



Clinical Informatics 101

why do I need to bother?

Heather Grain and A/Prof Graeme Hart

ACACI



ACACI Austin Centre for
Applied Clinical Informatics

What is changing about healthcare?

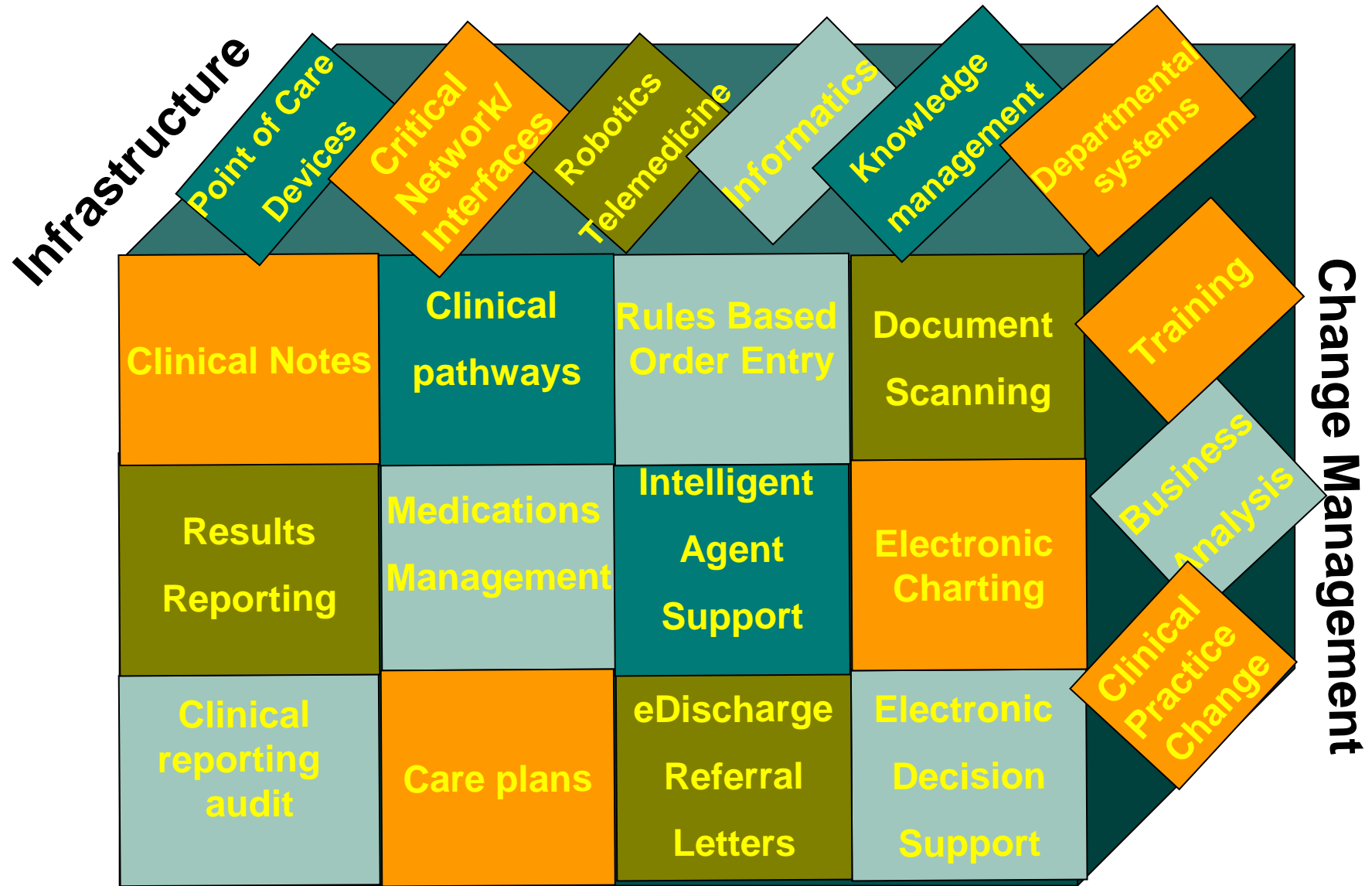
- Patient and Carer expectations
- Quantity and depth of knowledge change
- Use of technology
- Workplace stress
- Workplace complexity – multiple professionals, multiple departments, multiple conditions

