

Model of Cardiology Care

(Incorporating Chest Pain Evaluation, Integrated Chest Pain Management and Bed Management)

Abbreviations

AED	Automated External Defibrillator
APFU	Area Patient Flow Unit
AHS	Area Health Service
ACS	Acute Coronary Syndrome
CAN	Cardiac Assessment Nurse
CCU	Coronary Care Unit
CPEA	Chest Pain Evaluation Area
CPI	Clinical Practice Improvement
ECG	Electrocardiograph
ED	Emergency Department
EMU	Emergency Medical Unit
ETAMI	Early Triage of Acute Myocardial Infarction
HDU	High Dependency Unit
IT	Information Technology
KPI	Key Performance Indicator
NSW	New South Wales
NUM	Nursing Unit Manager
PCI	Percutaneous Coronary Intervention
STEACS	ST Elevation Acute Coronary Syndrome
SSU	Short Stay Unit
TASC	Towards a Safer Culture Program

NSW Department of Health

73 Miller Street
NORTH SYDNEY 2060
Tel: (02) 9391 9000
Fax: (02) 9424 5994
www.health.nsw.gov.au

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Design by Elisabeth Sampson (02) 4968 1337

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Table of Contents

Abbreviations	2
Acknowledgments	4
Foreword	5
Executive Summary	6
Section One: The Need for Change	
Bill's Story Prior to the New Model	8
Eric's Story Prior to the New Model	10
Matt's Story Prior to the New Model	12
Background: The State-wide Cardiology Project	14
Problems with the Current Journey	15
Section Two: Cardiology Model of Care	
Overview of the Model	16
Chest Pain Evaluation Areas	18
Bill's Story Under the New Model	18
Essential Components	20
Chest Pain Evaluation Area (CPEA)	21
Use "Good Practice" Chest Pain Processes	23
7 Day a Week Exercise Stress Testing	26
Outpatient Chest Pain Clinics	27
Integrated Chest Pain	
Eric's Story Under the New Model	28
Essential Components	30
First Responder Scheme	31
Integrated Clinical Management	32
Bed Management	
Matt's Story Under the New Model	34
Essential and Highly Desirable Components	36
23 Hour Beds	38
"Hot Beds"	42
Ward By-pass	43
Data Driven Bed Re-aggregation	44
Co-location of Cardiology Related Units	45
Short-term Use of Flex Beds in Peak Demand	46
Day Angioplasty for Appropriate Patients	47
Medi-Hotel	48
Implementing Chest Pain (Process Map)	50
Section Three: Resources	
References	52

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Chest Pain Evaluation Area Working Party

Dr Drew Fitzpatrick, (Working Party Chair), Chair Greater Metropolitan Clinical Taskforce Cardiac Coordinating Committee, and Director of Cardiology, Nepean Hospital,

Virginia Booth, Cardiology Clinical Nurse Consultant, Royal Prince Alfred Hospital

Dr Adam Chan, Director, Emergency Medicine, St George Hospital

Jeff Cobin, Ambulance Liaison Officer, Sydney South West Area Health Service

Dr Keith Edwards, Deputy Director Emergency Department, Liverpool Hospital

Cate Ferry, Towards a Safer Culture Program Manager, Clinical Excellence Commission

Catherine Foster, A/Nurse Manager Emergency Department, John Hunter Hospital

Dr John French, Director Cardiology Liverpool Hospital

Tony Gately, Ambulance/Patient Safety Manager, Ambulance Service of NSW

Margo Gill, Greater Metropolitan Clinical Taskforce Cardiac Coordinating Committee Consumer Representative

Dr Travis Grant, Project Manager, Accenture

Dave Hodge, Director Clinical Services, Ambulance Service of NSW

Alison Latta, Manager of Clinical Services Planning, NSW Health

Chris Lees, Clinical Projects, Ambulance Service of NSW

Karen Lintern, Clinical Nurse Consultant, Liverpool Hospital

Stephanie Lucas, Patient Flow Manager, Mona Vale Hospital

Jonathan Magill, Clinical Nurse Consultant, Prince of Wales Hospital

Pam McAllan, Clinical Manager, Emergency Department, Wollongong Hospital

Jill Morrow, Area Cardiac Liaison Officer Hunter New England Health

Olga Munoz, Patient Flow Officer, Mona Vale Hospital

Dr Richard Paoloni, Emergency Department Director, Concord Hospital

Dr Anette Pantle, Director Clinical Practice Improvement, Clinical Excellence Commission

Felicity Perrin, Towards a Safer Culture Program Coordinator, Armidale Hospital

Paul Stewart, State Cardiology Strategy, Ambulance Service of NSW

Keith Stockman, External Partner, Accenture

Integrated Chest Pain Working Party and the Ambulance and Emergency Department Working Party

Brett Abbenbroek, (Working Party Chair),
State-wide Coordinator Critical Care
Planning, NSW Health

Joel Bardsley, Patient Flow Manager,
NSW Ambulance

Andrew Bridgeman, Senior Nurse Manager,
Patient Access, St George Hospital

Dr David Brieger, Cardiologist, Concord
Hospital

Renee de Neve, Network Nurse Manager,
Cardiovascular, Blacktown/Mt Druitt
Hospitals

Rhys Dive, Ambulance Liaison, Sydney
West Area Health Service

James Dunne, Nurse Unit Manager
Cardiology, St George Hospital

Sarah Fenning, Nurse Unit Manager,
Cardiac Cath Lab, John Hunter Hospital

Dr Peter Fletcher, Director Cardiology,
John Hunter Hospital

Margo Gill, Greater Metropolitan Clinical
Taskforce Cardiac Coordinating
Committee Consumer Representative

Dr Travis Grant, Project Manager, Accenture

Dr Phil Harris, Director Cardiology, Royal
Prince Alfred Hospital

Sue Heath, Acting Nurse Unit Manager
Cardiology/Cath Lab, Nepean Hospital

Barb Hodges, Patient Flow Manager,
Royal North Shore Hospital

Jane Kerr, Area Cardiac Service
Coordinator, Tamworth Hospital

Dr Len Kritharides, Director of Cardiology,
Concord Hospital

Caroline Lawn, Clinical Nurse Consultant,
Coronary Care Unit, Liverpool Hospital

Karen Lintern, Clinical Nurse Consultant,
Cardiac Services, Liverpool Hospital

Stephanie Lucas, Patient Flow Manager,
Mona Vale Hospital

Jill Morrow, Area Cardiac Service
Coordinator, Hunter New England Area
Health Service.

Margery Mundy, Cardiology Clinical
Senior Nurse Manager, Critical Care,
Central Coast Sector, Northern
Sydney/Central Coast AHS

Olga Munoz, Patient Flow Manager, Mona
Vale Hospital

Sally Newport, Nurse Unit Manager,
Cardiac Cath Lab, Liverpool Hospital

Sylvia O'Rourke, Clinical Nurse Specialist,
Cardiac Assessment, Nepean Hospital

Dr Mark Perrin, Cardiology Registrar, St
Vincent's Hospital

Dr David Rees, Staff Specialist, St George
Hospital

Alan Reinten, Acting Operation Centre
Manager Sydney, NSW Ambulance Service

Neil Rickwood, Nurse Unit Manager
Coronary Care Unit St Vincent's Hospital

Sue Samuels, Acting Co-Network
Operations Manager Cardiovascular,
Nepean Hospital

Gail Smith, Acting Senior Nurse Manager,
Medicine, Wollongong Hospital

Keith Stockman, External Partner,
Accenture

Sharon Verhoeven, Acting Cardiac
Services Manager, Nepean Hospital

Deb White, Nurse Unit Manager, Cardiac
Cath Lab, Gosford Hospital

Jimmy Yap, Nurse Unit Manager, Cardiac
Cath Lab, Westmead

Foreword

NSW Health is developing new models of care for adult acute cardiology patients, through the *Clinical Services Redesign Program*. The program is currently supporting clinicians and managers to redesign and improve a range of patient journeys across multiple care centres in area health services.

The State-wide Cardiology Project is working with clinicians and health service teams to redesign better patient journeys for adult Acute Coronary Syndrome patients. We recognised the importance of key stakeholder engagement and sought early and ongoing input from area health service representatives, including Cardiology, Emergency Department, frontline clinical, Patient Flow Management Team, and Clinical Redesign Unit staff, as well as Ambulance NSW, Clinical Excellence Commission, GMCT Cardiac Coordinating Committee, and consumer representatives. The State-wide Cardiology Project Steering Committee includes a wide range of stakeholders.

The key phases of the project included a diagnostic and a design stage using proven methodologies based on sound data. It is critical to note that the solutions in this model have been generated by working parties comprising multi-disciplinary staff from across NSW health facilities. These solutions have been prioritised for immediate implementation due to their importance in improving cardiology services.

This model is part of the solution design and will be an asset in the implementation of the projects. This project will also benefit from expert solution design “SWAT teams”. These teams will help accelerate and guide “good practice” solution implementation, working in partnership with the staff at each site.

This model offers implementation solutions, which have been developed by frontline staff, to assist frontline staff to deliver timely access and high quality care for cardiology patients.

Dr Tony O’Connell

MB BS FANZCA FJFICM

Director Performance Improvement and
Clinical Services Redesign Program,
NSW Health

Executive Summary

This Model of Care was developed from the work undertaken by the members of NSW Health's State-wide Cardiology Project as part of the *Clinical Services Redesign Program*.

This project has focused on adult patients with Acute Coronary Syndrome (ACS). The project included consideration of demand management strategies and patient transfer services. It has not considered specific solutions for surgical processes, cardiac rehabilitation or community services. These will be described in future Models of Care.

There are a number of issues which can make the journey experienced by patients less than optimal. These issues relate to initial chest pain evaluation, chest pain management and bed management. There is also significant variation in practice and in the configuration of Cardiology beds across NSW hospitals.

The model presents a range of solutions to address the above issues.

Essential components to ensuring appropriate initial evaluation of chest pain include the establishment of Chest Pain Evaluation Areas (CPEA), the use of "good practice" chest pain processes that are owned by a staff member, the availability of 7 day a week exercise stress testing as well as the provision of care in outpatient chest pain clinics for selected patients.

Essential to good chest pain management is the introduction of a First Responder Scheme and integrated clinical management. These solutions allow patients to receive early pre hospital treatment under protocol as well as to be taken to the most appropriate hospital, rather than the nearest one.

Bed management can be improved with the introduction of measures including the establishment of 23 hour beds and hot beds for primary angioplasty cases. Metropolitan hospitals without cardiac intervention services should be able to transfer patients direct to the Cardiac Cath Lab at another hospital to have a procedure and bring them back to recover in the original hospital, bypassing the need for ward admission in the other hospital.

Short term use of flex beds, the co-location of cardiology related units and day only angioplasty for appropriate patients are some of the ways to ensure a better flow of patients within and across hospitals.

Together, these solutions will create a smoother, more seamless journey for patients. Health care providers will be able to provide timely, high quality care to more patients at less cost.

Why Implement this Model?

Improved assessment, treatment and management of patients.

A smoother, more seamless journey for patients.

Cost savings in providing care through reductions in re-admissions and Access Block.

Bill's Story Prior to New Model

Bill's Story

Bill is 55 years old, overweight and an occasional smoker.

One day, Bill has some chest pain and he is persuaded to visit his local Emergency Department (ED).

This is his story.

When I got to the hospital I explained what was happening to the nurse. She asked lots of questions and checked my blood pressure.

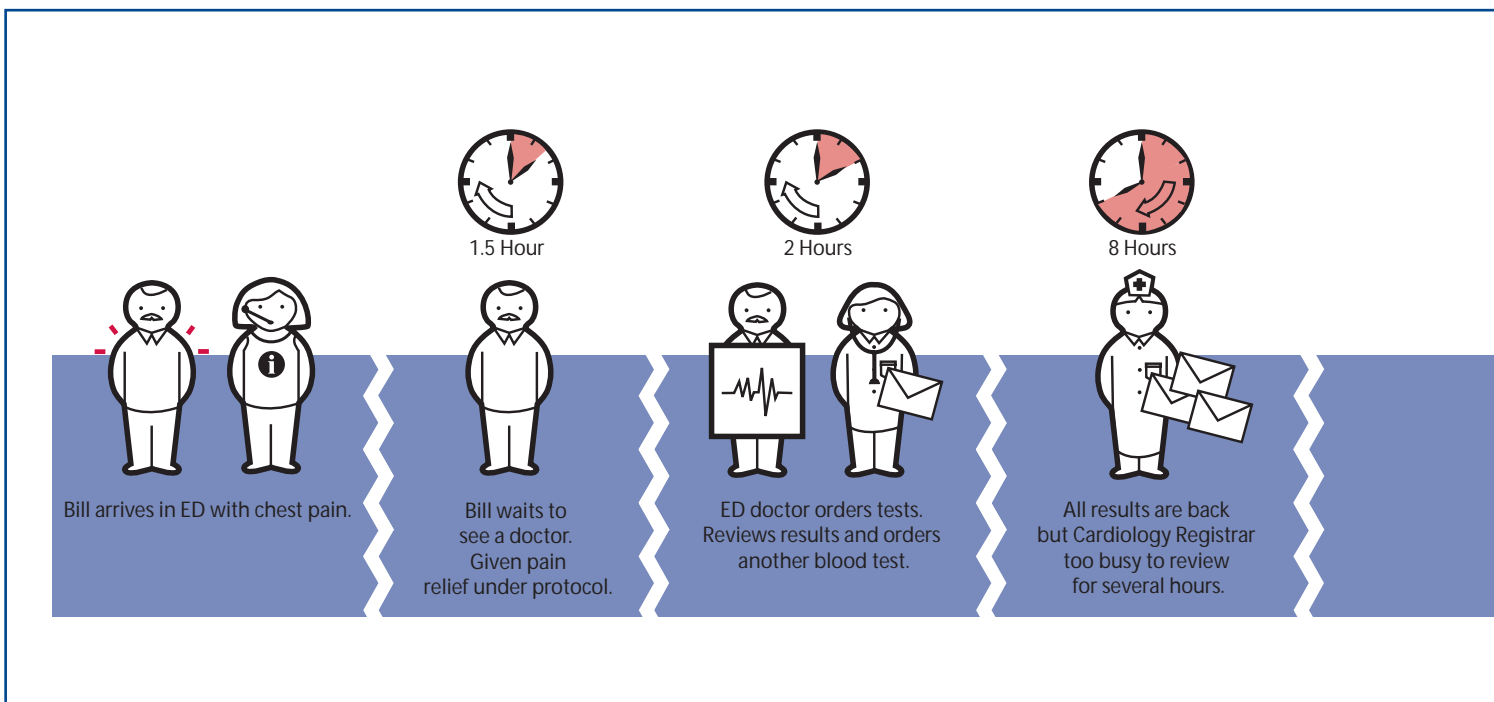
The nurse said I had to wait in the waiting room for a doctor but she didn't say how long the doctor might be. I was going to ask but she looked busy.

It felt like I was waiting forever. I was in pain and felt really sick. I was scared because I didn't know what was happening. After about an hour I was taken to a bed. Another nurse asked more questions and asked me about the pain. She gave me some pain relief and hooked me up to a monitor. Still there was no doctor. After a while the doctor arrived and said she would have to do some tests and that she would see me when the results were back. She didn't say how long they'd take and she rushed off.

About two hours later the doctor said she'd looked at my test results and that I had to have another blood test. This time she told me how long the results would take - 8 hours. I heard her tell the nurse that she would try to get a specialist (Cardiologist) to look at me.

By this time I was feeling annoyed but too sick to make a fuss. I still didn't know what was wrong with me or how long I had to be in hospital.

After many more hours the doctor came back and said she had my test results. She'd spoken with the specialist but he was too busy to see me until later in the day. Eventually, the nurse came back and told me I need some sort of exercise stress test. They wanted me to do it before I went home because I was at risk of having a heart attack.



To have this test I had to be in a ward in the hospital. That took a couple more hours to sort out. Finally, they took me up to Cardiology Ward. They kept me there for a whole day and then told me there was no spare doctor to do the test. My wife and family came in and my boss wanted to know when I'd be back at work but I couldn't tell them anything.

