

MOHHoldings
MOH Holdings Pte Ltd

National Electronic Health Record Procurement

Sari McKinnon
Principle – Enterprise Architecture
Information Systems Division

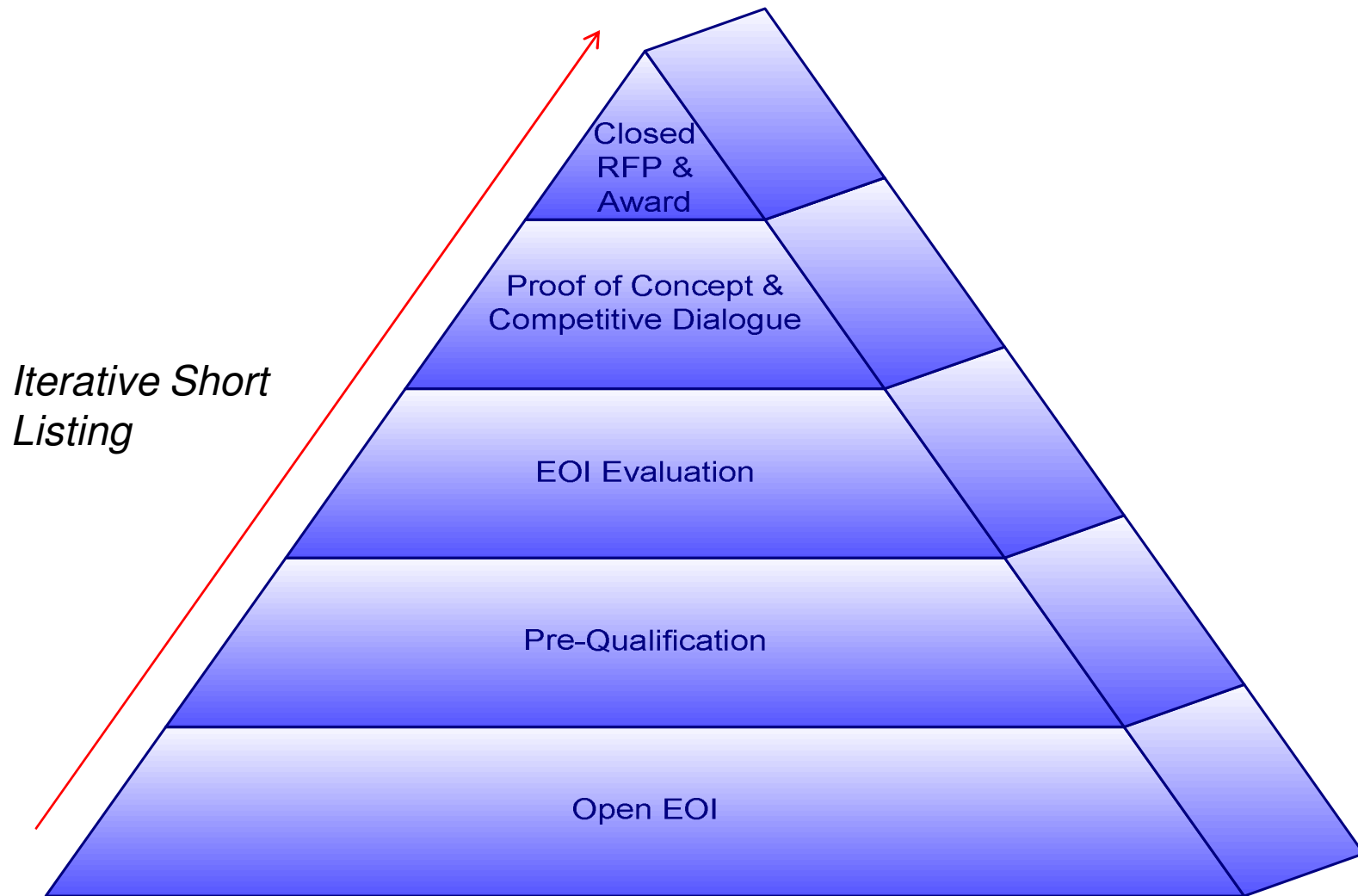
Health IT Summit, 2009



EHR Procurement - Objectives

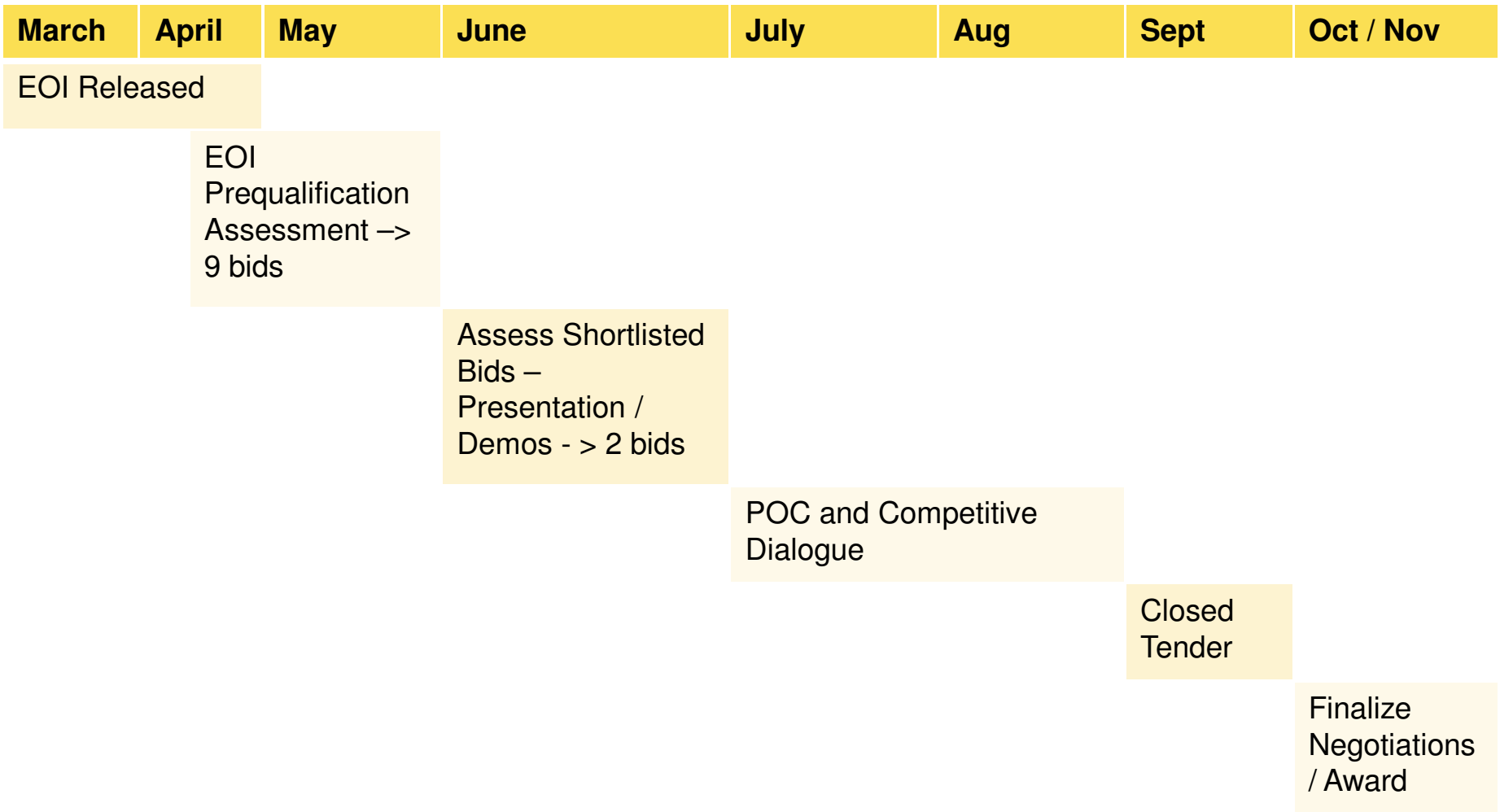
- Enable pre-qualification (short listing) of a small number of organisations or consortiums who are capable of partnering with MOHH to deliver a National EHR for Singapore.
- Validate the capability of the market to meet Singapore's EHR solution and services requirements.
- Engage a Consortium to work collaboratively with MOHH to supply an EHR solution and provide the necessary services to facilitate national implementation.

