'Proof of Concept': Implementation of a patient outcomes data capture and analytics system

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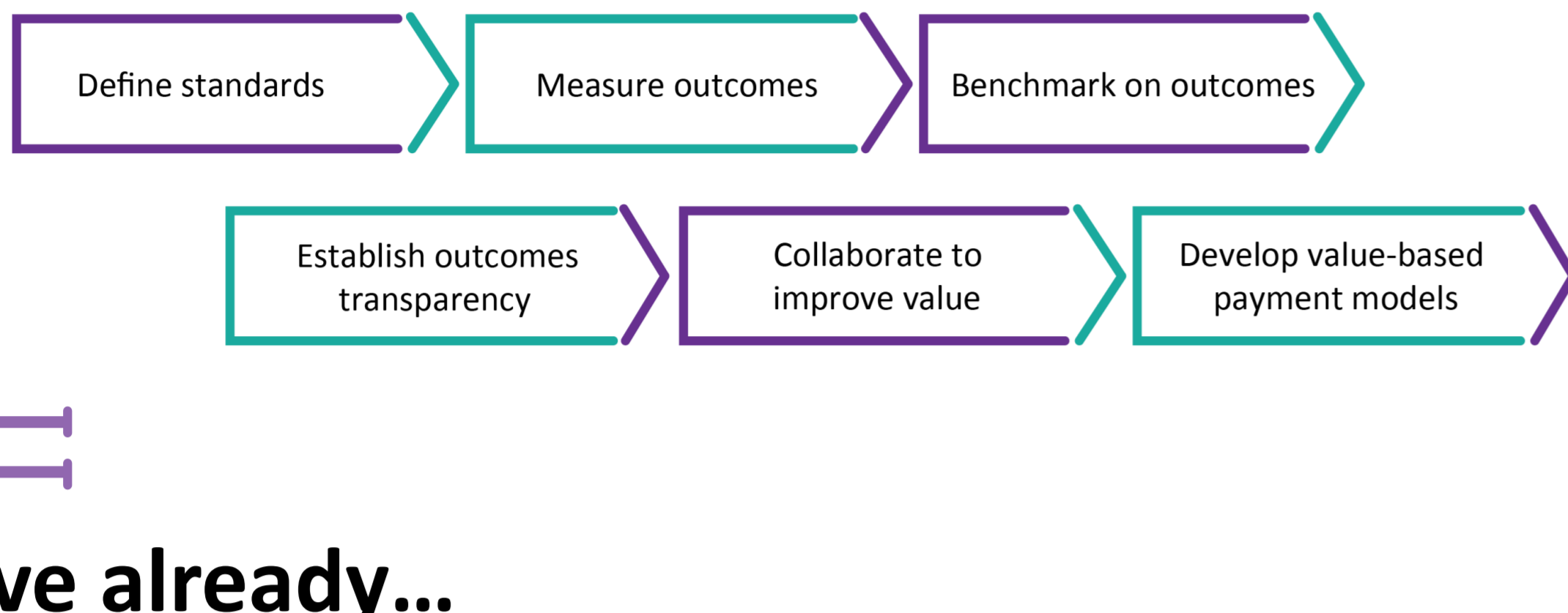*Contact – angela.ives@uwa.edu.au | www.ciccancer.com*

Continuous Improvement in Care *cancer*

Background...

◎ The Continuous Improvement in Care – Cancer (CIC Cancer) Project seeks to facilitate value-based healthcare (VBHC) through accurate measurement of outcomes important to patients.

