HEALTH SUPPORT SERVICES
NSW HEALTH

Implementing a State-wide eMR to effect a clinical transformation

HIC 2009 workshop

Mike Rillstone, A/Chief Executive
Ronan Herlihy, Benefits Realisation Manager
Eleonore Fuchter, Program Manager
Howard Dawson, Learning Coordinator
Stephen Mattes, Interface Manager

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Implementing a State-wide eMR to effect a clinical transformation

1. eMR Strategy – Mike Rillstone
2. Business Case & Benefits – Ronan Herlihy
3. Effecting a Clinical Transformation – Eleonore Fuchter
4. eMR Learning Strategy – Howard Dawson
5. eMR Integration - Stephen Mattes
6. Governance – Mike Rillstone

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1. eMR Strategy

Mike Rillstone
A/Chief Executive

On An Average Day

An average in day 06/07:

- 4,900 people are admitted to a public hospital
- 17,000 people spend the day in a public hospital
- 6,000 people are seen by emergency departments;
- one ambulance response every 30 seconds
- 30 per cent of people living in NSW went to an emergency department in 06-07
- 33% of all hospital beds will be occupied by patients aged over 75 years

Operational Budget

- 2007/08 Budget is $12.5 billion
- $1.43 million per hour
- NSW Health will pay $3.5 billion to suppliers for goods and services
- 1994/95 initial budget was $5.3 billion
- 136.6% in three years

References:

The following points come from the Australian Hospital Statistics 2006–07 Report, published 30 May 2008[i]:

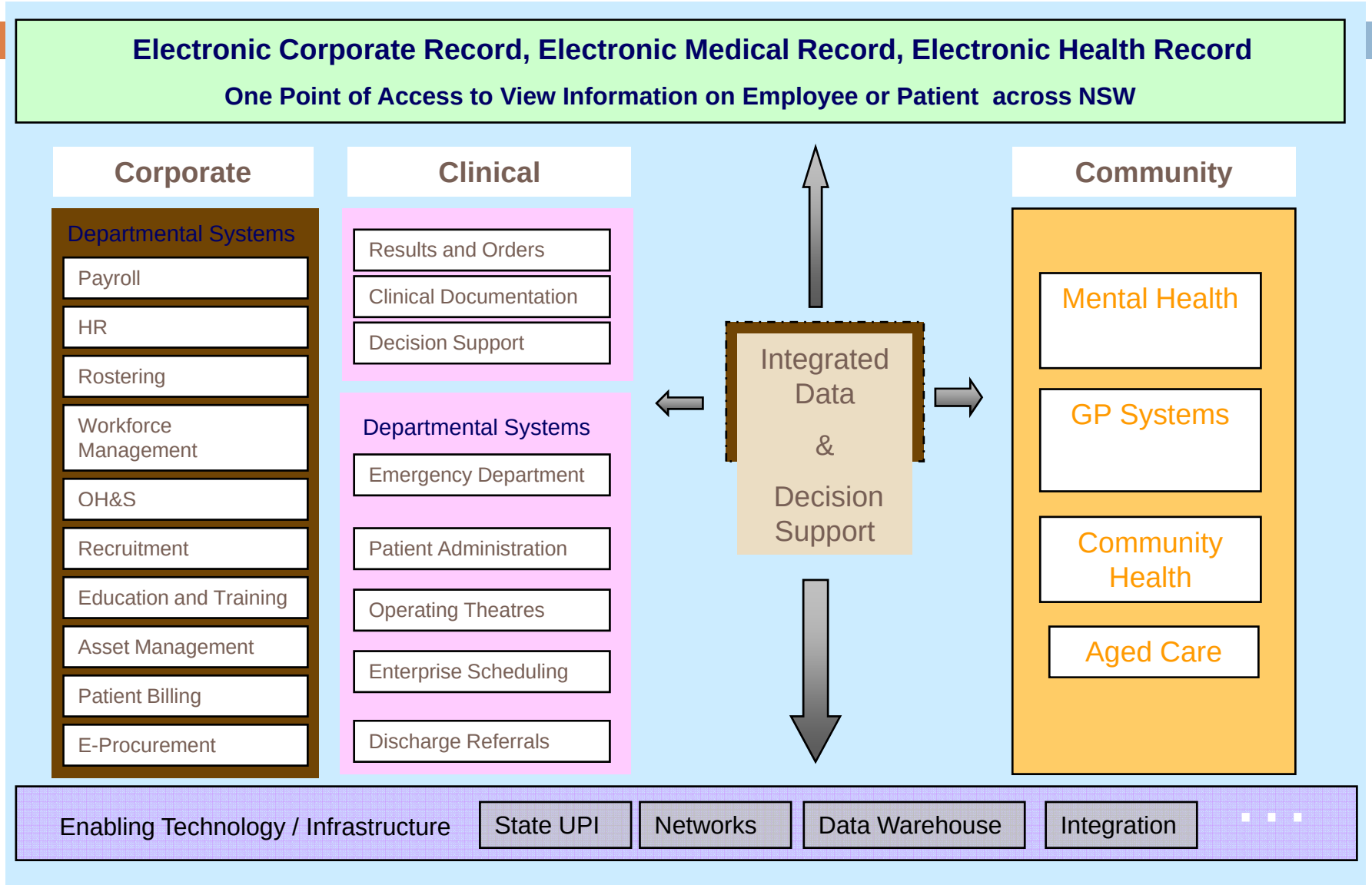
[i] Australian Institute of Health and Welfare 2008. Australian hospital statistics 2006–07. Health services series no. 31. Cat. no. HSE 55. Canberra: AIHW.

[ii] Booz Allen Hamilton 2007. Key Drivers of Demand in the Emergency Department. Sydney: NSW Department of Health.

eMR & NSW ICT Strategy – key points

- NSW Health ICT strategy, 10 year vision, where the components of the eMR fit into the strategy
- Dependencies between the projects and how they contribute to the NSW Health strategy
- Garling report recommendations - tuning required to keep the ICT strategy aligned with NSW Health priorities
- Number of eMR implementations have taken place – look at the results to see if revisions are required to the strategy

NSW Health Strategic ICT Plan at a Glance



eMR applications to support patient journey

Community

Referral, Assessment & Pre/Admission

Treatments & Procedures

Recovery & Discharge

Community

Diagnostics, Allied Health & Other Clinical Support

Support Tools for Clinicians

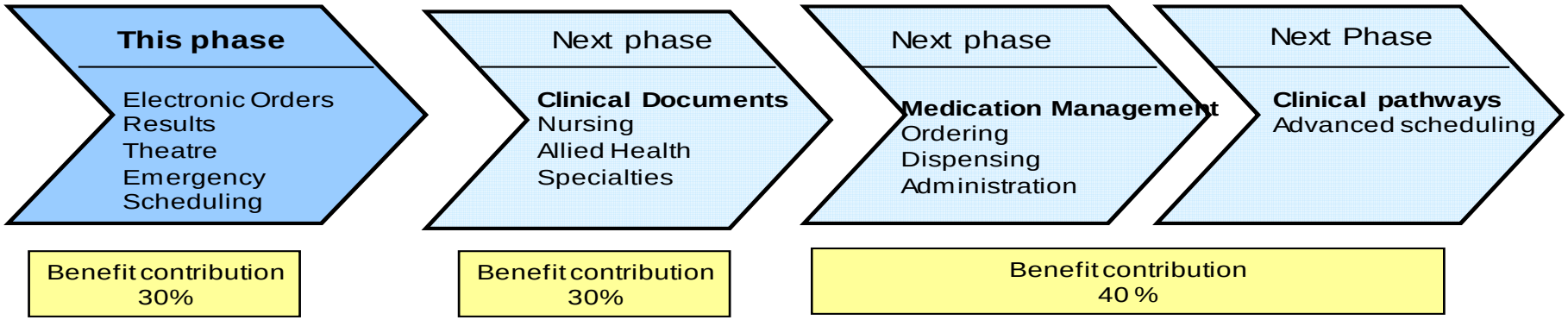
- Emergency Dept.
- Operating Theatres
- Discharge Referrals
- Electronic Orders
- Results Reporting
- Enterprise Scheduling

Enabling Technologies

- Decision Support
- Data Extraction & Reporting
- Interfacing

Corporate Systems

eMR is a long journey



The first phase is expensive, like building a house. Land, and services are necessary before we can enjoy the full value of a completed house.

The sooner we get through all phases the better.

eMR Applications

- **8 Area Health Services**
- **84 000 clinical, scientific and support staff require training**
- ***7* solutions**
  - eMR browser, Clinical Work Station
  - Electronic Orders and Results
  - Operating Room System
  - Emergency Dept System
  - Scheduling System
  - Electronic Discharge Referral System
  - Some Clinical Documentation ED / OT

Process of Implementation

- Collaborative effort with resources from:
  - Vendor for installation of applications
  - NSW Health for Change, Benefits & Technology management
  - Area Health Services for local project team & training
- State Baseline Build - standardised approach to build and implementation of modules to support the patient journey
- Rapid implementation

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2. eMR Benefits

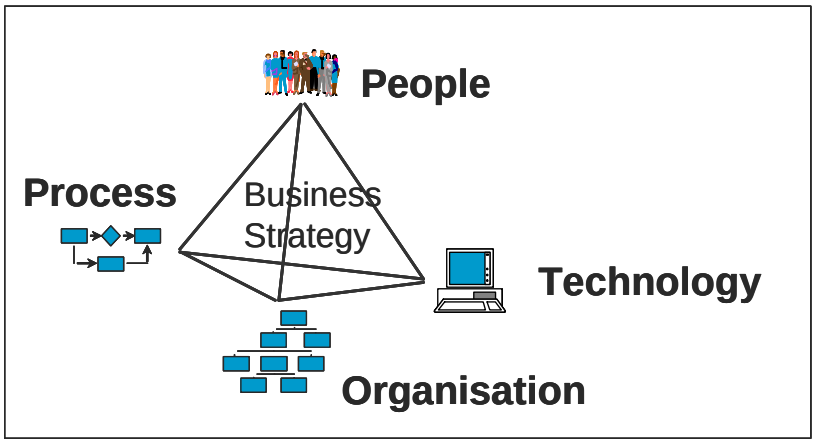
Ronan Herlihy
Benefits Realisation Manager

Contents

1. The Benefits Approach
2. Baseline measurements
3. Initial results
4. Lessons learned
5. Way forward

1. The Benefits Approach

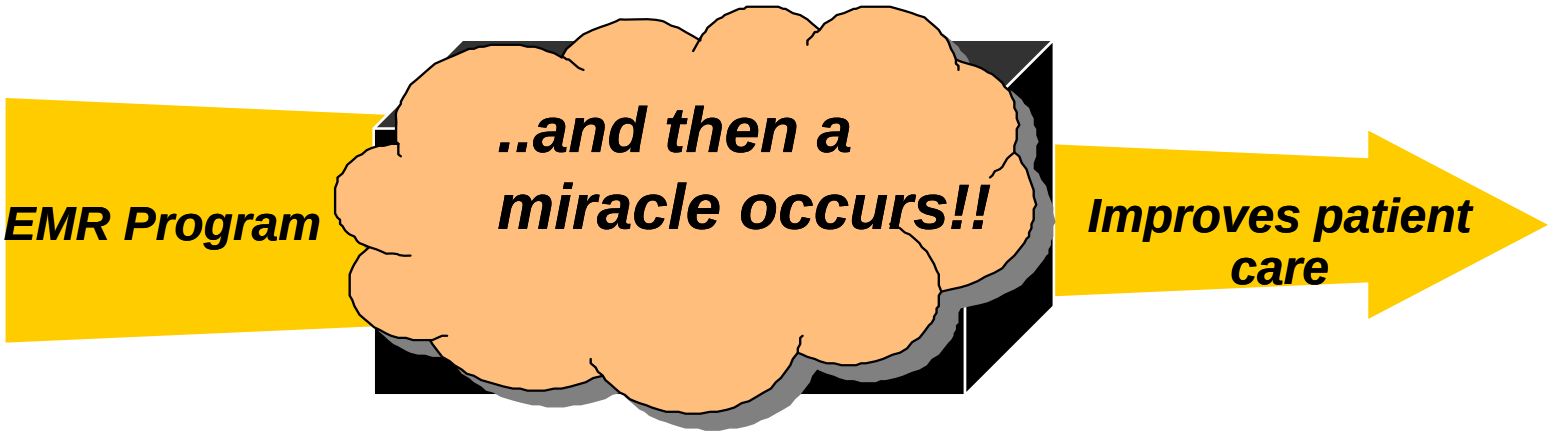
Principles of Benefits Realisation



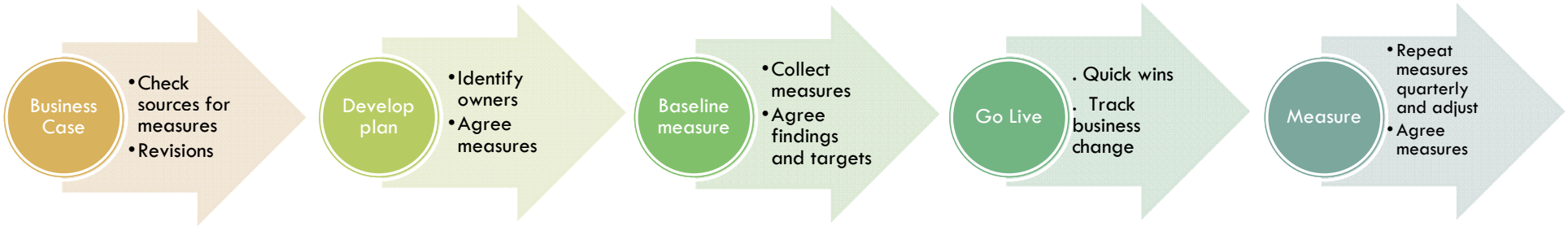
- Benefits must be owned and managed
- Benefits must be measured
- A program of business change is required

Why benefits realisation?

