

Factors influencing implementation of an Electronic Medical Record in a tertiary cancer centre

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Acknowledgement

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Thank you

All the participants who
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participate in this study



**Data Innovation
Lab**



BCI westmead
breast cancer
institute

Multiple heterogenous data sources



Data extracted into consolidated database



Downstream utilisation of data

Cerner eMR: Data for MDT recommendations, surgery, nursing, follow-up and administration is entered into power-forms for simultaneous clinical documentation and database entry. This consists of structured text & mandatory fields for the collection of a minimum dataset. A central M-page displays a summary of key patient data and is used for guiding MDT discussion.

Aria: OMIS for radiation and medical oncology. Aria eChemo is currently being implemented over 2019.

IPMS: Hospital wide appointment booking system (however all med/rad onc clinic appointments are booked through Aria).

Pathology (ICPMR): Original plans for the auto population of pathology data into the Cerner eMR was not successful and therefore data will also be extracted separately from pathology.

Qualtrics: PROMs survey data is collected using the DASS21 and BreastQ scales.

AUTOMATED EXTRACTION IN 2019

EXTRACTION UNDER DEVELOPMENT

BREAST CANCER CONSOLIDATED DATABASE

Currently hosted by
WSLHD Business
Analytics team within
Westmead Hospital

ANALYTICS

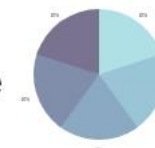
Interactive and real-time use of data for quality improvement

Clinical Decision
Support Tool -
Lymphoedema PoC



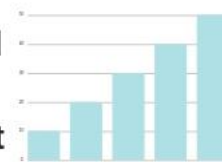
2017

Breast Cancer
Quality of Care
Dashboard



2018-19

Personalised
Professional
Development



Late 2019-20

Rapid
Research



Future

Background

- EMR now ubiquitous.
- Benefits of using EMRs include:
 - Improved quality of care
 - Increasing data access
 - Facilitating collaboration across teams
- Challenges implementing EMRs include:
 - Technical barriers and feature issues
 - Increased/changed workload
 - Lack of ROI for clinicians



Photo by Fahrul Azmi on Unsplash

Methodology: Aim

- Surprisingly little research into EMR implementation – especially outside of primary care
- Aimed to address this gap by exploring the barriers and enablers to implementing an EMR in a tertiary setting
- Secondary aim to understand how the EMR influenced Multidisciplinary Team (MDT) interactions with their data.



Methodology: Study Setting

- Undertaken in a cancer center within a large metropolitan public hospital.
- Members of the clinical team collaborated with the vendor to develop an EMR to suit the teams data needs.
- EMR launched in November 2017



Methodology: Study Design

- Interviews conducted with administrative and clinical staff 4 weeks pre-implementation
- Observed the launch MDT meeting to understand the use of the EMR in practice
- Interviews 12 months post-implementation with clinical and administrative staff



Findings

- 12 months on staff had both positive and negative experiences with the EMR.
- Six categories emerged from the interview data:
 - Standardisation of documentation and completeness of data
 - Effect on workload
 - Feature completeness and functionality
 - Interaction with technical support
 - Learning curve
 - Buy-in from Staff



Standardisation of documentation and completeness of data

Now, because we have the recommendations put up on the screen in the MDTs, everybody can see and give their feedback at the time, so **everybody's on the same page.**



Effect on workload

*It has a lot of drawbacks for administration work. **At first** I thought it is going to be very easy, but now looking at the EMR, we've got a little bit more to do at this stage, **I think that a lot of little things need to be fixed on there***



Interaction with technical support

Lately supports have been good, but prior to that we didn't have a lot of support at all. So, **we just had to kind of fumble our way through it.**



Buy-in from Staff

They can't see the benefit of using the EMR still...they've been very slow to try and maybe get motivated to use it or try and resolve the issue. It's all been from our end, pushing, pushing, pushing, trying to get them onboard with it. I think, once people start using it, then you start to see the benefits of using it and how quick ***it actually can make things quite efficient.***



Challenges of EMRs

- EMRs have been widely adopted, but are still burdened by their legacy as administrative and billing tools.
- The EMRs we have today often don't work well for clinicians and teams
- Data flow is often one way, with very little visibility for individual clinicians and teams.