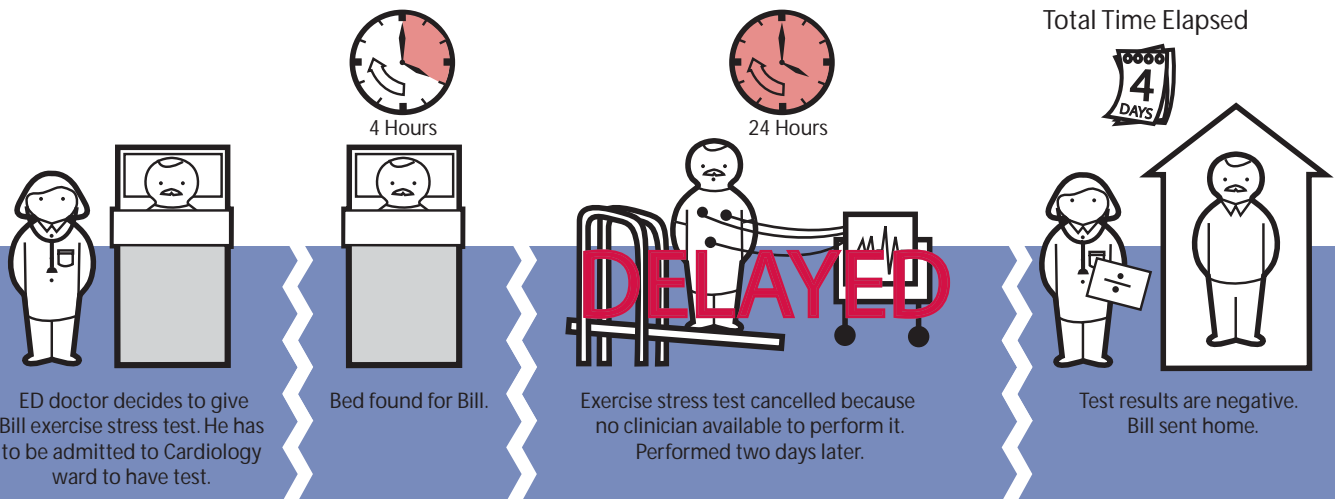
It took another two days until they gave me the test. The test didn't take long to do. I don't know why I had to wait so long for them to do it. After all that they said the test showed nothing wrong and I could go home. All that time in hospital, almost four days, for nothing.

**TOTAL TIME ELAPSED:
4 days**



What's Wrong with this Story?

- Bill has to wait too long for initial tests and diagnosis. After four days in hospital, Bill is discharged without treatment.
- He is not told how long he has to wait for at each stage of his journey.
- Some of the delay to Bill's care is because treatment has to be carried out by Specialist staff that are too busy to see him.
- He is scheduled for an exercise stress test but this is delayed. There is no appropriately staffed 7 day a week exercise stress testing service at the hospital.



Eric's Story Prior to New Model

Eric's Story

Eric is a 64 year old man who has a history of high blood pressure and high cholesterol. He currently smokes 25 cigarettes a day and lives a sedentary lifestyle.

He has severe chest pain at home one day.

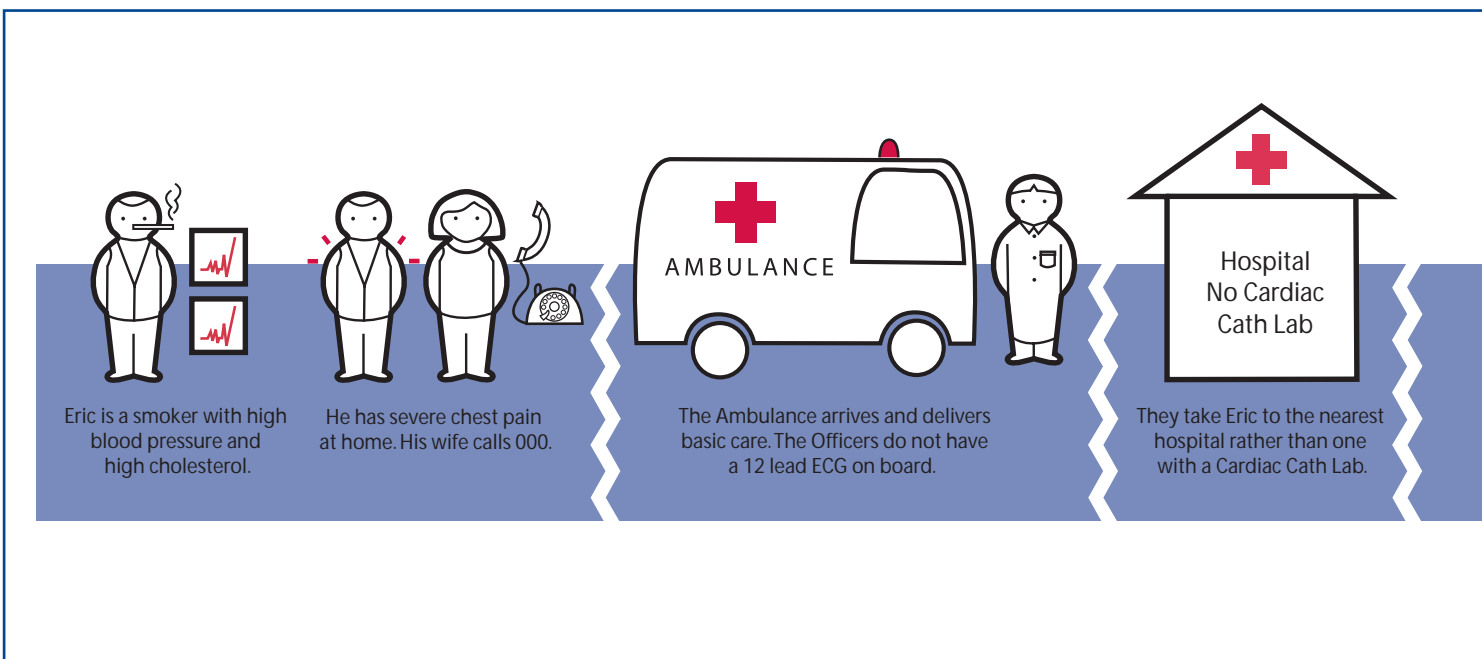
This is his story.

Late one morning, Eric is mowing the lawn when he develops severe pain in his chest which travels down his left arm. He goes into the house to find his wife, clutching his chest. He is very pale and quite distressed.

His wife Deidre dials 000 and asks for an Ambulance. The Ambulance arrives within eight minutes and the crew assesses Eric. They apply oxygen, perform vital signs and connect Eric to their portable 3 lead heart monitor. Eric has ongoing pain and they administer pain relief.

They take Eric to the nearest hospital.

On arrival at the hospital Eric has low blood pressure, a weak pulse and has ongoing pain. He is transferred to the Resuscitation Bay where a 12 lead ECG shows acute ST Elevation Acute Coronary Syndrome (STEACS).



The Cardiology Registrar arrives 30 minutes later to assess Eric. His condition has now stabilised and his pain has settled. There is no Cardiac Cath Lab at this hospital and the nearest hospital with these facilities is 40 minutes away.

It is now 60 minutes since Eric called the Ambulance. Eric is given thrombolytic therapy because of the time delay in him undergoing a primary Percutaneous Coronary Intervention (PCI). Therapy is commenced and Eric is transferred to the Coronary Care Unit (CCU).

Eric is diagnosed as suffering a myocardial infarct and he has lost a large amount of heart muscle.

What is Wrong with this Story?

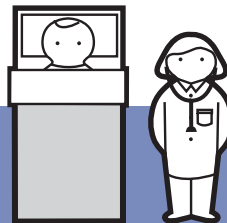
- Eric is taken to the nearest hospital, not the most appropriate one. The nearest Cardiac Cath Lab is 40 minutes away.
- It takes 30 minutes for the Cardiologist to assess Eric.
- As the Ambulance did not have a 12 lead ECG, the crew were not able to diagnose and start vital thrombolytic therapy.



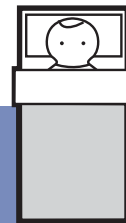
At the hospital Eric is triaged Category 1. He has acute ST Elevation Acute Coronary Syndrome (STEACS).



30 minutes later the cardiologist assesses Eric. There is no Cardiac Cath Lab at this hospital.



Eric is given thrombolytic therapy and transferred to the Coronary Care Unit. It would have been better if he could have had the therapy earlier in the Ambulance.



Eric stays in hospital for 8 days.

Matt's Story Prior to the New Model

Matt's Story

Matt is the Bed Manager at a large metropolitan teaching hospital with cardiac catheterisation facilities.

The hospital is at capacity and, although it is only 8.30am, there are 30 patients requiring admission to the hospital.

This is the story of Matt's day.

It is only 8.30am and there are 27 patients in the ED requiring admission to hospital. Of these, nine are cardiology patients. There are two patients at rural hospitals that need to be transferred, one requiring a CCU bed and the other requiring a ward bed. There is also one patient who has come in for an elective procedure who will require a CCU bed.

The hospital is at 100% capacity and the number of predicted discharges is low.

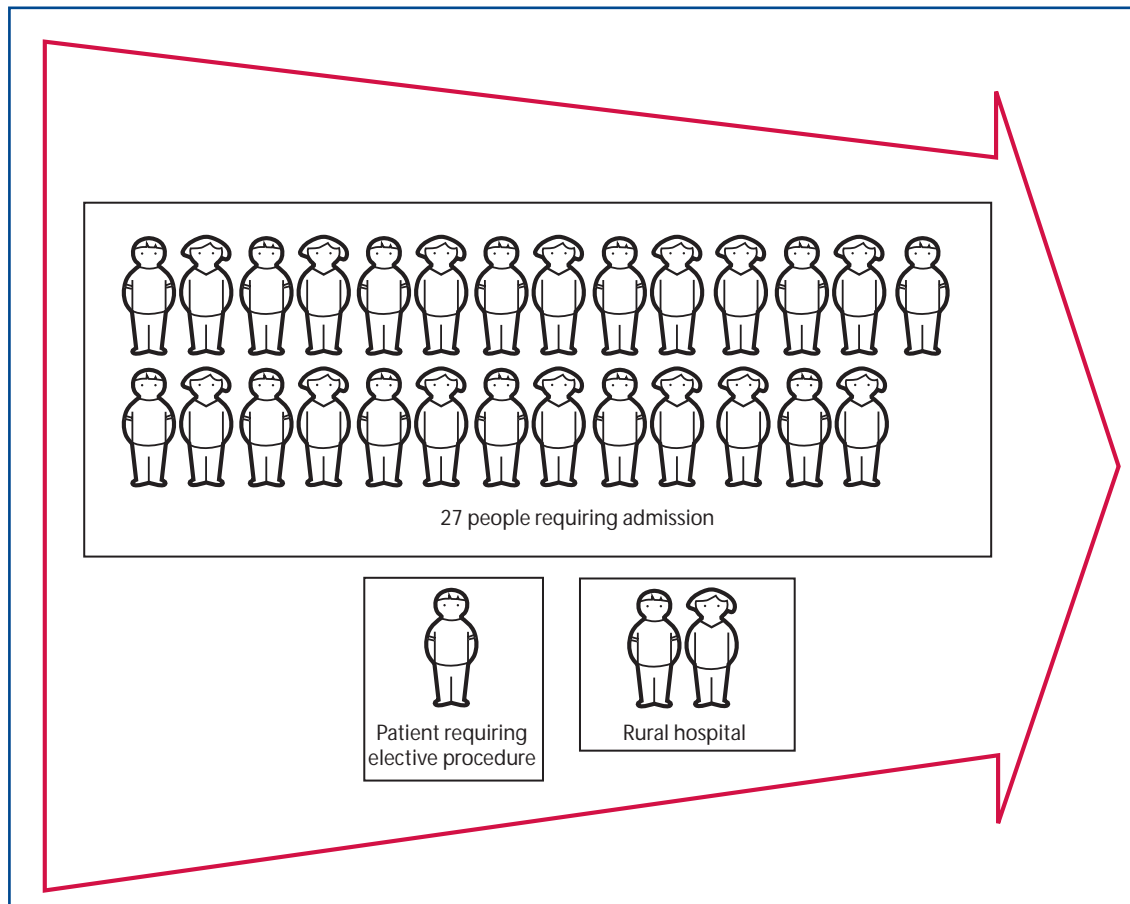
There is a significant wait for cardiology inpatient beds. One patient has been waiting for 36 hours. Of the nine cardiology patients waiting for beds:

- two have atypical chest pain with normal electrocardiographs (ECGs) and normal cardiac markers
- three require monitoring in the CCU for abnormal heart rhythms

- one patient has presented within the previous hour following a heart attack
- three require admission for management of fluid congestion related to heart failure.

Matt receives calls from the hospital's Executive Director, the Area Executive Director, and the Ambulance Liaison Officer all asking what strategies he will be using to give patients access to timely care.

The CCU Nurse Unit Manager (NUM) confirms that there is likely be four CCU beds available later that day. Two of the beds are likely to come from patients who had elective procedures the previous day but are awaiting medical review, ECG and the result of blood tests. There is no protocol for these patients and they wait for the CCU ward round. The other two beds are likely to come from two CCU patients who are waiting to go to the ward.



The ward NUM confirms that it is likely there will be four beds but they will not be available until later in the afternoon. So the CCU will not have beds available until then.

The Cardiac Cath Lab accepts the patient who suffered a heart attack for an urgent procedure to try and open their blocked arteries. There are many calls exchanged to make a CCU bed available for this patient as the hospital has no designated "Hot Bed". The patient has the procedure but the negotiations for beds delay it by more than one hour.

The CCU beds are not cleared until early in the afternoon. The delay in access to suitable beds has resulted in a downstream impact on all the patients waiting for beds.

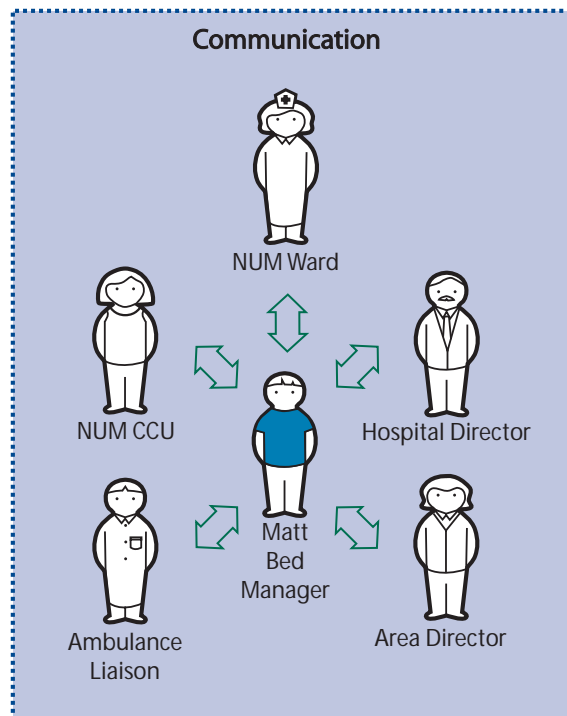
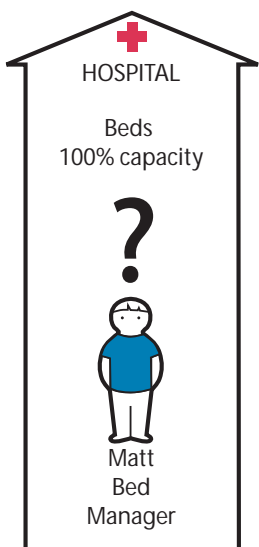
- The two elective Primary Angioplasty patients have their procedures cancelled.

- The two patients from the rural hospital have their transfers delayed by another 24 hours.
- The three patients with symptomatic heart failure continue to wait. All three have been in the ED for more than 24 hours.
- The two patients with atypical chest pain have waited for more than 24 hours for an exercise stress test.

Matt continues to field calls from the Hospital's Executive Director, the Area Executive Director, and the Ambulance Liaison Officer. As there are limitations to opening additional beds they decide to cancel elective procedures and non urgent inter-facility transfers. This does little to alleviate the problem. There is still Access Block, poor Off Stretcher Times and delays in elective procedures.

What's Wrong with this Story?

- Patients are waiting too long for care and having procedures postponed.
- There is no effective discharge planning protocol.
- Having so many patients waiting for admission is overcrowding the ED.
- The urgently required treatment of a patient is delayed because there are no "hot beds" for emergency patients.
- The transfer of patients from rural hospitals is delayed.



Background: The State-wide Cardiology Project

This Model of Care was developed by the members of NSW Health's State-wide Cardiology Project as part of the Clinical Services Redesign Program.

The project is redesigning service configuration and clinical services for Cardiology patients across NSW, with a particular emphasis on metropolitan hospitals.

The project has focused on adult patients with ACS. The project has included consideration of demand management strategies and patient transfer services. It has not considered surgical processes, cardiac rehabilitation or community services.

Objectives of the State-wide Cardiology Project

- Enable timely and equitable access to effective and appropriate care to adult acute cardiology patients across NSW.
- Treat adult acute cardiology patients in order of clinical priority.
- Reduce variations in the length of stay for acute cardiology patients between and within facilities.
- Enable access by health service teams to a practical and co-ordinated cardiology service.

In-Scope

The project was conducted within the Sydney metropolitan area health services and Hunter New England Area Health Service with engagement and input from rural area health services. The primary recipients of the services are:

- Sydney West Area Health Service
- Sydney South West Area Health Service
- South Eastern Sydney Illawarra Area Health Service
- Northern Sydney Central Coast Area Health Service
- Hunter New England Area Health Service

The project focussed on:

- adult ACS patients requiring investigative cardiology tests and interventional cardiology procedures
- demand management strategies in relation to acute cardiology patients and
- patient transfer services for acute cardiology patients.

Out of Scope

The project (and this Model of Care) has not focused on:

- purchasing of equipment
- patient flow processes for cardiac surgery
- paediatrics
- Chronic Heart Failure
- cardiac rehabilitation
- community services for cardiology patients.

Current Problems with the Journey

Key chest pain evaluation issues include:

- limited use of chest pain pathways
- sub-optimal use of exercise stress testing
- significant Access Block.

Key chest pain management issues include:

- delays in provision of appropriate treatment to some patients, including delays in defibrillation
- differences in clinical management of chest pain patients by the Ambulance Service
- insufficient continuity of care between Ambulance vehicles and hospital EDs
- delays in reperfusion for some patients, including inequity of access to primary angioplasty, and/or delays in administration of thrombolysis therapy.