- Assists clinicians, Hospitals and Area Health Services achieve the full value from an eMR
- Identifies what has to be done to achieve benefits
- Supports the delivery of business case benefits
- Provides evidence of achievement
- Assists with ownership of the outcomes

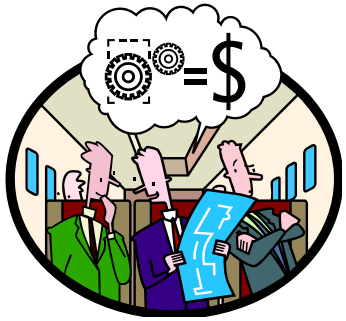


Benefits steps



Benefits activities continue well beyond the go live date

From business case to reality!



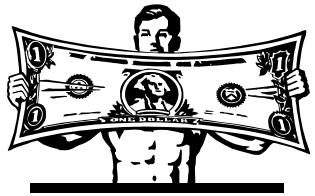
IT Business Cases

What, no benefits??

Budget Cuts

Strategy Implementation

To approve or not to approve!



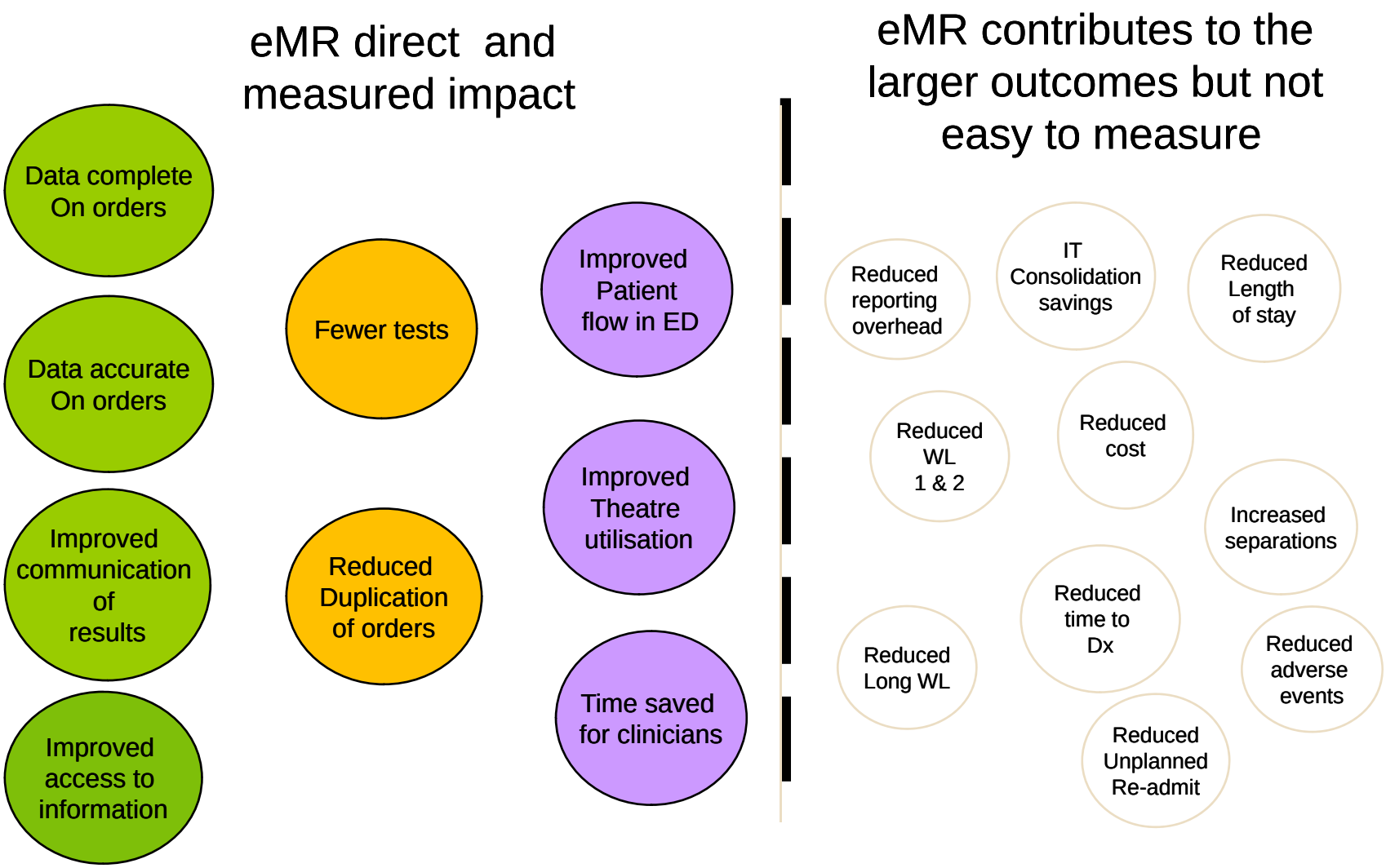
Do more for less!

Benefits just happen!

Too much to do,
never enough money!

Clinician Satisfaction with IT

The eMR Business Case identified 24 measures in the categories of Access, Quality and Safety and Cost. The measurement plan will focus on those impacts which can be directly associated with the eMR



Value is in the eyes of the beholder

- Realistic list of “what’s in it for me” for each level of the organisation.
- Conduct the measures at every large hospital so that it is meaningful locally.
- Collect convincing evidence by knowing how things work locally.
- Relating the benefits to daily operational challenges.

Benefit drivers

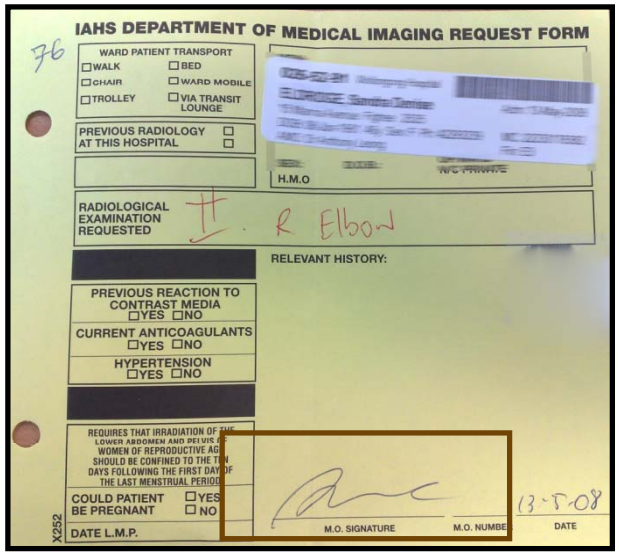
- Implementation of a State Baseline Build
- Revised policies and procedures to support a hybrid record
- Integration with pathology and radiology systems
- Staff trained in new processes
- Doctors and nurses use the system for orders and results
- Adequate workstations and mobile devices

2. Baseline measures

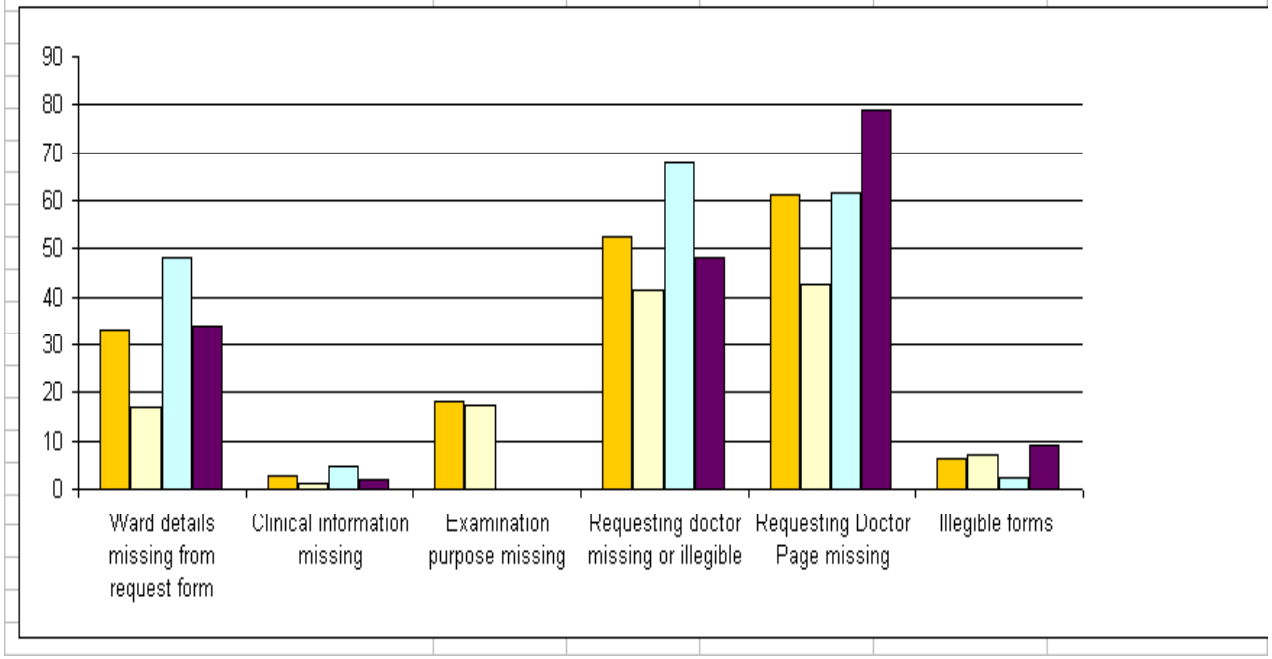
Baseline measures

- Monthly hospital activity statistics used for baseline
- Manual collection of some information was necessary
- Satisfaction survey conducted
- Business process issues identified
- Process to be stopped identified
- Steering committee at each Area engaged in agreeing the targets and accepting the measures

Example - quality and completeness of requests



	Area average	%	%	%
Number of requests surveyed	800	200	400	200
Ward details missing from request form	33	17	48	34
Clinical information missing	3	1	5	2
Examination purpose missing	18	18		
Requesting doctor missing or illegible	53	42	68	48
Requesting Doctor Page missing	61	43	62	79
Illegible forms	6	7	3	9



Benefits Register

Benefit	Current environment	Type	Sourc	KPI / Source	Target	Timeframe
Improved data completeness and legibility of diagnostic orders 	Paper test request forms for Pathology and Medical Imaging are frequently incomplete or illegible resulting in phone calls or further investigation by Pathology and medical Imaging staff to clarify the request. **Solution:** Electronic orders guide clinicians to order the correct items as well as requiring mandatory fields to be completed. The quality of orders is substantially improved.	Quality & Safety	Orders	**Measure:** Baseline measures of 1,500 requests indicate: **Pathology** - 36% Missing doctor or illegible - 60% Requesting doctor page number missing - 48% Missing clinical notes **Medical Imaging** - 3% Clinical information missing - 18% Examination purpose missing - 53% Requesting doctor missing - 61% Requesting doctor page number missing	100% complete and legible.	3 months post implementation
Time saved from the elimination of data entry of orders 	Every Pathology and Medical Imaging request form has to be manually data entered in the department systems. **Solution:** An interface between the eMR and the Pathology and Radiology systems will eliminate the need for data entry.	Cost	Orders	**Measure:** Time spent doing data entry. **Baseline measure:** Time taken to enter requests was measured. Weekly hours released for other tasks is as follows:	100% on the implementation of interfaces for Pathology and Medical Imaging	3 months post implementation

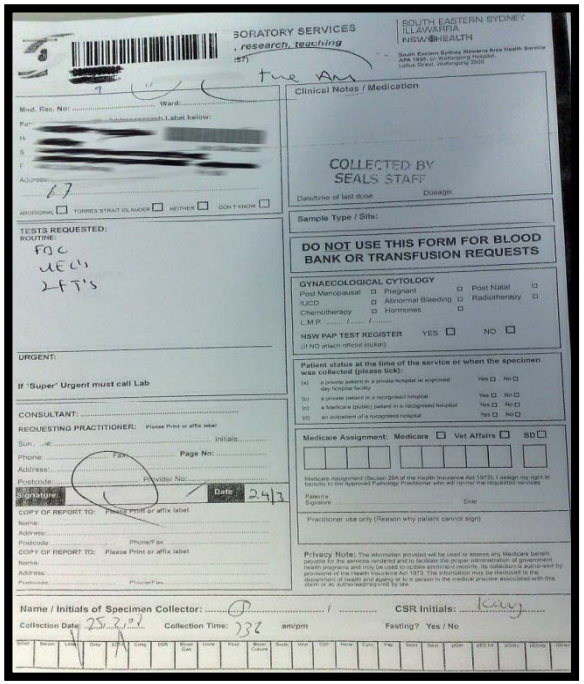
3. Initial Results

"Show me the money"

