

# Infection Control Collaborating with Patient Flow

# Whole of Health Program Masterclass #12

Belinda Boston

Infection Prevention and Control CNC St George Hospital 2018

Wednesday 9th May 2018



### "Alone we can do so little"

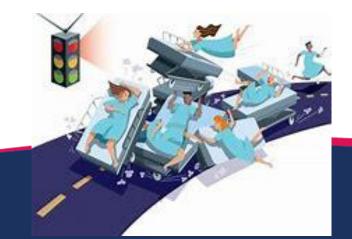




### "Together we can do so much"

**Helen Keller** 

- 1. Returned traveller with fever
- 2. MRSA vs overseas transfer post surgery
- 3. 82 year old post fall in ED
- 4. Child with cough in ED waiting room





## When it all goes wrong ....

- Measles was confirmed in our traveller from Thailand
- A deep wound swab grew Carbapenem resistant
   Enterobacteriaceae (CRE) and the patient had been in
   three separate four bedded rooms
- Patient with active Norovirus started having diarrhoea again after two bags of IVF. Patient was transferred to open14 bed ICU unit
- Child with coughing fits has been diagnosed with pertussis





What patient gets the single room? And can I risk manage this?

## St George Hospital

- Acute tertiary referral trauma hospital.
- 600 beds
  - 4 bed shared rooms
  - 89 single rooms
  - 18 singles with shared bathroom
- New ASB opened November 2017
  - Additional 25 single rooms plus 2 bedded rooms
  - New 52 bed ICU all singles

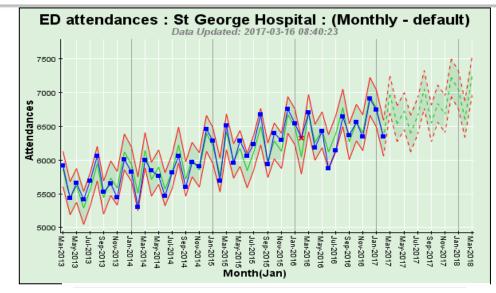




## St George Hospital

- Significant increase in activity at SGH Emergency
- Issues with bedblock
   ED > 24 hours
- Issues with single room availability during peak of winter

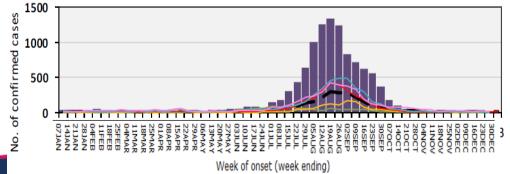
Confirmed influenza cases in SESLHD, 2017 compared to previous 5 years

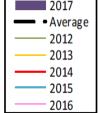


#### health **health problems**

#### Australia hit by worst flu outbreak on record in 2017

AUSTRALIA is in the grip of the worst flu outbreak on record and experts are urging people to have a flu vaccine now before it's too late.







### When conditions are favourable

#### Outbreak of Respiratory Syncytial Virus (RSV) Infection in Immunocompromised Adults on a Hematology Ward

Tomas Ostergaard Jensen, $^{1,2*}$  Sacha Stelzer-Braid, $^{2,3}$  Christiana Willenborg, $^3$  Carol Cheung, $^4$  David Andresen, $^1$  William Rawlinson, $^{2,3,5}$  and Kate Clezy $^6$ 

Department of Infectious Diseases St. Vincent's Hospital Sydne



Flu Takes a Toll in NYC, With 4 Children Reported Dead in Seasonal Outbreak

By GILLIAN MOHNEY . Feb 7, 2017, 11:43 AM FT







# Risk Matrix and Influenza Flowchart development

- Aim: To reduce bed block
- Brainstorming sessions led to formation of x 2 flowcharts
  - Infection Prevention and Control CNC x 2
  - Respiratory CNC
  - Bed Managers
  - Deputy Director of Nursing and Midwifery/ A/DDON
  - Nurse Manager Division of Medicine 1
  - Nursing Unit Manager Respiratory ward
  - Nurse Educator Respiratory Medicine
  - Microbiologists
  - Infectious Diseases Staff Specialist
  - Respiratory Medicine Consultant
  - Clinicians within ED and clinical areas



### Flowchart 1

Health
South Eastern Sydney
Local Health District

St George Hospital - Risk Assessment for placement of patients with known or suspected MRO or communicable illness when limited single room availability update May 2016.