Procurement Stages



National EHR Procurement Stages

EHR Procurement



Phase 1 Evaluation - Prequalification

- **36 Bids Received**

- **Mandatory Pre-qualification Criteria**

- Demonstrated evidence of a functioning EHR solution, within enterprises of similar (or larger) size and scale to Singapore.
- Evidence of suitable, available and capable resources.
- Significant long-term commitment to Singapore.
- Financial strength and stability;
 - Issued and paid up share capital of at least S\$2m.
 - Annual revenue in excess of S\$15m.



9 Qualified Bids

Phase 2 Evaluation - Presentations

Assessment Criteria – 4 Focus Areas

- **Consortium & System Integrator Capability**
 - Demonstrated large scale program delivery
 - Localization of technical and clinical teams
 - Maturity of SI and Delivery Capability and Processes
 - Cultural Compatibility
- **Functional Capability**
 - Product demonstration of core capabilities outline in EOI
 - Clinical usability - in particular flexibility of User Interface
- **Technical Architecture**
 - Integration patterns and architecture standards
 - Non-functional aspects i.e. performance, reliability, currency of data,
 - Security
- **Standards**
 - Flexible data models
 - Support for legacy system data integration / mapping
 - Support for multiple terminologies and local codes

Next Phase – POC & Competitive Dialogue

- Proof of Concept will validate:
 - Capability of vendor offering – functional and technical
 - Capability of Consortium to support delivery of EHR (resources, method, process)
 - Capability of Consortium to manage relationships effectively both internally and with MOHH

- Competitive Dialogue will inform Final RFP and focus on:
 - Finalization of functional and non-functional specifications
 - Legal Terms and Conditions
 - Commercial / Contractual Models
 - Pricing

Access

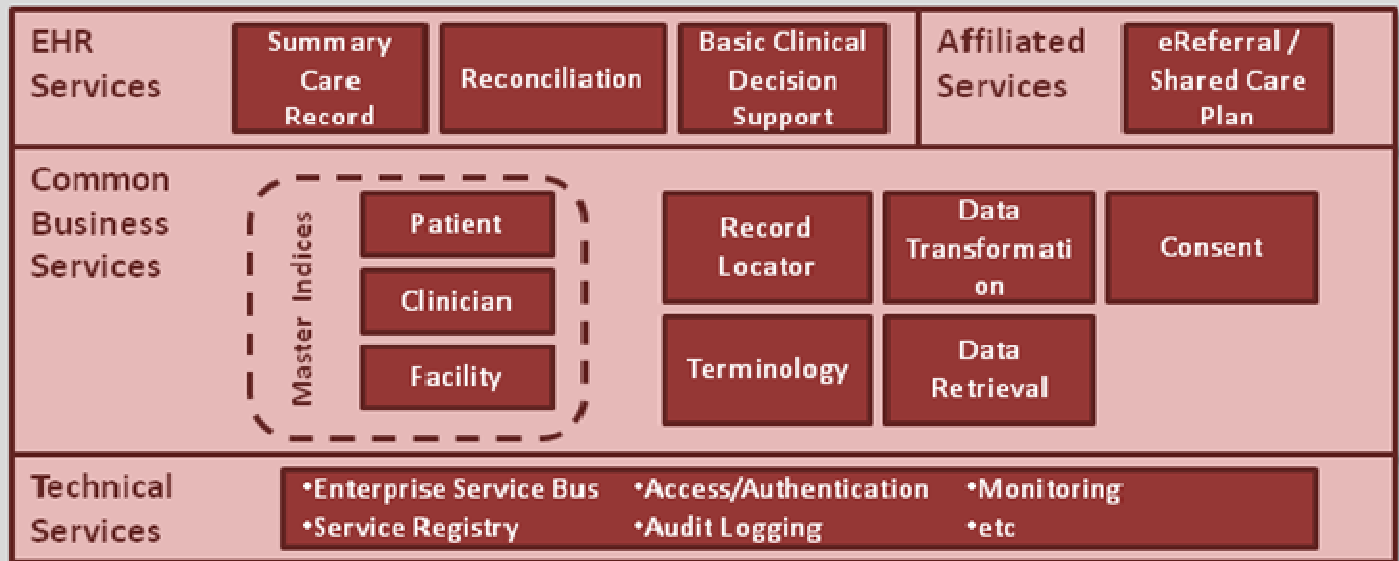


Data Access Interface

New end-user screens/functionalities

- Summary Care Record
- Detailed Documents
- Reconciliation
- Referral
- Shared Care Plan
- etc

