Evolving models to meet the challenges of COVID 19 Perspective from Westmead Hospital

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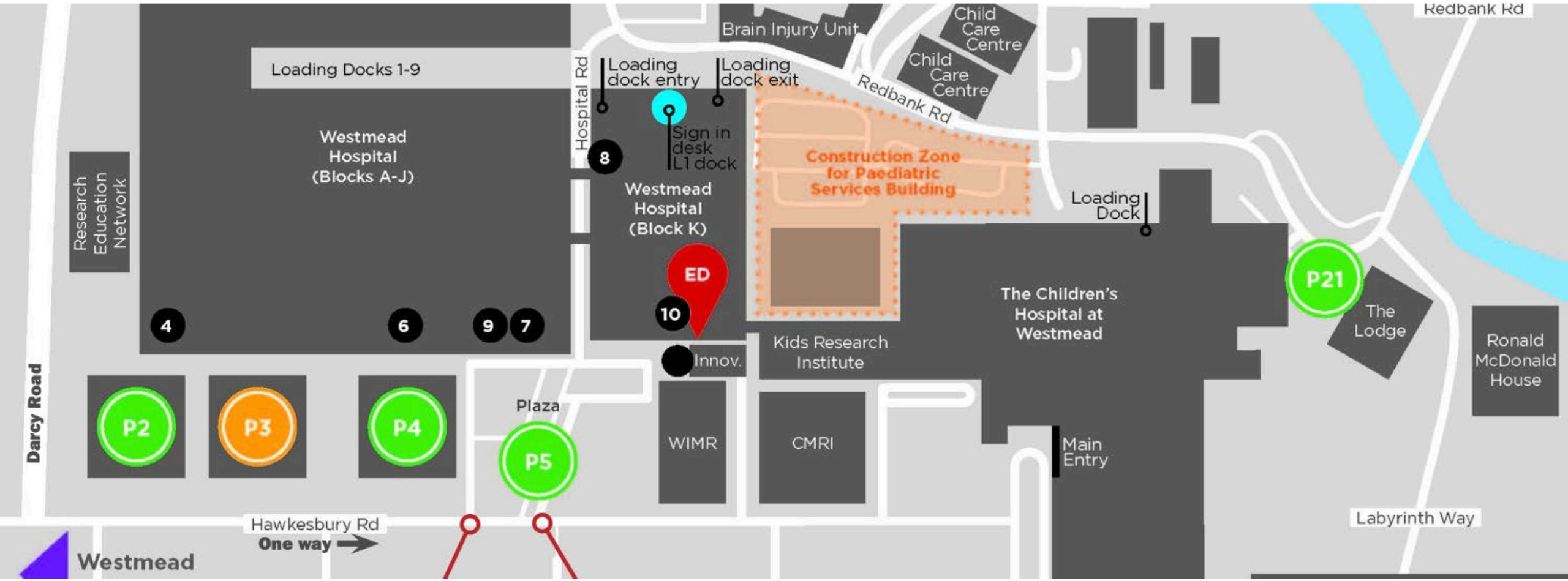