Key bed management issues include:

- variation in multi-day patient flow in major hospitals with Cardiac Cath Labs
- delays in inter-facility transfer of patients from rural and metropolitan hospitals
- high bed occupancy
- significant number of 'outlier' patients
- sub-optimal Cardiac Cath Lab utilisation due to lack of available beds.

Current Problems

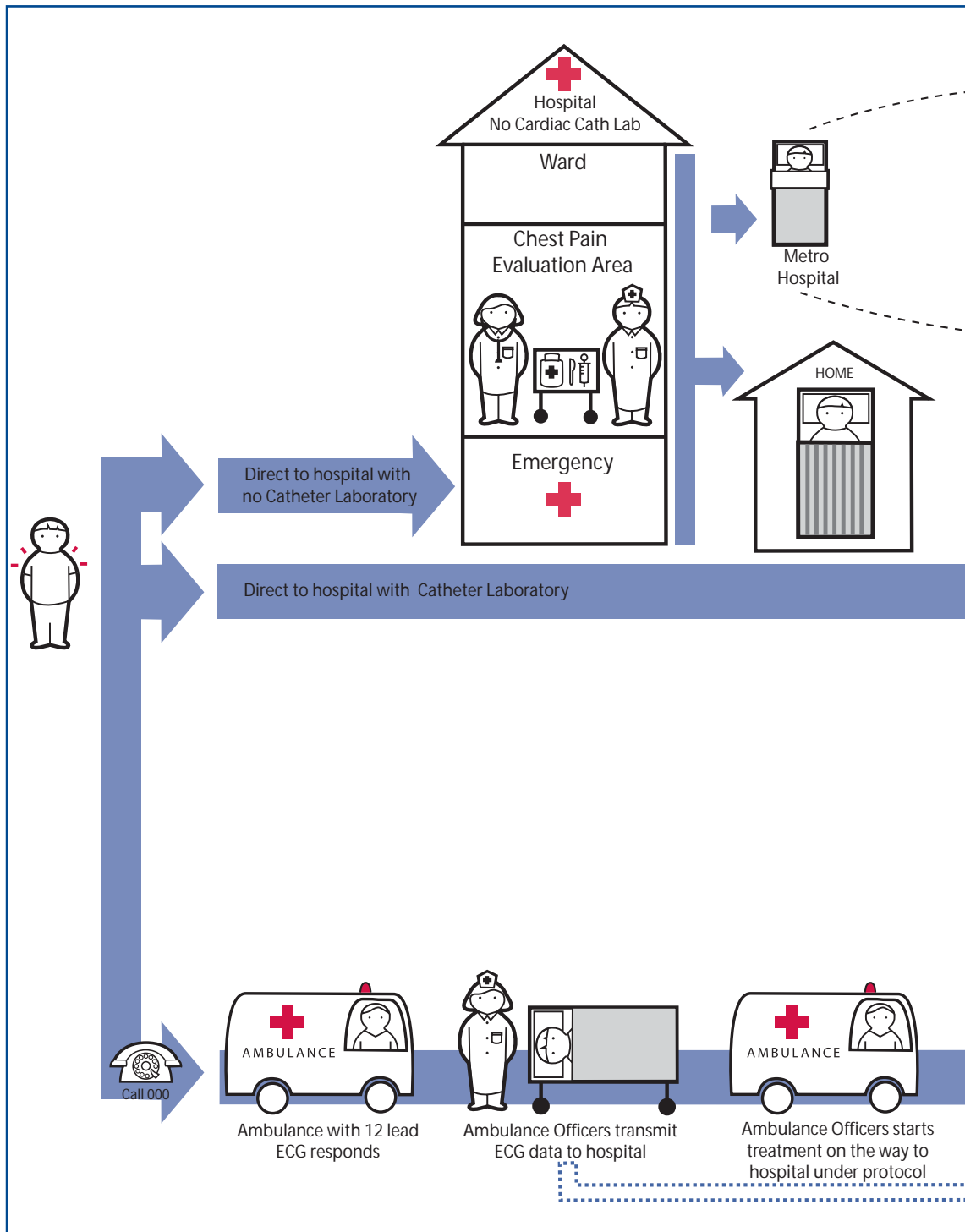
There are a number of issues which can make the journey for patients with chest pain sub-optimal. These issues relate to initial chest pain evaluation, chest pain management and bed management.

There is also significant variation in practice and in the configuration of Cardiology beds across NSW hospitals.

Cardiology Model of Care

The *Cardiology Model of Care* contains solutions that will improve the patient journey and their experience. It will enable timely access to effective and appropriate care for patients experiencing chest pain.

- Chest pain evaluation areas**
- Chest Pain Evaluation Area.
 - Use "good practice" chest pain processes.
 - 7 day a week exercise stress testing.
 - Use outpatient clinics (where appropriate).
 - Data driven bed re-aggregation.



Integrated chest pain management

- First Responder Scheme.
- Integrated clinical management.
- Basic clinical management by Ambulance Officer.
- 12 lead electrocardiogram (ECG)/Ambulance administered thrombolysis.
- Early Triage of Acute Myocardial Infarction (ETAMI).

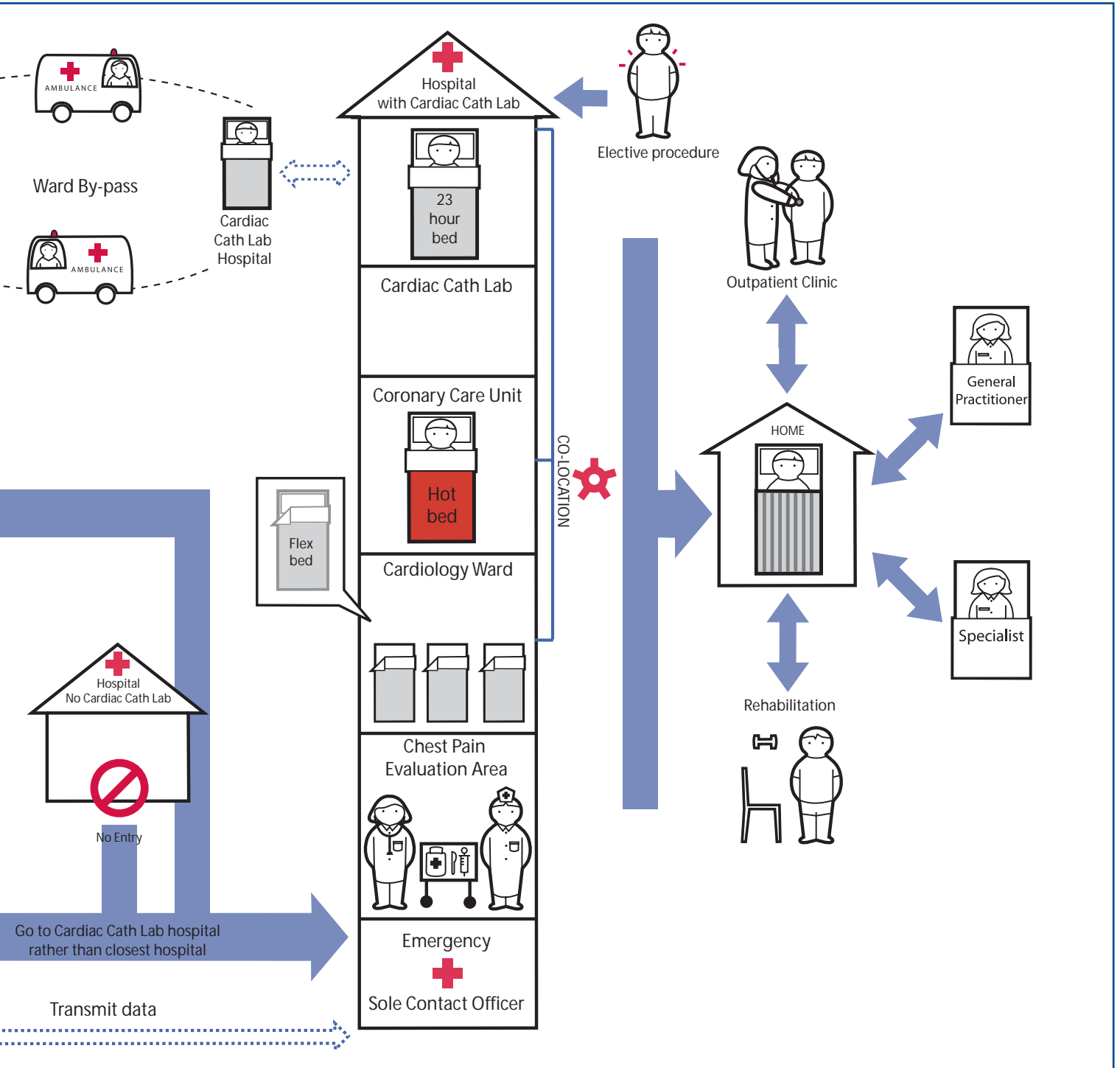
Bed management

Essential

- 23 hour beds.
- Hot beds.
- Ward by-pass for metro hospitals.
- Data driven bed reaggregation.

Desirable

- Co-location of Cardiology related units.
- Flex Beds.
- Day Angioplasty.
- Medi Hotel.



Chest Pain Evaluation Areas - Essential Components

Bill's Story

Bill is 55 years old, overweight and an occasional smoker.

A year after his initial chest pain, Bill experiences another similar episode.

This is his story under the new *Cardiology Model of Care*.

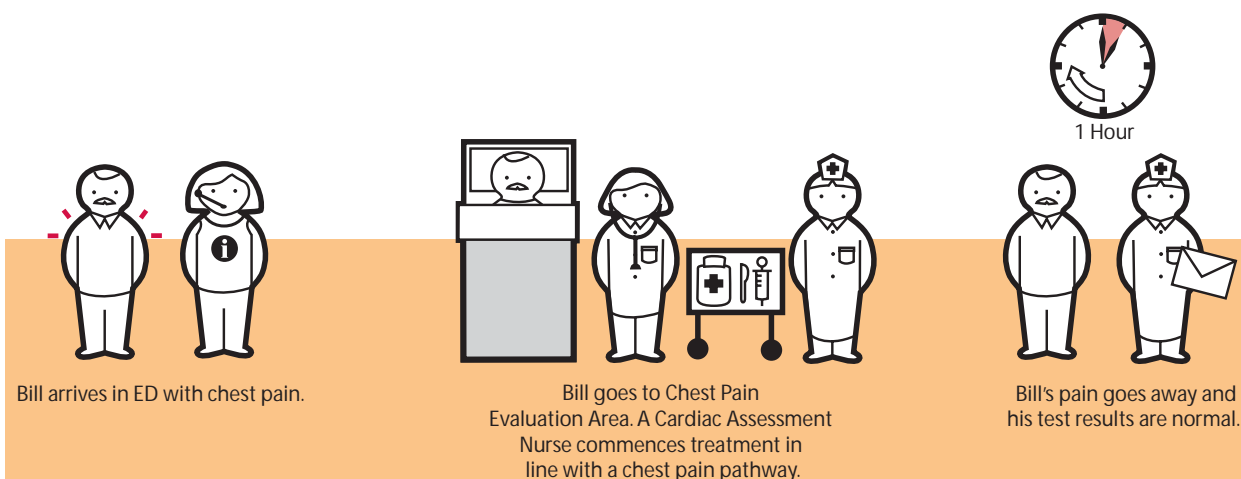
At the hospital I explained my symptoms to the nurse. She asked me some questions and checked my blood pressure and pulse.

Almost immediately I was sent to a special area for people with chest pain near the ED.

A special Cardiac Nurse explained that I would have to have some tests. She asked me some questions about my pain and put me on a monitor. She said she was starting treatment as part of a standard process (chest pain pathway) for people with chest pain. She gave me some oxygen and took some blood.

The nurse performed an ECG and gave me some aspirin. Soon after a doctor came in and examined me. He said I had an intermediate risk for a condition called Acute Coronary Syndrome. Shortly after that my chest pain disappeared.

After only about an hour the nurse said my results were back. They were normal.



She went and told the doctor. She came back and said that to be on the safe side they would give me an exercise stress test.

They said it would be done in an hour and exactly an hour later the nurse took me to the equipment. It was in the same area so I didn't have to go far. She explained what was going to happen and then the Cardiology doctor came in and did the test.

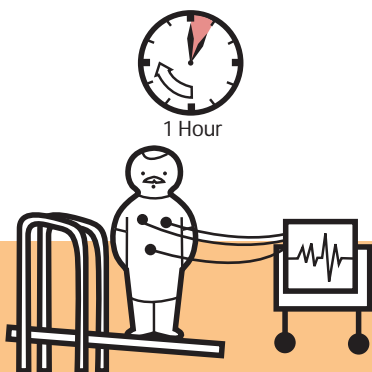
The test was negative and the Cardiology doctor said he thought my pain was most likely related to an old shoulder injury. He said I could go home, which was great news. He warned me to contact the hospital again if the chest pain came back.

The doctor gave me a prescription for anti-inflammatory medications and told me to see my local doctor. The nurse provided information about the need to stop smoking and to have a healthier diet. She offered me some good tips and places to go for more information.

They gave me very good care. I didn't have to wait long at all and I knew what was happening every step of the way.

What is Good About this Story?

- There is a Chest Pain Evaluation Area in the hospital.
- Within minutes of arriving at the ED Bill has been medically assessed and is in the care of a qualified staff member.
- Bill receives care according to a chest pain pathway.
- An exercise stress test is completed to verify the chest pain is not cardiac related.
- Bill goes home after three hours with information to reduce his risk of heart attack.



Bill undergoes an Exercise Stress Test in the Chest Pain Evaluation Area. The test is negative.



The Cardiac Registrar diagnoses the pain to be coming from a shoulder injury.



Bill is offered information on smoking cessation and healthy diet.



Bill is discharged with a prescription for anti-inflammatory medications and instructions to see his GP.



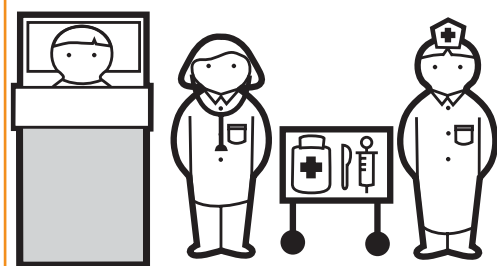
Total time 3 Hours

Chest Pain Evaluation Areas – Essential Components

Essential Components of Chest Pain Evaluation Areas

- Chest Pain Evaluation Area (CPEA).
- Use “Good Practice” Chest Pain Processes.
- 7 Day a Week Exercise Stress Testing.
- Outpatient Chest Pain Clinics.

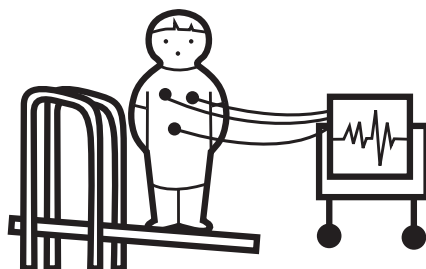
Chest Pain Evaluation Area (CPEA)



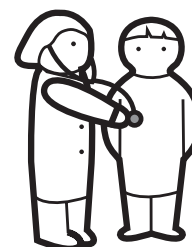
Use “Good Practice” Chest Pain Processes



7 Day a Week Exercise Stress Testing



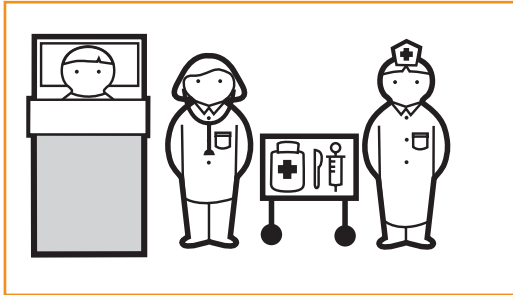
Outpatient Chest Pain Clinics



Benefits

- Improved assessment, treatment and management for patients with chest pain, leading to improved patient safety and outcomes.
- 10%-15% reduction in longer stay cardiology admissions i.e. many patients will be processed via CPEA and not admitted to a cardiology bed.
- A dramatic reduction in Access Block can be achieved if patients are admitted to the CPEA for their initial assessment and treatment.
- Potential reduction in re-admissions and/or morbidity/mortality of cardiology patients.
- Potential decrease in cost of treating chest pain patients.

Chest Pain Evaluation Area (CPEA)



Characteristics

- Dedicated area used for evaluation of chest pain.
- Dedicated staff skilled in cardiac care, who can initiate treatment under protocol.
- 12 lead ECG machine and exercise stress test equipment available.

Benefits

- Rapid treatment for patients.
- Reduced admissions.
- Improved ED bed availability.
- Reduced Access Block.

Barriers to overcome

The location of the CPEA needs to be flexible. The locations most likely to deliver sustainable success are:

- in or next to the ED
- within Short Stay Units (SSU) or Emergency Medical Units (EMU)
- in Cardiology Units.

The table on the next page illustrates the pros and cons of the various CPEA locations.

Essential Components of Chest Pain Evaluation Areas

- Chest Pain Evaluation Area (CPEA).
- Use “Good Practice” Chest Pain Processes.
- 7 Day a Week Exercise Stress Testing.
- Outpatient Chest Pain Clinics.

