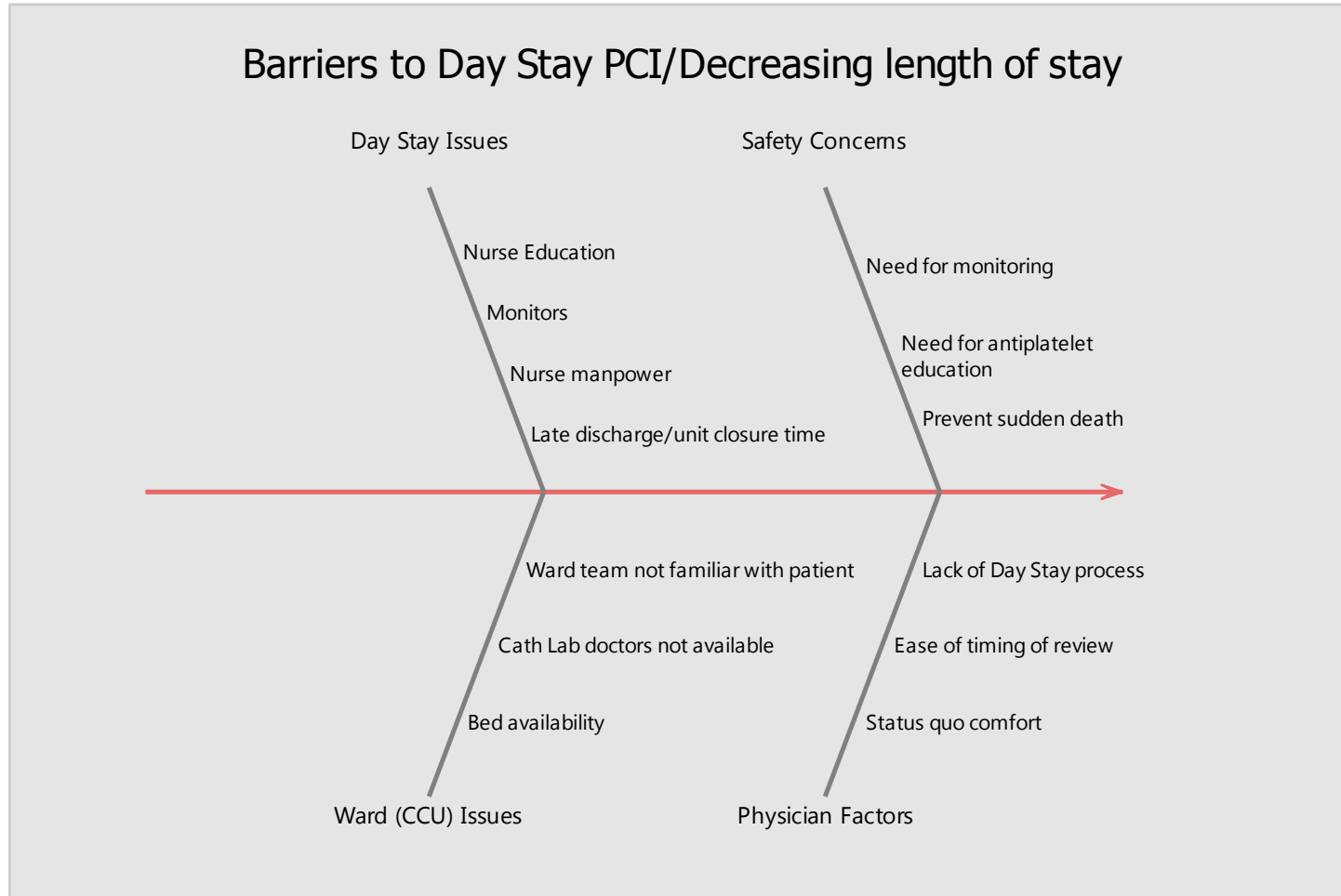


15 patients who had undergone diagnostic coronary angiography were rebooked for PCI at a later date due to an overnight bed not being available

# Process Map



# Affinity Diagram




# SVH Radial Day Stay PCI Program

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- Initial phase designed as a 6 month pilot to determine feasibility and safety
- Project commenced February 2014
- To be trialled on Monday only (largest radial volume)
- One pt/day initially due to resourcing in Day Procedure Unit