EHR Info Exchange



Data Provision Interface

Provider Gateway

Data



EMRs



Repositories (CMIS, NIR, etc)



Virtual EHR Database (RLS)



Summary Care Record



Master Indices

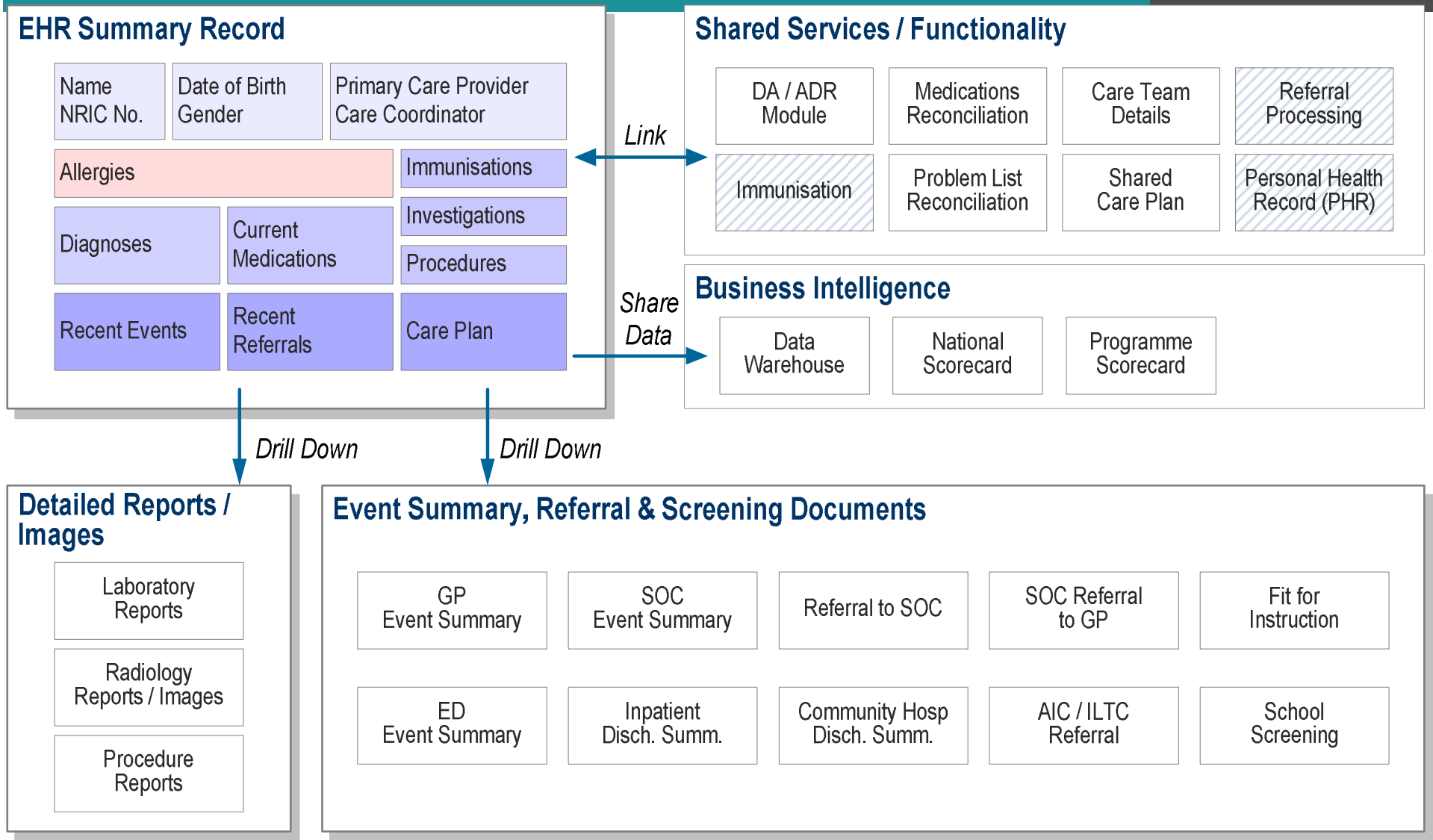


Reconciliations (Med, Diagnosis, etc)