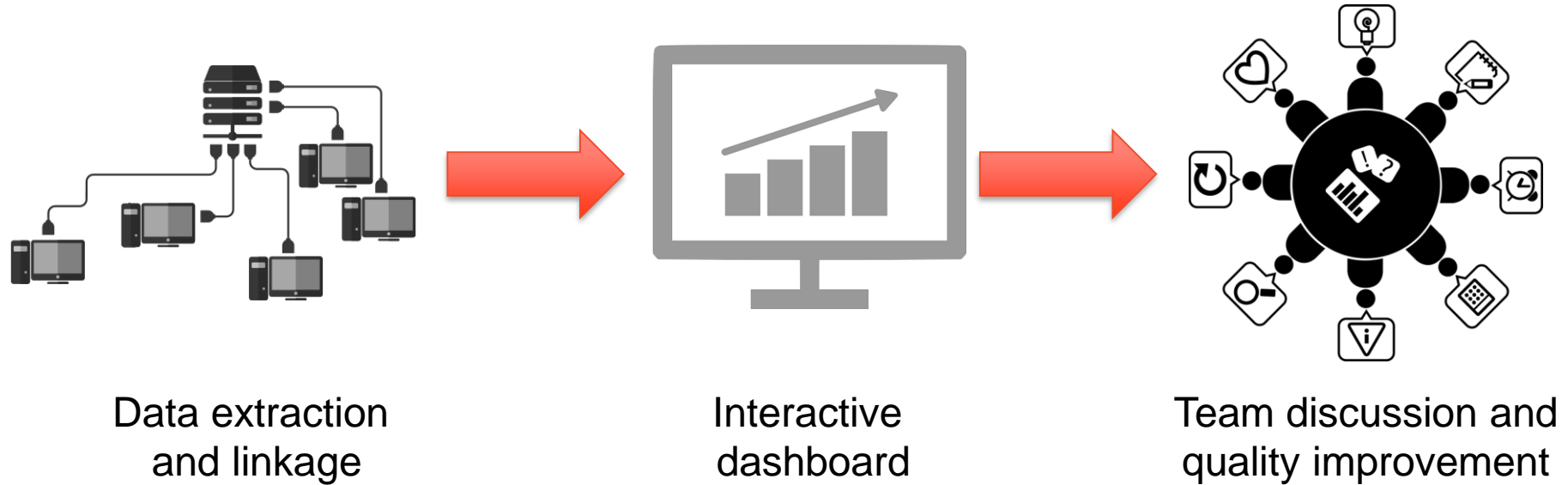
Where to next?

- Demonstrated return on investment
- Clinical Analytics and improved decision making
- Performance feedback and links to continuous learning



Photo by Piron Guillaume on Unsplash

Near real-time data visualisation

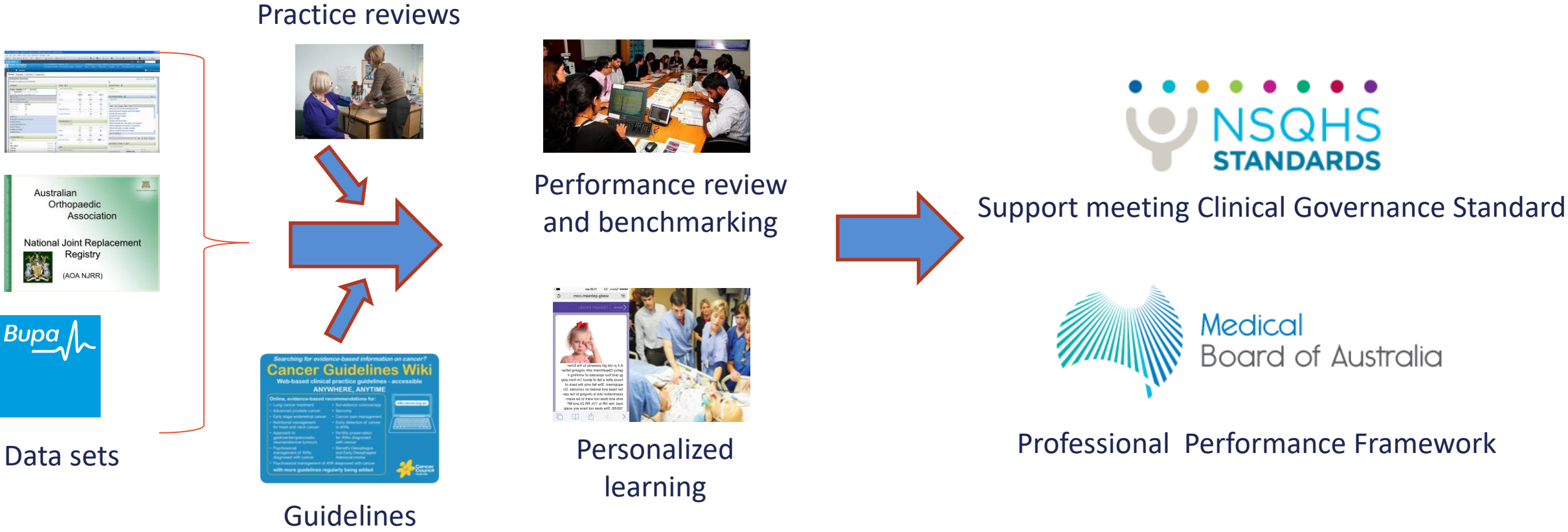


Challenges to overcome

Data access and automated extraction.