ONGOING PROACTIVE MANAGEMENT MUST OCCUR TO ENSURE APPROPRIATE PLACEMENT OF PATIENTS WITH MRO IN EITHER SINGLE ROOM OR COHORT

Risk Rating of Clinical Area	Clinical transmission risk:	Good skin integrity  Patient has known MRO  Patient is alert, orientated and continent, with no exudation of wounds	Poor skin integrity Patient has known MRO Patient has cognitive impairment Patient has exudation of wounds not including skin tears	Likely/ Known Infective gastroenteritis diarrhoea, vomiting	Conditions spread by Droplet or Airborne transmission/ or highly infectious conditions spread by direct contact
Low  Aged care/ Rehabilitation units Palliative care units Maternity and birthing units Level 1 nursery		Contact Precautions  Designated toilet/ Single if Available  No delays to transfer	Contact Precautions  Designated toilet/ Single if Available  No delays to transfer		Patients with potential/ known communicable illness spread by droplet or airborne transmission  OR  Conditions that ID/ Infection Control
Medium Acute medical units (except cardi renal/gastroenterology ward) Paediatric units	ology and	Contact Precautions  Designated toilet/ Single if Available  No delays to transfer	Contact Precautions  Designated toilet/ Single if Available  No delays to transfer	Contact precautions  Single room only  Must have own toilet  Determine cause of diarrhoea and send appropriate specimen	advise single room only  OR  Carbapenem resistant  Enterobacteriacecae or Carbapenem resistant Pseudomonas with resistance in 3 major classes
High Surgical units Emergency Departments Level 2 nurseries Coronary care/ Cardiology Renal/gastroenterology		Contact Precautions  Designated toilet/ Single if Available  No delays to transfer, however patient must be allocated to a single room within 6 hours of transfer	Contact Precautions  Designated toilet/ Single if Available	Risk assess patients on receiving ward as per PD2007_024 Infection Control Policy: Prevention & Management of Multi- Resistant Organisms (MRO)	OR  Recent travel to endemic region Prior admission to overseas PHO or RACF in last 12 months  Single room only and institute appropriate transmission based
Extreme Intensive care units Neonatal intensive care units Burns units Haematology/oncology inpatient Transplant units		Contact Precautions  Designated toilet/ Single if Available	Contact Precautions Single room only	to determine whether single can be created	precautions  Risk assess patients on receiving ward as per PD2007_024 Infection Control Policy: Prevention & Management of Multi-Resistant Organisms (MRO) to determine whether single can be created

IMPORTANT: When MRO patients are moved to a shared room. Place with other patients who are continent, ambulant, self-caring, have minimal or no invasive devices, wounds, no recent surgical procedures or immunosuppression and those who perform hand hygiene. Staff must ensure that strict Hand hygiene and environmental cleaning of shared care items is a priority to reduce the risk of transmission



### How MRO matrix works Risk rate clinical area

Medium St George Hospital - Risk Assessment for placement of patients with know pected MRO or communical Acute medical units (except cardiology and ONGOING PROACTIVE MANAGEMENT MUST OCCUR TO ENSURE APP PLACEMENT OF PATIENTS WITH renal/gastroenterology ward) Risk Rating of Clinical Area Paediatric units risk: Aged care/ Rehabilitation units Palliative care units Maternity and birthing units High Level 1 nursery Surgical units Emergency Departments Acute medical units (except cardiology and Level 2 nurseries renal/gastroenterology ward) Coronary care/ Cardiology Paediatric units Renal/gastroenterology autions Surgical units Designated toile gle if Available **Emergency Departments** Level 2 nurseries Coronary care/ Cardiology No delays to transfer, Renal/gastroenterology however patient must be Extreme Designat allocated to a single room Intensive care units within 6 hours of transfer Neonatal intensive care units Burns units Neonatal intensive care units **Contact Precautions** Haematology/oncology inpatient units Designated toilet/ Single if Available Haematology/oncology inpatient units Transplant units

IMPORTANT: When MRO patients are moved to a shared room. Place with other patients who are continent, ambulant, self-caring, have minimal or no invasive devices, wounds, no recent surgical procedures or immunosuppression and those who perform hand hygiene. Staff must ensure that strict Hand hygiene and environmental cleaning of shared care items is a priority to reduce the risk of transmission