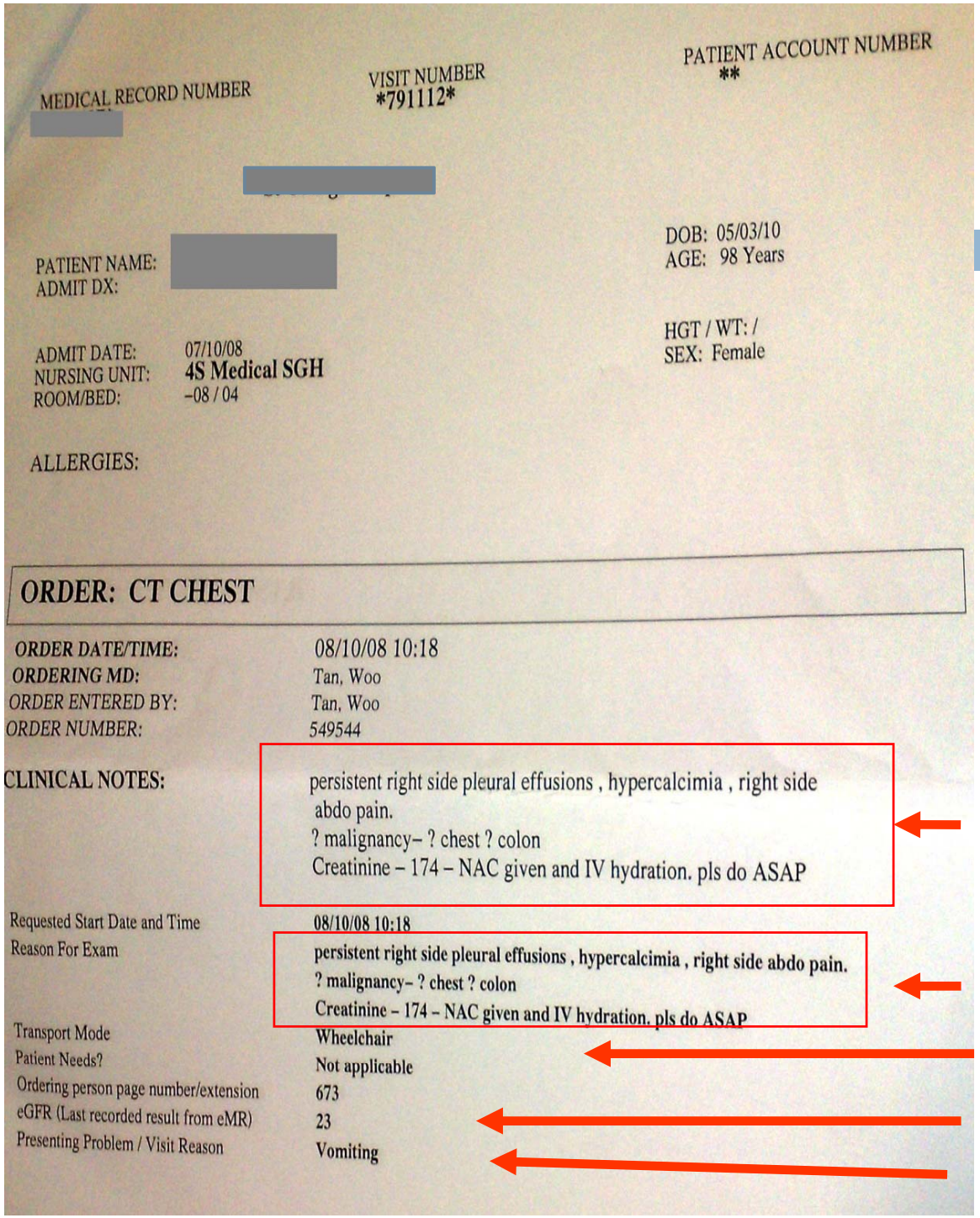
Progress with benefit drivers

- ✓ State Baseline Build is in production use
- ✓ Workstation have been deployed
- ✓ Integration of system with pathology and radiology has been achieves
- ✓ New policies have been implemented
- ✓ Staff training has been accomplished
- ✓ Process changes have commenced
- ✓ Doctors and nurses are using the system

Pathology
quality and completeness of forms



	Hospital 1		Hospital 2	
Review of 200 forms at each hospital	% Pre	% Post	% Pre	% Post
Requesting doctor missing or illegible	51	0	22	0
Requesting doctor page number missing	59	0	47	0
Clinical notes missing	59	2	25	1



MEDICAL RECORD NUMBER [redacted]

VISIT NUMBER *791112*

PATIENT ACCOUNT NUMBER **

[redacted]

PATIENT NAME: [redacted]
ADMIT DX:

DOB: 05/03/10
AGE: 98 Years

HGT / WT: /
SEX: Female

ADMIT DATE: 07/10/08
NURSING UNIT: 4S Medical SGH
ROOM/BED: -08 / 04

ALLERGIES:

ORDER: CT CHEST

ORDER DATE/TIME:	08/10/08 10:18
ORDERING MD:	Tan, Woo
ORDER ENTERED BY:	Tan, Woo
ORDER NUMBER:	549544
CLINICAL NOTES:	persistent right side pleural effusions , hypercalcimia , right side abdo pain. ? malignancy– ? chest ? colon Creatinine – 174 – NAC given and IV hydration. pls do ASAP
Requested Start Date and Time	08/10/08 10:18
Reason For Exam	persistent right side pleural effusions , hypercalcimia , right side abdo pain. ? malignancy– ? chest ? colon Creatinine – 174 – NAC given and IV hydration. pls do ASAP
Transport Mode	Wheelchair
Patient Needs?	Not applicable
Ordering person page number/extension	673
eGFR (Last recorded result from eMR)	23
Presenting Problem / Visit Reason	Vomiting

Data accurate on orders

Legible

Good clinical notes

Reason for exam

Wheelchair identified

Doctors details including page

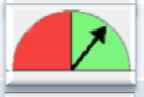
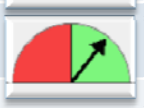
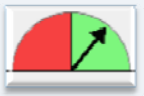
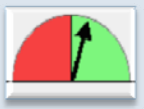
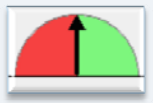
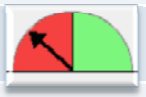
Presenting problem identified.

Stopped printing results

Time saved at one AHS	
Ward clerks 1 hour per day 115 ward clerks	Equivalent of 14 FTE for whole of Area

Savings will also be achieved on printing costs

Example Satisfaction Survey

Question	Score
How many system logins do you have?	
How satisfied are you with access to computers?	
How satisfied are you with system availability?	
How satisfied are you with support in using the system or answering questions?	
How satisfied are you with access to patient information?	
How satisfied are you with the process of recording allergy and alert information?	
How many times a week does a diagnostic department contact you to clarify orders?	
How satisfied are you with information available to help you decide what test or procedure to order?	
How satisfied with ordering tests	

Emergency and Theatre

- Data from these two system are now part of the eMR. Previously they were separate systems.
- There is an increasing awareness of value of being able to review patient information between hospitals.
- Key information such as alerts and allergies entered by these departments was not shared with the rest of the hospital.

Use of allergies flag (quality indicator)

Hospital

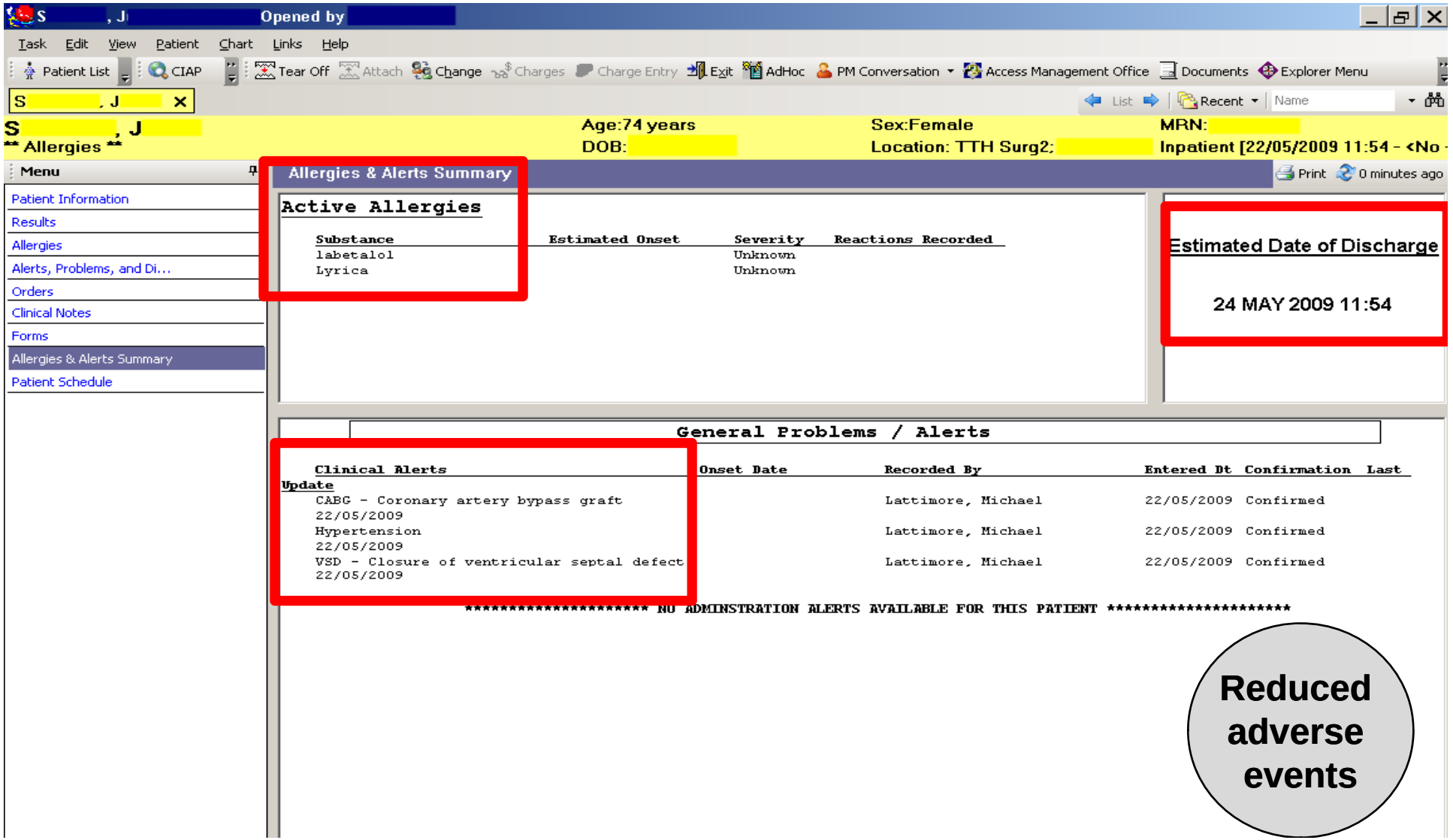
Wednesday 8th April

Reduced adverse events

Ward	Patients	Allergies updated	Percent of Total
ED (inpatient)	9	6	67%
ICU	7	6	86%
Medical Ward A7	35	21	60%
Theatre 20th April	20	18	90%

Good compliance at this early stage.

Improved communication of important information



New information to monitor processes

Process
Expected date of discharge
Duplicate patient registration (quality)
Orders - Use of order sets - Cancelled orders - Duplicate order alert override - Orders not co-signed - Who is placing orders and the volume
Results - Results which have not been signed or acknowledged by the doctor.
Allergies recorded (safety)
Clinicians using and not using the system

Progress towards one patient, one eMR

Hospital 1 Emergency Dept

- Geriatric patient presentation
- Allergies recorded
- Clinical documentation completed

Hospital 1 Theatre

- Operation completed
- Surgical documentation completed
- Allergies noted

Hospital 2 ED

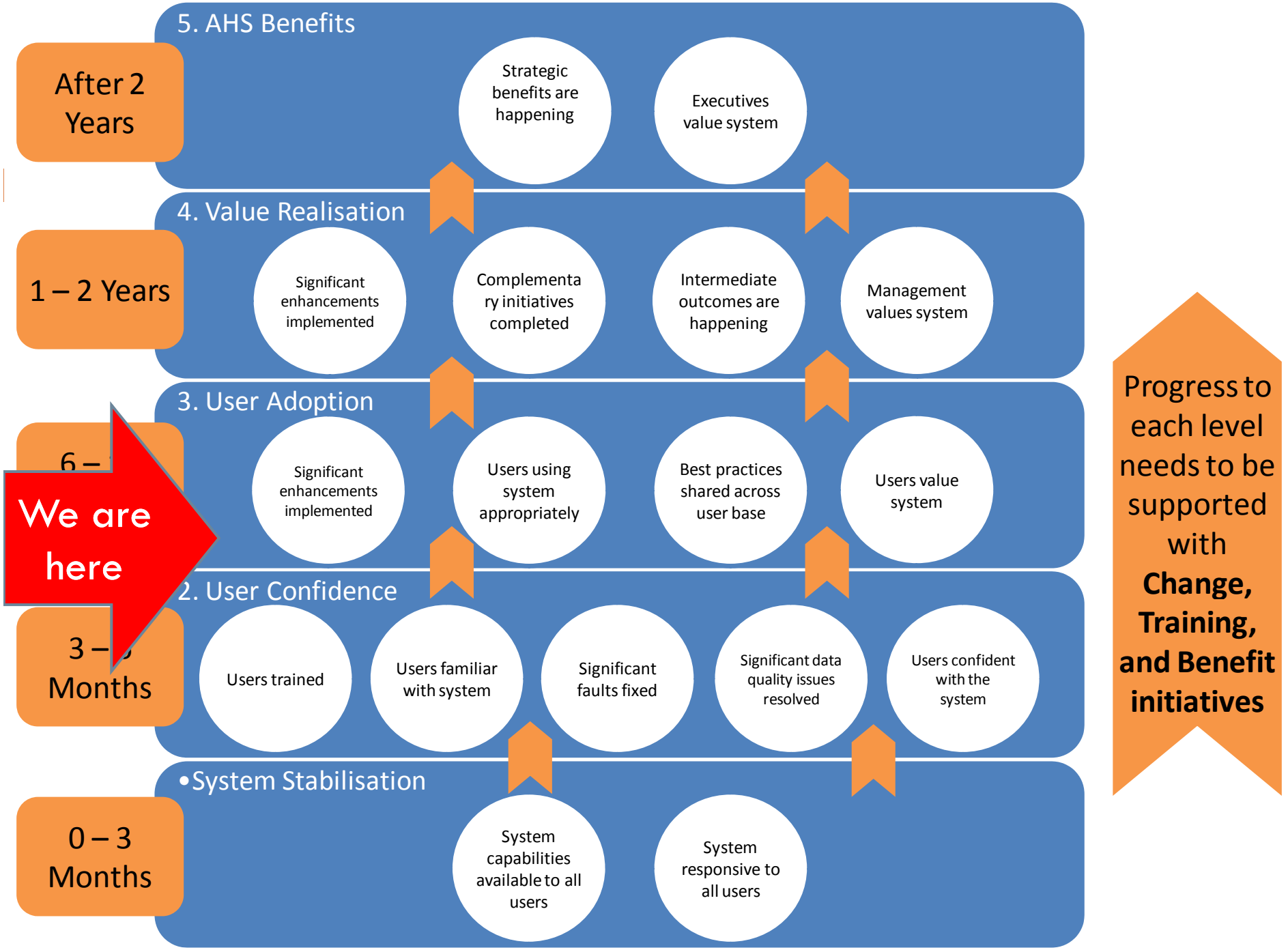
- Patient presents in Ballina
- Full episode details including emergency and surgical notes from Lismore are available in the eMR

Single patient identification for Area – one MRN
Patient record is available through the eMR anywhere in the Area.