Clinical Informatics

- Clinical informatics includes the application of technology to information systems in the clinical practice of medicine. The following examples demonstrate a few aspects of the field:
 - Information access – patient information and knowledge resources (presented as needed)
 - Clinical decision support (warning on drug/drug, drug/diagnosis interactions)
 - Reporting out of ‘range’ test results
 - Automated clinical care pathways – advice, reminders, information

Elements of Clinical Information Systems

- Where does a clinical information system fit into health systems in general
- What are the components of a clinical information system
- Investigation of a system to define the segments.



Applications

Question!

Why are there pilots on the team that developed NASA space programs?





System Level	Cost		Staff Information System Skills			Value	Data Quality	Procedural Change Implications
	System	Labour Input	IT Staff	Clinical Staff	Admin Staff			
1 – Manual extraction of data for statistics	\$	\$	X		X		😊	!
2 - Computers for administration and statistics	\$\$	\$\$	XX		XX		😊 😊	!
3 - Clinical information systems within the department or organisation	\$\$\$	\$\$\$	XXX	XX	XX		😊 😊 😊	!!!
4 - Shared health information systems	\$\$\$\$	\$\$\$\$	XXXX	XXXX	XXX		😊 😊 😊 😊 😊 😊	!!! !!!

Value for Effort

Clinical Information System

To achieve outcomes need:

- Process change
 - » IT offers different information management alternatives to paper based systems
 - » Information availability can change responsibilities and simplify processes
 - » Takes time and needs direction from those who know their systems best – this is not a task just for IT
- Overall view
 - » IT is expensive and the more coordinated the development the cheaper and more effective solutions will be in the end.
 - » Small steps in an agreed general direction
 - » Every change costs money and takes time (leverage a shared view)

Enablers – it isn't just the hardware/software

To delivery the functionality you need

- Computer and software AND
- Information in a computable form (structured and coded)
- Computer processable rules
- Computable knowledge (access to reputable clinical information when and where you need it in the clinical process)
- Agreed processes to trigger events
- Data capture and presentation mechanisms

? How do we develop these components

Development Options

The way we've done it in the past

- within the hospital – often within individual departments
 - » considerable duplication of data and of effort
 - » lack of consistent data representation (reducing the ability to share)
 - » Increased effort in development of rules and knowledge access
 - » Expenses born by individual departments (often bearing costs that could have been shared, and thereby reduced to each individual department).

The way to the future

- Agreed vision and progressive movement towards that vision such as:
 - Clinical Information System with closely integrated best of breed systems.
- Agreed structure and codes (standards based)
 - Meteor, SNOMED-CT
 - Agreed and managed clinical knowledge and rules bases shared by professional groups (through archetypes)
- Coordinated clinical involvement in system development, design and implementation
- Cross departmental vision AND action

What clinicians need to understand

- Hardware impact upon work activities and possibilities
- Information storage, representation and responsibilities
- Systems, management and how they can contribute to better systems
- Standards development and how to impact and use them

How do you see your role?

- Clinician
- Enabler
- Systems Decision Maker

Roles change in different circumstances.

You may be all of the above.

Summary

- Clinical systems are about
 - Understanding
 - » Hardware possibilities
 - » Not becoming an IT professional (knowing the support you need)
 - » How systems can enhance / impact upon clinical practice
 - Building Networks
 - » Within Austin – Austin Centre for Applied Clinical Informatics
 - » Standards Australia – free access to all standards for health informatics
 - » NEHTA - national infrastructure
 - » DHS and HealthSmart
 - » Professional College

Challenge

- The world IS going to change
- Be involved or it will role over you anyway – you can't avoid it!