Aged care/ Rehabilitation units

Maternity and birthing units

Palliative care units

Level 1 nursery



### How matrix works Risk rate clinical transmission risk

NSW | South Eastern Sydney St George Hospital - Risk Assessment for placement of patients with known or suspected MRO or communicable illness when limited single room availability update May 2016. Local Health District ONGOING PROACTIVE MANAGEMENT MUST OCCUR TO ENSURE APPROPRIATE PLACEMENT OF PATIENTS WITH MRO IN EITHER SINGLE ROOM OR COHORT Good skin integrity risk: diarrhoea, vomiting transmission/ or highly infectious conditions Patient ha Patient has known MRC no exudation of wounds Low **Contact Precautions** Patients with potential/known communicable illness spread by Aged care/ Rehabilitation units Designated toilet/ Single if Available droplet or airborne transmission Palliative care units Maternity and birthing units No delays to transfer Level 1 nursery Conditions that ID/ Infection Control act precautions advise single room only **Contact Precautions** Acute medical units (except cardiology and oom only Designated toilet/ Single if A renal/gastroenterology ward) Paediatric units Must have own toilet Carbapenem resistant No delays to transfer Enterohacteriacecae or Carbanenem Determine cause of diarrhoea resistant Pseudomonas with and send appropriate resistance in 3 major classes specimen Contact Precautions <u>High</u> Surgi Level **Good skin Poor skin** Likely/ known Conditions Coro infective integrity integrity spread by

 Patient has known MRO

Haen

IMPO

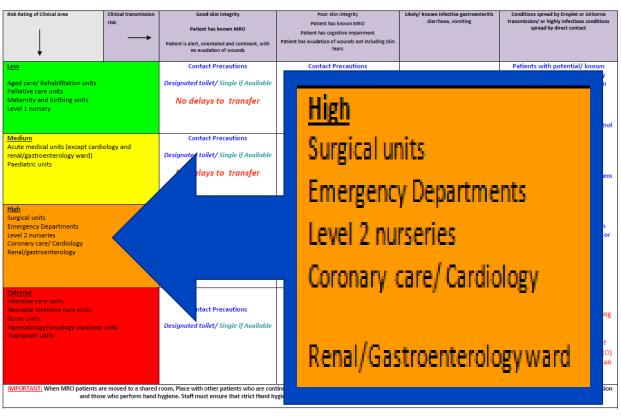
- Patient is alert, orientated and continent with no exudating wounds
- Patient has known MRO
- Cognitive impairment
- Including
  exudating
  wounds and
  abscess but not
  including skin
  tears
- Likely/ known infective gastroenteritis, diarrhoea, vomiting
- Conditions
   spread by
   Droplet or
   Airborne
   transmission /
   or highly
   infectious
   conditions
   spread by
   direct contact

# 2 patients require admission to Cardiology

Health
South Eastern Sydney
Local Health District

St George Hospital - Risk Assessment for placement of patients with known or suspected MRO or communicable illness when limited single room availability update May 2016

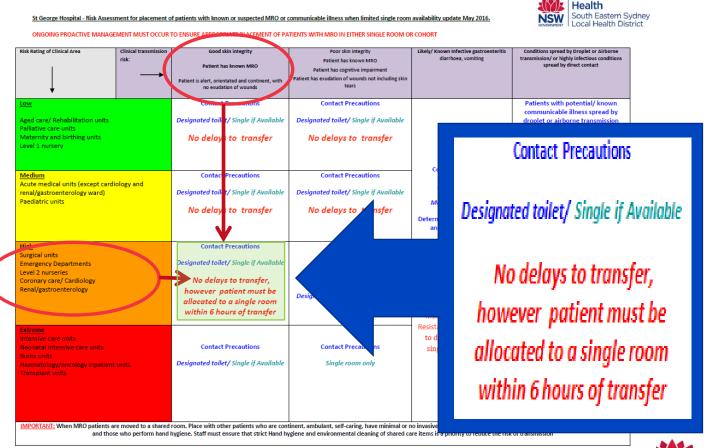
ONGOING PROACTIVE MANAGEMENT MUST OCCUR TO ENSURE APPROPRIATE PLACEMENT OF PATIENTS WITH MRO IN EITHER SINGLE ROOM OR COHORT



- 2 admissions to Cardiology
- Both require singles
- One single is available now, one is available at 3pm (in 6 hours)
- No patients can be moved out of other singles