Documents (Event Summaries, Referral, etc)

EHR – Conceptual View



EHR Capabilities – Summary Care View

Release 1

- Patient Demographics
- Allergies
- Coded Diagnoses, from discharge summaries
- Coded Medications
- Immunisations
- Laboratory and Radiology reports
- Events, referrals and care plans, as they become electronically available

Release 2

- Primary Care Providers and Care Coordinators (e.g. Delivery on Target programme)
- Content will grow over time, as EHR footprint grows
 - E.g. Events from GPs only possible after GP adoption of IT

EHR Capabilities - Reports and Images

Release 1

- Laboratory and Radiology Reports
- Mindef - Screening

Release 1.5

- Laboratory reports ordered by GPs (Private sector)

Release 2

- School Health Programme reports (HPB)
- Radiology Images
- Operating Theatre reports
- Radiology reports ordered by GPs (Private sector)
- Chronic Disease Management Programme indicators

EHR Capabilities (Documents)

Release 1

- Inpatient **Discharge Summaries**, structured and coded
- Community Hospital **Discharge Summaries**, structured and coded
- Emergency Department summaries, structured and coded

■ Release 1.5

- Integrated Screening Programme results (HPB)
- GP event summaries, as GP adoption grows
- Community Hospital → Restructured Hospital referrals
- Transfer of care component in event summaries and referrals
- Shared Care Plans from Community Hospitals

Release 2

- Polyclinic summaries
- Shared Care Plans for Chronic Disease Management
- Delivery-on-Target (DOT) referrals which are part of an integrated care system

Future releases

- SOC event summaries
- GP → hospital referrals
- Agency for Integrated Care (AIC referrals)

EHR Work Streams

<i>EHR Work Streams:</i>	<i>Includes:</i>
Program and Project Management	Integrated Project Plans and Schedules, Issues and Risk Management, Project Reporting.
Commercial & Contract Management	Contract development, contract management to delivery
Supporting Clinical Transformation (Sub Projects)	New Models of Care, Discharge Summary, Medications Management, Diagnostics, Shared Care Plans, Secondary Data Use, Transfer of Care/Referral, and Benefits Realisation,
Solution Architecture and Design	User Interface, Application and Data Repository, Messaging and Exchange Services
Information and Data Architecture & Design	EHR information model, data dictionary, data formats, and exchange specifications
EHR Delivery	Change Management, Clinician Adoption, Implementation Planning, Site Readiness.
EHR Conformance Governance	Governance frameworks and processes to ensure alignment over time
EHR Operations	Identification, Access, Security, Data Quality
Enable & Integrate Applications	Enhancements for existing applications to integrate with the EHR
Technology Infrastructure	Data centers, Disaster Recovery, Network & Communications
Deployment, Operations & Maintenance	On going operations, support and maintenance

EHR Implementation Footprint

- Public sector clusters
 - **Roll-out will be iterative**, rather than big bang, so that we can learn and refine from each deployment mini-cycle.
 - **Iterations will be short and expand rapidly** to reach the entire public sector as soon as possible
 - Target sites with the most **clinical benefit**, e.g. ED & polyclinics
 - Deploy to **integrated care coordinators**, e.g. AIC case managers and DOT right-siting officers
- Family Practitioners
 - Targeting **50+** in early stage of Release 1, to grow with GP Adoption programme
 - Majority will be part of **integrated care programme**, in partnership with **restructured hospitals**
- Community Hospitals
 - **Start with 1** community hospital in early stage of Release 1
 - Roll-out to all community hospitals by Release 2