# New Process





**ST VINCENT'S HOSPITAL**  
SYDNEY

Radial Day Stay PCI

MRN	SURNAME
GIVEN NAME(S)	
DOB	SEX
AMO	WARD/CLINIC

**IS THE PATIENT SUITABLE FOR DAY STAY PCI?**

Name	
DOB	
Address	
Best contact number	
Next of kin (contact number)	

Please tick the following boxes

Socio-demographic Background (Nurse to complete during pre admission call)	Yes	No
Patient will have a carer at home on night of admission		
Patient will have a carer available to drive them home on day of procedure		
Patient has a working phone		
Patient has no cognitive impairment		
Patient is happy to be a day case		
Patient lives or is staying the night in metropolitan Sydney		

IF THE RESPONSE TO ALL THE ABOVE QUESTIONS IS YES,  
THE PATIENT MAY BE SUITABLE FOR DAY STAY PCI AND SHOULD BE BOOKED AS CASE 1 OR 2

Clinical Criteria (Interventional Fellow to complete prior to procedure)	Yes	No
INR < 1.8		
GFR > 60mls/min		
LVEF > 30%		
Able to tolerate aspirin/thienopyridine		
Patient loaded with ticagrelor, clopidogral, prasugral		
Stable symptoms of coronary disease		


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RADIAL DAY STAY PCI

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**ST VINCENT'S HOSPITAL**  
SYDNEY

Radial Day Stay PCI

MRN	SURNAME
GIVEN NAME(S)	
DOB	SEX
AMO	WARD/CLINIC

**Angiographic Criteria  
(Interventional Fellow to complete following procedure)**

	Yes	No
Successful PCI (no dissection, TIMI 3 flow, no side branch occlusion)		
No bifurcation stenting		
No access site complications		
No post procedural chest pain		

IF THE RESPONSE TO ALL THE ABOVE QUESTIONS IS YES,  
THE PATIENT IS SUITABLE TO BE TREATED AS A DAY STAY PCI

**Checklist Prior to Discharge  
(To be completed by Interventional Fellow)**

	Yes	No (and reason)
Access site reviewed / no problems		
ECG reviewed / no problems		
No chest pain post procedure		
Dual antiplatelet regime discussed		
Patient has been given dual antiplatelet therapy		
Follow up appointment with cardiologist booked in 7-10 days		

**Phone Call 24 Hours Following Discharge  
(Interventional Fellow to complete)**

	Yes	No
Ischaemic chest pain		
Access site problems		
Dual antiplatelet regime discussed		