Determining scaffolding dashboards need to change behaviour.

Performance feedback and education to reduce variation





ambulatory summary

Brooks, Henri 08/05/2015 Age: 34 Year Males MC 034-024 Section: WHC/Chen Pan/Other

Problems (1/1/2015)

Problem	Start Date	End Date	Priority	Status
Chest pain without complication	2015-08-05	2015-08-05	1	Resolved
Head injury without complication	2015-08-05	2015-08-05	1	Resolved

Vitals & Measurements (1/1/2015)

Vital	Value	Unit	Location	Notes
Temp	37.5	°C	Emergency	
HR	110	b/min	Emergency	
RR	24	/min	Emergency	
BP	100/60	mmHg	Emergency	

Medications (1/1/2015)

Medication	Dose	Frequency	Route	Status
Aspirin	100mg	Once daily	Oral	Resolved
Paracetamol	500mg	Once daily	Oral	Resolved

General Info (1/1/2015)

Field	Value	Unit	Location	Notes
Weight	70	kg	Emergency	
Height	170	cm	Emergency	
Age	34	Year	Emergency	

Procedures (1/1/2015)

Procedure	Date	Location	Status
Aspirin for chest pain without complication	2015-08-05	Emergency	Resolved
Paracetamol for chest pain without complication	2015-08-05	Emergency	Resolved

Family (1/1/2015)

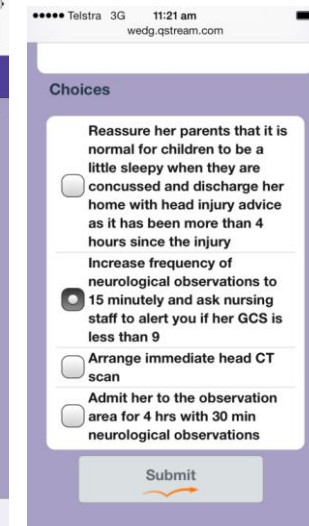
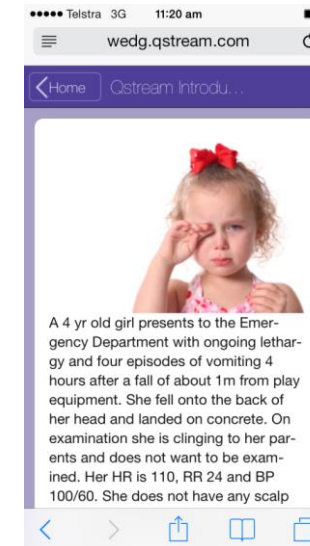
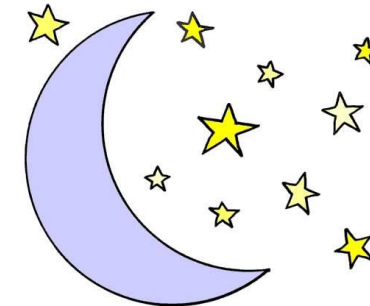
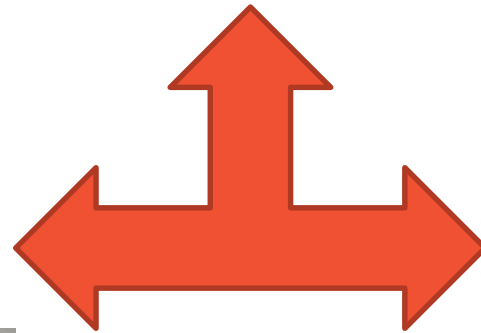
Relationship	Name	Date of Birth	Location	Status
Spouse	Henri Brooks	1981-01-01	Emergency	Resolved
Child	Henri Brooks	2015-08-05	Emergency	Resolved

Health Maintenance (1/1/2015)

Task	Date	Location	Status
Annual physical examination	2015-08-05	Emergency	Resolved
Annual cancer screening	2015-08-05	Emergency	Resolved

Outstanding Orders (1/1/2015)

Order	Date	Location	Status
Aspirin for chest pain without complication	2015-08-05	Emergency	Resolved
Paracetamol for chest pain without complication	2015-08-05	Emergency	Resolved



Conclusions

- Engaging health teams in the design and implementation of EMRs is a big step to improving them, but it is only the first step.
- To make EMRs work for clinicians we have to think bigger and come up with innovative solutions to make data actionable and accessible.
- Still many missed opportunities in EMR development and implementation