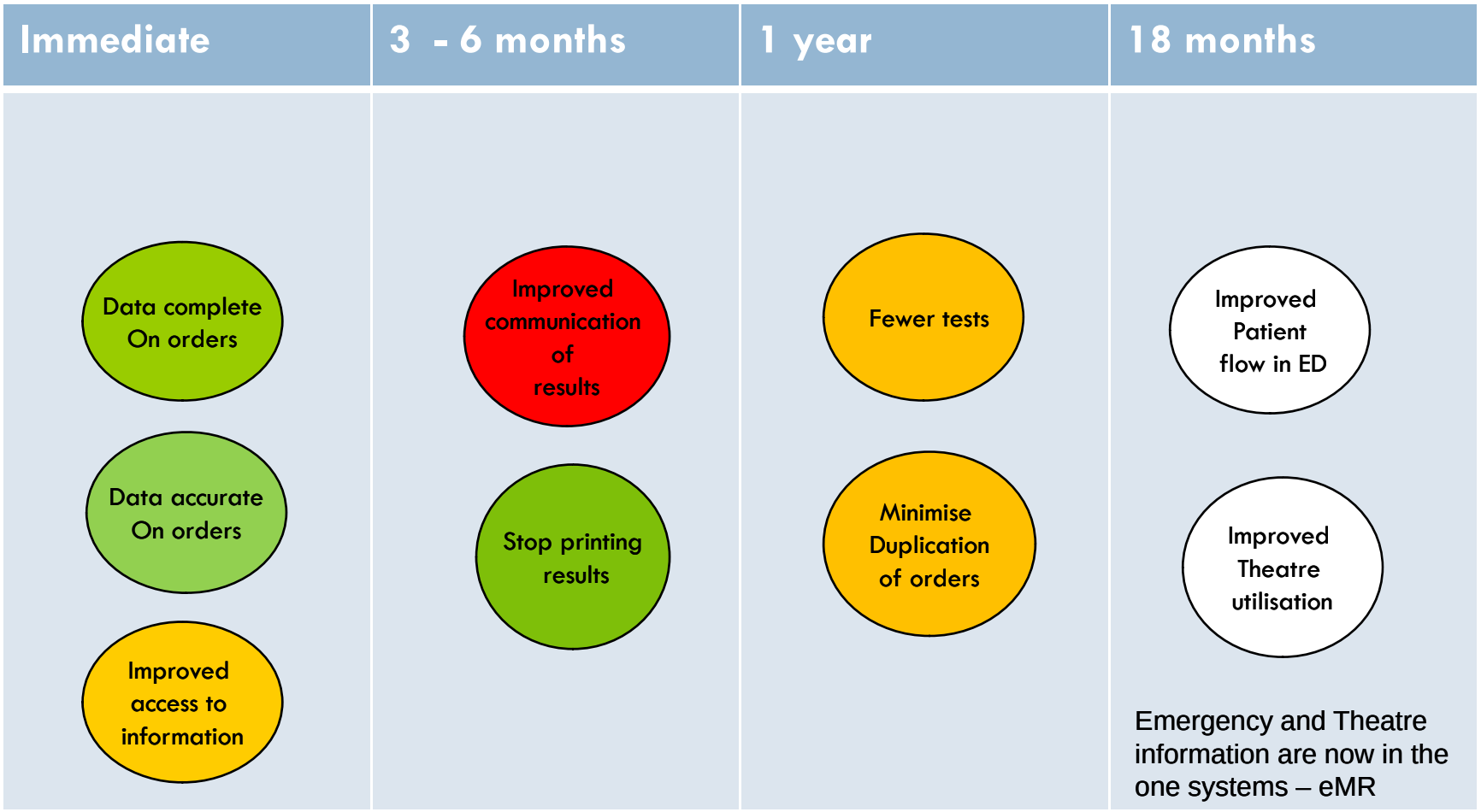
4. Lessons learned

Key findings

- Baseline is essential
  - people forget
  - do not want to own up
- Be involved in the business case benefits
- Earlier and better engagement with sponsors on benefits
- Search for benefits and listen
- You have to be able to translate what people are saying into benefits
- Business Outcomes not Jargon
- Keep it simple, use pictures and get real evidence
- Hard to deliver process change, use the tools.

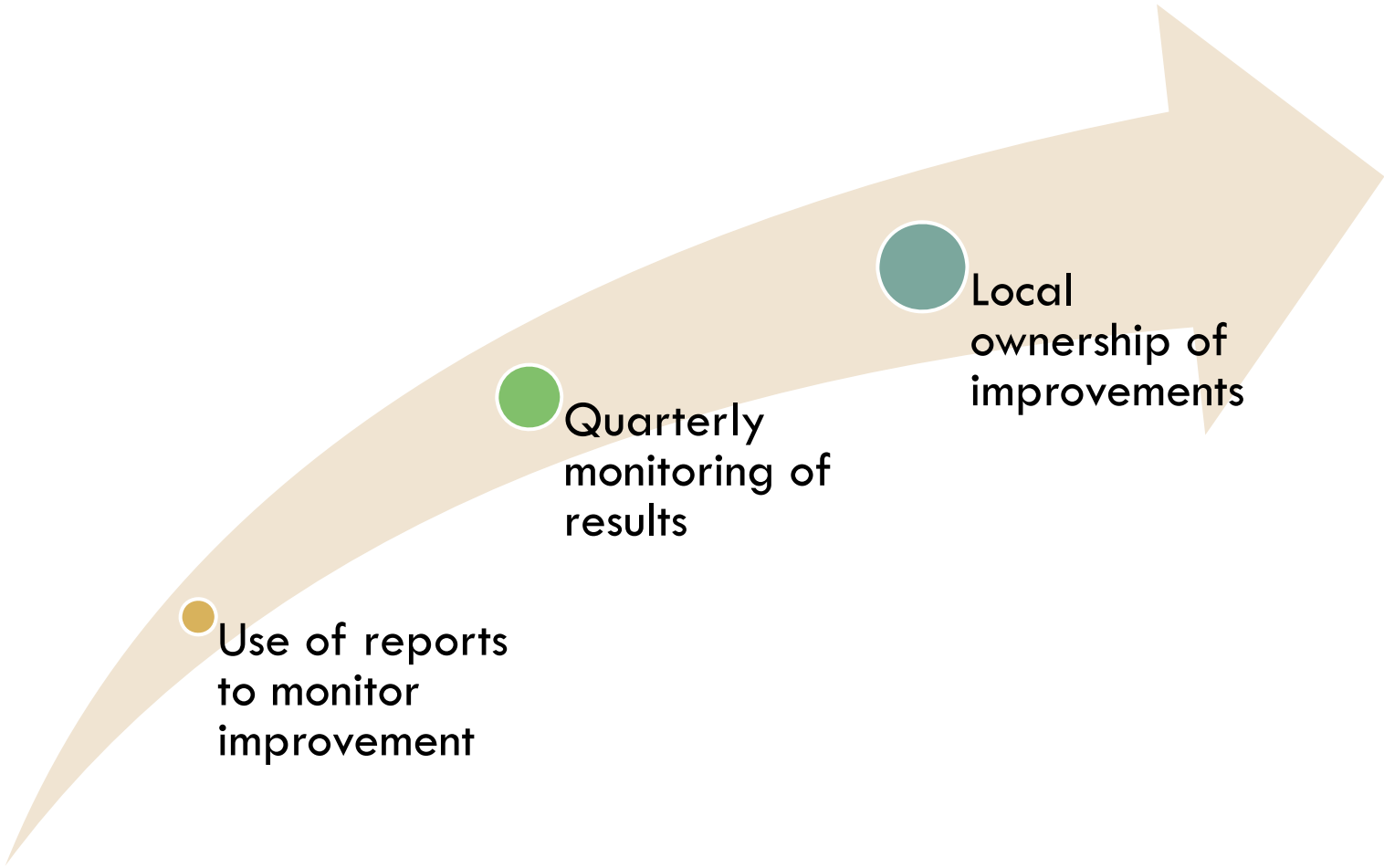

5. AHS Benefits
After 2 Years
Strategic benefits are happening
Executives value system
4. Value Realisation
1 – 2 Years
Significant enhancements implemented
Complementary initiatives completed
Intermediate outcomes are happening
Management values system
3. User Adoption
6 –
We are here
Significant enhancements implemented
Users using system appropriately
Best practices shared across user base
Users value system
2. User Confidence
3 –
Months
Users trained
Users familiar with system
Significant faults fixed
Significant data quality issues resolved
Users confident with the system
•System Stabilisation
0 – 3 Months
System capabilities available to all users
System responsive to all users
Progress to each level needs to be supported with Change, Training, and Benefit initiatives

Benefits outcomes over time



5. Way Forward

The benefits journey has started



We are moving..

From not just...

Focus on delivery of the Project

To

Focus on delivery of the Value of the Programs of Business Change

The Doing....

...the Achieving

Questions

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3. eMR Change Management

Effecting a Clinical Transformation

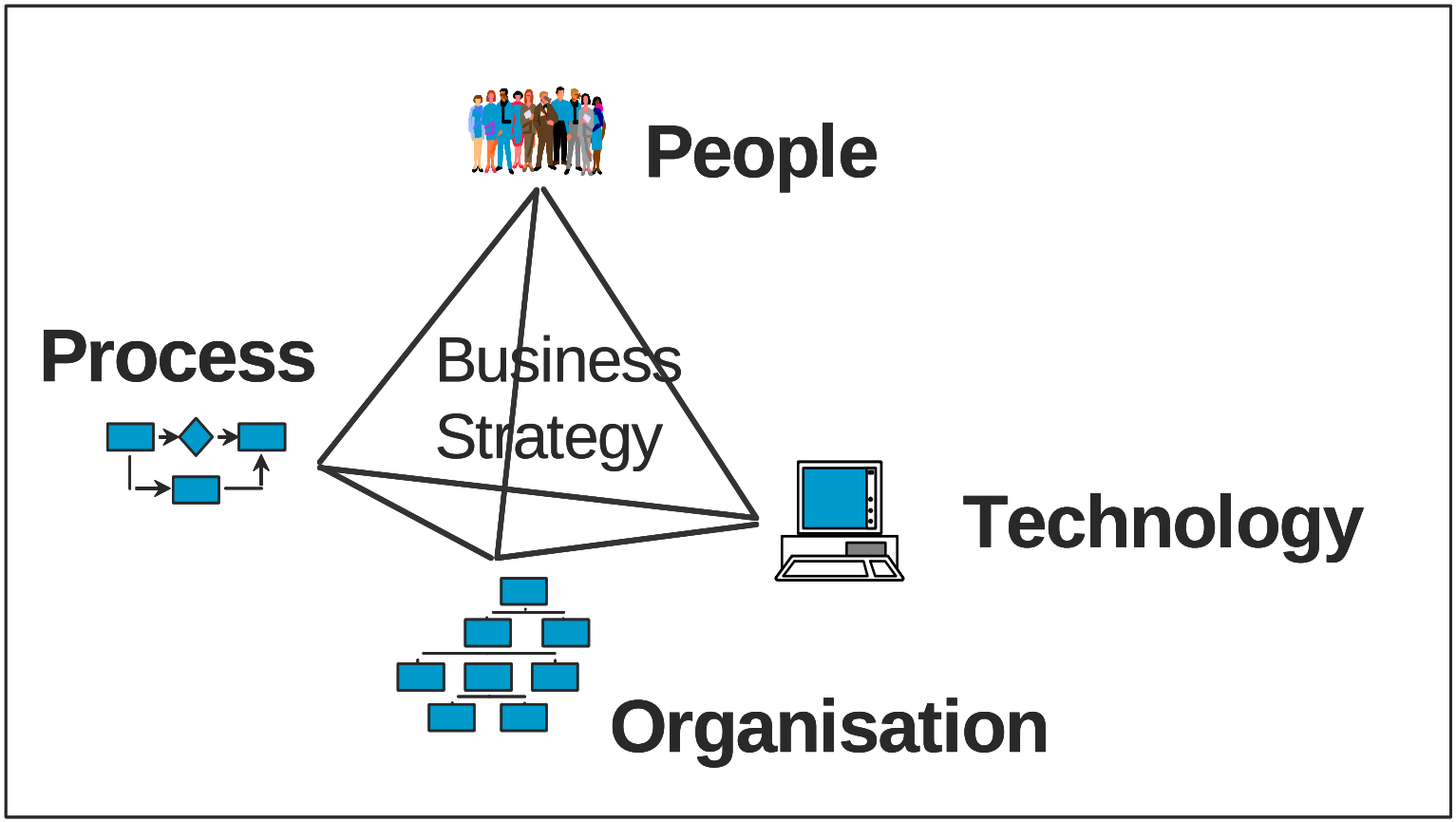
Eleonore Fuchter
Program Manager
Organisational Change Management

Objectives

- Interdependency of change & benefits
- Process of clinical transformation through eMR implementation
- Challenges and lessons learned
- Transition to business as usual

1. Change & Benefits

System alone does not deliver benefits



Benefits & Change

Benefits cannot be delivered without change...