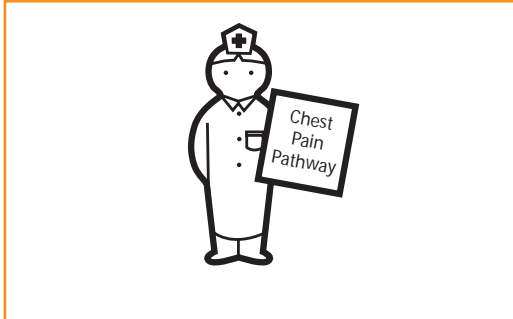
Chest Pain Evaluation Areas (CPEAs) provide a dedicated area for the rapid treatment of patients with chest pain.

Ideally they have staff skilled in cardiac care and specialist equipment. Their most effective location will vary at each hospital.

Pros and Cons of Locations for Chest Pain Evaluation Areas

	Emergency Department (ED)	Short Stay Units (SSU) Emergency Medical Units (EMU)	Cardiology Units
Pros	<ul style="list-style-type: none"> • Play a key role in determining ACS patients. • Currently own most steps of the chest pain pathway. • Patients admitted to the CPEA to reduce Access Block. 	<ul style="list-style-type: none"> • Improves ED bed availability while not impacting space in Cardiology Units. • Patients admitted to the CPEA to reduce Access Block. • Reduces pressure to admit or discharge when diagnosis is not yet known. 	<ul style="list-style-type: none"> • Improves availability of beds in ED and SSU. • Quick admission to CPEA may reduce Access Block. • Improved patient access to skilled staff familiar with the condition. • Cardiologist can decide on administering Heparin.
Cons	<ul style="list-style-type: none"> • May be long duration of ED bed use (wait for second troponin result). • Patient needs to be admitted to CPEA to improve Access Block. • Physical constraints. ED may lack space for CPEA beds and equipment. 	<ul style="list-style-type: none"> • Some facilities do not have a SSU. May require investments in infrastructure and staffing. • Requires strong links with ED and Cardiology to ensure optimal care delivery and patient safety. 	<ul style="list-style-type: none"> • Higher investment if space not available. • Patient safety issue if they do not have ACS. Efficient ED patient screening is critical. • Potential for delayed access to senior clinicians. • Patient safety issue if patient becomes unstable when clinicians not there. • Reduced ED involvement may impact buy-in and co-ownership.

Use “Good Practice” Chest Pain Processes



Characteristics

- Cooperative design by ED and Cardiology departments is critical.
- Choose a pathway proven to deliver improved outcomes for patients. The Towards a Safer Culture (TASC) pathway or a tailored pathway should be implemented, depending on site preferences. Regardless of choice, pathways must adhere to process ‘good practice’ principles.
- Pathways are to be supported by electronic data entry capabilities.
- Provision of data via mechanisms such as dashboards is required to deliver improved insight into patient outcomes (e.g. outcomes attributed to different treatments).
- Audits are to be conducted. This necessitates robust IT processes to automate manual processes to reduce the data processing time.

Benefits

- Improved assessment, treatment and management for patients with chest pain, leading to improved patient safety and outcomes.
- Potential reduction in re-admissions.

Barriers to overcome

- Insufficient leadership and executive support.
- Lack of a process owner, e.g. Cardiac Assessment Nurse (CAN) at each site.

Essential Components of Chest Pain Evaluation Areas

- Chest Pain Evaluation Area (CPEA).
- Use “Good Practice” Chest Pain Processes.
- 7 Day a Week Exercise Stress Testing.
- Outpatient Chest Pain Clinics.

Hospitals need to adopt a chest pain pathway to deliver a timely and accurate management plan for the patient.

The pathway should be co-operatively designed by the ED and Cardiology Departments.

See the National Heart Foundation of Australia, Cardiac Society of Australia and New Zealand Guidelines for the Management of Acute Coronary Syndromes, 2006.

www.heartfoundation.com.au/downloads/ACS_Guidelines_MJA_170406_Summary.pdf

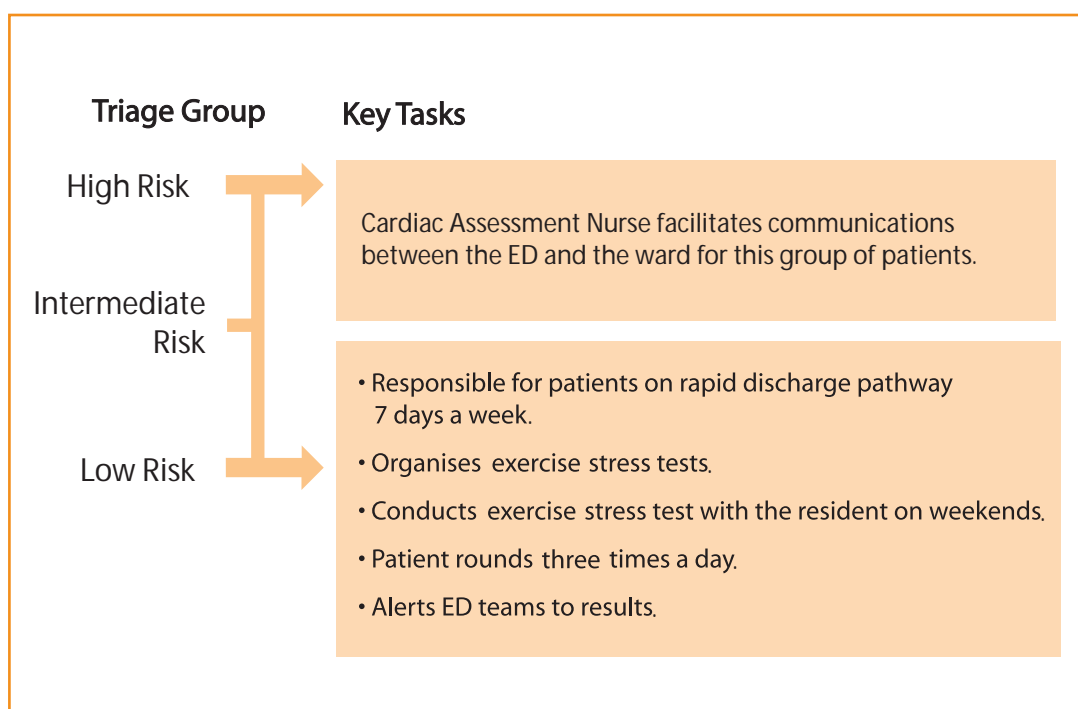
A key to success is having a Cardiac Assessment Nurse (CAN) as the process owner, responsible for the passage of patients on the pathway.

Case Study: Cardiac Assessment Nurse

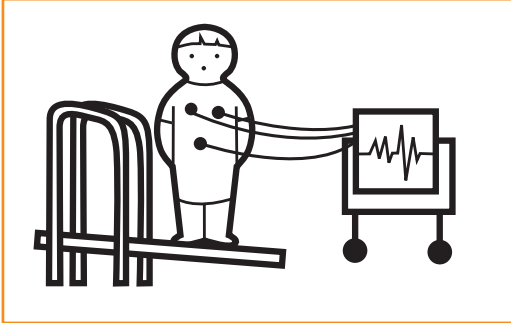


The high level roles of a chest pain process owner are:

- identification and placement of chest pain patients on the chest pain pathway
- co-ordination of care delivery tasks for every patient on the pathway
- liaison between ED and Cardiology
- co-ordinating exercise stress testing, including strategy for 7 day exercise stress tests
- case management of certain conditions
- co-ordination and/or administration of Thrombolysis (if appropriate).
- education and training of staff in the chest pain pathway (e.g. new Registrars)
- data collection for performance monitoring and communication to staff and patients.



7 Day a Week Exercise Stress Testing



Characteristics

- Delivery of exercise stress testing 7 days a week in hospitals. The rate of use will depend on the hospital's patient demographics.
- Non-exercise stress testing (Echo and Nuclear Medicine exercise stress tests) should be performed within 48 hours. The hospitals should engage in scheduling dedicated time slots for the ED patients, and should be able to effectively communicate the booking status in case of any changes.
 - Use of nuclear medicine services reduces impact on ED and Cardiology, but has high associated costs.
 - Echocardiograph facilities are effectively utilised as an area resource (e.g. service available to peripheral hospitals).
- Flexibility in staffing is required to use exercise stress test machine. Process owners (e.g. CAN) should be trained in conducting exercise stress tests. Doctors must be in close proximity. Advanced cardiology trainees could conduct weekend exercise stress tests (e.g. conduct tests on Saturday and Sunday morning as implemented at John Hunter Hospital).
- Prompt reporting of exercise stress tests is required for timely decisions on the patient management plan. The process owner should be accountable for organising these tasks.
- Where an ED patient is unable to access exercise stress testing (e.g. smaller hospitals), the patient should be considered for 48 hours observation or follow up within 48 hours.

Benefits

- Rapid access to exercise stress testing 7 days per week.
- Improved patient flow.
- Avoids unnecessary hospital stay.

Barriers to overcome

- Staffing: Access to appropriately trained staff over weekends.
- Cost of weekend coverage.
- Access to equipment.

Essential Components of Chest Pain Evaluation Areas

- Chest Pain Evaluation Area (CPEA).
- Use "Good Practice" Chest Pain Processes.
- 7 Day a Week Exercise Stress Testing.
- Outpatient Chest Pain Clinics.

Hospitals must have the capability to deliver exercise stress tests 7 days per week.

Outpatient Chest Pain Clinics

Essential Components of Chest Pain Evaluation Areas

- Chest Pain Evaluation Area (CPEA).
- Use “Good Practice” Chest Pain Processes.
- 7 Day a Week Exercise Stress Testing.
- Outpatient Chest Pain Clinics.

An optional enhancement is to book an outpatient appointment (where appropriate) with a Cardiologist as part of the patient management plan.



Characteristics

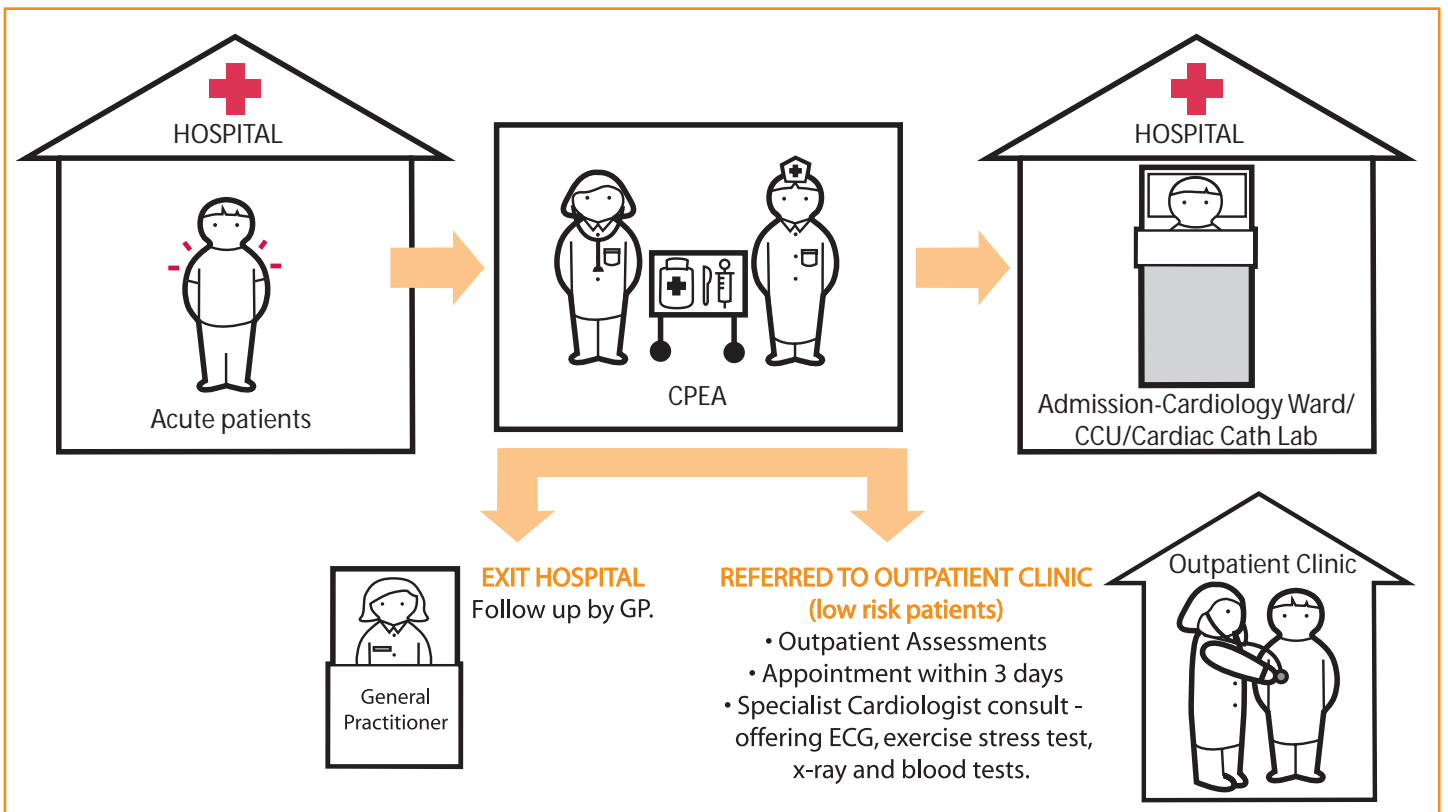
- Patient is not admitted or discharged earlier than usual but is given rapid follow up (i.e. within 3 days) as an outpatient.
- Additional tests (e.g. ECG, exercise stress tests, x ray and blood tests) can be conducted and the overall management plan improved.
- This is an optional enhancement suitable for some low risk patients.

Benefits

- A reduction in admission rates.
- The potential to improve revenue capture from appropriate cases.

Barriers to overcome

- This solution may not suit some patients, some facilities or Cardiologists.
- The outpatient referral is only viable if senior clinicians are allowed to refer patients.



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Integrated Chest Pain Management

Eric's Story

Eric is a 64 year old man who has a history of high blood pressure and high cholesterol. He currently smokes 25 cigarettes a day and lives a sedentary lifestyle.

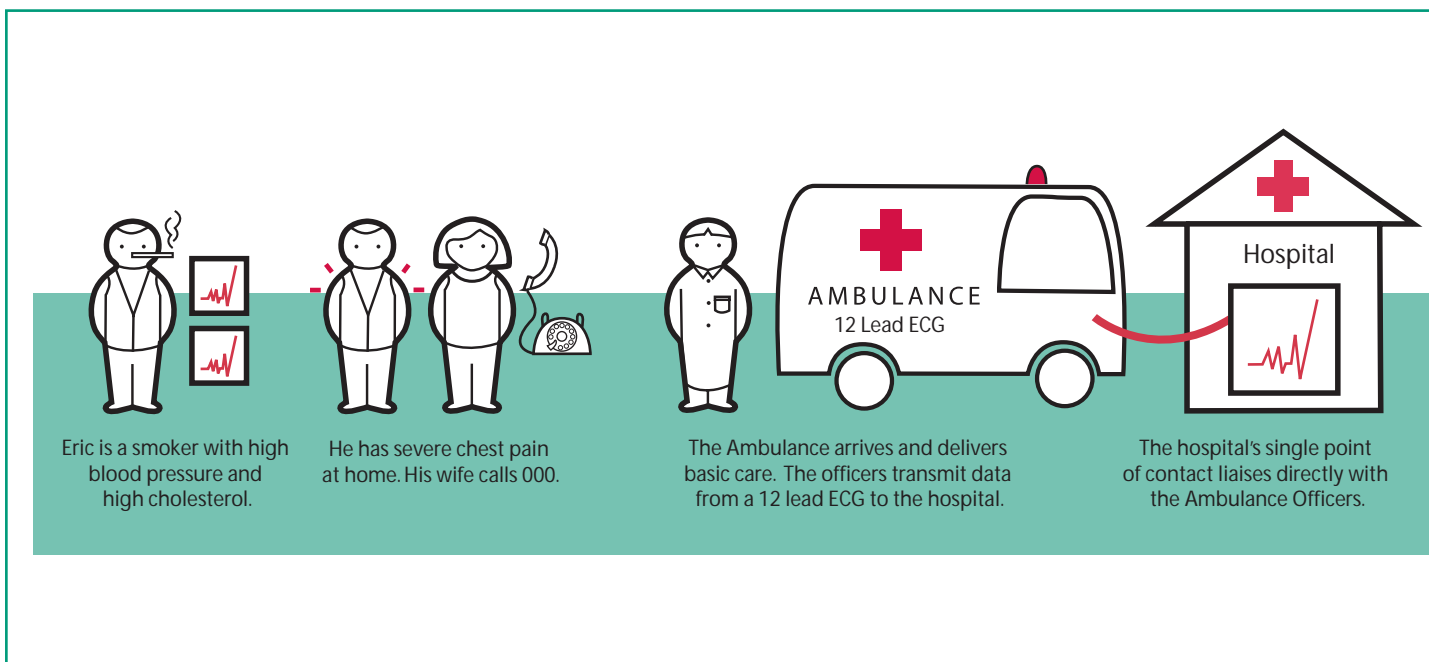
This is his story under the new *Cardiology Model of Care*

Late one morning, Eric is mowing the lawn when he develops severe pain in his chest which travels down his left arm. He goes into the house to find his wife, clutching his chest. He is very pale and quite distressed.

