Digital Health Records

Eastern Health's Electronic Medical Record Journey …to date!

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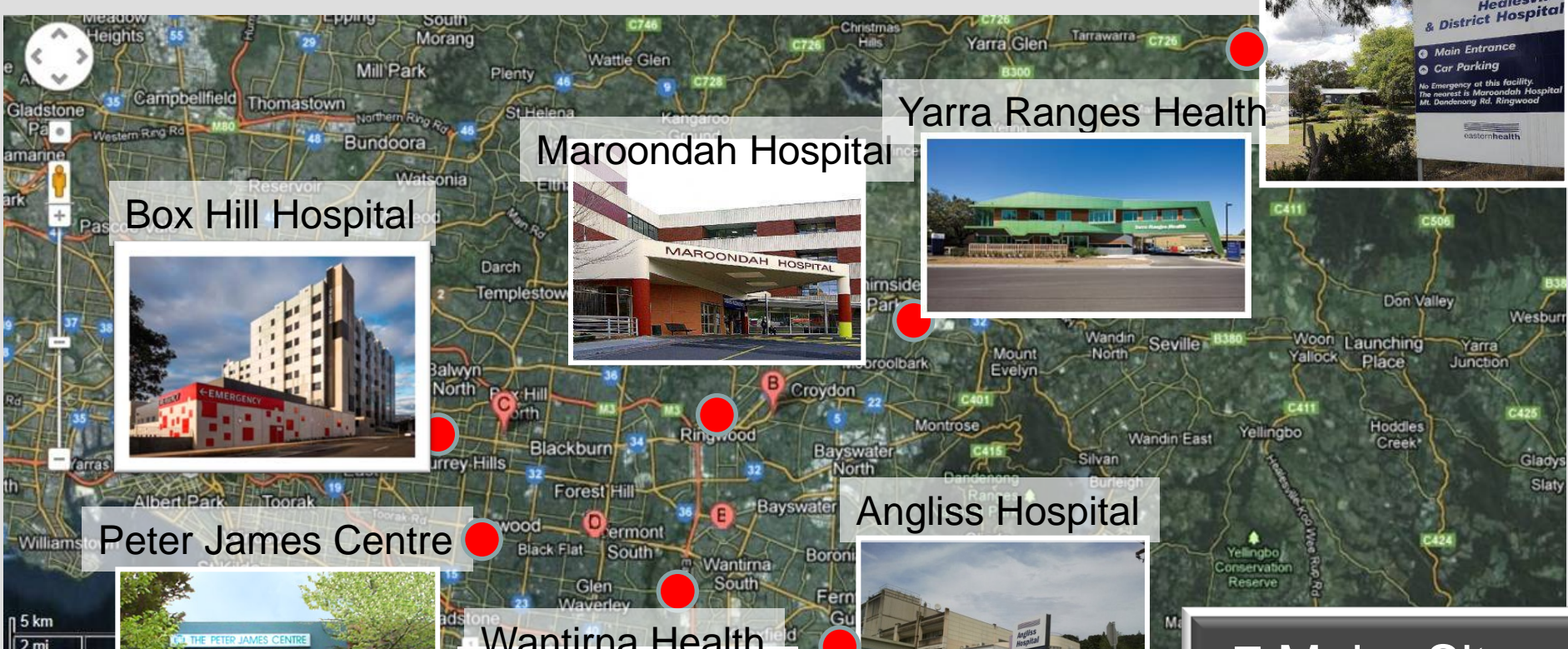*Program Director Information Integrity*

November 2019

Overview

- Eastern Health – who we are
- Health record timeline & milestones
- Lessons – the good, the bad & the ugly
- Reflections
- Next Steps
- Implications for health record managers
- Questions