… change without benefits cannot be sustained.

2. Process of Clinical Transformation

eMR Change Management Approach

- Lack of effective change management for IT implementations
- Change Management formally acknowledged as vital element of implementation
- Central development of strategies, templates and tools
- Based on best practice transformation methodology
- Change Manager funded and appointed at each AHS
- Central assistance to AHS with managing the change
- Measurement of change through agreement with stakeholders of benefits and targets

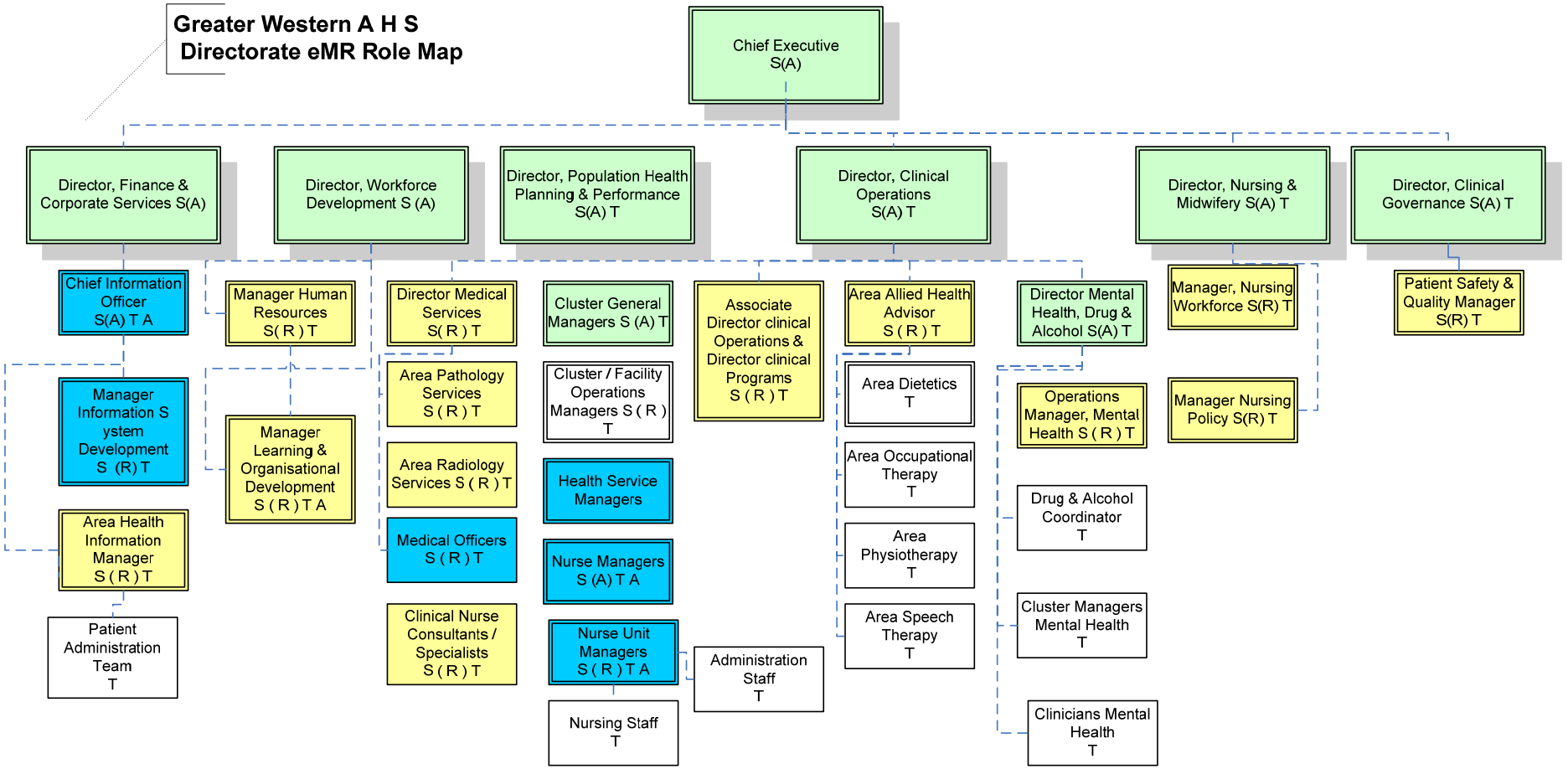
Change Management Components

- Defining the Change (Vision)
- Current State Analysis (BPR)
- Stakeholder Management
- Communication Strategy & Plan
- Future State Definition & Gap Analysis
- Learning & Development
- Benefits Management

Stakeholder Management

- Identify all stakeholders – groups and key individuals
- Analyse current and desired levels of commitment, impact of project, issues and concerns
- Identify sponsors, champions, change agents and clinical subject matter experts (SMEs)
- Cascading sponsorship model

Key Role Map


Greater Western A H S
Directorate eMR Role Map
Chief Executive
S(A)
Director, Finance & Corporate Services S(A)
Director, Workforce Development S (A)
Director, Population Health Planning & Performance S(A) T
Director, Clinical Operations S(A) T
Director, Nursing & Midwifery S(A) T
Director, Clinical Governance S(A) T
Chief Information Officer S(A) T A
Manager Human Resources S(R) T
Director Medical Services S(R) T
Cluster General Managers S (A) T
Associate Director clinical Operations & Director clinical Programs S (R) T
Area Allied Health Advisor S (R) T
Director Mental Health, Drug & Alcohol S(A) T
Manager, Nursing Workforce S(R) T
Patient Safety & Quality Manager S(R) T
Manager Information S ystem Development S (R) T
Manager Learning & Organisational Development S (R) T A
Area Pathology Services S (R) T
Area Radiology Services S (R) T
Medical Officers S (R) T
Clinical Nurse Consultants / Specialists S (R) T
Cluster / Facility Operations Managers S (R) T
Health Service Managers
Nurse Managers S (A) T A
Nurse Unit Managers S (R) T A
Nursing Staff T
Administration Staff T
Area Dietetics T
Area Occupational Therapy T
Area Physiotherapy T
Area Speech Therapy T
Operations Manager, Mental Health S (R) T
Drug & Alcohol Coordinator T
Cluster Managers Mental Health T
Clinicians Mental Health T
Manager Nursing Policy S(R) T
Area Health Information Manager S (R) T
Patient Administration Team T

Stakeholder Management

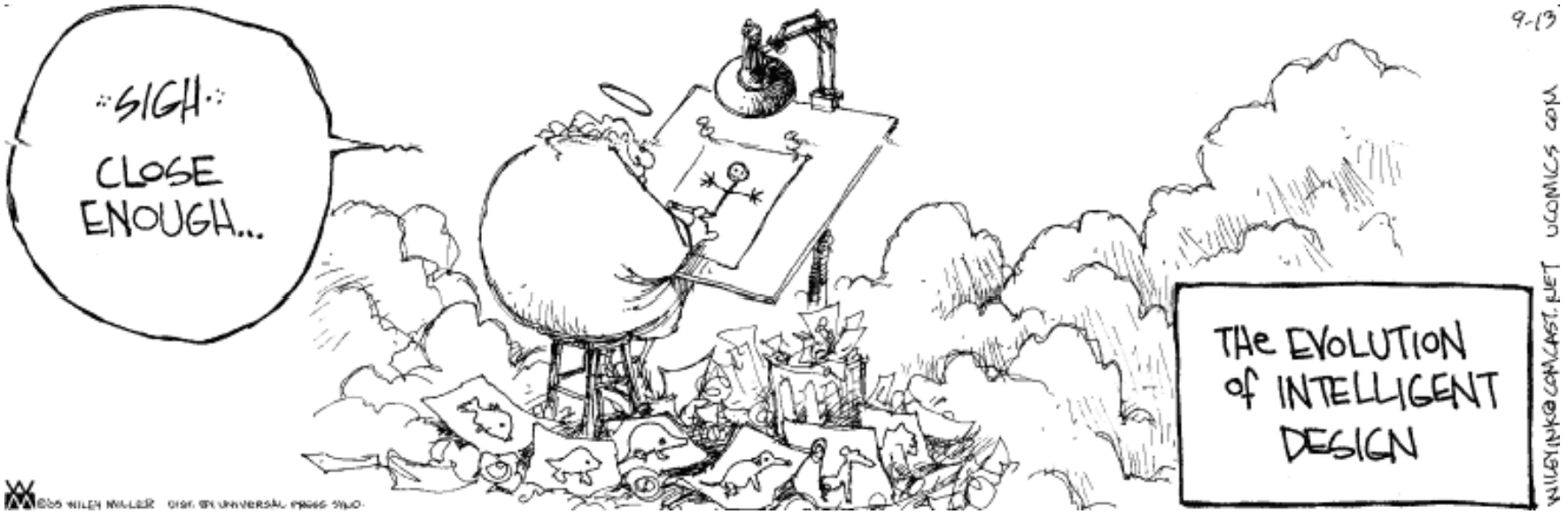
- Formulate stakeholder management plan
- Work with sponsors and champions to develop change management skills
- Generate clinical engagement - for the long haul
- Develop trust for future phases

Trust Is a Requirement for Change

eMR Communications

- State-wide strategy to ensure standardisation of messages
- Local AHS communications strategy & action plan
- "What's in it for me" key messages used to get buy in and understand benefits
- Brochures, posters developed centrally
- State & local newsletters
- eMR website:
- http://www.emr.health.nsw.gov.au/
- Feedback loop

Workflow design & analysis



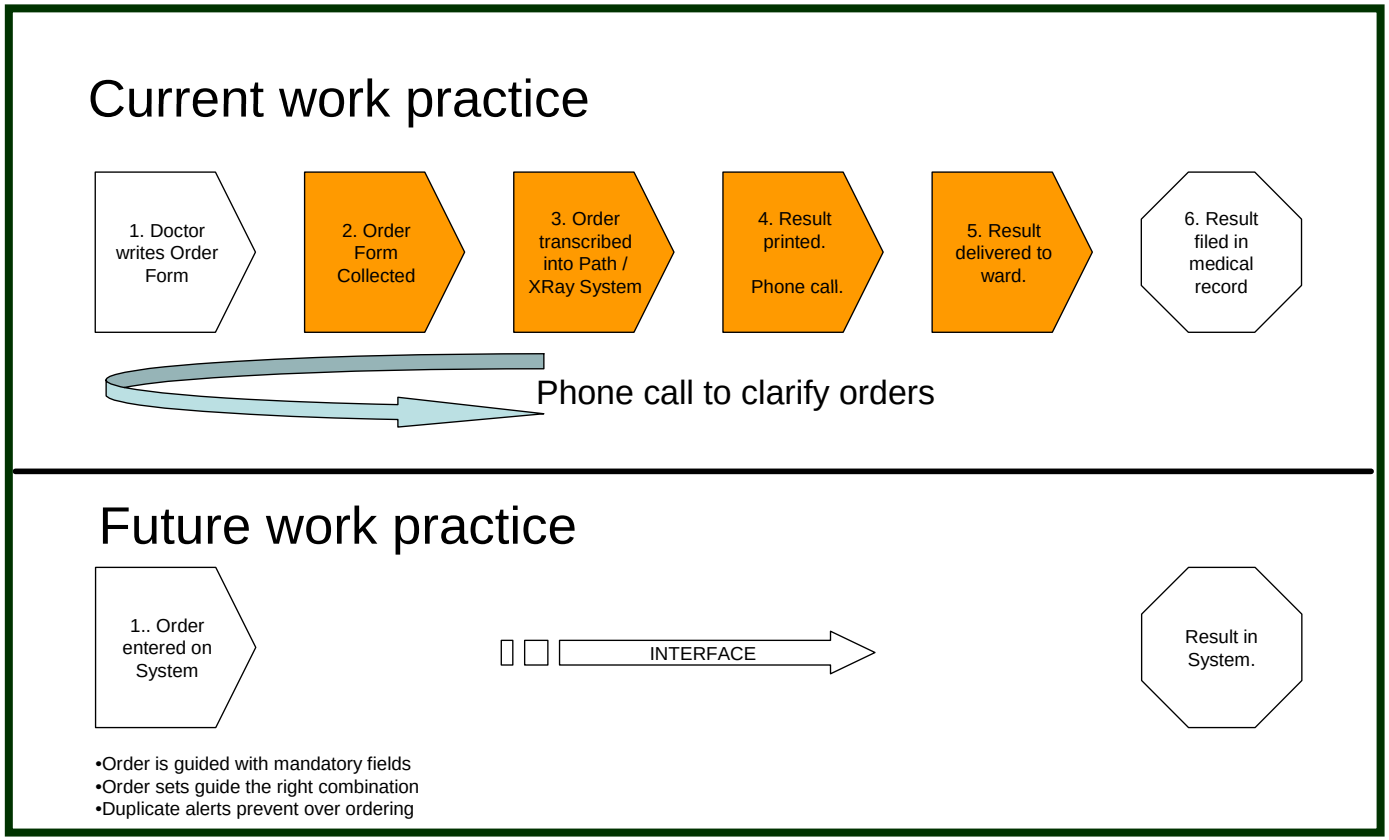
Future State & Gap Analysis

- In addition to identifying and documenting current and future state workflows, the key ingredient of success was the gap analysis and the "Stop/Start/Continue" (SSC)
- Maximises utilisation of the eMR