His wife Deidre dials 000 and asks for an Ambulance. The Ambulance arrives within eight minutes and the officers assess Eric. They apply oxygen and perform vital signs. They administer aspirin as per the protocol and attach a 12 lead ECG to Eric and transmit the results to a major local hospital.

The Ambulance Officers monitor the time of Eric's initial call and liaise with the agreed single point of contact at the hospital, in this case an ED Staff Specialist.

They discuss the likely time of arrival at the hospital. The Staff Specialist confirms that Eric is likely to be suffering from a STEACS, based on the interpretation of the 12 lead ECG that was transmitted.



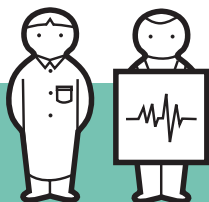
As the nearest hospital with cardiac catheterisation facilities is 75 minutes away, and the nearest rural hospital is 65 minutes away, the Ambulance Officer administers thrombolytic therapy in line with the agreed protocol.

Eric receives thrombolytic therapy within 45 minutes of his first call to 000. He is then transferred to the nearest hospital. Eric is triaged in the ED, his condition stabilised and he is transferred to a bed in the CCU.

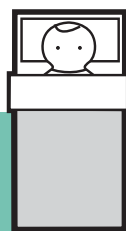
Eric recovers from his myocardial infarct well, with only very minor loss of heart tissue muscle. He is discharged home several days later to a cardiac rehabilitation program.

What is Good About this Story?

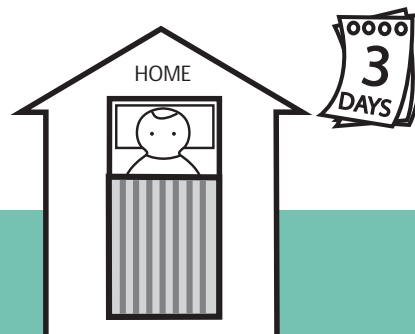
- Ambulance and hospital staff work together to ensure rapid assessment, provisional diagnosis and treatment under an agreed protocol.
- Rapid treatment reduces the loss of heart muscle and enhances recovery.



The Ambulance Officer delivers thrombolytic therapy under protocol because Eric is some distance from hospital.



Eric recovers well in the Coronary Care Unit of the hospital.



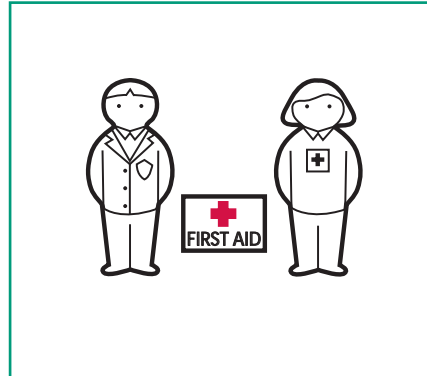
He is discharged home within several days and attends outpatient cardiac rehabilitation.

Integrated Chest Pain Management - Essential Components

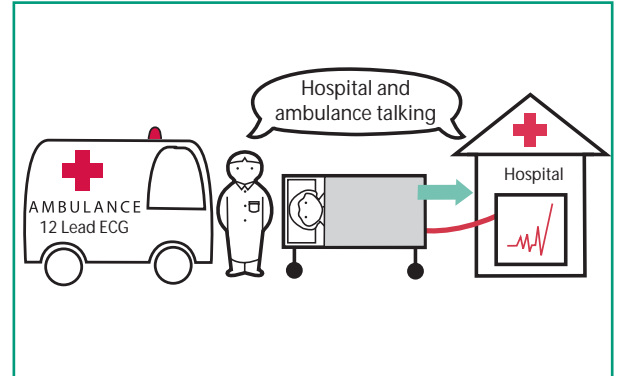
Essential Components of Integrated Chest Pain Management

- First Responder Scheme.
- Integrated Clinical Management.
 - Basic clinical management by Ambulance Officer.
 - 12 lead ECG/Ambulance administered thrombolysis.
 - Early Triage of Acute Myocardial Infarction (ETAMI).

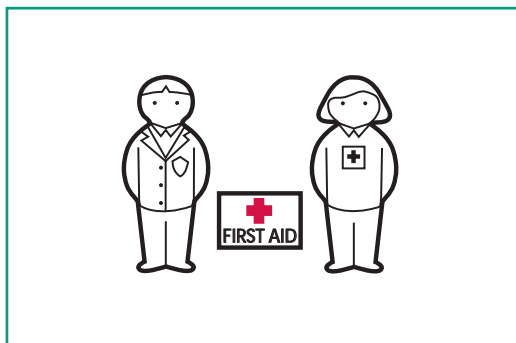
First Responder Scheme



Integrated Clinical Management



First Responder Scheme



Characteristics

- Experienced, trained persons and non-traditional First Responders are appointed to deliver timely and appropriate care to improve patient outcomes – especially in areas where there may be a delay in Ambulance arrival (e.g. rural setting).
- First responders may include Police officers or members of the public (e.g. first aid providers).
- Lists of First Responders and their level of skill are managed by the Ambulance Service of NSW.
- Registry of Automated External Defibrillators (AEDs), their location, and their maintenance history needs careful management.

Benefits

- Patients receive rapid assistance.

Barriers to overcome

- Recruiting training and supporting First Responders.

Essential Components of Integrated Chest Pain Management

- First Responder Scheme.
- Integrated Clinical Management.
 - Basic clinical management by Ambulance Officer.
 - 12 lead ECG/Ambulance administered thrombolysis.
 - Early Triage of Acute Myocardial Infarction (ETAMI).

The First Responder Scheme involves training voluntary workers to be certified medical support staff so that they can provide first level assistance to chest pain patients.

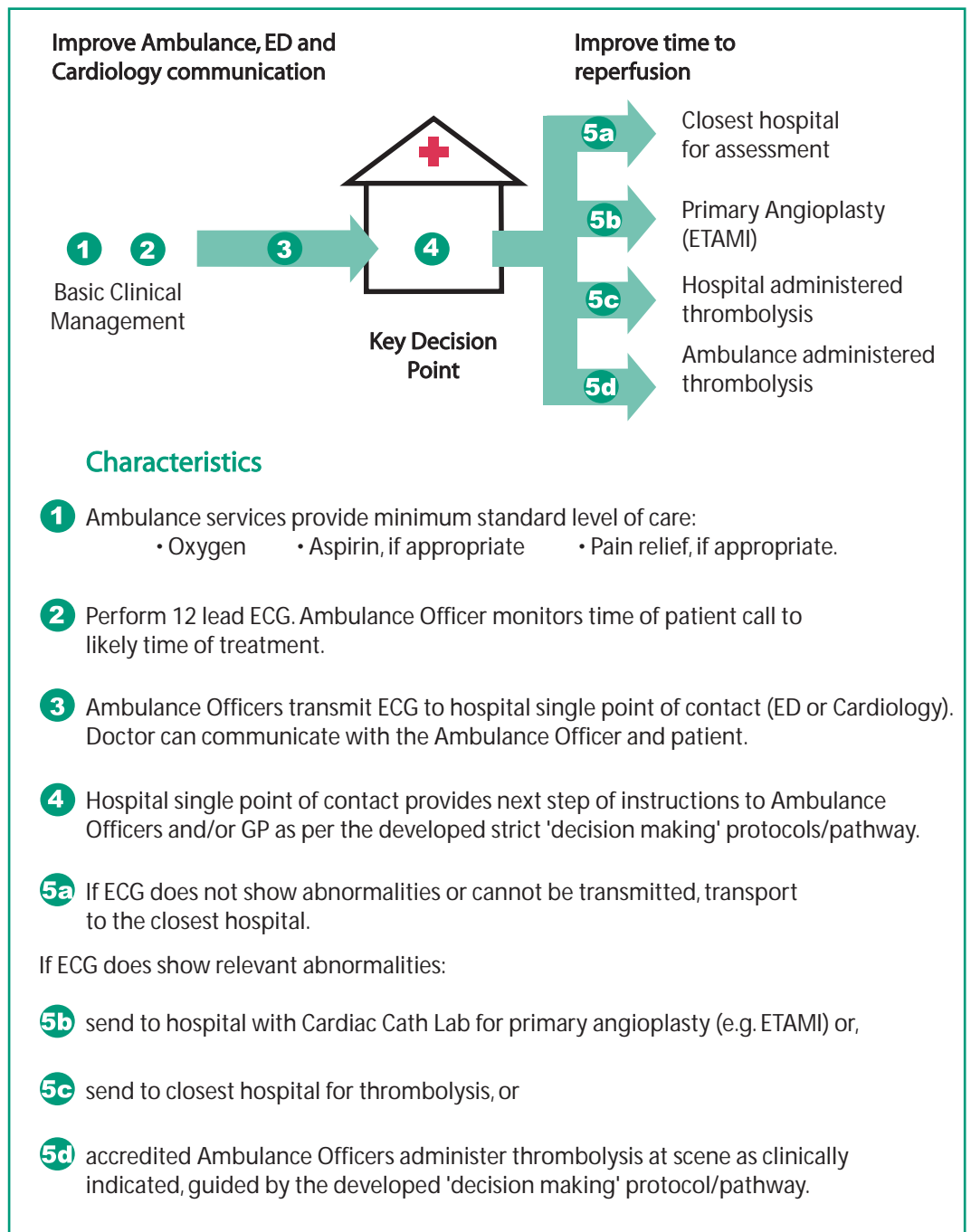
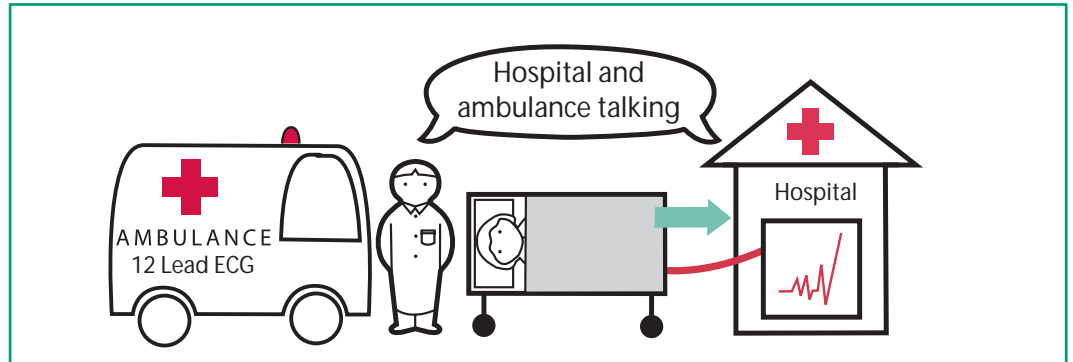
First Responders are deployed where an Ambulance would have to travel a long distance to reach a patient and the patient needs urgent medical attention.

Integrated Clinical Management

Essential Components of Integrated Chest Pain Management

- First Responder Scheme.
- Integrated Clinical Management.
 - Basic clinical management by Ambulance Officer.
 - 12 lead ECG/Ambulance administered thrombolysis.
 - Early Triage of Acute Myocardial Infarction (ETAMI).

Integrated clinical management seeks to create a smooth, seamless journey for chest pain patients from the time the Ambulance is called through to the ED and their time in the Cardiology departments.



Benefits

- Rapid assessment and treatment of chest pain patients, including integration of risk stratification between the Ambulance and ED (eg STEACS pathway).
- Improved communication between Ambulance and ED staff.
- Improved time to reperfusion.
- Improved patient outcomes/survival rates.
- Efficient use of resources if Ambulance is directed to most appropriate destination.

Barriers to overcome

- Rigour of data collection and KPI analysis will be important in order to monitor and manage compliance and performance.
- High establishment costs.
- Need to ensure Ambulance 'time at scene' is captured.
- Paramedic training to administer thrombolysis.
- Resource implication for the ECG receiving department.

There are two processes used to transport emergency patients to NSW hospitals via the Ambulance Service.

The traditional approach involves the delivery of a patient suffering from chest pain to the nearest hospital. Ambulance Officers also provide a minimum standard of care (aspirin, oxygen, narcotic pain relief) to the patient before they arrive at hospital.

The Early Triage of Acute Myocardial Infarction (ETAMI) is being trialled in the Western Sydney (Westmead Hospital) and Northern Sydney Central Coast (Royal North Shore Hospital) area health services.

It supports a key part of the Integrated Clinical Management process by providing the capacity to access primary angioplasty for patients experiencing STEACS. It builds on the 12 lead ECG process delivered by Ambulance Officers.

- If the ECG shows ST elevation, the hospital's single-point-of-contact will notify the Cardiologist on call.
- On-call Cardiac Cath Lab staff are notified of a pending angioplasty before the patient reaches the ED, thereby shortening the time to clinical intervention for patient diagnosed with an Acute Myocardial Infarction.
- The Ambulance delivers the patient to the ED at the appropriate Cardiac Cath Lab hospital bypassing metropolitan hospitals if necessary.

Bed Management

Matt's Story

Matt is the Bed Manager at a large metropolitan teaching hospital with a Cardiac Cath Lab.

Although it is only 8.30am there are 30 patients requiring admission to the hospital including a number of cardiology patients.

This is the story of how Matt tackles the problem under the *Cardiology Model of Care*.

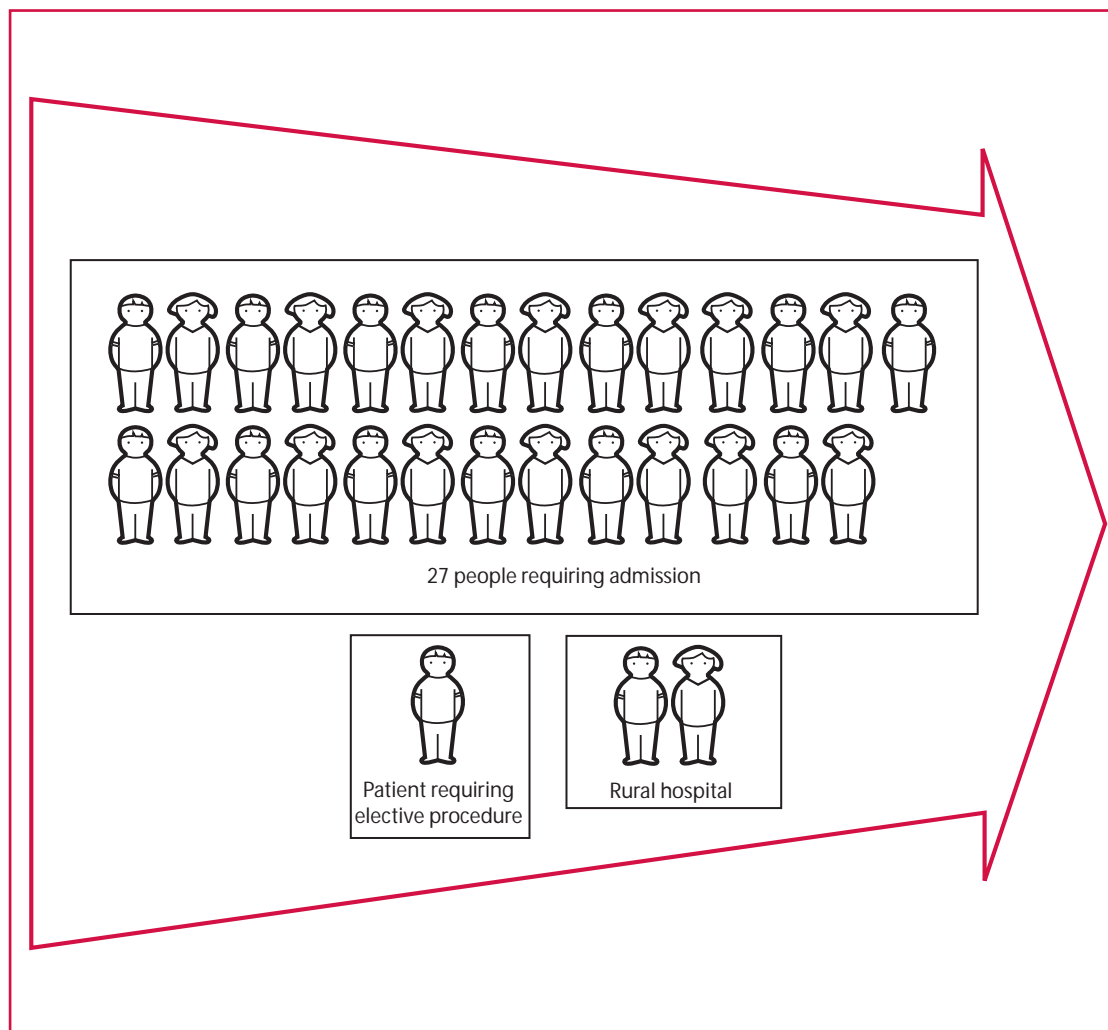
It is only 8.30am and there are 27 patients in the ED requiring admission to hospital. Of these, nine are cardiology patients. There are two patients at rural hospitals that need to be transferred, one requiring a CCU bed and the other requiring a ward bed. There is also one patient who has come in for an elective procedure who will require a CCU bed.

