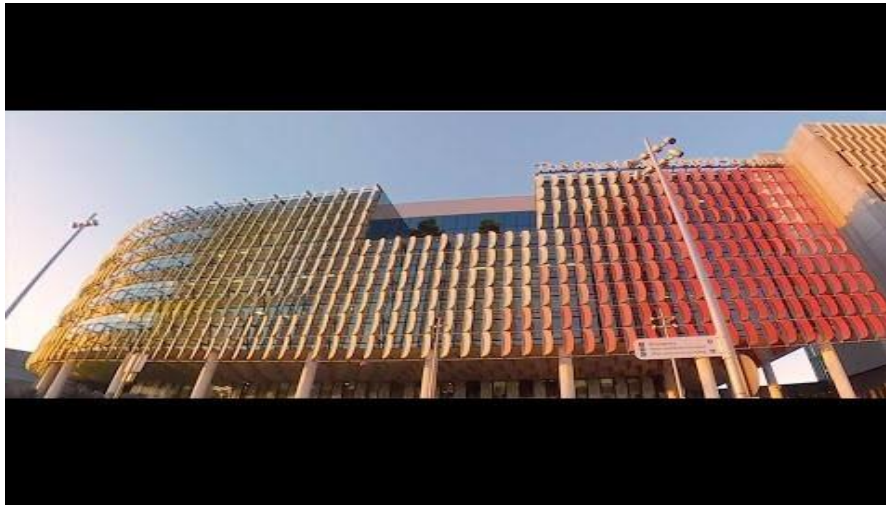# Infection Prevention and EMR
The Virtual Reality
Wednesday November 21 2018 1100
Jane Tomlinson

Objectives

- https://youtu.be/i_btNNSGD2c

- History of Electronic Medical Record
- RCH services
- Infection practice changes, challenges and wins

Royal Children's Hospital Melbourne

- Second largest Australian city

- Population - 4.2 million

- State capital of Victoria

- Victorian Population about 6.3 million

- Annual pop Growth rate 3.2%

Royal Children's Hospital

Major specialist paediatric hospital in Victoria

- Extends to other states and overseas.

- National liver and cardiac transplant centre

- State trauma centre

- Rehabilitation and palliative care services

www.dexigner.com

Activity
Royal Children's Hospital

- 50,200 inpatient stays
- 338,100 outpatient visits
- 17,900 operations
- 86,000 emergency presentations
- 460 community care patients each day
- More than 5000 staff

History of the EMR at RCH

2010: RCH submitted Stage 1 EMR business case

May 2011: Received 23.9m in funding in 2011/12 over 4 years under HealthSmart

2011/12: RCH delays implementation to focus on infrastructure commissioning

2012: HealthSmart program reviewed and no longer mandated for use

2013: RCH issues tender for contemporary EMR solution

2014: Revised business case approved for $48.0m in capital, with $23.9m still funded by Government

2014: Epic awarded tender for EMR implementation

2014 – 2016: EMR Implementation

Why Epic?

Extensive background investigation

Most suited for academic paediatric hospital

Our staff chose Epic:

- Over 250 staff attended - tendering demonstrations
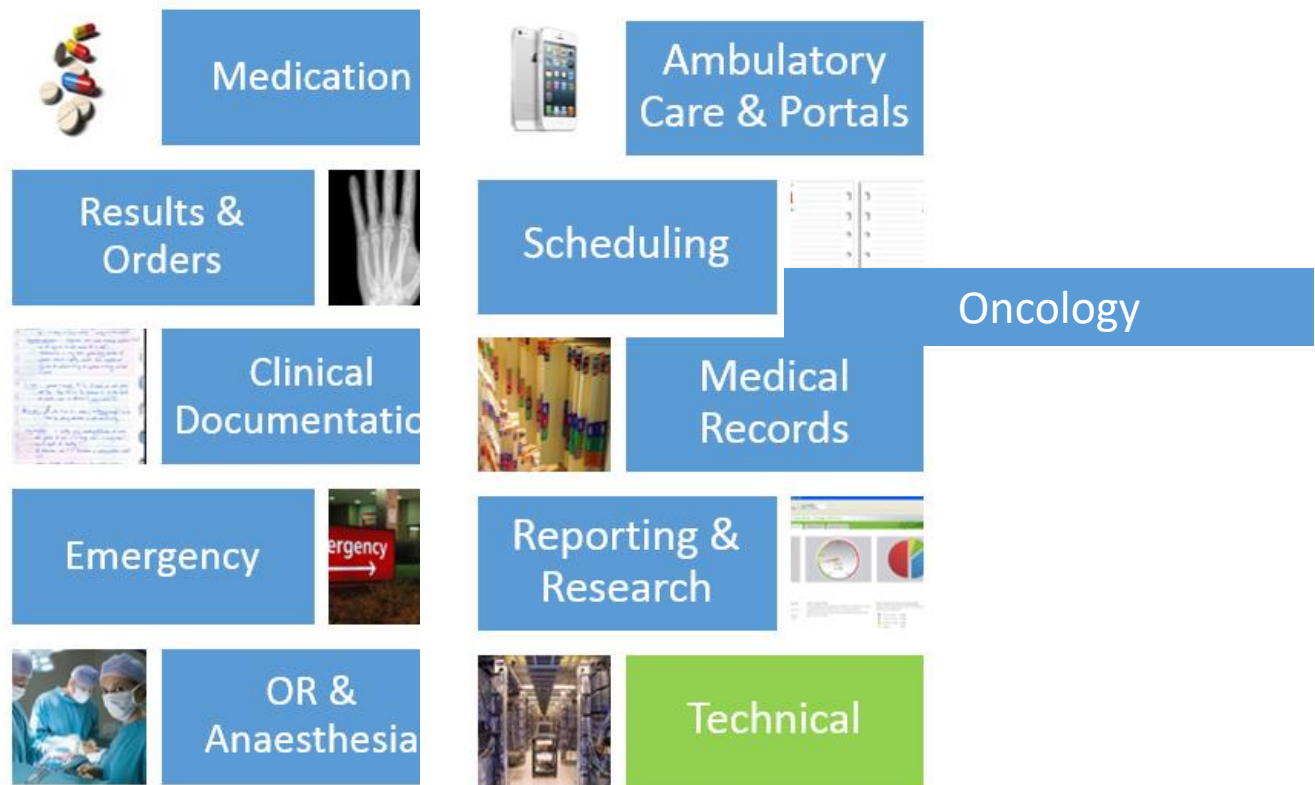- Over 70 staff, formal tender evaluation process

Model for go live
April 30th 2016 – "big bang"

Which elements included in our EMR?

Benefits – quality and safety Comparison 2016/2017

- 14% less patient deaths
- 32% less cardiac arrests
- 30% reduction in prescribing errors
- 22% reduction in overall medication errors

Patient care – less interventions

- fewer pathology tests (duplicates and repeat)
- fewer Medical imaging exams
- reduction in medication costs

Poster for Hand Hygiene sequence

- HH sequence for when device use (scanner/rover/COW)

Hardware

Selection of devices – COW, laptop, desktop, mobile and bring your own

Challenges for IPC

- device selection – used in patient zone. Sought advice from manufacturer to ensure surfaces cleanable

- Device cleaning - product which won't damage

- How dirty are they?

  – ATP testing – ATP COW keyboard average 190627 (floor 171, 511)

- Additional devices appropriate for patient zone

Connecting with our families and other health communities - My RCH Portal

- **8000** My RCH Portal users

- using the mobile app
- records are accessed by Community providers (GP & referrers)
- https://www.rch.org.au/my-rch-portal/