Eastern Health at a Glance

Public Metropolitan Health Service in the Eastern Suburbs of Melbourne

Healesville Hospital

Yarra Ranges Health

Maroondah Hospital

Box Hill Hospital

Angliss Hospital

Peter James Centre

Wantirna Health

7 Major Sites + 65 Community Sites/locations

Eastern Health Catchment

Municipalities: *Boroondara, Manningham, Yarra Ranges, Knox, Whitehorse*

Covering: *2,817km area*
Population: *773,992*

Eastern Health at a Glance*

Key Metrics:

- Services covering birth to death
- Operating Budget: $1.01B
- Costed per minute: $1931
- Staff (incl. volunteers): 10,265
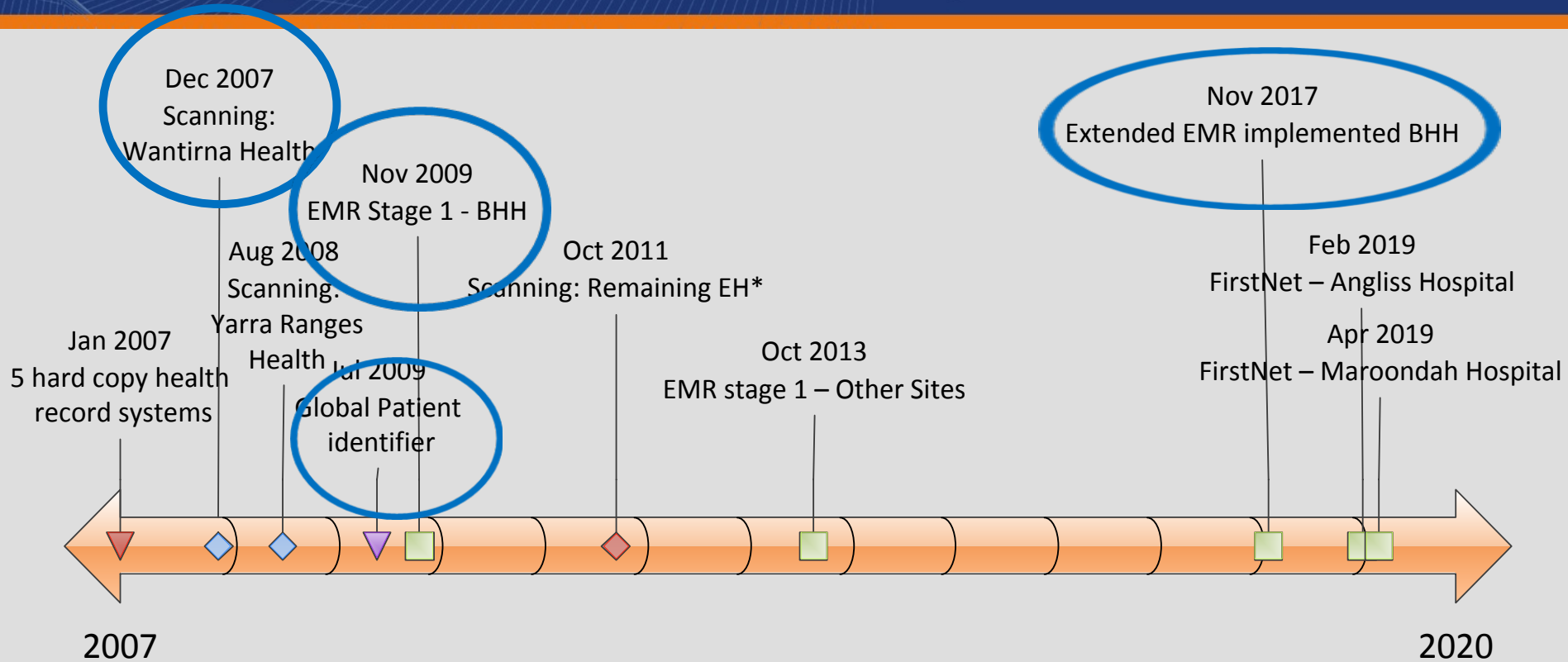- Beds 1,508
- Care Episodes: 1.33M