Of the nine cardiology patients waiting for beds:

- two have atypical chest pain with normal ECGs and normal cardiac markers
- three require monitoring in the CCU for abnormal heart rhythms
- one patient has presented within the previous hour following a heart attack

• three require admission for management of fluid congestion related to heart failure. Matt considers what strategies he will use to ensure an effective flow of patients through the hospital.

Following a review of its bed configuration, the Cardiology Department has the capacity to more effectively accommodate a variety of patient types. The CCU and cardiology ward beds are co-located and the beds are managed by one NUM. The bed manager liaises with the NUM who confirms that there are a number of free beds, which allows some of the patients in the ED to immediately access ward and CCU beds.



The most urgent patient in the ED, who has had a heart attack, is sent immediately to the Cardiac Cath Lab for primary angioplasty, and then to the 'hot bed' in CCU, which is routinely identified to accommodate urgent patients (as they are required).

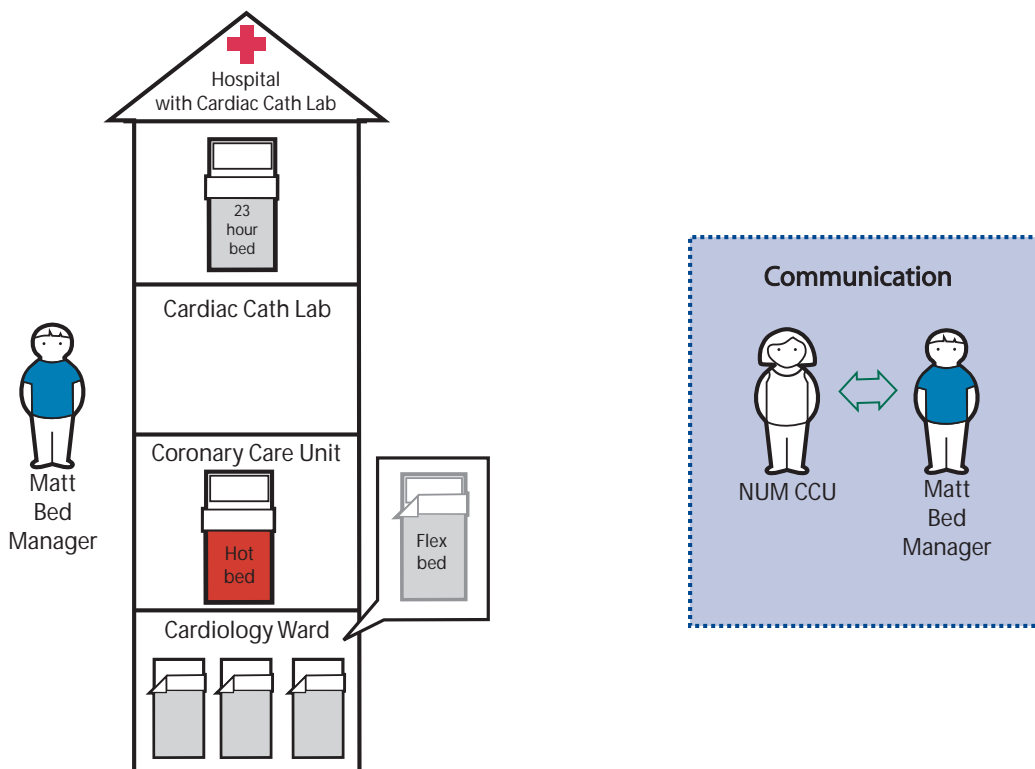
The other available beds are 23 hour beds. They were vacated at 7.30am as they contained patients with well defined admission and discharge protocols. The two booked elective Percutaneous Coronary Intervention (PCI) patients are admitted to 23 hour beds.

Matt also liaises with the rural hospital and, after receiving standardised handover forms, agrees to transfer the two most acute patients to the remaining 23 hour beds.

Matt is confident that the bed management strategies within the Cardiology Department are sufficient to accommodate demand. He recognises that not all days will be as straightforward as this one but is confident that the 'flex strategies' negotiated with the Cardiothoracic Department would help him to manage some of the sudden peaks in demand likely to occur in the future.

What's Good About this Story?

- The CCU and Cardiology beds are co-located and jointly managed providing greater flexibility and capacity to accommodate a variety of patients.
- "Hot beds" are in place for patients with ACS.
- 23 hour beds for ACS patients with defined discharge protocols.



Bed Management

- Essential and Highly Desirable Components

Essential Components

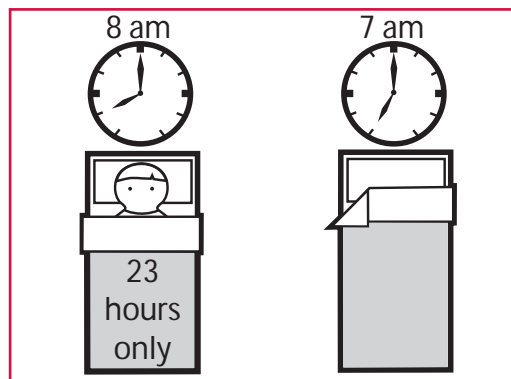
- 23 Hour Beds
- “Hot Beds”
- Ward By-pass
- Data Driven Bed Re-aggregation

Highly Desirable Components

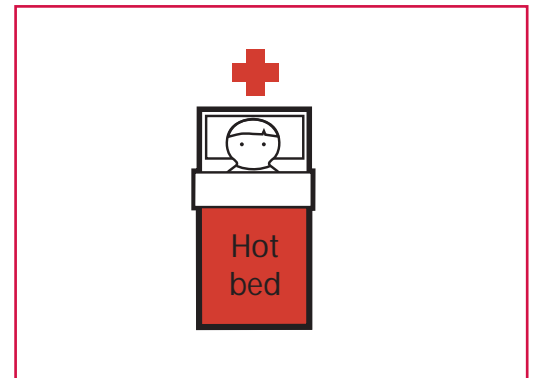
- Co-location of Cardiology Related Units
- Short-term Use of Flex Beds in Peak Demand
- Day Angioplasty for Appropriate Patients
- Medi-Hotel

Essential components of bed management

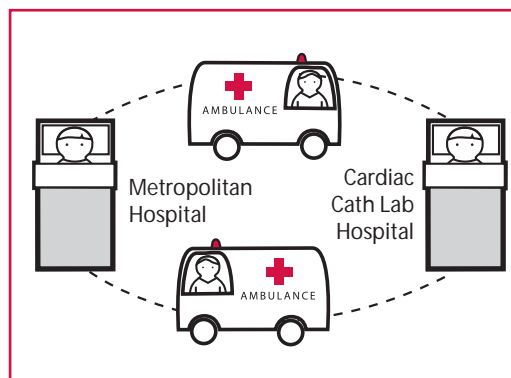
23 Hour Beds



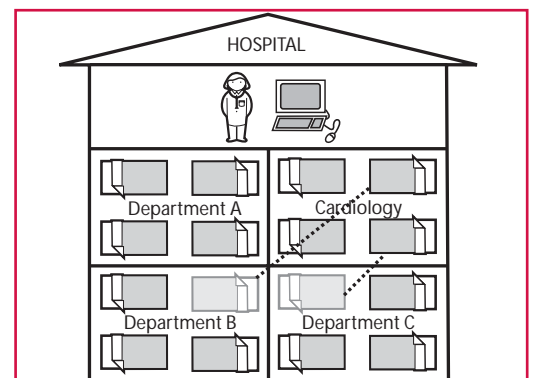
“Hot Beds”



Ward By-pass for Metropolitan Hospital Patients



Data Driven Bed Re-Aggregation

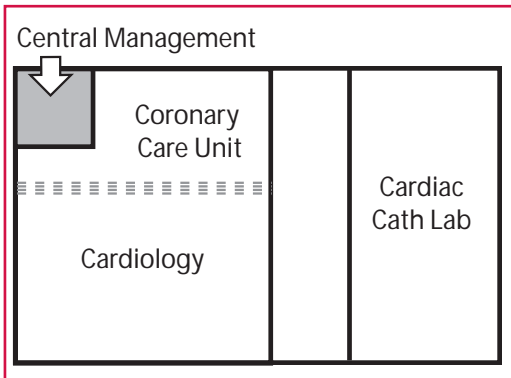


Benefits

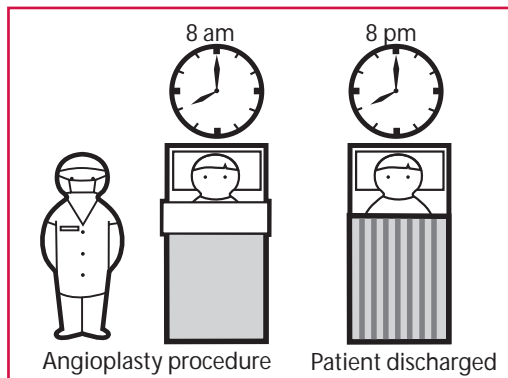
- Greater equity of patient access due to improved inpatient bed availability.
- Optimising the Cardiac Cath Lab throughput by an improvement in the alignment of appropriate patients and appropriate beds in preparation for Cardiac Cath Lab processing.
- Greater certainty for patient transfers, allowing more time to coordinate the transport and nurse escorts.
- Reduction in the Access Block.
- Greater flexibility to meet sudden peaks in demand.
- Bed use tailored to clinical needs, freeing up inpatient beds for acute care.
- Improved staff and patient satisfaction due to improvements in operational efficiency.
- Effective resource utilisation.

Highly desirable components of bed management

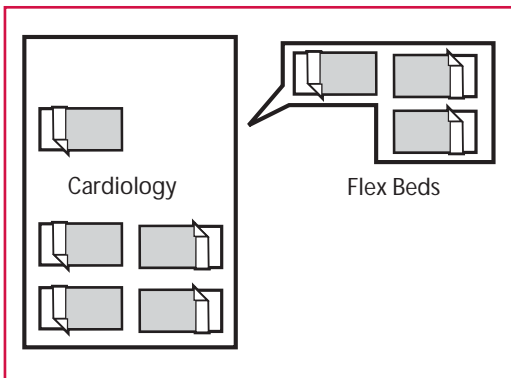
Co-location of Cardiology Related Units



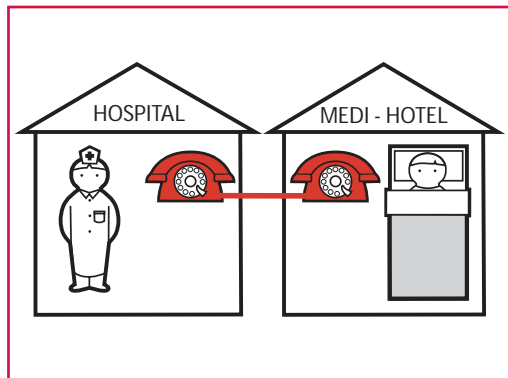
Day Angioplasty for Appropriate Patients



Short-term Use of Flex Beds in Peak Demand



Medi-Hotel ('Unsupervised' Accommodation)



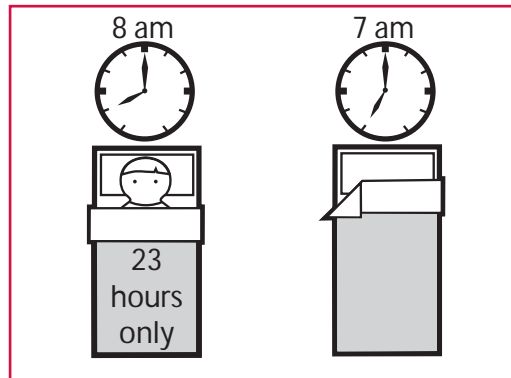
23 Hour Beds

Essential Components of Bed Management

- 23 Hour Beds
- “Hot Beds”
- Ward By-pass
- Data Driven Bed Re-aggregation

Hospitals with Cardiac Cath Labs should pursue ‘preferential beds’ (23 hour beds) to help ensure timely discharge, encourage use of “follow on angioplasty”, and provide more reliable access for feeder hospital patients.

Measures should be in place to ensure 23 hour beds do not replace the use of day procedure beds.



Characteristics

- The number of 23 hour beds and their proportion relative to multi-day beds needs to be data driven. It must reflect the ‘demand and supply’ factors of each hospital.
- Preferred use by the Cardiac Cath Labs to maximise usage.
- Clear protocols and guidelines for the use of the beds must be established and enforced.
- Must be supported by criteria driven patient discharge.
 - Set discharge time e.g. 7am.
 - Discharge documentation and medication prepared the night before.
 - Review by a consultant in exceptional cases.
- Defined hours of operation (e.g. closed daily, closed for the duration of the weekend).
- 23 hour beds could be in the Cardiology Ward or in a SSU.
- Patients are scheduled to the Cardiac Cath Labs and, where possible, relevant staff are informed in advance, (e.g. inter-facility transfer). Where Area Patient Flow Units (APFU) exist they can work with the Cardiac Cath Lab to proactively schedule transfer patients to 23 hour beds (i.e. at least 24 hours in advance where possible). This will aid in timely transfer of patients (e.g. allows time to co-ordinate transport and nurse escort, where appropriate).
- Without the need for an inpatient ward bed the patient can be discharged on the same day.

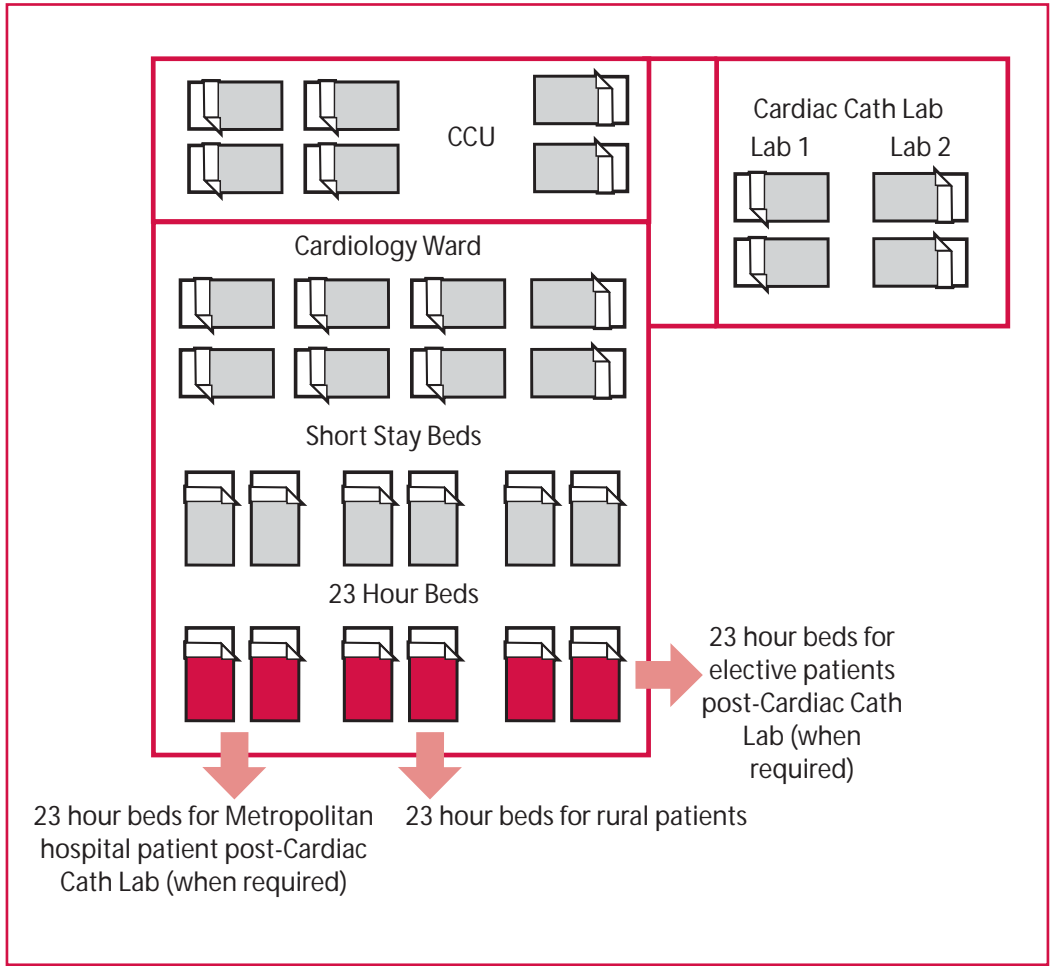
Benefits

- Equity of patient access to cardiology services across NSW.
- Improved patient care by providing faster access to clinical care.
- Greater certainty for patient transfers, allowing more time to co-ordinate transport.
- Streamlined use of resources. Improved Cardiac Cath Lab throughput and reduced waiting lists due to higher turnover.
- Improved staff and patient satisfaction by minimising delays for critical care.

Barriers to overcome

- Insufficient leadership and executive support.
- Barriers to resources for ideal bed re-aggregation and co-location.
- Variations to costs depending availability of existing infrastructure and resources.