Infection control activities

1. Best practice alerts

- **Transmission based precautions** - prompts and banner alerts

- Best practice advisories which trigger when documented risks

  – Returned travellers alerts e.g. CPE, MERS

  – Flexible & customisable to respond to new events

Infection control activity

Transmission based precaution
best practice advisory

- Trigger showing -
  clinical staff showing
  need to order
  transmission based
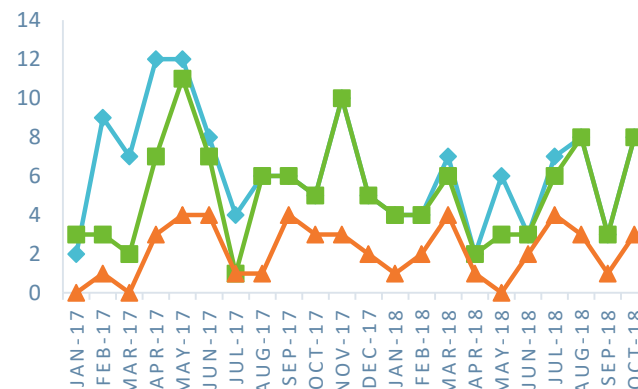 precaution

Infection control activities

Best practice advisories which trigger when documented risks

– Returned travellers alerts e.g. CPE

– Flexible & customisable to respond to new events

CARBAPENEMASE-PRODUCING ENTEROBACTERIACEAE (CPE) PRE-EMPTIVE ISOLATION AND SCREENING

Admitted to RCH — Isolated — Screen collected

	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18
Admitted to RCH	2	9	7	12	12	8	4	6	6	5	10	5	4	4	7	2	6	3	7	8	3	8
Isolated	3	3	2	7	11	7	1	6	6	5	10	5	4	4	6	2	3	3	6	8	3	8
Screen collected	0	1	0	3	4	4	1	1	4	3	3	2	1	2	4	1	0	2	4	3	1	3

IC activities

2. Pathology

- Order test – screening and co-signing

IC activities

3. Virtual ward rounds – patient chart review

- Custom buttons

- Button

- Diagnosis

- Problem list

- Link to notes

- Observation graph

- Medication

IC Activities

4. Data collection

- Quick glance at pt history and current status

- Add notes

- Initial rise in Infections quarter of go live, due to scale of organisational change