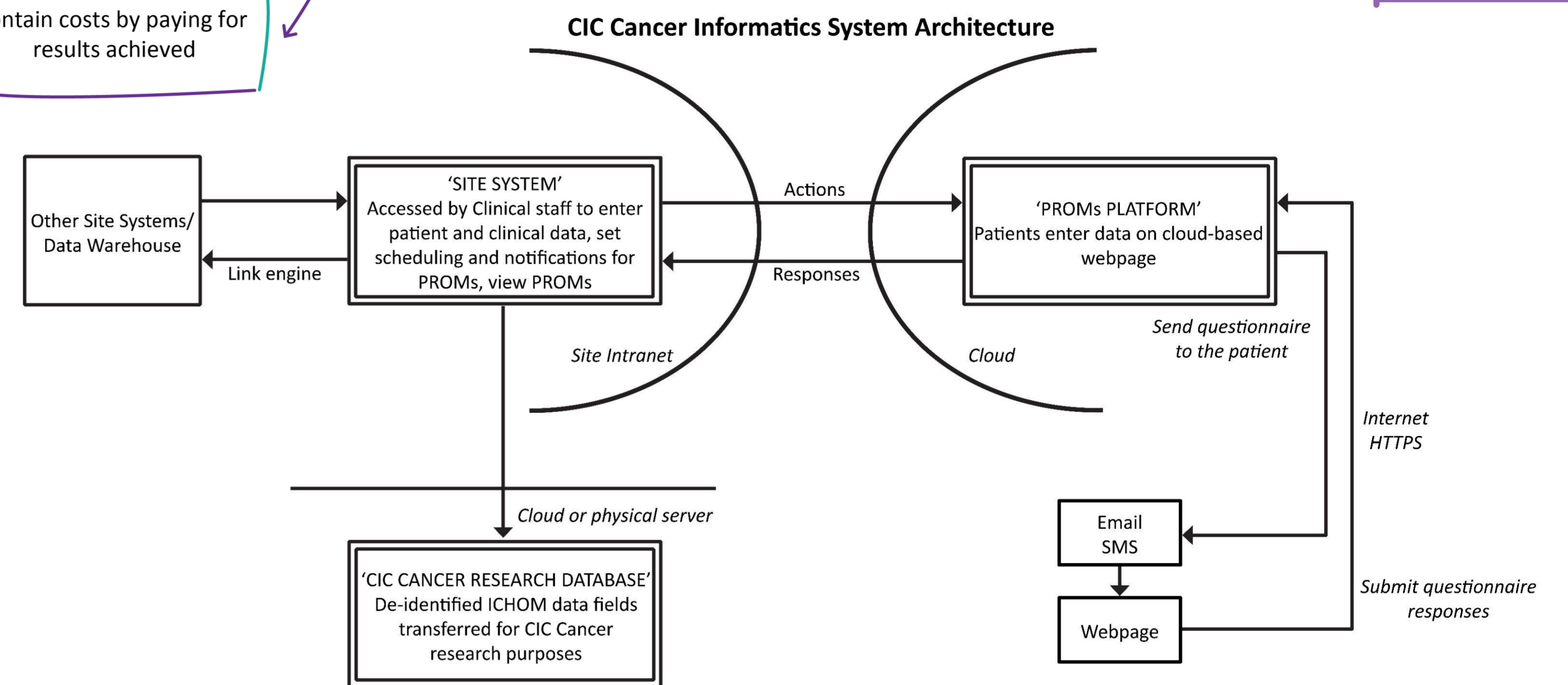## How value based healthcare is defined...

Define standards → Measure outcomes → Benchmark on outcomes

Establish outcomes transparency → Collaborate to improve value → Develop value-based payment models

Compete to deliver high quality results at competitive prices

$$Value = \frac{\text{Patient Health outcomes achieved}}{\text{Cost of delivering those outcomes}}$$

Contain costs by paying for results achieved

We aim to...

◎ Bring VBHC into cancer care in public and private hospital settings within Western Australia to help drive improvements in care and patient outcomes. To the best of our knowledge, this is the first time that VBHC processes have been implemented simultaneously across multiple hospitals in both the public and private healthcare sectors in Australia.

◎ Evaluate the impact of the implementation which will include an economic evaluation.

We have already...