Illustration of 23 Hour Beds



Patients Suitable for 23 Hour Beds

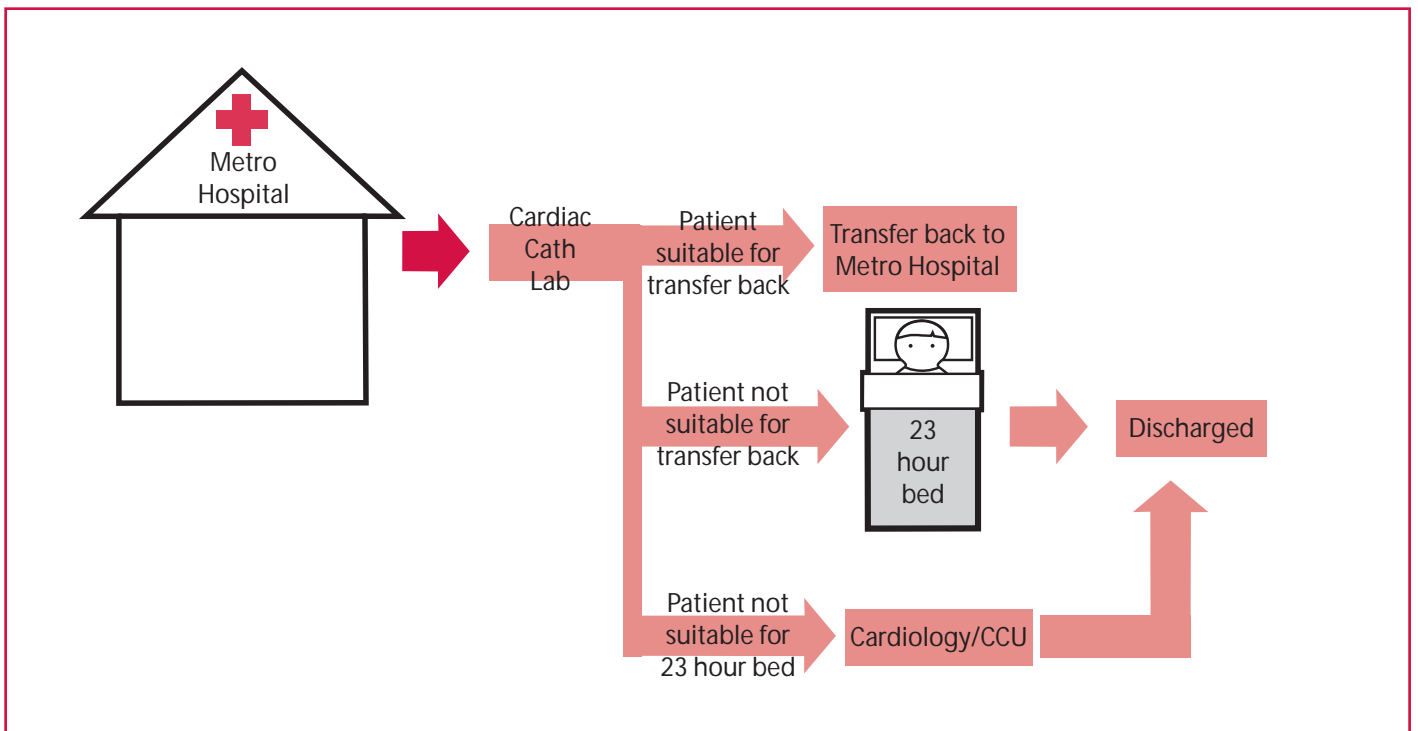
- Inter-hospital transfer patients, pre and post Cardiac Cath Lab procedure.
- Elective patients post angioplasty/stent (who cannot remain in recovery beds).
- Elective patients requiring 'follow on' angioplasty.
- Electrical Cardioversions pre and post-procedure.
- Post-operative elective pacemaker procedures.
- Pre and post-hospital transfer pacemaker procedures.
- Outpatient transoesophageal echos.

23 Hour Beds

Supporting Transfer for Patients from Metropolitan Hospitals

Patients from metropolitan hospitals can usually be transferred directly to Cardiac Cath Labs on the day of their intervention, in some cases patients are transferred back to the feeder hospitals. If they need to remain in the Cardiac Cath Lab hospital for observation a 23 hour bed should be used. If the patient's stay is likely to be extended, they should be admitted to a multi-day bed.

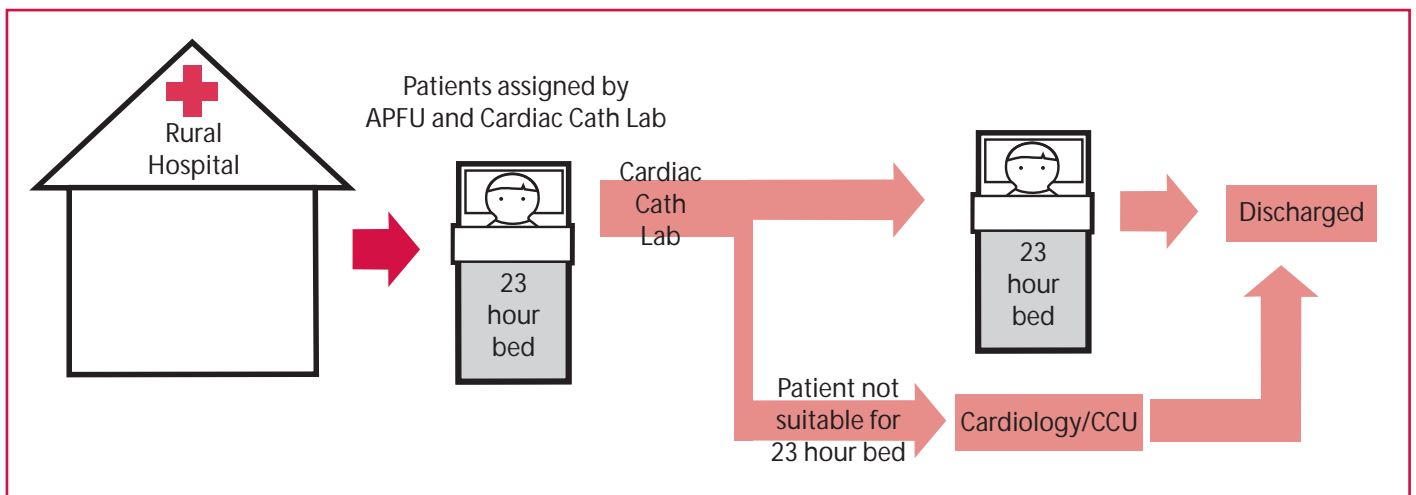
23 Hour Beds – Metro Hospitals



Supporting Transfer for Patients from Rural Hospitals

Patients from rural hospitals can be transferred directly to 23 hour beds that are assigned to particular rural regions. Bed Managers or the Area Patient Flow Unit (APFU) and the Cardiac Cath Lab may co-ordinate scheduling activities for rural patients. If the patients' condition is complicated post-intervention (and they require several days in hospital), they should be transferred to a multi-day bed.

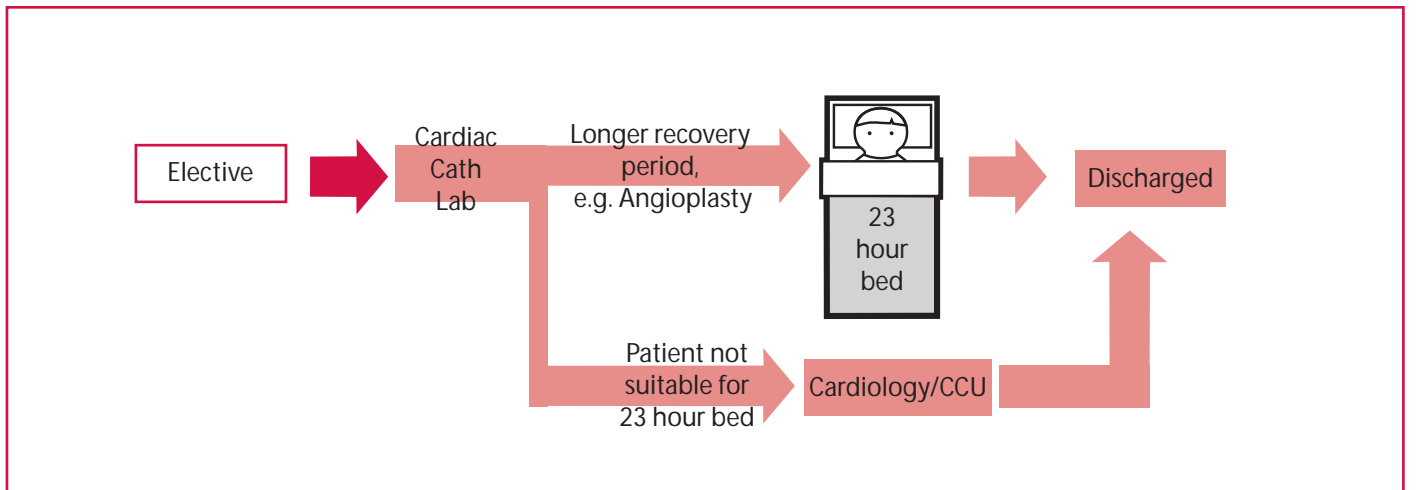
23 Hour Beds – Rural Hospitals



Supporting Transfer for Elective Patients

Given the relatively uncomplicated journey of elective angioplasty patients, 23 hour beds can be used for them to recover whenever required. This may reduce the number of elective patients being cancelled due to a lack of available beds.

23 Hour Beds to Support Angioplasty for Elective Patients



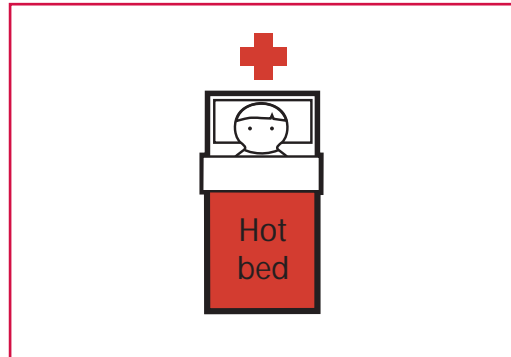
“Hot Beds”

Essential Components of Bed Management

- 23 Hour Beds
- “Hot Beds”
- Ward By-pass
- Data Driven Bed Re-aggregation

“Hot Beds” are pre identified beds in the CCU that are used for emergency cases.

Access to “hot beds” for primary angioplasty cases helps to improve patient flow and helps deliver more timely treatment.



Characteristics

- A well defined strategy which is executed for a primary angioplasty patient ‘hot case’ or complex angioplasty patient.
- A CCU patient (less-acute, when appropriate and safe) is pre-identified to transfer from a CCU bed to a non-CCU bed (e.g. Ward bed, HDU bed) if an appropriate emergency patient requires urgent CCU care.
- This strategy can include maintaining an empty “hot bed” whenever practicable. Approach does not require a ‘hot bed’ to be vacant at all times.

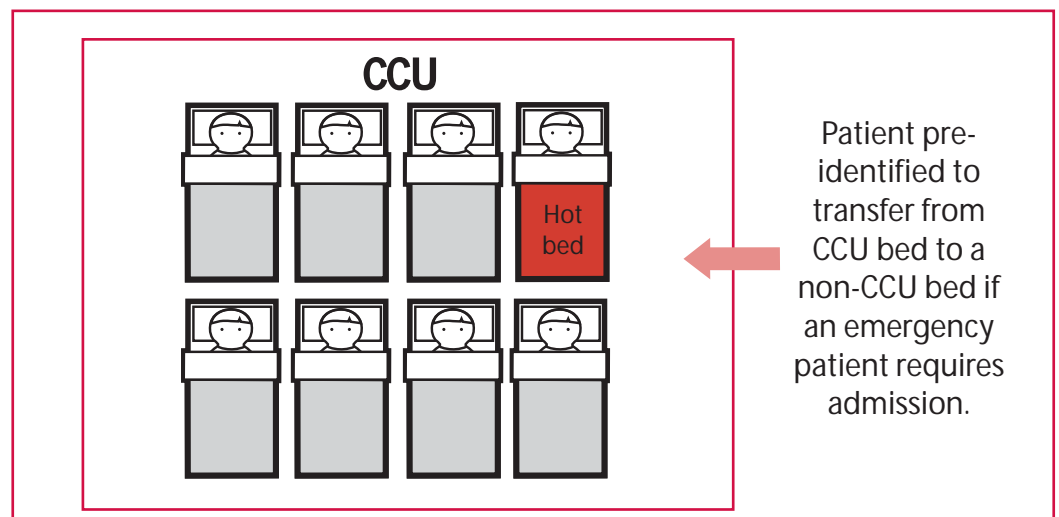
Benefit

- A defined escalation plan to accommodate primary angioplasty patients helps to improve patient flow and helps deliver more timely treatment.

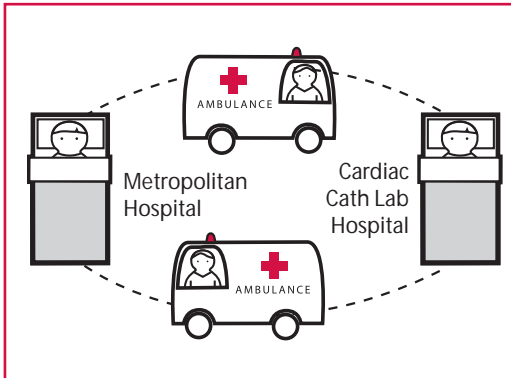
Barriers to overcome

- “Hot bed” strategy requires a well defined usage criteria to prevent bed not being available when required.

“Hot Bed” For Speed of Access for Emergency Patients



“Ward By-pass” for Metropolitan Hospital Patients



Characteristics

- Patients in metropolitan hospitals who require angiography are transported directly to the Cardiac Cath Lab (rather than to a ward bed) for tests and procedures. They recover in the recovery or day area. The patients are transported back to their original hospital bed or discharged directly from the Cardiac Cath Lab hospital if clinically appropriate.
- Patients in metropolitan hospitals who require angioplasty can be transported back to the metropolitan hospital post-intervention if clinical risk and transport scheduling allows.
- Agreements between metropolitan hospitals and Cardiac Cath Lab hospitals must be established. Joint protocol development is required.

- Adequate Cardiologist and nursing support at metropolitan hospitals is required.
- All patients transported into hospital with interventional service need to be captured on IT system.

Benefits

- Reduced bed occupancy at the feeder hospitals leading to greater Cardiac Cath Lab throughput, particularly for patients in metropolitan hospitals.
- Up-skilling of cardiology teams in metropolitan hospitals improves overall care delivery skills.

Barriers to overcome

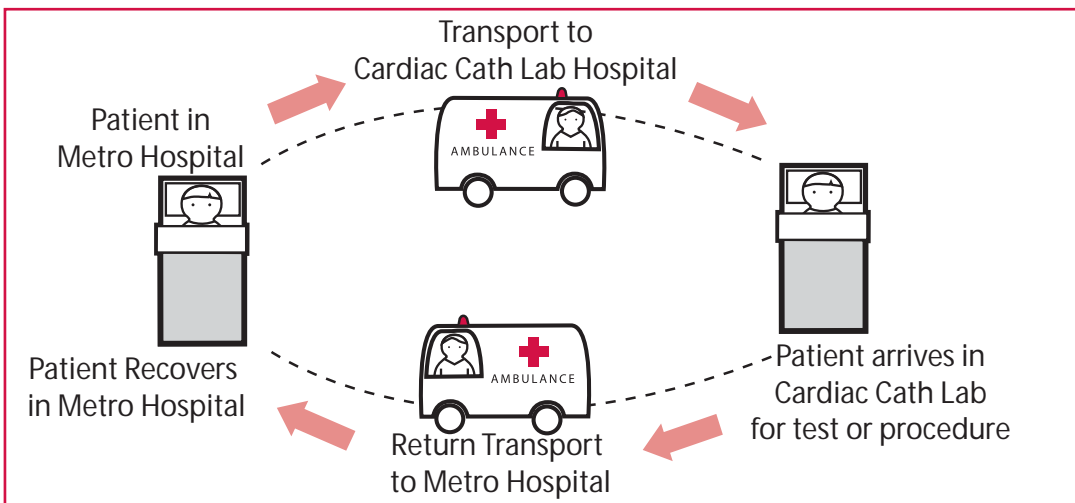
- Guidelines for assessment prior to transfer are critical for promotion of patient safety.
- Some facilities lack an adequate recovery or day area.
- Recovery area may have limited operating hours.
- Agreement from feeder hospitals to take patients back post-test or intervention.
- Upskilling of staff in feeder hospitals.

Essential Components of Bed Management

- 23 Hour Beds
- “Hot Beds”
- Ward By-pass
- Data Driven Bed Re-aggregation

The Ward By-pass Strategy enables an angioplasty patient to be treated without being admitted into hospital.

Ward By-pass Strategy

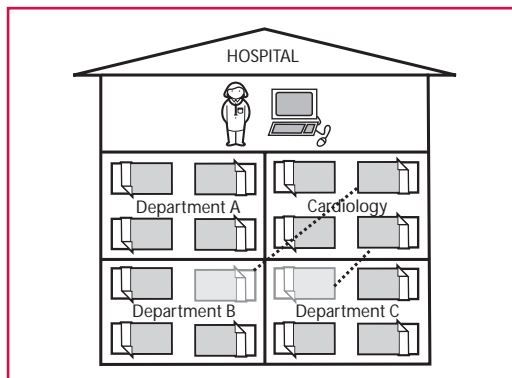


Data Driven Bed Re-aggregation

Essential Components of Bed Management

- 23 Hour Beds
- “Hot Beds”
- Ward By-pass
- Data Driven Bed Re-aggregation

Hospitals that have been proven to have insufficient cardiology beds (based on analysis of historical data, length of stay and capacity planning scenarios) need to re-aggregate their beds (i.e. increase the number of cardiology beds) to enable timely patient admissions.