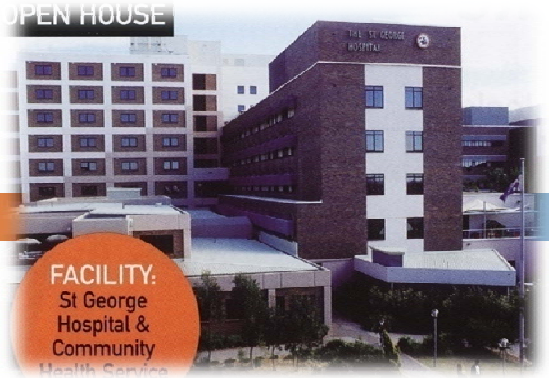
Workflow Analysis - Purpose

- Identifies changes in processes and workflows
- Facilitates understanding of new work processes allowing clear communication of changes
- Informs Learning requirements
- Informs test scripts
- Identifies Policy and Procedure adjustments/updates
- Identifies changes to responsibilities and skill requirements
- Maximises utilisation from the eMR
- Opportunities for process improvement
- Provides opportunity to quantify change for benefits realisation

Work practice change – Lab staff



Theory & Reality



Today

- To date 65 % of state hospitals successfully implemented eMR
- Early evidence of change
- Valuable experience gained, will facilitate continued rollout
- Change management lessons

3. Challenges & Lessons Learned

Change Management

- Cascading sponsorship hasn't occurred
- System design, build and validation took precedence over change activities
- Future state design and gap analysis was very good
- SSC - new initiative to check that new processes have started and old practices stopped
- Difficulty in getting acceptance that change management and benefits delivery activities continue post implementation and need to be resourced

Communications
Stakeholders without a story

- Difficult to communicate reasons for the change without vision
- No-one listening – too busy to hear the message
- WIIFM done for each level, seemed to be just words
- Changes and benefits hospital-wide; strong leadership required to get one group to do more work so that another group benefits
- Several versions of governance structures evolved - slow to create clinical engagement

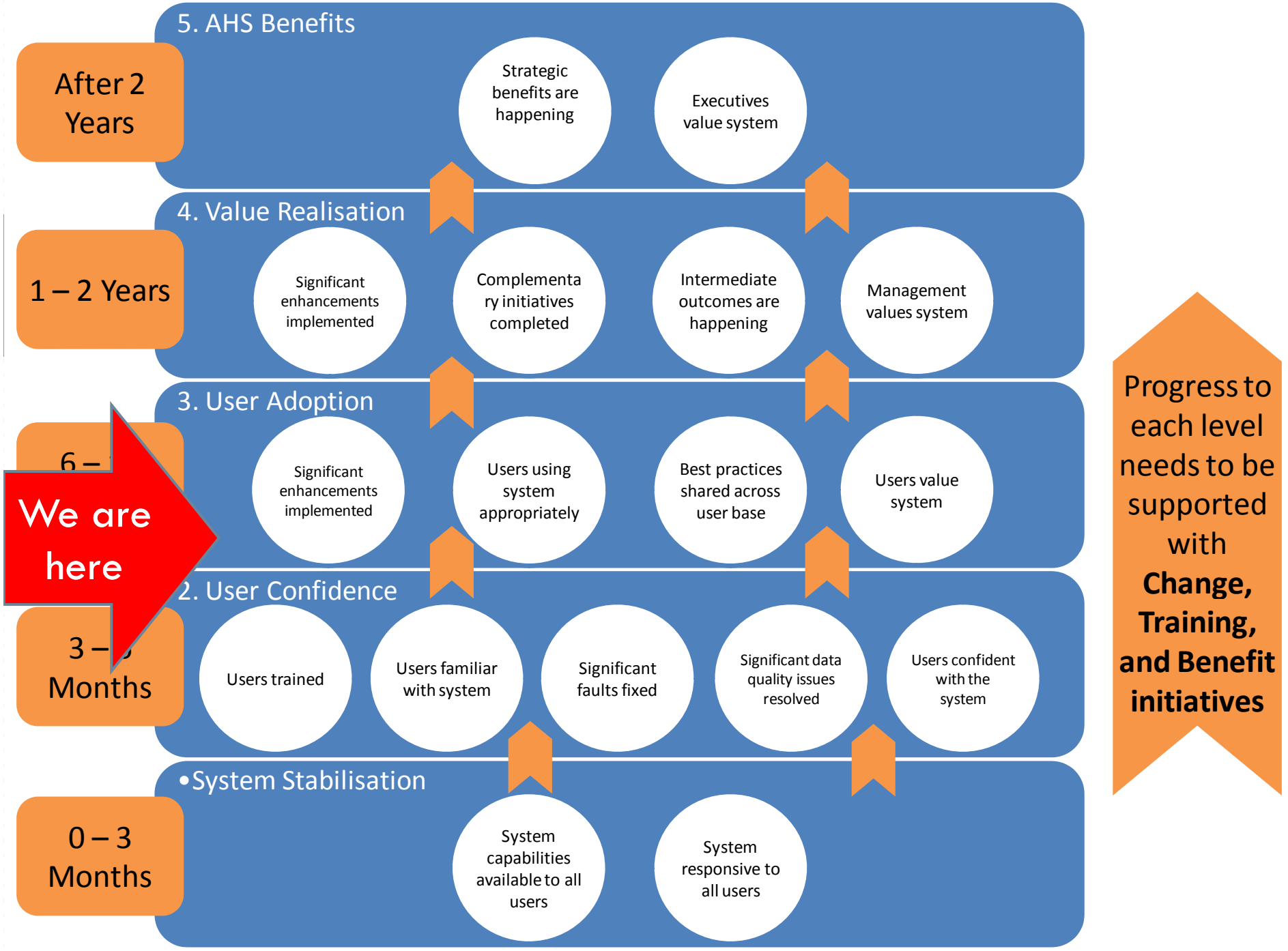
Support & Governance

- Absolute dependence on implementation team, not enough focus on governance
- Hands on support at and post go live best form of learning
- Change and support for up to 6 months post go live essential to transition to business as usual
- Importance of super-user network
- Leadership at each level of the organisation
- Ongoing business governance including local clinical advisory groups post implementation

Critical Success Factors

- Strong Executive commitment and ownership
- Cascading sponsorship and leadership
- Strong commitment from Nurse Managers and Clinical Directors
- Workflows – basis for role change, training and communication
- Super user strategy
- Post system installation change management and support
- Pro-active benefits management and evidence of achievement of value for money

4. Transition to Business as Usual


5. AHS Benefits
After 2 Years
Strategic benefits are happening
Executives value system
4. Value Realisation
1 – 2 Years
Significant enhancements implemented
Complementary initiatives completed
Intermediate outcomes are happening
Management values system
3. User Adoption
6 –
Significant enhancements implemented
Users using system appropriately
Best practices shared across user base
Users value system
We are here
2. User Confidence
3 –
Months
Users trained
Users familiar with system
Significant faults fixed
Significant data quality issues resolved
Users confident with the system
•System Stabilisation
0 – 3 Months
System capabilities available to all users
System responsive to all users
Progress to each level needs to be supported with Change, Training, and Benefit initiatives

Process improvement – 1: the reality

- Experience – 3 months post go live
  - Initial quick wins
  - Project team moved on
  - Less than optimal usage of system
  - Workflows don't quite match business practice/system
  - Fixes/tweaking to system required

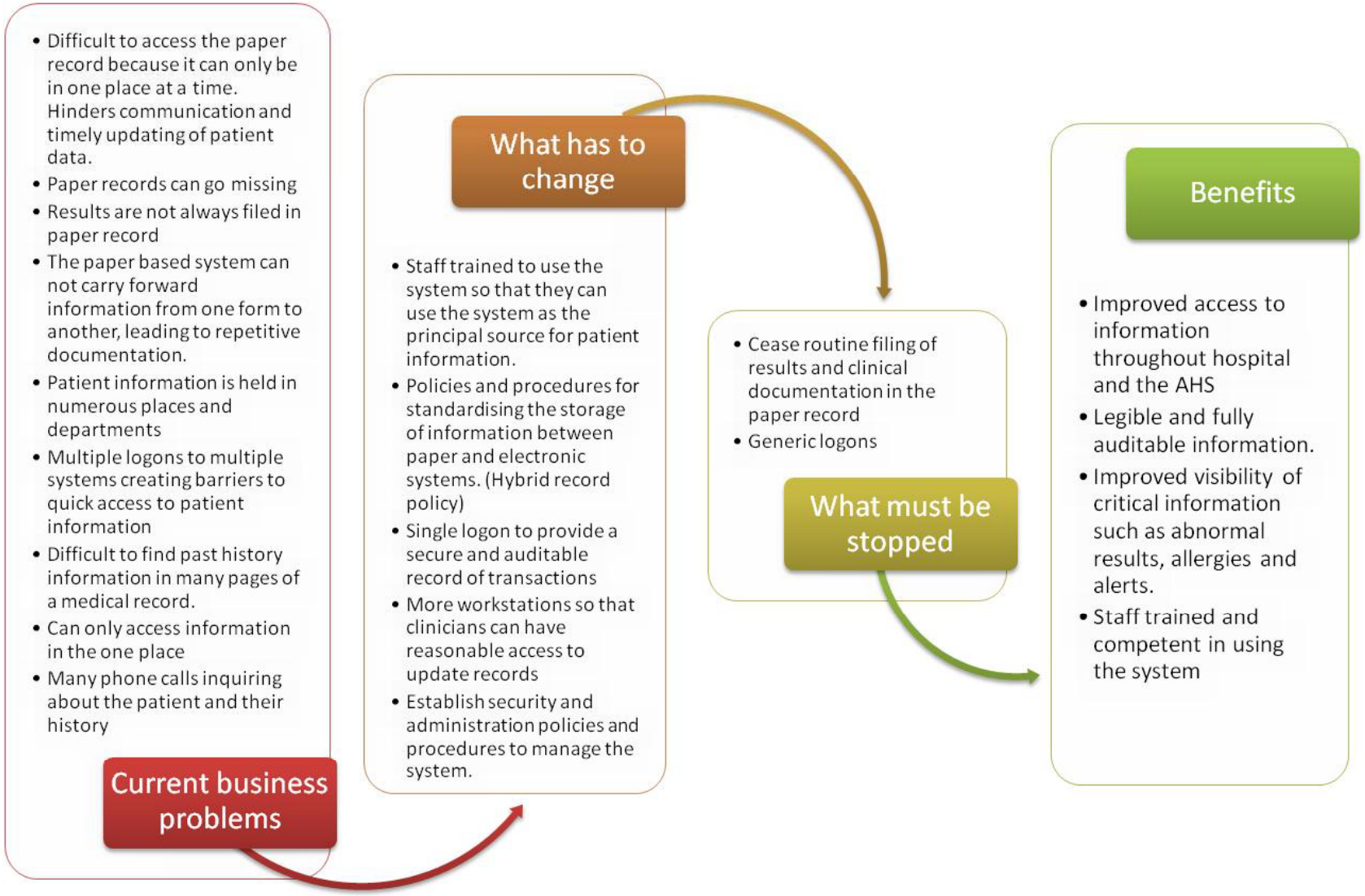
Process improvement – 2: the adjustment

- Re-engage with management
- Establish local governance comprising local improvement team and clinical governance committee
- Re-establish issues log
- Joint HSS – AHS initiative, focused
- Analysis of issues, identify broken processes
- Review, revise and refine processes as basis for communication and training
- Involves management, sponsors, BAs, SMEs, super-users, trainers, local support
- Continue monitoring system and its usage

Process improvement – 3: the outcomes

- Quarterly reporting to local facility governance body
- Improvements in:
  - Orders
  - Order sets
  - Allergies recording
  - Endorsing results via Message Centre
  - Co-signing of orders
  - Depart / Admit process
  - Handover from ED & OT to Wards
- Reduction in duplicate registration of patients
- Conversion of eMR project to ‘business as usual’

eMR Change - Benefits Pathway



Conclusion

- Solid acceptance of the methodology
- Success in getting clinical groups to work together on processes previously never reviewed
- Successes with future state development and benefits management
- Earlier definition of the vision
- Protect resources for change work
- Ongoing governance, process improvement & support
- Benchmark set for all future projects

Questions

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4. The NSW eMR Learning Strategy

One size does not fit all

Howard Dawson
Learning Coordinator

Session Overview

- What is scope of the NSW eMR program?
- What is the HSS Learning Strategy?
- What challenges (risks/issues) have we faced?
- What lessons have we learned?
- Where to from here?