*July 2017 - June 2018

Source: moziru.com

Today's Health Records Landscape

- Paper
- Scanned
- 20+ key clinical systems (including)

*Cerner	*HOMER	*Auslab
*AutumnCare	*BOS	*Kestral
*HIMS	*Bookwise	*Merlin
*CMI	*Endobase	*Fluvax
*Healthtrak	*IRIS	*Medical Director

Started with a <u>best of breed </u>approach NOW <u>single system </u>due to integration challenges

source: amazon.com

Timeline for Adoption

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Dec 2007
Scanning:
Wantirna Health

Nov 2009
EMR Stage 1 - BHH

Nov 2017
Extended EMR implemented BHH

Aug 2008
Scanning:
Yarra Ranges
Health

Oct 2011
Scanning: Remaining EH*

Feb 2019
FirstNet – Angliss Hospital

Jan 2007
5 hard copy health
record systems

Jul 2009
Global Patient
identifier

Oct 2013
EMR stage 1 – Other Sites

Apr 2019
FirstNet – Maroondah Hospital

2007

2020

source: amazon.com

Eastern Health's EMR Journey
January 2009-October 2017

2009

Release 1a
PowerChart Results
Discharge Summaries
Allergies & Alerts

2010

Release 1b
Discharge Scripts

2012/13

Release 2a
Medications (WH,PJC)
Path/Rad Orders & Collection
Fluid Balance Chart

2014

Release 2b
Acute
Path/Rad Orders & Collection
Patient Access List

2016/2017

Medications Management
Acute
(AH, BHH)

OCT 2017

EMR EXTENSION
(BHH)

easternhealth EMR
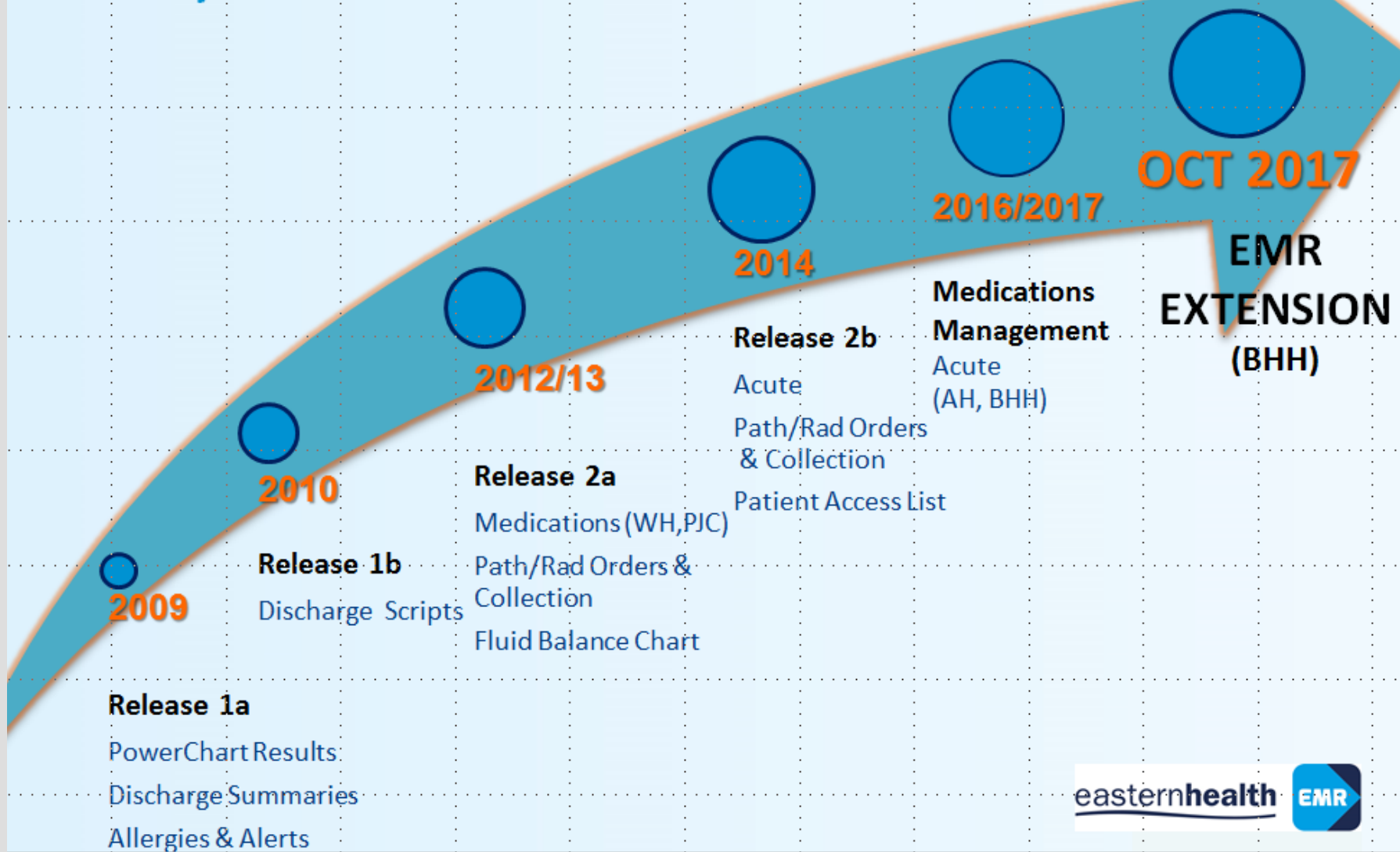
- **Completed in September 2014**