# Patient 1: Alert/Orientated, MRSA, no open wounds, no recent travel

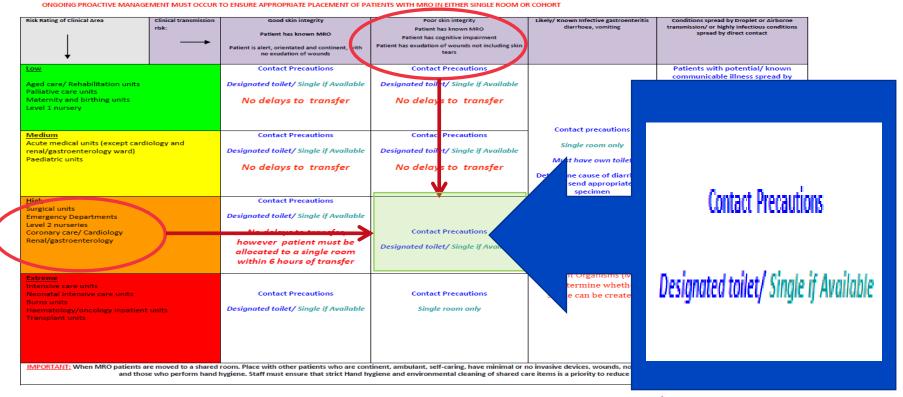




## Patient 2: MRSA, confused, incontinent and has leaking pressure ulcers.

St George Hospital - Risk Assessment for placement of patients with known or suspected MRO or communicable illness when limited single room availability update May 2016.

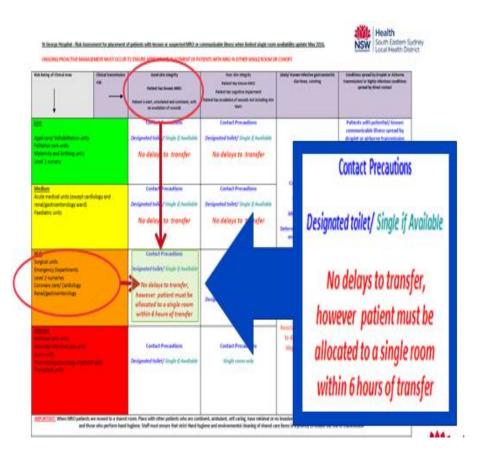
Health
South Eastern Sydney
Local Health District





# Patient 2 single now. Patient 1 transfer/ move to single at 3pm

#### Patient 1



#### Patient 2





### Flowchart 2



#### St George & Sutherland Hospitals

Clinical Business Rule SGH CLIN337

#### INFLUENZA - FLOWCHART AND GUIDELINE FOR THE PLACEMENT OF PATIENTS REQUIRING ADMISSION WITH INFLUENZA-LIKE SYMPTOMS - ST GEORGE HOSPITAL

This flowchart is designed to assist in the bed allocation of patients being admitted to St George Hospital with 'influenza like' symptoms

Patient presents to the Emergency Department with Influenza like symptoms Within the last 7 days has the patient had: - fever of >38 and cough and any of the following: Sore Throat Chills Mivalgia / Arthralgia Obtain a patient history including information in relation to: Recent Overseas Travel Suspected recent overseas acquired resolvatory illness Recent contact with people who have 'flu like' symtoms Whether they have presented from an aged or other facility \* Note: Patients with a travel history from a high risk area, overseas need to be isolated, in a single room only until test results are available Yes -**Emergency Department** No -Take nose & throat viral swabs - request Yesp Virus Sowers respiratory precautions not Apply a surgical mask to the patient required Activation of the cohort Isolate the patient room/s is decided by the Provide patient & relatives with information NUM & NM, DOON or the brochure AHNM after hours Consider whether suitable for Discharge with or without Document "Resp Virus Screen" in Requires admission - needs isolation either in presciption for Tamiflu EPJB to identify patients single or cohort room in 5 South requiring single or cohort room If presribed Tamiflu, must receive the full dose over 72 Haematology, oncology and Patient prescribed Patient not prescribed hours & be afebrile prior to renal patients can be Tamifin Tamiffu being moved out of isolation managed in 5 South If medically stable Single or cohort room Single & Cohort room: Isolate in single room for 7 Discharge from days from the onset of Dedicated nurse to room isolation when Limit public & staff access symptoms or as determined 72 hours in isolation in consultation with No nebulisers and Respiratory or infectious No NIV (permitted in single room) Diseases Physicians afebrile No pregnant women No children Move out of isolation into general ward bed