What is the scope of the NSW eMR implementation?

eMR Applications

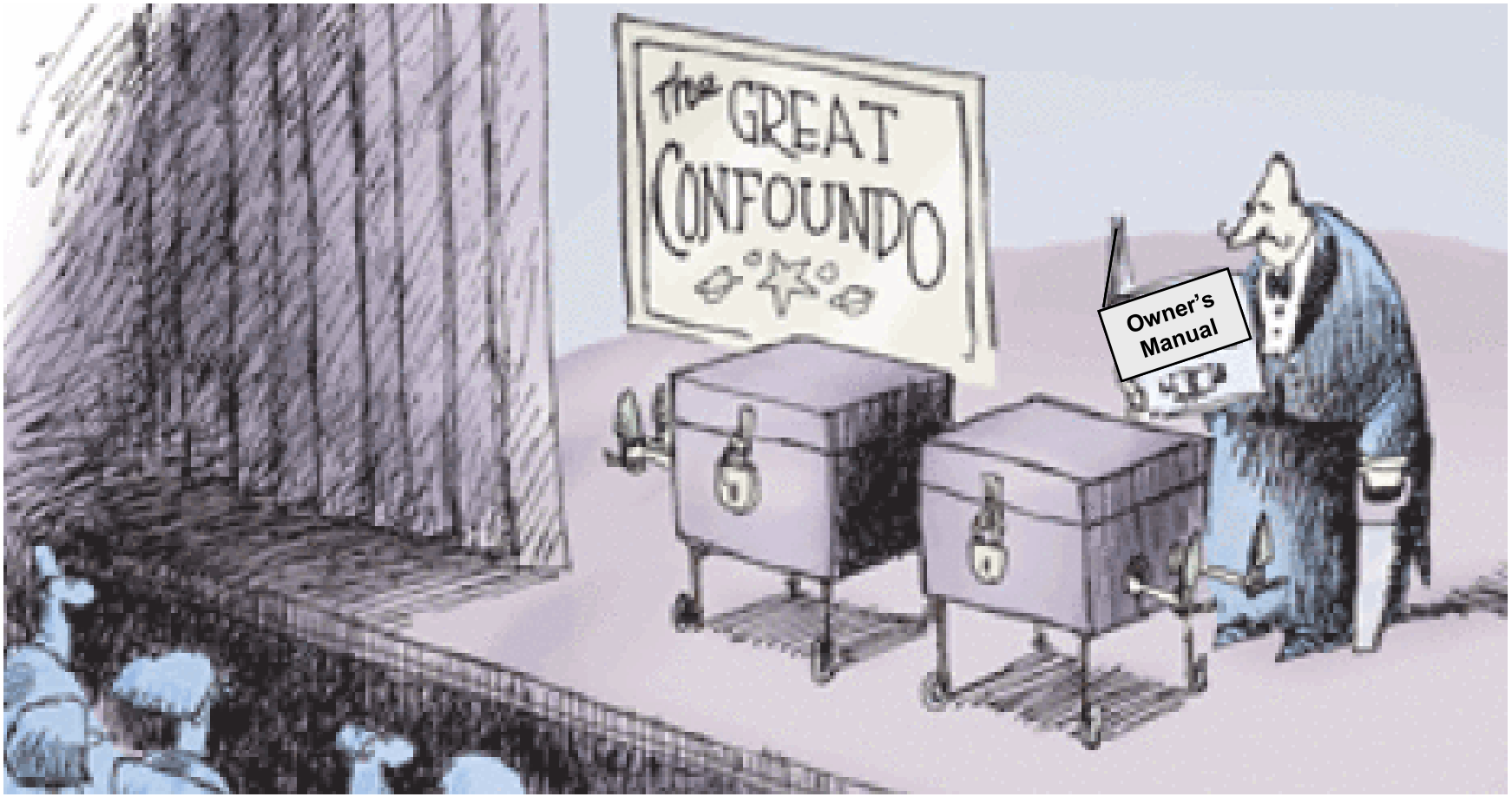
- **8 Area Health Services**
- **84 000 clinical, scientific and support staff require training**
- ***7* solutions**
  - eMR browser, Clinical Work Station
  - Electronic Orders and Results
  - Operating Room System
  - Emergency Dept System
  - Scheduling System
  - Electronic Discharge Referral System
  - Some Clinical Documentation ED / OT

What is our Learning Strategy?

What is our Learning Strategy?

- A State Learning Plan is the starting point for localised AHS Learning Plan development
- Blended approach
  - Instructor Led Training
  - TRAIN domain
  - End user instructional materials
  - Web Based Training
- Training focuses on Business Practices and Workflows
- The aim is to standardise delivery, lower local development costs and maximise materials reuse

Dealing with challenges

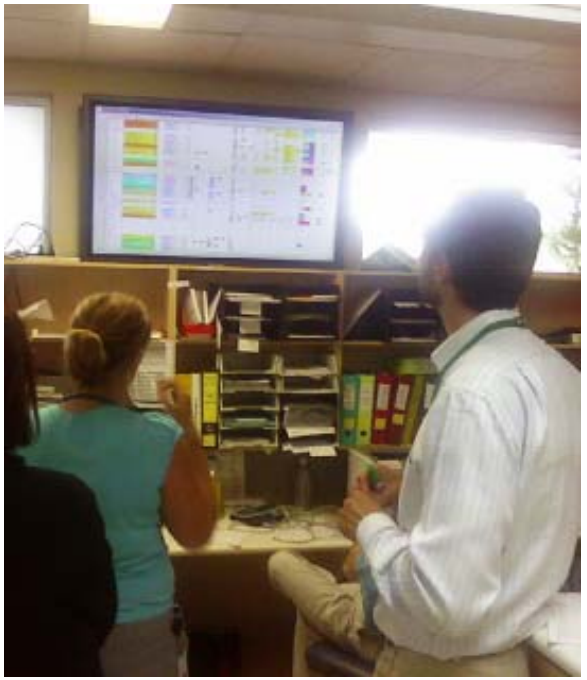


The challenges…

- Stakeholder engagement
  - Difficult to release staff to attend training due to work demands
  - Difficult for staff to attend multiple classes
  - Difficult for staff to have opportunity to practice skills in their workplace after training

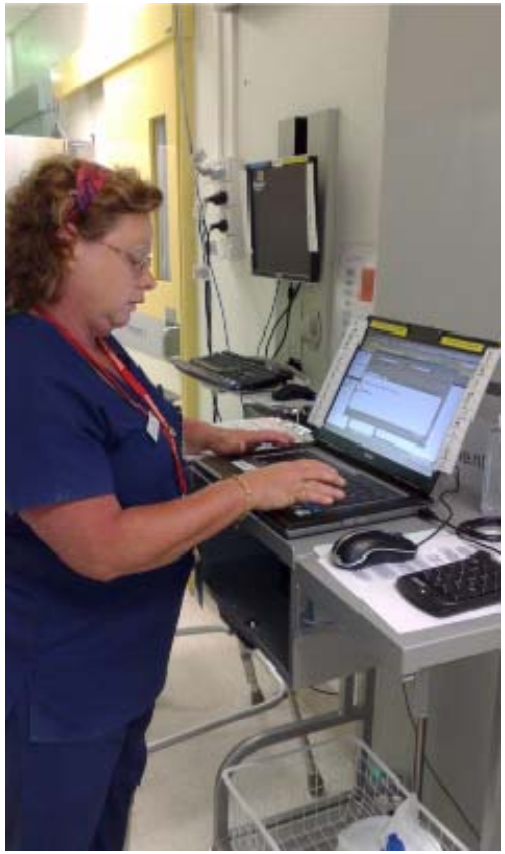
What lessons have we learned?

- The importance of Sponsorship / Leadership
  - Business Ownership
    - Clinical Champions
    - "Super Users"
      - Nomination
      - Training
      - Go-Live support and beyond
  - Effective Communication strategy



What lessons have we learned?

- The Strategic Role of the Learning Coordinator in the Change Management Process
  - BA / SME / Clinical Champion / "Super User" and End User liaison
  - Stakeholder engagement
  - Benefits realisation
- Employing Trainers with Health experience is crucial for credibility and enhanced communication when training clinicians.



The challenges…

- “Super User” identification, engagement and development

What lessons have we learned?

- The importance of "Super Users"
  - Integral to the acceptance and adoption of the application/s by their peers
  - Senior endorsement is essential
  - Super User training needs to be role specific and workflow focussed.
  - Managers are seeing their importance beyond Go-Live support

The challenges…

- Endorsement of curriculum and course durations
- Instructional design and development
- Web based training development – cost, time and effort
- Reinforcement / overlearning of work practice changes prior to Go-Live
- Sufficient access to the expertise of the Application Business Analysts

What lessons have we learned?

- Instructional Design and Materials Development
  - Work practices must be localised
  - Materials need to focus on the role of the audience
  - Materials need to be designed to be flexibly delivered in a number of formats – e.g. QRGs, Job Aids, Reference Manuals, Intranet…
  - Quality and Version Control needs to be carefully monitored – e.g. standard templates and styles guides
  - Materials need to be durable and permanently placed in the workplace

The challenges…

- Complexity of TRAIN domain development / population
  - Cornerstone of delivery model
  - Needs to reflect PROD environment
    - "real" patient names (not "Mickey Mouse")
    - Results, allergies, alerts, problems, diagnoses etc
  - Needs sufficient patients for maximum number of trainees
  - Refresh strategy

What lessons have we learned?

- TRAIN domain population and refresh strategy
  - Significant planning and preparation are required in anticipation of the release of the TRAIN domain
  - Use of Vedant TestStream to run scripts to populate the database with patient data, alerts, allergies, diagnoses, clinical documentation and results
  - Daily automated refresh from a baseline backup

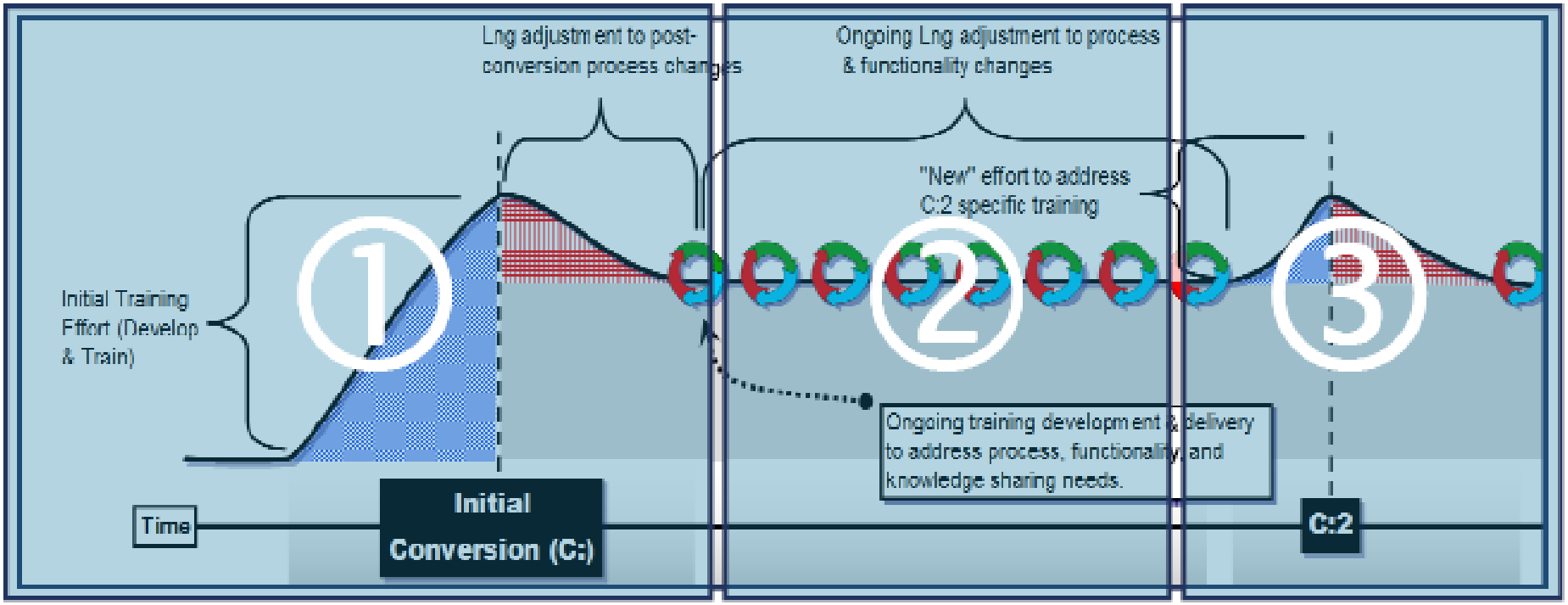
The challenges…

- Providing training for GP/VMOs, Locum Doctors and Agency Nursing staff
- Post Implementation training and support
- Retraining

What lessons have we learned?

- A Blended Training Approach is fine, but…

  Training is not a single event!



Acknowledgments to Cerner for the illustration

What lessons have we learned?

- Post-Implementation Training and Support
  - Transition from Project to “Business Ownership” - Committees need to continue after Go-Live
  - Resources are required to support sites after the Go-Live support has finished and moved on
  - Training needs to be ongoing to cater for new staff, and to continue to emphasise best practice
  - Super-Users need to continue to provide internal support
  - Transition to an evolved system

Where to from here?

- Locum doctor and Agency Nurse education and certification
- Enhanced training for staff at live sites
  - Workflow and application training
- Expanding eLearning capability
  - Learning Management System
  - Multi View Panel
  - Increased development capability
- Further refine Distance Education strategies to cater for rural sites e.g. Greater Western and Greater Southern AHSs
  - Webinars
  - Video tutorials
  - Discussion forums
- Implement eMR Knowledge Base

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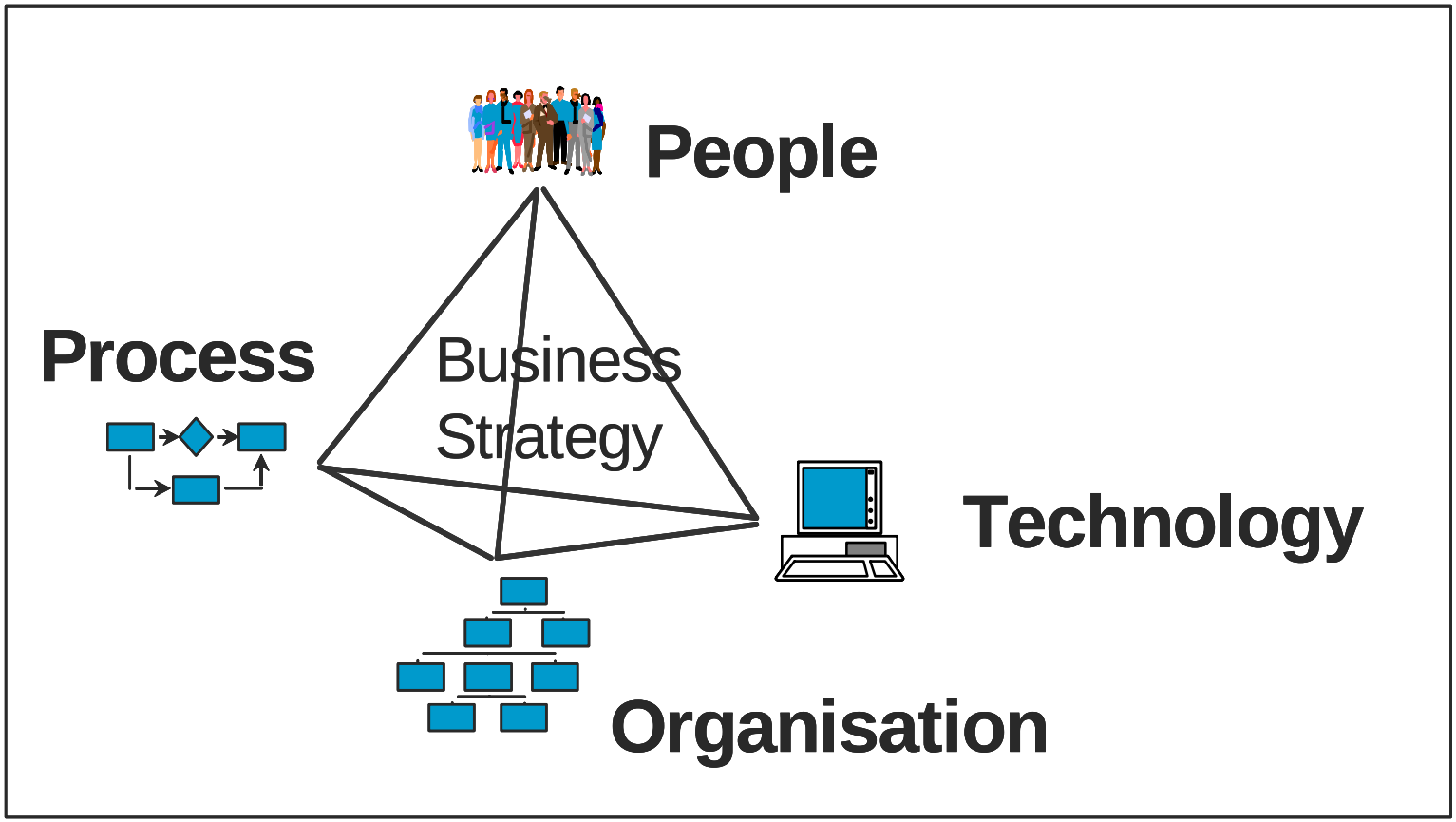
5. eMR Integration