- **Vision: To create a technologically advanced healthcare facility in Box Hill**

EMR Suite Implemented at Box Hill Hospital (Nov 2017)

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EMR EXTENSION INTRODUCED

- ICU solution (Critical Care)

- Emergency solution (FirstNet)

- Surgery solution (SurgiNet)

- Anaesthesia Management

- Complex Medications & IVs

- Clinical Documentation

- Positive Patient Identification (PPID)

- Device Integration

- Specimen Collection

- Lighthouse (Sepsis, falls and pressure ulcers)

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Device Integration

Transmitting clinical data directly into the Electronic Medical Record.

- Spot Check Monitors (145)

- Bedside Medical Devices

  Fixed monitors (172)
  Anaesthetic Machines (16)
  Ventilators (30)
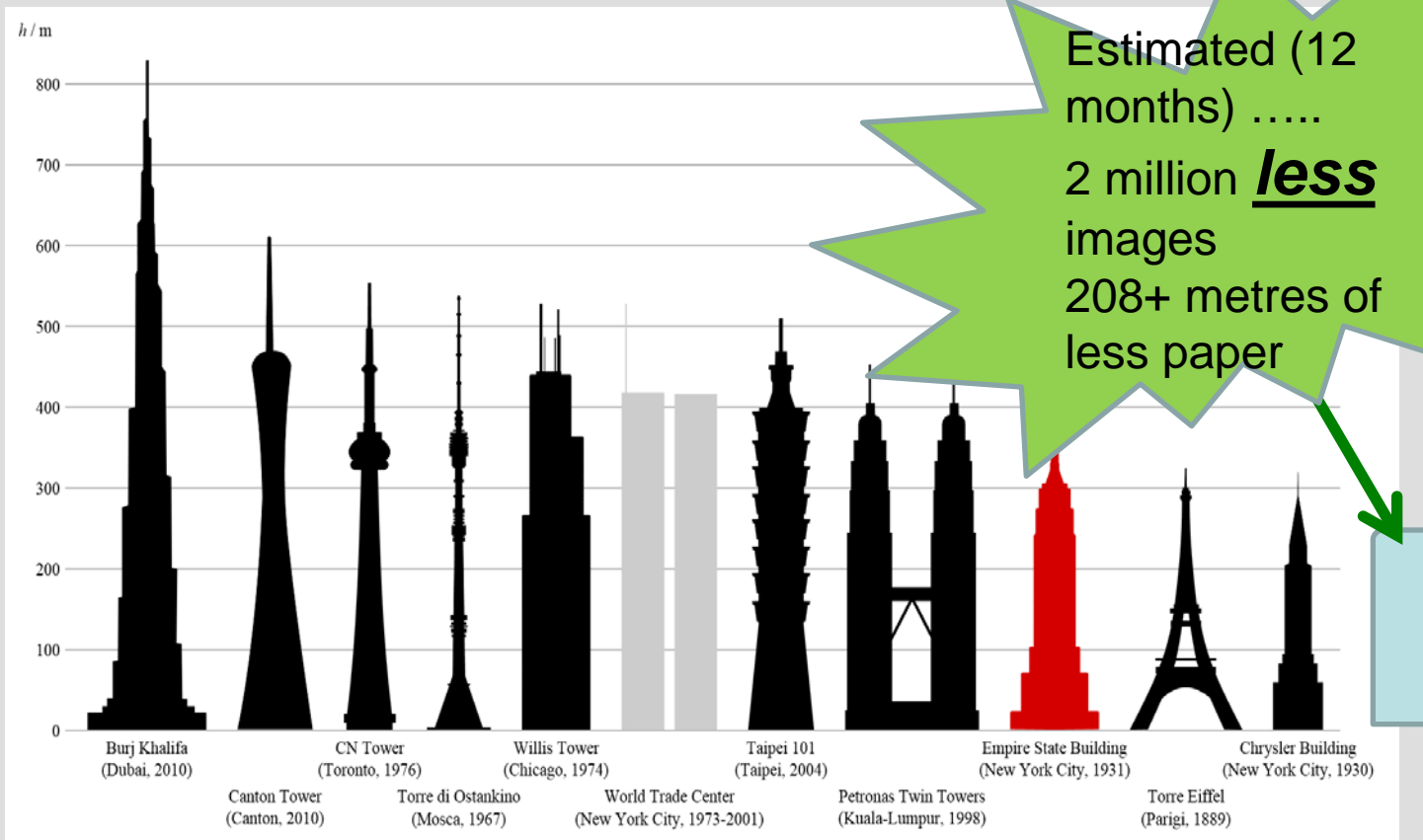 Cardiac Output Monitors (4)

- ECG Machines (26)

EMR Daily Usage - Average

- 3,141 EMR logins

- 2,291 EMR users a day

- 11,749 medications administered

- 12,203 orders signed

- 39,484 times medication records is opened

- 47,393 time a patient chart is opened

The Good, the Bad & the Ugly!

Sustainability - reduction in scanning

Estimated (12 months) …..

2 million **_less_** images
208+ metres of less paper

Diagram source: Wikipedia

The Good, the Bad & the Ugly!

- Real time data entry
- Real time data access
- Auditability (legal health record)
- Electronic transfer of information (My Health Record)
- Legibility

Don't write like this
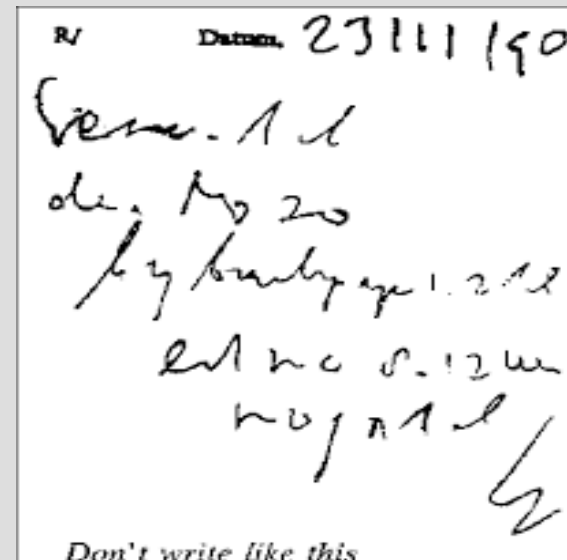
Electronic Medical Record