- Depends on human data entry at bedside

IC activities

5. Reports - export to excel and custom filters

For example compliance to CPE screening

. Contact tracing - only a 'ward list' not index patient tracker

- Patient location, bed movements

Customisable personalisable

- Patient chart tabs are customisable for each persons workflow

Activities

6. Surveillance

- Surgical site – custom report, extract to excel then chart review

- CVAD maintenance documentation – required daily and hourly checks

- central line insertion practices – smart sets for inserters

7. Audits

- Blood stream infection review of documentation

- VAP surveillance BPA – prompt if febrile, no orders for ventilation

National Standards

- Governance
- Partnering w consumers
- IPC
- Medication safety
- Comprehensive care
- Communicating for safety
- Blood management
- Recognising and responding to acute deterioration
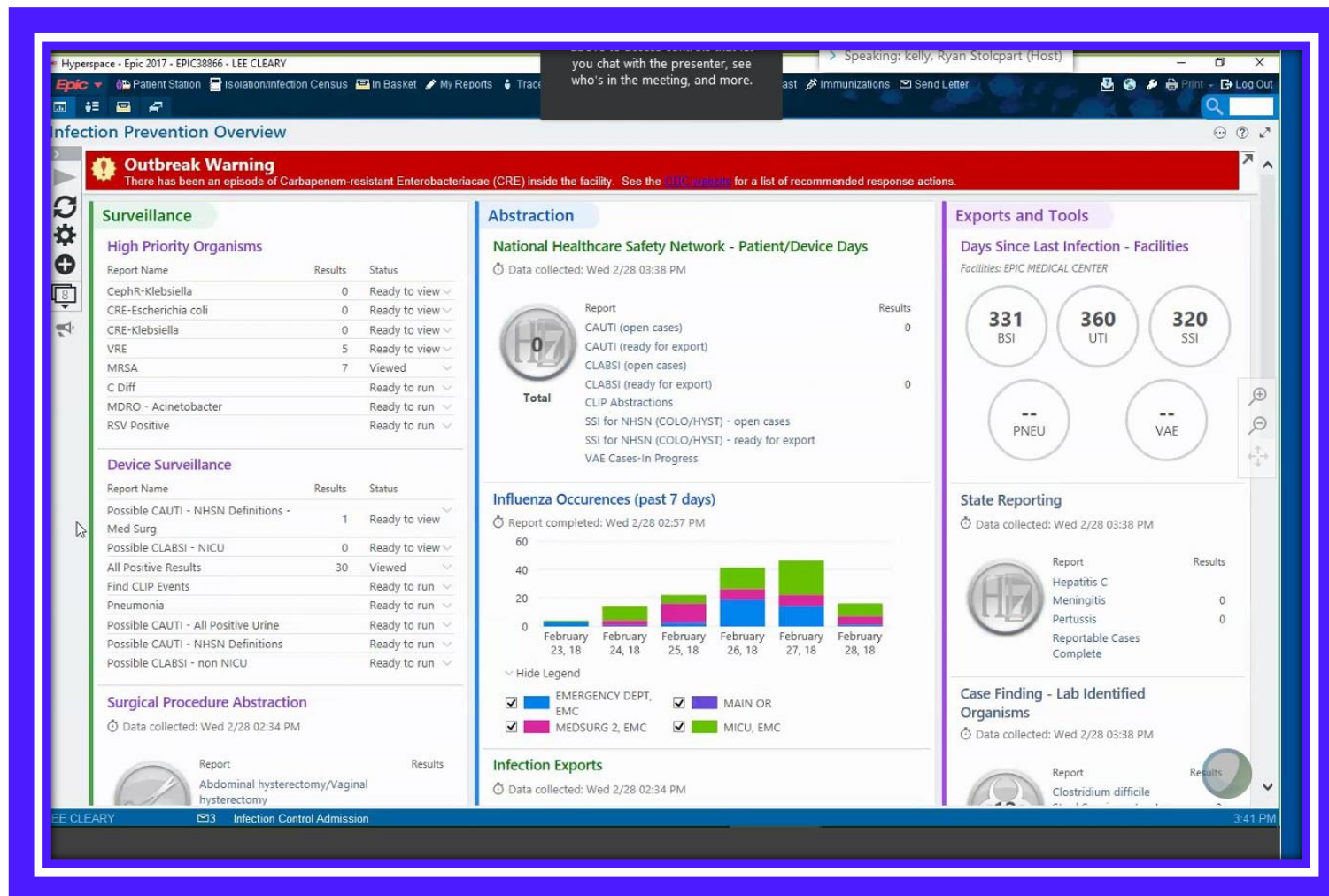
Future – IPC module (ICON)

Support for IPC workflow

- Report workbench
- Provides index patient – bed trace – contact bars, review of outbreak
- SSI readmitted patient flags
- Antibiograms and organism reports

Improvement requests

- Census including device days
- Ordering ventilation
- MRO screening BPA

ICON dashboard

Summary

Benefits

- Don't move from chair – instant view of chart

- Less paper

- Chart documentation is clearer and easier to read.

- Flow sheets to prompt clinical staff

- Banner alerts

- BPAs to guide care

- Report customisation, can do locally. Not relying on other department

- Ward lists are quicker than previous methods of gaining demographic lists

- Handover guides

Summary

Challenges

- Don't move from chair
  - Local ward links program established for increasing clinical input
- More local education and formal education sessions
- Real ward visits

- Cleaning devices
- Custom ICON module not yet funded
- Feeder systems example ambulatory service arrival time e.g. Qflow are not viewable but can be found
- Resolving infection risks before completed
- Skills acquisition steep learning curve "just in time" skills
- Alert fatigue 'ignore' pop ups - 25% less vs USA style

Acknowledgements

- Presentation authors
- Infection Prevention and Control Department
  - Jane Tomlinson
  - Sue Scott
  - Kareena Johnson
  - Kate O'Donaghue
- Microbiology
  - Associate Professor Andrew Daley
- Chief Nursing Information officer
  - Adrian Hutchinson

- Not sponsored or supported by EMR provider

Thank you
Questions?