Stephen Mattes
eMR Integration Manager

Contents

- NSW Health network architecture + messages
- Business benefits arising from Integration
- Integration design
- Business engagement
- Future directions

Dimensions of eMR



Why integrate eMR?

- EMR Functions
  - Clinical information repository
  - Emergency Department processes
  - Operating Theatre processes
  - Orders and Results processes
- Why integrate this with other applications?

Why integrate eMR?

- Basic EMR functions
- Centralise access
- Centralise and enhance clinical operations
- New clinical workflows
- Improve patient safety and save costs

Integration design

- Your mission: design an electronic pathology orders interface

- Success factors?

Integration design - what

- Process
- Business and technical staff
- Business and technical requirements gathering
- Use-cases, message triggers and data

Integration design - why

- Discovery
- Shared understanding
- Involvement

Integration design - practical insights

- Fosters participation
- Encourages communication
- Identifies workflow requirements
- Identifies required triggers and data

New workflow - business challenge

- Triage Nurses too busy
- "Create duplicates"
- Questions re strategy
- "Temporary MRN"
- Budget and time constraints

- What to do?

New workflow - engagement

- Build technical solutions
- Promote the benefits
- Explain simply
- Increase reliability

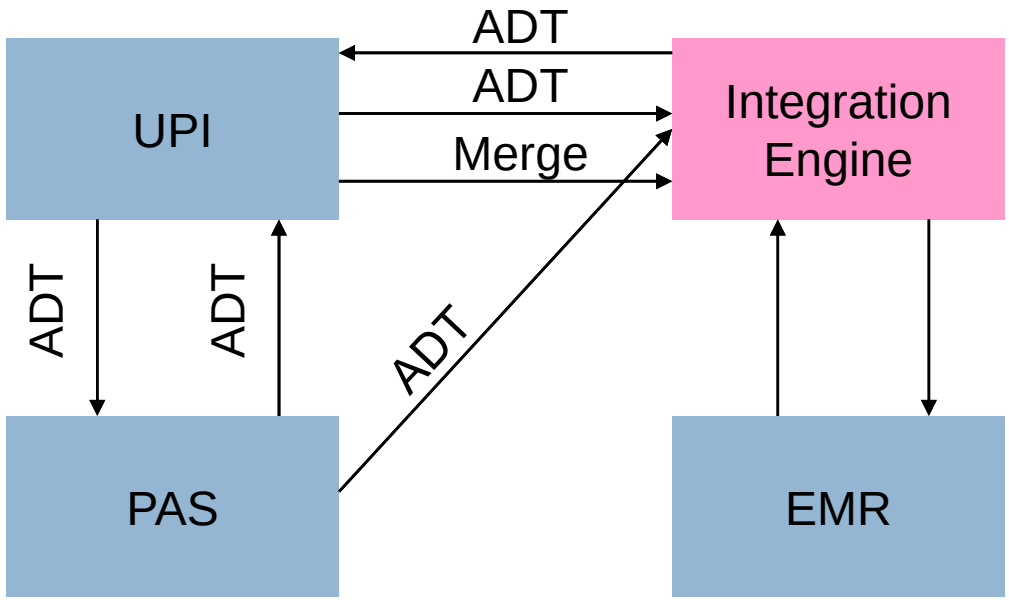
New workflow - technical challenges

- Many potential message paths
- System will corrupt if messages arrive out of order
- System not being used as designed

- How to overcome?

New workflow - technical principles

- Common pathways
- Synchronisation messages
- Data synchronisation
- Risk Management

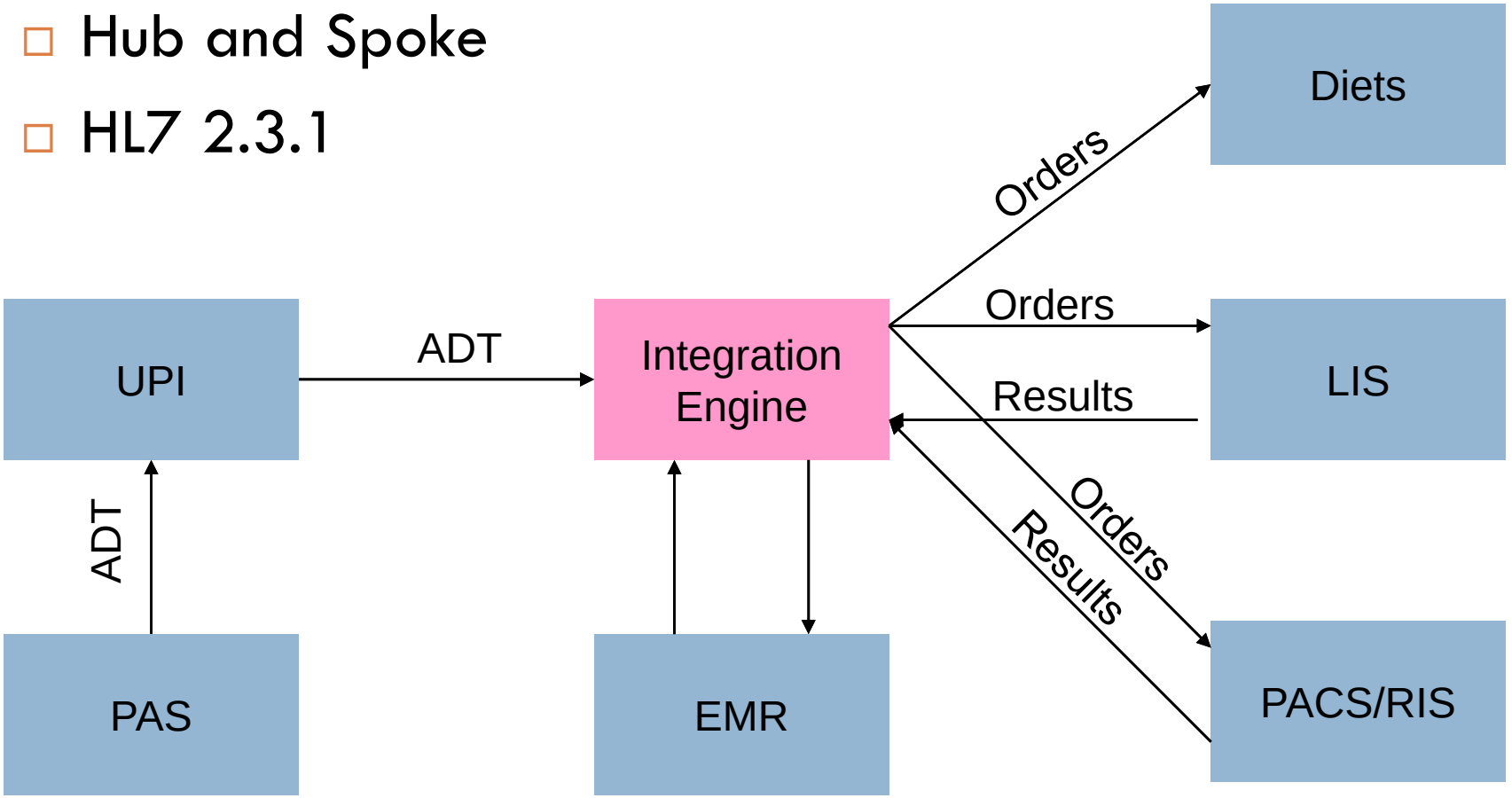


Practical insights

- Detailed message flow analysis
- Should it be solved?
- Stay engaged

Future directions

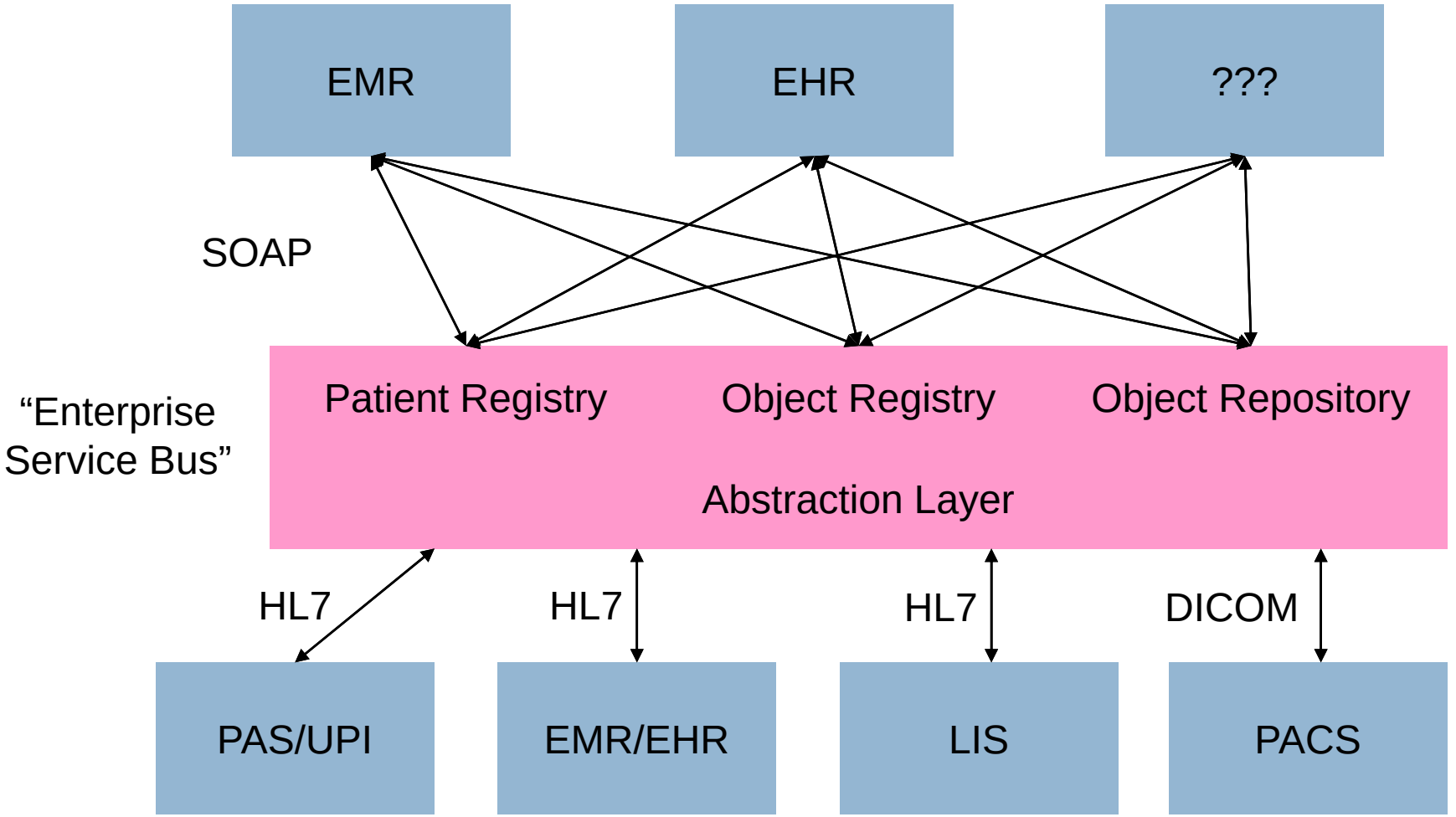
- Hub and Spoke
- HL7 2.3.1



Future directions – business drivers

- Work effort / new interface.
- Vendor support
- Service reuse
- Vendor resistance
- Vendor scale

Future directions – SOA?



Practical insights

- Existing standards are dated
- Widespread vendor support for SOA needed
- Commercial disincentives to SOA support

Conclusion

- EMR has convincing safety and cost benefits
- EAI enables these benefits
- Factors for successful EAI
- Tools to get there.
- SOA TBA

Questions

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6. eMR Governance

Mike Rillstone
A/Chief Executive

Governance

- Role of SBB, its evolution
- CAG, AAGs
- Vendor partnership
- ‘Process Improvement’ – reinforce need to for business to own the eMR and establish a process of continuous process improvement and benefits realisation

Questions