A comprehensive electronic patient record which is up to date, easy to read and accessible instantly by the patient's healthcare team

Patient benefits

- Better care co-ordination and outcomes
- Secure and private information
- Less clinical and medication errors
- Improved communication
- Early warning systems and alerts for at-risk patients

Staff benefits

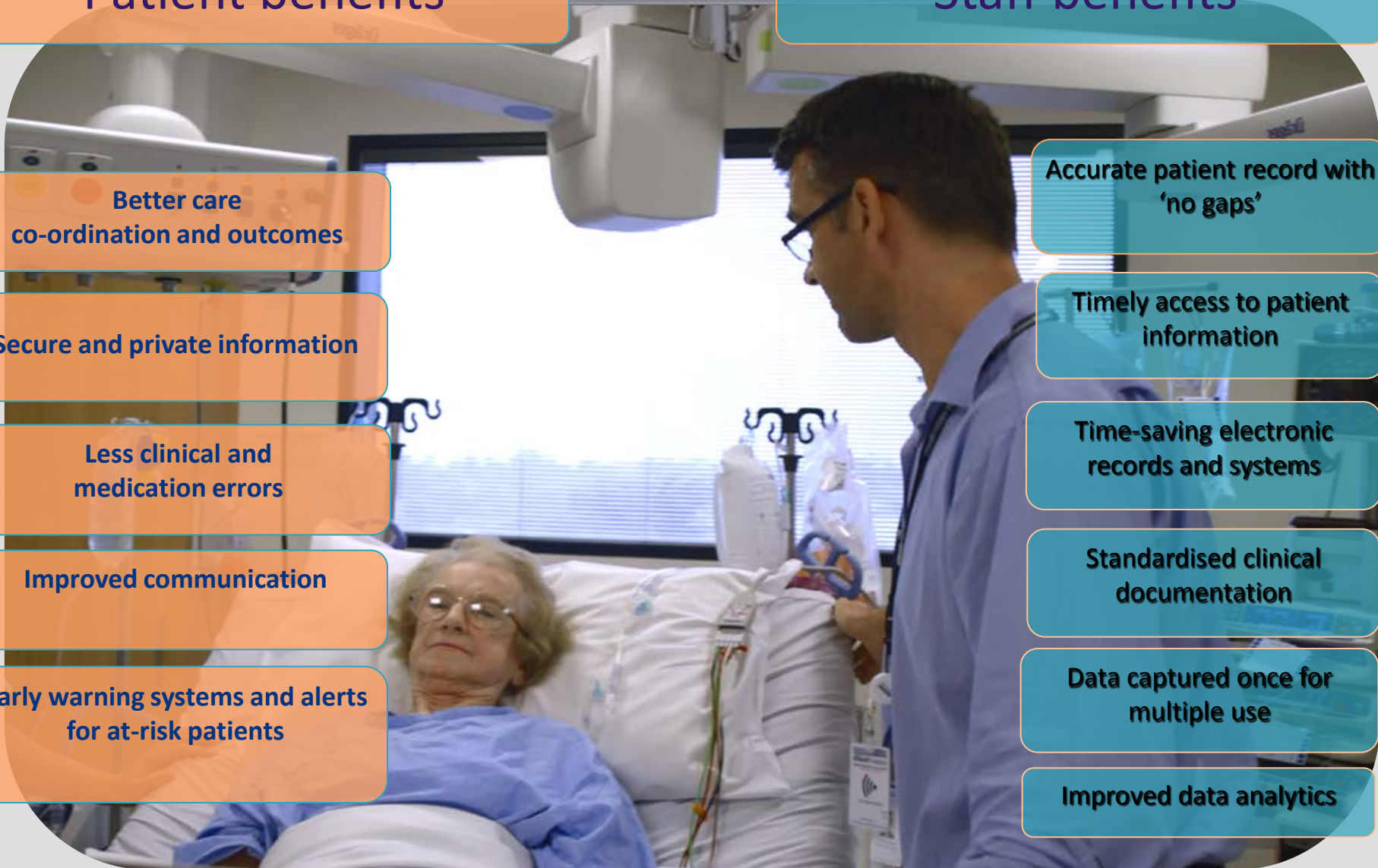- Accurate patient record with 'no gaps'
- Timely access to patient information
- Time-saving electronic records and systems
- Standardised clinical documentation
- Data captured once for multiple use
- Improved data analytics