Characteristics

- Data driven bed re-aggregation on a regular basis, (e.g. every 2 years) to support changes in demand.
- This strategy is an important foundation for other components of this model. It is important that Cardiac Cath Lab hospitals have a sufficient inpatient bed base to support other bed strategies such as 23 hour beds and “hot beds”.
- Requires confidence that length of stay is stable and relatively optimal. Other solutions to help reduce length of stay such as improved discharge planning

and improved rehabilitation programs may be required to improve overall operational efficiency.

Benefits

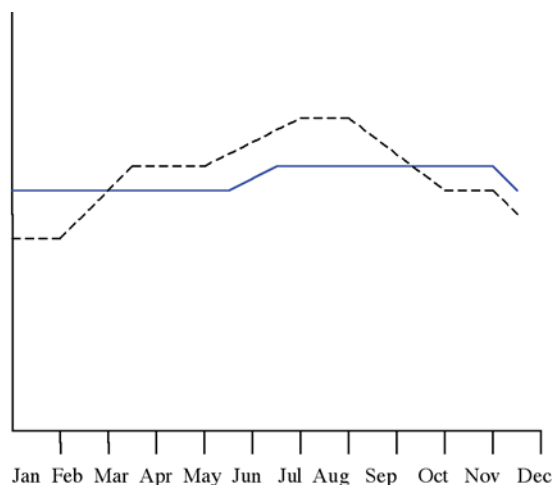
- This is a data driven and evidence-based method to help match the number of beds to number of patients.
- Reduced Access Block.
- Improved staff and patient satisfaction.
- The visibility of demand and supply of beds, and ability to model different scenarios, provides support to proactive capacity planning.

Barriers to overcome

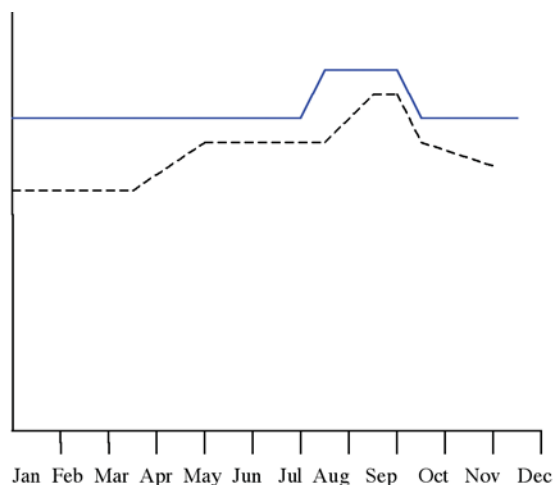
- Make data driven bed capacity planning an extensively embedded process that is a routine part of hospital culture.
- Other specialties may need to contribute bed space and budget to cardiology, which requires careful change management processes.

Data Driven Bed Re-aggregation

Issue: Mismatched bed and patient numbers

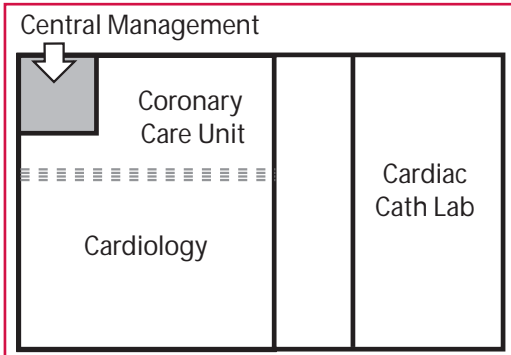


Solution: Bed re-aggregation modelling



— Number of Beds (illustrative)
 - - - - - Number of Patients (illustrative)

Co-location of Cardiology Related Units



Characteristics

- Cardiology services located in close physical proximity.
- Central bed management capabilities.
- Single management structure.

Benefits

- More effective use of resources (space and staff).
- Less distance to transfer patients from Cardiac Cath Lab to post-intervention recovery beds.
- Reduced Access Block.
- Facilitates staff rotation and skill development.
- Creates flexibility during peaks in demand (e.g. cardiology patients can 'flex up' into cardio-thoracic beds during peaks in demand).

Barriers to overcome

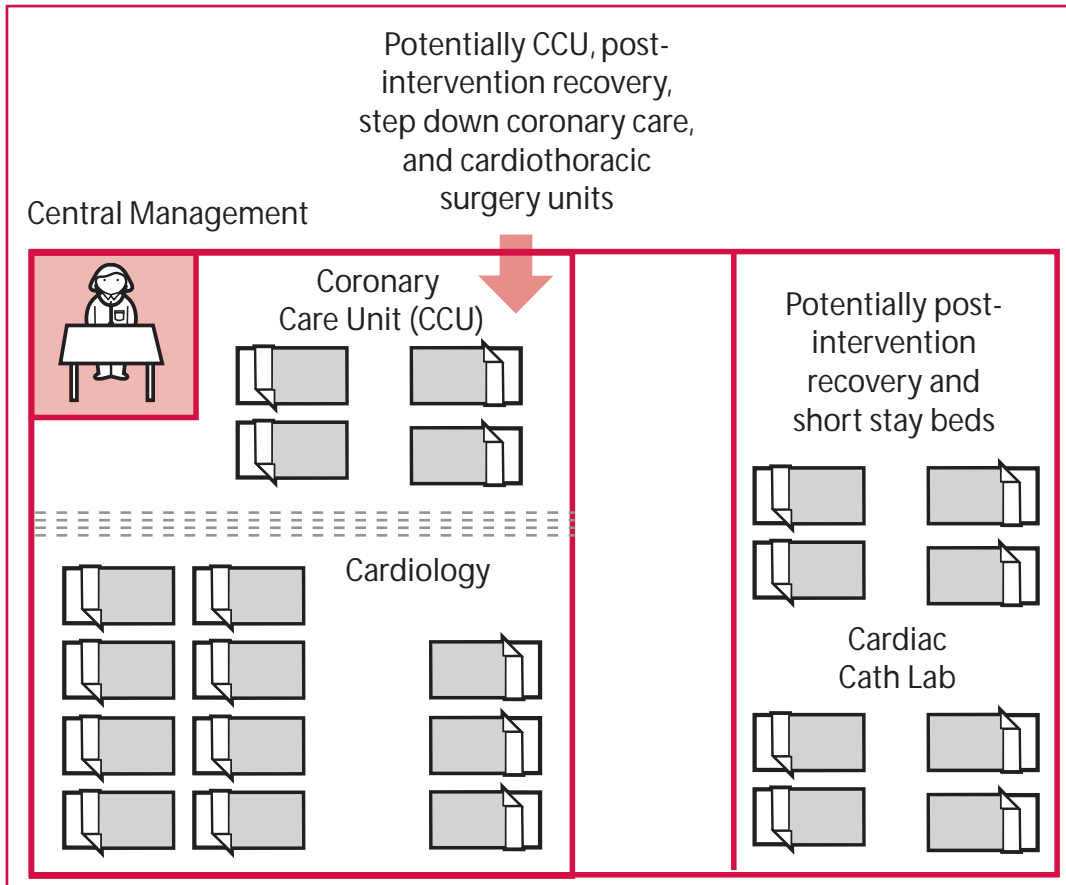
- Local physical practicalities may reduce suitability of this solution in the short term.
- Some sites may require some investment to co-locate services.

Highly Desirable Components of Bed Management

- Co-location of Cardiology Related Units
- Short-term Use of Flex Beds in Peak Demand
- Day Angioplasty for Appropriate Patients
- Medi-Hotel ('Unsupervised Accommodation')

The co-location of cardiology related units such as the Cardiology Ward, CCU, Cardiac Cath Lab and Cardio-thoracic Unit can improve operational efficiency.

Co-location of Cardiology Related Units

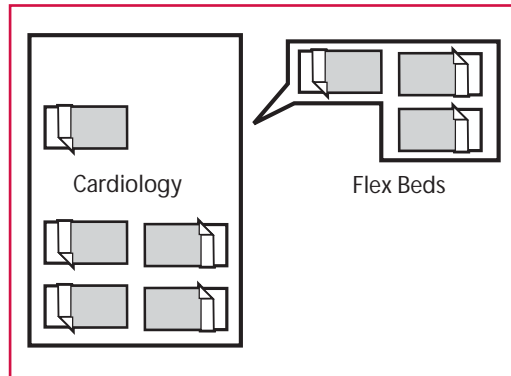


Short-term Use of Flex Beds in Peak Demand

Highly Desirable Components of Bed Management

- Co-location of Cardiology Related Units
- Short-term Use of Flex Beds in Peak Demand
- Day Angioplasty for Appropriate Patients
- Medi-Hotel ('Unsupervised Accommodation')

"Flex beds" can accommodate patients for a short period of time during peaks in demand. These beds can be located in close proximity to the cardiology ward or in other wards and are made available during high patient flow.



Characteristics

- Temporarily increases the number of beds for cardiology patients in periods of high demand. Source of "flex beds" need to be tailored to each facility, but may include the use of:
 - 'over-census' bed (if and when appropriate)
 - pre-identified beds in an adjacent ward
 - cardio-thoracic beds.
- "Flex beds" are ideally located in close proximity to cardiology beds.
- Requires agreement from relevant stakeholders, and development of well defined bed usage criteria. This strategy is only effective if the cardiology bed base is appropriately configured to freely accommodate patients on a routine basis.

Benefits

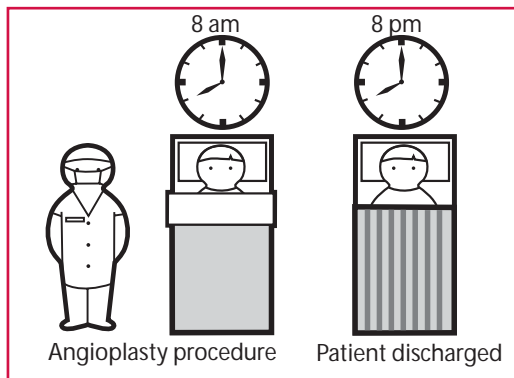
- Greater flexibility and bed management capabilities.
- Ability to proactively manage sudden peaks in demand.

- Reduced outliers.

Barriers to overcome

- Agreement from non-cardiology stakeholders.
- Careful adherence to bed usage criteria. Ability to rapidly "flex down" must be consistently displayed.
- Skills of staff supporting the "flex beds" must be agreed and monitored.

Day Angioplasty for Appropriate Patients



Characteristics

- Select angioplasty patients admitted as a day-only patient.
- A defined patient selection criterion is required to ensure patient safety.
- Patients are in recovery bed for four hours.
- Increased efficiency when combined with 23 hour bed strategy.
- Adheres to *National Heart Foundation of Australia, Cardiac Society of Australia and New Zealand Guidelines for the Management of Acute Coronary Syndromes, 2006.*

Benefits

- Reduced number of bed days.
- Improved access to beds for other cardiology patients.

Barriers to overcome

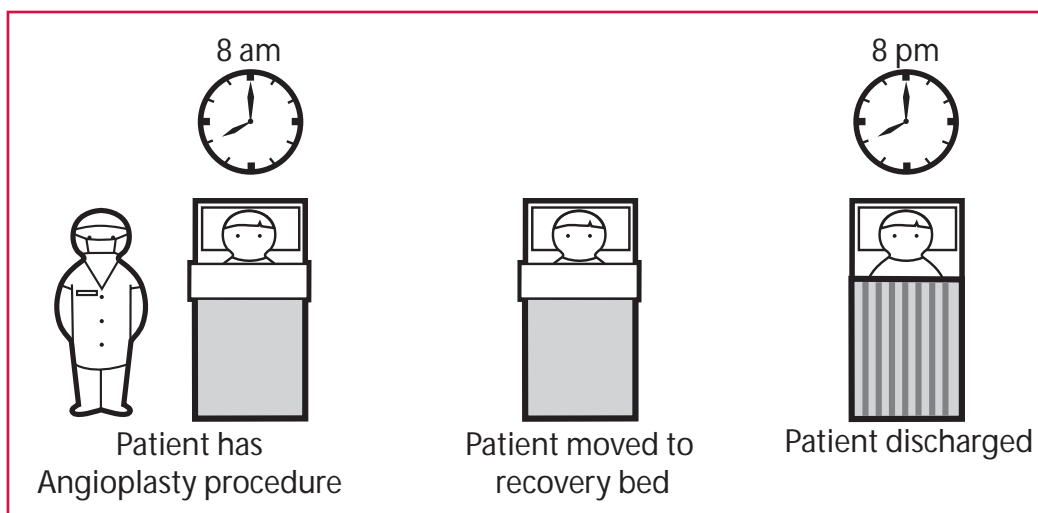
- Hesitation or reluctance of some cardiology teams and patients to accept this model of care.

Highly Desirable Components of Bed Management

- Co-location of Cardiology Related Units
- Short-term Use of Flex Beds in Peak Demand
- Day Angioplasty for Appropriate Patients
- Medi-Hotel ('Unsupervised Accommodation')

Traditionally, the treatment of patients requiring angioplasty involves patients spending approximately 2-3 days in an inpatient bed. However, recently the Cardiac Society has suggested that some patients can be safely provided angioplasty on a day-only basis.

Day-Only Angioplasty



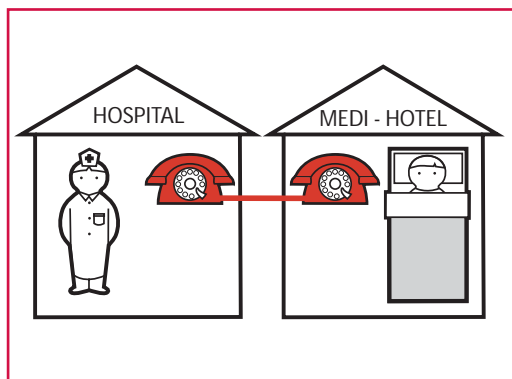
Medi-Hotel ('Unsupervised' Accommodation)

Highly Desirable Components of Bed Management

- Co-location of Cardiology Related Units
- Short-term Use of Flex Beds in Peak Demand
- Day Angioplasty for Appropriate Patients
- **Medi-Hotel ('Unsupervised Accommodation')**

Some patients do not require constant medical supervision after their cardiology intervention but cannot be confidently discharged.

In peak times, these patients can be transferred to medi-hotels until the cardiology staff are satisfied that they are safe for discharge.



Characteristics

- Guidelines must be developed for suitable patients, e.g. elective angioplasty patients who have met clinical and social criteria, including patient demographics.
- Located close to hospital with suitable facilities such as elevators.
- Patients are provided with appropriate communication devices to establish immediate contact with hospital staff in the case of an emergency. For example, a telephone linked to ED and medical call back up.
- Patients return from the medi-hotel the next morning for clinical review before going home at 7am.
- Can be a routine strategy to help manage cost of care delivery or a strategy used in defined times only (i.e. when the hospitals temporarily reach their maximum capacity).
- Some facilities in close proximity to each other may choose to share a single medi-hotel.

Benefits

- Patient does not occupy a ward bed, therefore increased access to more acute patients.
- Lower operating costs.
- Medi-hotel is offered at no expense to the patient, and may also accommodate a family member or carer.

Barriers to overcome

- Lack of suitable supply of ready-made medi-hotels in close proximity to hospitals.
- Establishment cost in some circumstances.
- Cultural reluctance from some clinicians and patients.

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Implementing Chest Pain Model of Care

Process Map

Visit the online version of this and other process maps on the ARCHI website at www.archi.net.au/elibrary/build/moc

Here you will be able to access more information on each of the steps to implement the model.

You will have access to tools and templates as well as hints and lessons learned by others who have implemented the model.

	Planning Where are you now?
Governance	Establish Governance. Form Steering Committee.
Patient Journey How do patients flow through the model	Map patient journey (include carer and/or family perspective).
Policies and Protocols	Understand current systems.
People Understand who the staff are, how they function and what role they play in the patient journey	Stakeholder analysis. Staff profile.
Resources	Conduct a resource survey.
Communication	Develop a communication plan for internal and external target groups.

Note: This process map is for implementing Chest Pain Evaluation Areas. A process map for bed management is on the Models of Care website at www.archi.net.au/elibrary/build/moc

	Preparation Make it happen	Operationalise Make it stick
	Develop a Process Map. Develop a Project Plan. Set KPIs. Establish Business Rules.	Monitor and evaluate KPIs.
	Check patient journey.	Monitor patient journey.
	Develop and execute protocols.	Monitor protocols.
	Form CPEA team.	Develop a review process.
	Deliver required resources.	Monitor resource use and plan upgrades.
	Execute communication plan. Identify how feedback will be used to inform project.	Ensure ongoing communication strategy with patients and staff.

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For more information about the Cardiology Models of Care visit the Models of Care section of the ARCHI website

www.archi.net.au

Here you will find an electronic copy of this document, resources and have the opportunity to participate in workshops and online discussion groups.

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