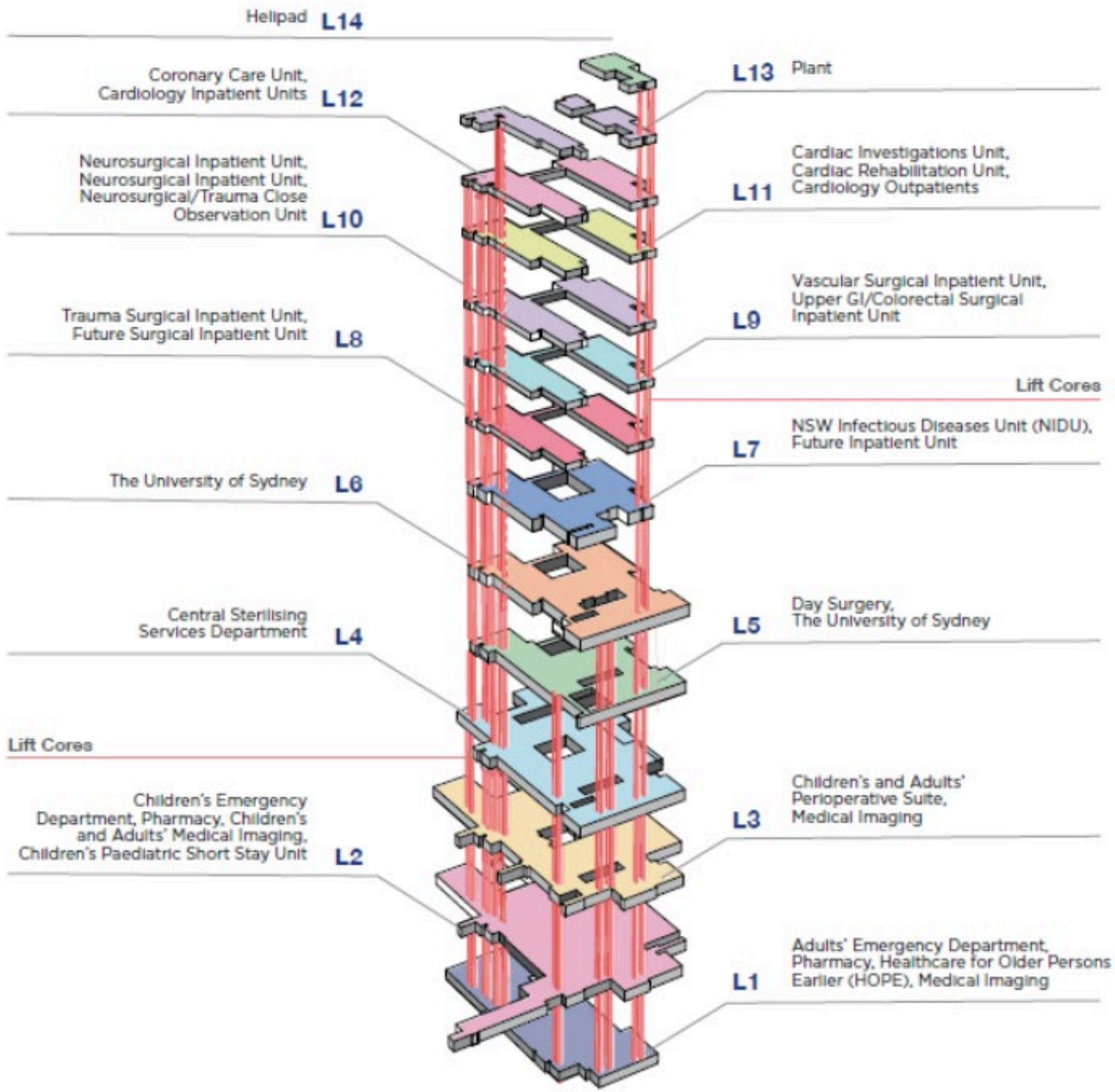
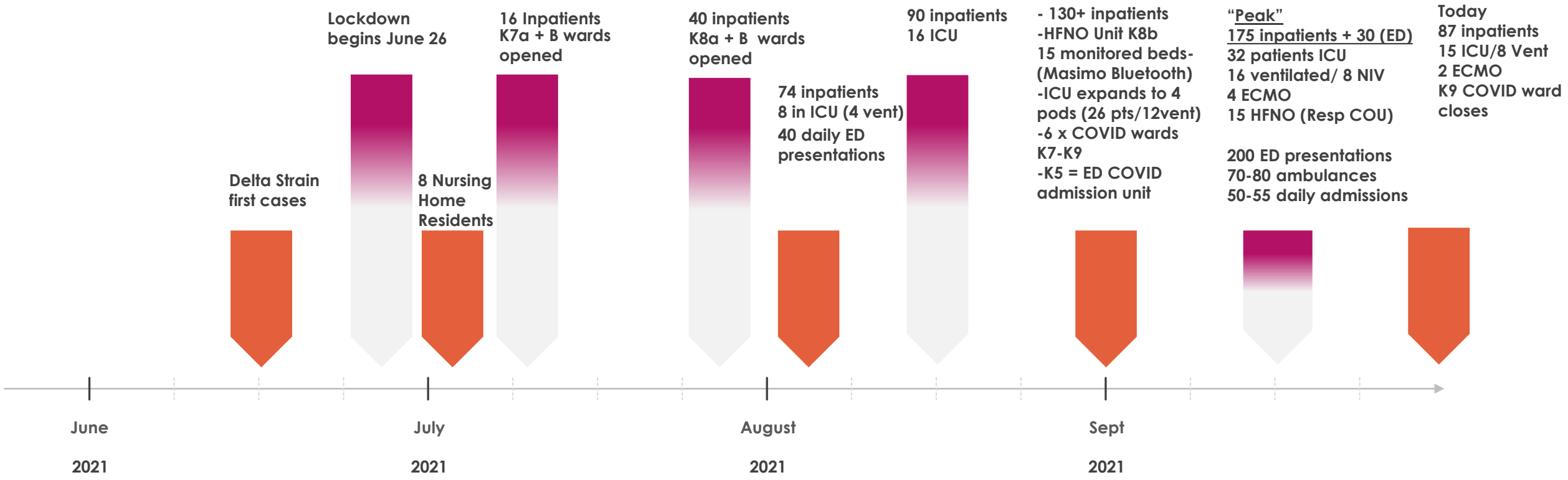
CLINICAL LEAD, RESPIRATORY FAILURE AND RESPIRATORY C.O.U