The Good, the Bad & the Ugly

- High degree of managing knowledge gaps
- Skilled staffing availability – an industry problem
- Can be difficult to find information
- Resourcing and funding to maintain
- Alignment and priority demand – changes to system
- Updating standards to reflect environment

The Good, the <u>Bad</u> & the Ugly

- Cybersecurity increased investment and monitoring (across all systems)

OAIC – 2018-2019 - 950 offically reported data breaches in Australia

#TECHNOLOGY NEWS · SEPTEMBER 25, 2014 / 4:25 AM / 3 YEARS AGO

Your medical record is worth more to hackers than your credit card

U.S. EDITION

RANSOMWARE HACKERS ARE COMING FOR YOUR HEALTH RECORDS

BY LILLIAN ABLON AND MARK ... FRIEDBERG ON 4/9/16 AT 10:00 AM

Newsweek

HealthIT Security

More Hospitals Affected by Healthcare Ranso... ...cks

Healthcare ransomware attac...
health systems, although pati...

CSO
FROM IDG

NEWS

**Black market medical record prices drop to under $10, criminals switch to ransomware**

The black market value of stolen medical records dropped dramatically this year

- Difficulty creating consistency across sites – different levels of functionality

- Embedding into organisational processes (13 months – clinical agreement on process)

- Governance – who is responsible for what?

- Managing and monitoring access to system

- Integration requirements

The Good, the Bad & the <u>Ugly</u>

170+ systems
Interfaces – too scary to mention!