# Flowchart 2: Influenza Cohort Chart Patient must meet case definition

This flowchart is designed to assist in the bed allocation of patients being admitted to St George Hospital with 'influenza like' symptoms

Patient presents to the Emergency Department with influenza like symptoms

Within the last 7 days has the patient had:

- fever of >38 and cough and any of the following:

Sore Throat

Chills

Myalgia / Arthralgia

Obtain a patient history including information in relation to:

Recent Overseas Travel

Suspected recent overseas acquired respiratory illness Recent contact with people who have 'flu like' symtoms Whether they have presented from an aged or other facility

\* Note: Patients with a travel history from a high risk area overseas need to be isolated in a single room only until test results are available



### Patient requires admission and single rooms exhausted

Consider whether suitable for Discharge with or without presciption for Tamiflu

If presribed Tamiflu, must receive the full dose over 72 hours & be afebrile prior to being moved out of isolation

Single & Cohort room:

- Dedicated nurse to room
- Limit public & staff access
- No nebulisers
- No NIV (permitted in single room)
- No pregnant women
- No children

room/s is decided by the NUM & NM, DDON or the AHNM after hours

Patient not prescribed

Tamiflu

days from the onset of

in consultation with

Respiratory or Infectious

Diseases Physicians

Document "Resp Virus Screen" in EPJB to identify patients requiring single or cohort room

Activation of the cohort

Haematology, oncology and renal patients can be managed in 5 South if medically stable

Single or cohort room Isolate in single room for 7 Discharge from isolation when symptoms or as determined 72 hours in isolation and afebrile

Patient prescribed

Tamiflu

Move out of isolation into general ward bed

Requires admission - needs isolation either in

single or cohort room in 5 South



## How do the matrixes work together?



- A patient with Influenza and a patient with CRE are in ED and both require admission to Aged Care
- Only one single room available
- Cohort room available in respiratory ward



## Key Outcomes 2016 and 2017

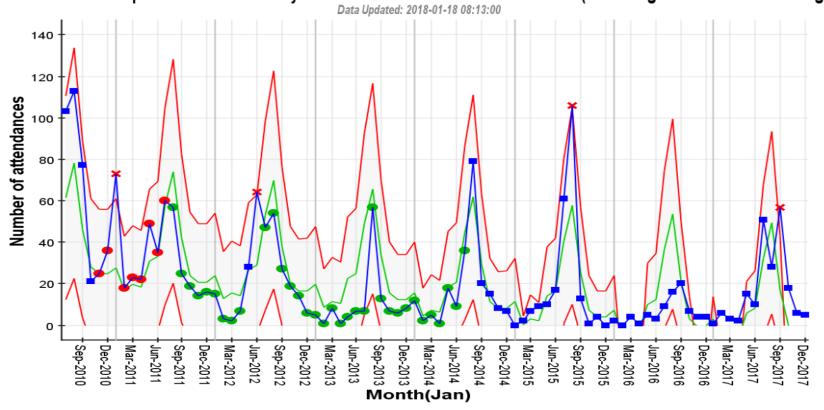
Improved management of patients with Influenza

- 298 and 553 patients positive Influenza A or B.
- 252 and 390 requiring admssion
- 84.5% to 89% isolated correctly despite higher presentations
- 25% influenza admissions on 5SR (n=64/ n=96)
- > 50% patients (n=178/ n =280) given oseltamivir
- No influenza outbreaks in areas Matrix used correctly



### 2017 ED presentations >24hours

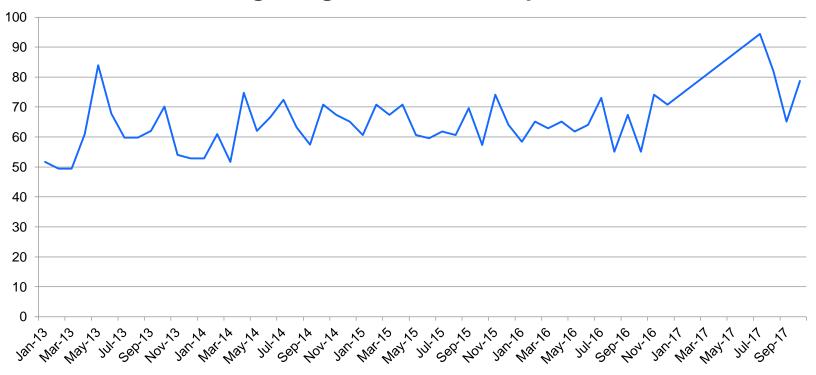
Total Count of ED presentations who stay in ED >24 hours and are then Admitted (Excluding Mental Health St George)