Westmead
Health Precinct
Entrance 9, 10
Innovation Centre
P4
Entrance 6, 7
P5


Redbank Rd
Brain Injury Unit
Child Care Centre
Child Care Centre
Loading Docks 1-9
Hospital Rd
Loading dock entry
Loading dock exit
Redbank Rd
Sign in desk L1 dock
Westmead Hospital (Blocks A-J)
Research Education Network
8
Westmead Hospital (Block K)
Construction Zone for Paediatric Services Building
Loading Dock
ED
10
The Children's Hospital at Westmead
P21
The Lodge
Ronald McDonald House
4
6
9
7
Innov.
Kids Research Institute
Darcy Road
P2
P3
P4
Plaza
P5
WIMR
CMRI
Main Entry
Hawkesbury Rd
One way
Labyrinth Way
Westmead


Helipad
L14
Coronary Care Unit, Cardiology Inpatient Units
L12
Neurosurgical Inpatient Unit, Neurosurgical Inpatient Unit, Neurosurgical/Trauma Close Observation Unit
L10
Trauma Surgical Inpatient Unit, Future Surgical Inpatient Unit
L8
The University of Sydney
L6
Central Sterilising Services Department
L4
Lift Cores
Children's Emergency Department, Pharmacy, Children's and Adults' Medical Imaging, Children's Paediatric Short Stay Unit
L2
L13
Plant
L11
Cardiac Investigations Unit, Cardiac Rehabilitation Unit, Cardiology Outpatients
L9
Vascular Surgical Inpatient Unit, Upper GI/Colorectal Surgical Inpatient Unit
Lift Cores
L7
NSW Infectious Diseases Unit (NIDU), Future Inpatient Unit
L5
Day Surgery, The University of Sydney
L3
Children's and Adults' Perioperative Suite, Medical Imaging
L1
Adults' Emergency Department, Pharmacy, Healthcare for Older Persons Earlier (HOPE), Medical Imaging

Timeline



"amber" inpatient numbers not included

CURRENT : ICU Space

46 ICU Beds

E3B
13 Beds

E3A
11 Beds

E3C
Pod C
12 Beds

D3
22 Beds

10 Green ICU Beds

36 Red ICU Beds

COVID ward beds
6 wards ~ 120 beds
K5 ED admission ward
= 33 beds

K8B HFNP
28 bed Resp COU (15 monitored)