◎ Engaged consumers, clinicians, health services and researchers to initiate the measurement of value-based outcomes important to cancer patients.

◎ Developed datasets to capture clinical and patient-reported outcomes measures (PROMs) for breast, prostate, colorectal, and lung cancer. These were based on the International Consortium for Health Outcomes Measurement (ICHOM) standard dataset and adapted to the Australian setting.

◎ Created an open source, web-based environment to collect/extract/integrate data to enable purposeful application of the collected information.

◎ Begun integration of this application at St John of God Healthcare for colorectal and lung cancer patients.

◎ Commenced collection of PROMs and clinical data at a public and a St John of God Healthcare hospital.

CIC Cancer Informatics System Architecture

Other Site Systems/ Data Warehouse

Link engine

'SITE SYSTEM'
Accessed by Clinical staff to enter patient and clinical data, set scheduling and notifications for PROMs, view PROMs

Actions / Responses

'PROMs PLATFORM'
Patients enter data on cloud-based webpage

Site Intranet / Cloud

Send questionnaire to the patient

Internet HTTPS

Cloud or physical server

'CIC CANCER RESEARCH DATABASE'
De-identified ICHOM data fields transferred for CIC Cancer research purposes

Email SMS

Webpage

Submit questionnaire responses

Lessons learnt so far...

Planning and project management

◎ Ensure adequate time, resources and expertise are available for project management.

◎ Good governance is vital to meet the requirements of different health providers.

◎ The use of logic modelling can assist in providing a basis for program planning.

◎ Implementation of good project management practices and involvement of clinical knowledge and health system awareness are important when seeking to introduce new systems.

◎ Formal identification of communication strategies during planning phases enhances efficiency and effectiveness of engagement activities.

Expectation management

◎ A complex and innovative project requires significantly more lead time than anticipated and delays have a 'snowball' effect.

◎ Realistic expectations about the potential for delays and implementation of effective communication streams are vital to maintain engagement.

◎ Full consumer involvement is ideal but may not be practical or achievable.

◎ Staff turnover and changes to roles within organisations creates challenges in terms of milestones and timelines to be met.

◎ Significant timeframes are required to introduce new IT systems to health settings.

ITC system implementation

◎ Implementation of a new and customised informatics system within health systems is complex.

◎ Flexibility and adaptability are necessary to meet differing requirements of sites, information flows and clinicians.

◎ To maximise quality data collection, it is important to work through processes to identify data needs and make any necessary adjustments prior to commencement.

Engagement
• Assemble a VBH transition project team – clinicians, consumers, researchers, project managers, IT experts
• Pilot trials
• Incorporate research studies aimed at improving care

Engaging hospital- and patient-based stakeholders with implementation

Establishing a data-capture model allowing routine and efficient data collection

Data capture
• Identify electronic data-capture tools
• Data sourced from clinicians, patients (PROMs), health care providers, administrative sources
• Collection of data at time points coinciding with patient visit
• Minimise data-entry related errors

State/National Benchmarks
• Develop new initiatives to improve outcomes
• Data standardisation
• Adoption of evidence based practice

Implementing a Data-Capture-and-Analyse Model (CIC Cancer)

Embedding into practice

Measuring and analyzing the captured data

Determining treatments which promote best patient outcomes

Feedback and visualisation
• Clinicians and patients are better informed when selecting treatment options
• Health providers encouraged to provide quality, transparent data
• Promotes comparative effectiveness research

Data analysis
• Efficient and secure data storage
• Frequent collection of measurements
• Real-time analyses of numerical data
• Rapid dissemination of results
• Efficient monitoring of data quality

Customisation

◎ Commercial data collection systems may not fully meet complex tailoring, integration and linkage requirements, and may be more costly to adapt than a bespoke open source system that allows for future, long-term uptake and ownership by the public and private health services.

◎ A level of adaptation of standardised datasets is required to meet local conditions and enable practical implementation.

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