# Admitted patients with MRO and isolation rates SGH

#### Percentage single rooms taken up with MROs



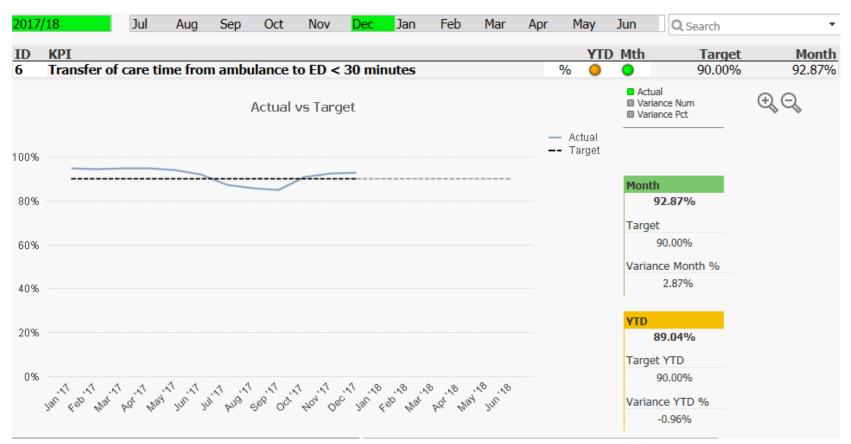
Percentage single rooms taken up with MROs



# Number of ambulance presentations 2017

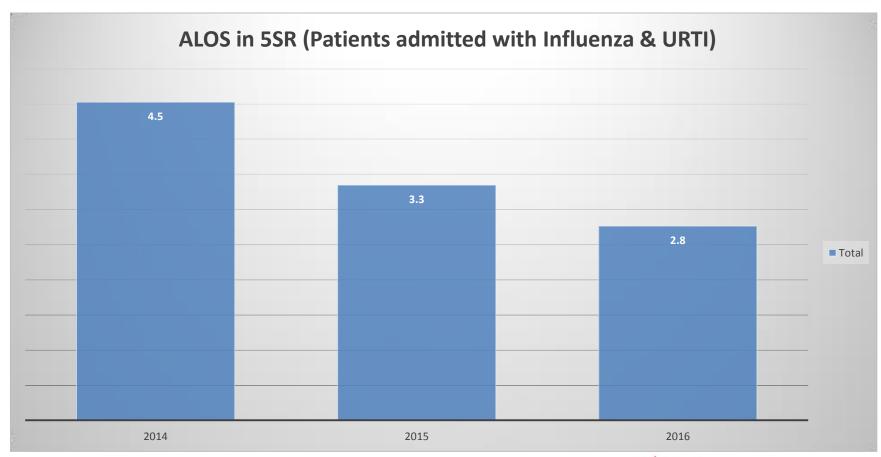


### TOC- Ambulance to ED < 30 mins





### **Average LOS 5 South Respiratory Ward 2016**





# Tips and tricks to preventing outbreaks

- Prevention is Key
- Read EMR to determine why patient being admitted
- Report without delay
  - NHs with outbreaks
  - 2 or more cases
  - Conditions requiring immediate notification on suspicion
- Highest risk put in singles without delay
- Ask the question to rule out viral gastro/Influenza
- Ask Experts, Use Control Guidelines/ Infection Control policies and procedures to help guide placement decisions
  - Isolate on suspicion
  - Notification to PHU if necessary
  - Test correctly and without delay





## Outbreaks tips and tricks

- Form Outbreak team
- Communication
  - Team huddles, emails, notify key stakeholders
- Close a bed and contain
- Get the basics right
  - Stool charts, documentation, correct tests
- Line listings
- Cleaning
  - Start additional cleaning
- Limit visitors
- Consider Engineering
  - Air-conditioning

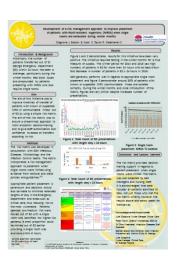






## Acknowledgements: Project Teams

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- Bed Management
- Emergency Department
- 5 South Respiratory







## Questions