TOTAL approx 220+ beds

Adapting to rapid rise in admissions

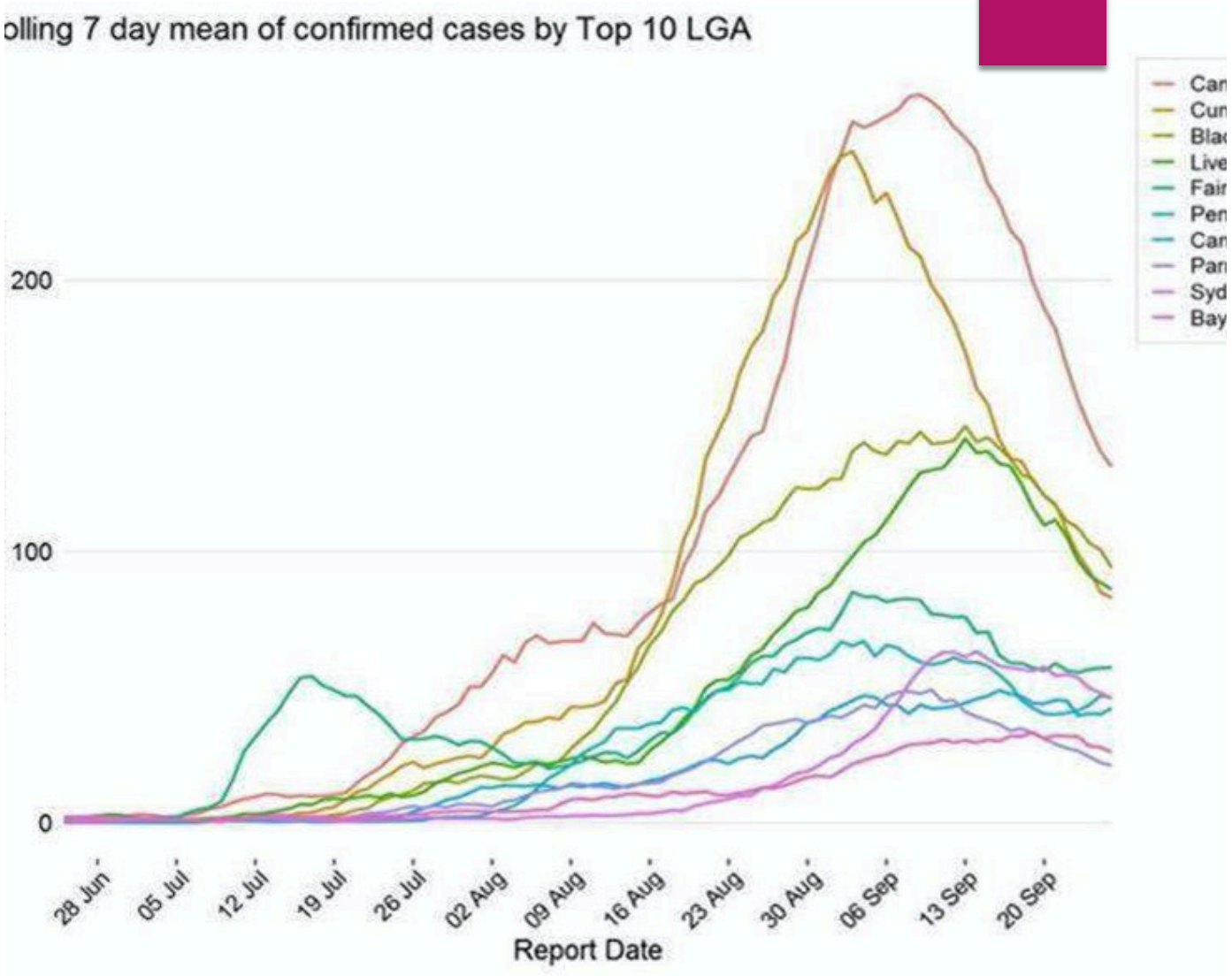
- Increasing ward capacity in K block building & relocating surgical units
- Creating ED capacity with a dedicated COVID ED
- Nursing redeployment to COVID wards
- Ward based JMO model of care and redeployment to COVID wards
- All medical consultants rostered to rotate through general COVID wards
- 6 COVID wards and a COVID Respiratory COU (28 beds, 15 monitored)
- ICU capacity expanded into an additional 12 bed "pod" in monitored surgical COU with critical care capacity expanded from 36 to 46 ICU beds
- Model able to flex up to 72 ICU beds supported by 28 Resp COU beds
- Transfer of ICU patients to other local health districts
- Non- COVID patients moved to local private hospitals and rehab facilities

Challenges

- Rapid increase in patient numbers. Large proportion NESB. Younger, higher acuity, presenting later
- Redeployment of nursing and medical staff
- Completely new JMO and SMO roster
- New model for monitoring with wearable technology (Masimo) to meet challenges of rapid expansion and patients who required positioning/ proning
- Ward exposure events
- Mental health COVID patients and “Code Black” calls
- Adapting new Standard 8 / Code Blue and CERS escalation criteria
- ICU/ ID/ Respiratory role in supervision of consultant colleagues unfamiliar with management of COVID patients

Questions?