EMR
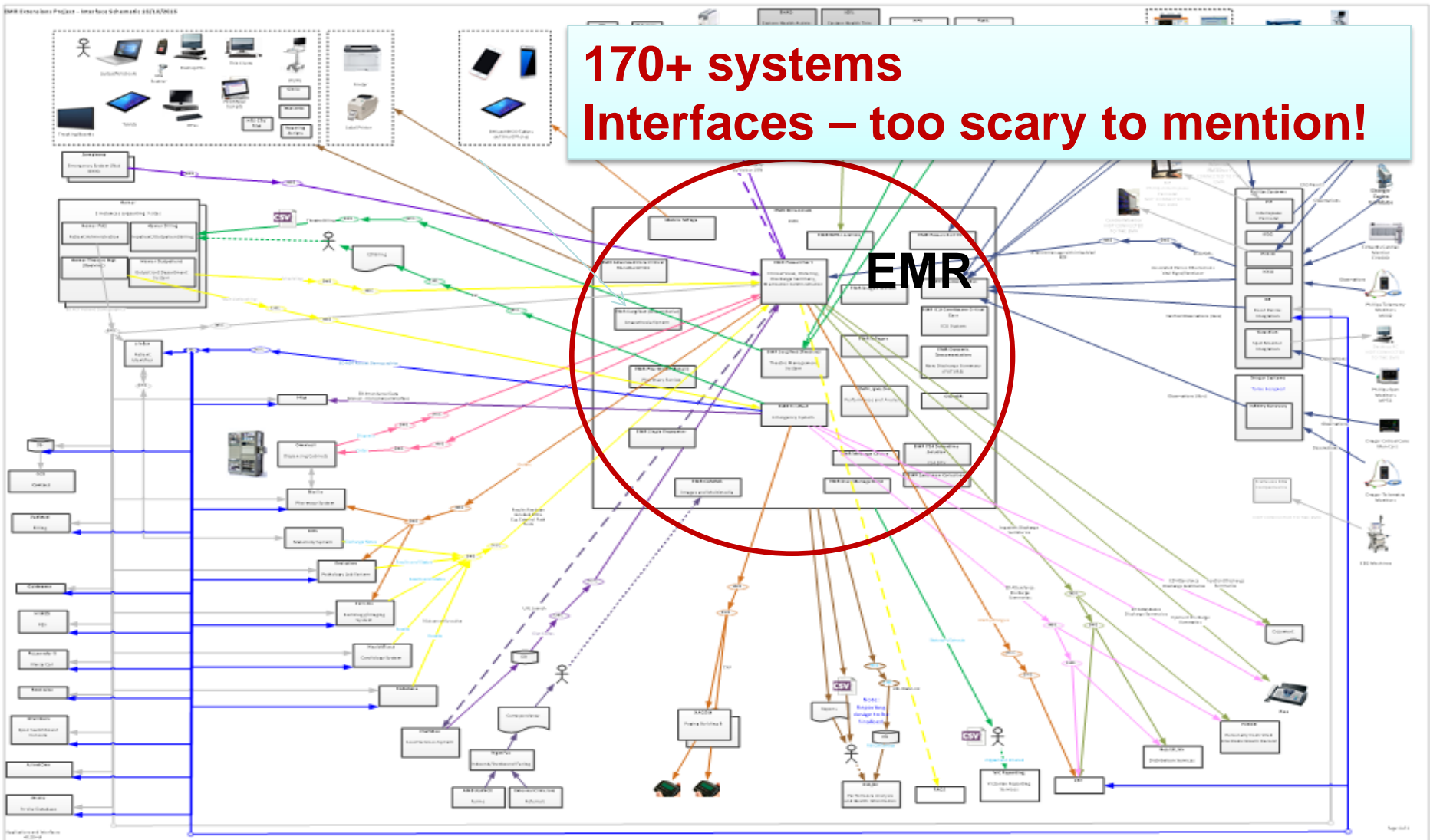
The Good, the Bad & the Ugly

- Data protection – organisational culture change (Transferring of information)
- Hybrid record – organisation risk
- Not tackled archiving or destruction
- Managing downtime and recovery

Reflections

- Major Transformation
- Challenging and Complex
- Requires Leadership from the top
- Clinical Engagement from the start
- Organisational Ownership
- Implementation is just the start …

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Next Steps

- Leverage functionality & capability

- Leverage analytics capability – improvement patient care and research

- Business cases – 4 in train additional EMR functionality

- Patient Administration System (second attempt!)

Next Steps: PAS System Replacement

- HOMER – end of life

- EMR before PAS replacement (Mistake!)

- Challenges
  - Integration
    - Downstream systems (42 systems)
    - Medical device integration (393 devices)
    - Replacement of integration engine (jcaps)
  - Testing effort (9 months)

Implications for Health Record Managers

- Change management: paper ⟶ digital
- Industry changes very rapid - reskilling & rethinking
- Adaptive and "bold"
- Standards – evolving environment, new, variable capability
- Restructure – new focus & new environment
- Standards – evolving environment, new, variable capability

Summary

- Hybrid record environment – clinical risk
- Challenging journey
- Changed the role of health record managers – less direct involvement – data quality and protection focus
- Now will be the time to leverage more of the benefits –patient care and service delivery improvements
- *Great opportunities ahead……*

source: teepee12.com