If any concerns, patient is to re-attend Level 5 for medical review

Name / Designation / Sign: \_\_\_\_\_

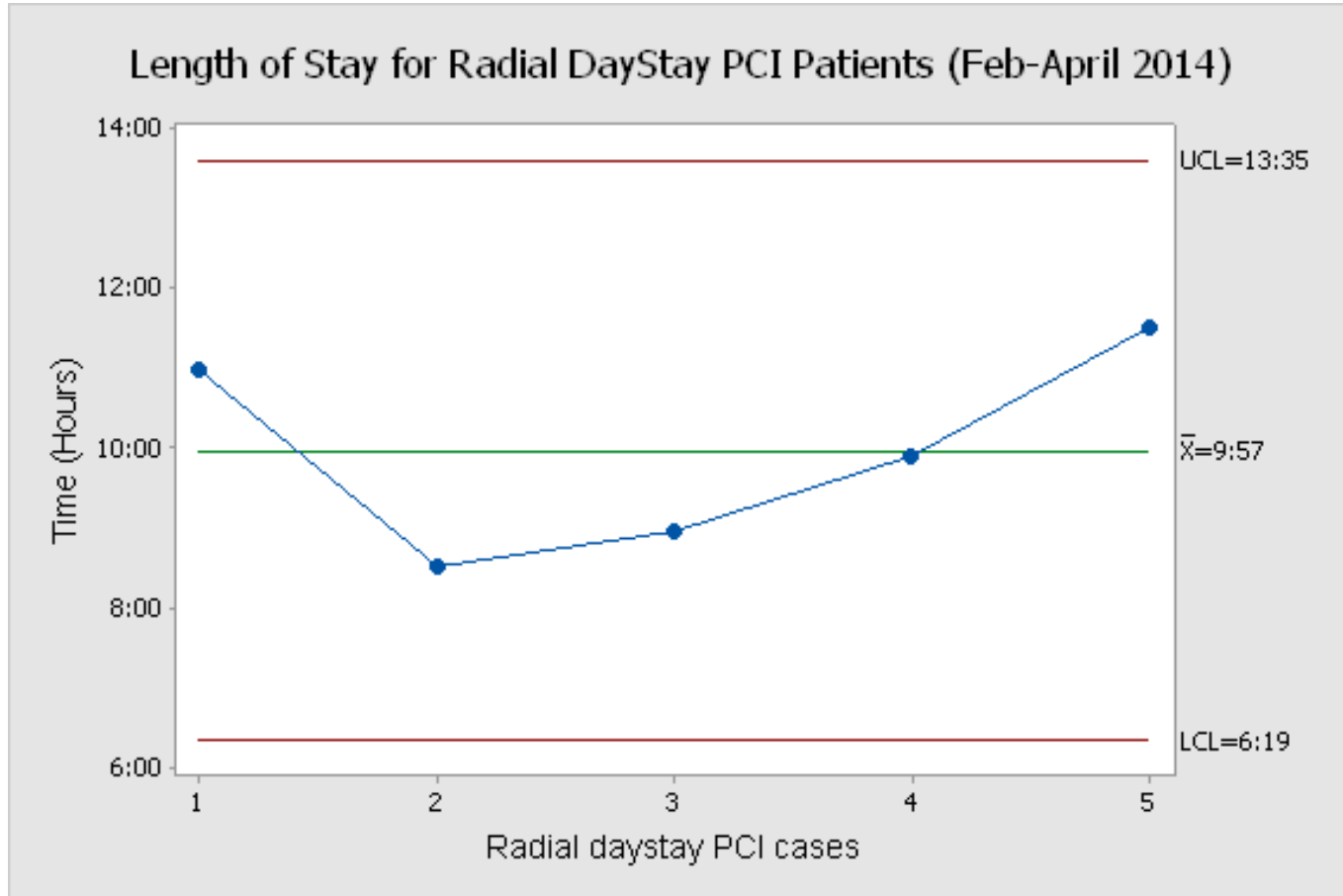
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# Results



# Patient story

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- Mrs CA, 65 yr old lady with 3 weeks of exertional chest pain
- Admitted 10/2/14 via Day Procedure Centre
- Diagnostic coronary angiography showed tight LAD lesion
- Identified prior to and on admission as suitable for day stay PCI
- Treated with drug-eluting stenting
- On table 1030am - Off table 1120am
- Discharged home 530pm
- Played bridge with friend the following day showing off her radial access site

# Next Phase

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- Extend to more than 1 patient per day
- Extend service to 5 days/week once 6 month pilot complete and no safety issues
- Purchase 2-3 telemetry units for the day procedure unit to enable more pts to be involved
- Extend to femoral approach cases



# Limitations

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- Patient barriers
  - Main socioeconomic limitation, patients who live alone
  - Complex cases (renal dysfunction, LV dysfunction etc)
  - Complicated cases (chest pain post procedure etc)
- Organisational/team barriers
  - Funding for telemetry monitors
  - Opening hours of day procedure unit
  - Nursing manpower in day procedure unit

# Strategies for Spread

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Potentially applicable to most of NSW health areas

# References

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1. Feldman DN et al: Adoption of radial access and comparison of outcomes to femoral access in percutaneous coronary intervention: An updated report from the national cardiovascular data registry (2007-2012). *Circulation*. 2013;127:2295-2306
2. Jolly SS et al: Radial versus femoral access for coronary angiography and intervention in patients with acute coronary syndromes (rival): A randomised, parallel group, multicentre trial. *Lancet*. 2011;377:1409-1420
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4. Rinfret S et al: Economic impact of same-day home discharge after uncomplicated transradial percutaneous coronary intervention and bolus-only abciximab regimen. *JACC Cardiovascular interventions*. 2010;3:1011.