- Past the peak??



Additional slide 1: COVID wards model

- 1x 28 bed Respiratory Consultant run unit – High Flow Oxygen and CPAP/ NIV only as a bridge to escalation to ICU
- 5 x general COVID wards run by other medical sub-specialty consultants (Geriatrics, Immunology, Neurology, Cardiology, Rheumatology, etc…)
- ID and Respiratory providing outreach support
- Daily 730 am Clinical Expert Advisory Group meeting
- Daily COVID wards teleconference (all wards, all consultants and teams) to discuss patients
- Regular (1-2x daily) ICU and Anaesthetics/ Code Blue team outreach meetings within each COVID ward
- Twice weekly combined COVID radiology meeting


88
97
SpO2
74
15
4.0
20

COVID WARD HFNO

GUIDANCE FOR MEDICAL & NURSING TEAMS

Version 1.0; 08/09/2021

NSW GOVERNMENT Health
Western Sydney Local Health District

GENERAL MANAGEMENT

Indications

- Increasing O_2 requirements on NP despite self-proning
- Patients discharged from ICU with stable or improving disease trajectory
- Patients with stable $HFNO_2$ requirements (as per Respiratory/Anaesthetics/ICU)
- Patients for whom $HFNO_2$ is ceiling of care
- To temporise hypoxaemic patients awaiting ICU transfer

Patients not suitable for ward $HFNO_2$

- FiO_2 > 50% required to maintain target SpO_2
- Patients whose clinical trajectory is clearly deteriorating
- Patients with Respiratory Failure **AND** 1 or more other organ system failing
- Non-compliance due to distress, agitation, psychological, illness, language barriers

Parameters

- $HFNO_2$ with FiO_2 titrated up to 50%
- Flows 30-60L/min
- Target SpO_2 92-96% (88-92% in patients with chronic hypoxia)
- Continue to self-prone if required
- Continuous pulse-oximetry monitoring
- Respiratory Covid Consultant must be called prior to commencement

Deterioration

Sudden desaturation & tachypnoea is common during any exertion, eg changing position, eating, toileting. **Before escalation:**

- Ensure HNFP appropriately applied to nares
- Increase FiO_2 briefly & allow them to settle
- Reassure & encourage to take slow deep breaths
- Once settled, titrate FiO_2 down to target SpO_2
- Observe for 5-10mins then re-assess

RAPID RESPONSE CALL

Calling criteria for $HFNO_2$

- Failure to maintain target SpO_2 on FiO_2 up to 50% & flows 60L/min
- RR > 30bpm
- Any serious concern
- Non-respiratory criteria as per SAGO chart

Initial Management

- Urgent R/V by most senior doctor on ward (aim within 10mins, must be within 30mins)
- Ensure HFNP are properly applied to nares
- Rapidly titrate flows & FiO_2 (up to 60L/min & 100% if required) to achieve target SpO_2
- ABCDEFG assessment
- Exclude other causes of hypoxia
- Consider CXR / ABG / frusemide / proning / chest physio

Call Code Blue if life-threatening situation or urgent intervention is required, eg CPR or intubation.

CODE BLUE CALL

Calling criteria for $HFNO_2$

- **Acute escalation** in HFNO to > 50% & 60L/min **AND** Failure to maintain target SpO_2 despite O_2 escalation
- RR > 40bpm
- Acute respiratory distress
- Imminent arrest or any serious concern
- Non-respiratory criteria as per SAGO chart

Initial Management

Call Code Blue if life-threatening situation or urgent intervention is required, eg CPR or intubation.

- Otherwise, immediate R/V by most senior ward doctor
- See Initial Management of Rapid Response
- Consider passive/supported ventilation via bag-valve-mask + filter (2 person technique)

If ICU admission required - liaise with ICU Consultant / PF

Surge Plan : ICU Capacity

72 ICU Beds

E3B
13 Beds

E3A
12 Beds

E3C
13 Beds

D3
22 Beds

C3C
12 Beds

12 Green ICU Beds

Considerations-Updates:
Equipment / Capital Works

60 Red ICU Beds

Supported by K8B HFNP
28 Beds