



Health  
Northern Sydney  
Local Health District

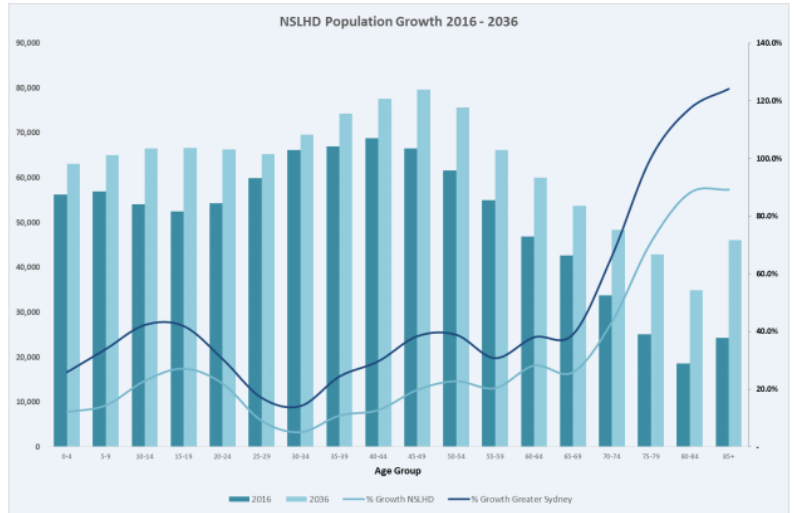
**MIYA PRECISION**

**ACUTE CORONARY SYNDROME (ACS) &  
SURGICAL CARE RISK STRATIFICATION PLATFORM**

**NSLHD, The Sydney Uni & Alcidion  
Partnership**

Seven Guney, Program Manager  
NSLHD Health Informatics & Analytics Program





Source: Draft NSLHD Strategic Plan 2017-2022

<https://www.nslhd.health.nsw.gov.au/AboutUs/StrategicPlan/Documents/Strategic%20Plan%20Draft%20.pdf>

# Our Strategy

## Our Purpose

Embracing discovery and learning, building partnerships and engaging our community, to deliver excellent health and wellbeing

## Our Vision

Leaders in healthcare, partners in wellbeing



### Healthy Communities

Prevention, early intervention and community development strategies will improve health outcomes



### Connected Person-Centred Care

People have a good experience of care, which meets their health needs, in partnership with multiple care providers



### Evidence-Based Decision Making

Decisions are made on the basis of best available information and a philosophy of continuous improvement



### Responsive & Adaptable Organisation

Our structure and systems support the delivery of innovative and responsive services in partnership with other providers and our community



### Engaged & Empowered Workforce

Our staff are confident, capable and committed to the support and delivery of good care every day

Realising our vision

We will focus on five key themes

To achieve these outcomes

While building our internal capacity

## OUR COMMUNITY AND PATIENT OUTCOMES

Quality care by the right provider, in the right place, when needed | Minimise impact of illness, maximise health and wellbeing

Improve health outcomes for vulnerable populations  
—  
Support people to manage their own health and maximise wellbeing

Improve quality and safety of care  
—  
Develop reliable integrated systems of care  
—  
Improve the patient experience of care

Evaluate and apply information and knowledge to improve clinical, business, and organisational practices  
—  
Promote enquiry and research to develop, share and apply new knowledge

Develop expertise in clinical, business, contractual and collaborative partnerships  
—  
Develop a rigorous approach to innovation for continuous improvement and transformational change  
—  
Develop ICT capabilities to support clinical and business needs

Develop a person-focused health and safety culture  
—  
Strengthen staff communication and engagement  
—  
Develop leaders who drive change and innovation  
—  
Develop a talented, empowered and accountable workforce

Achieve a sustainable financial position | Maximise value from resources

## OUR FINANCIAL STEWARDSHIP

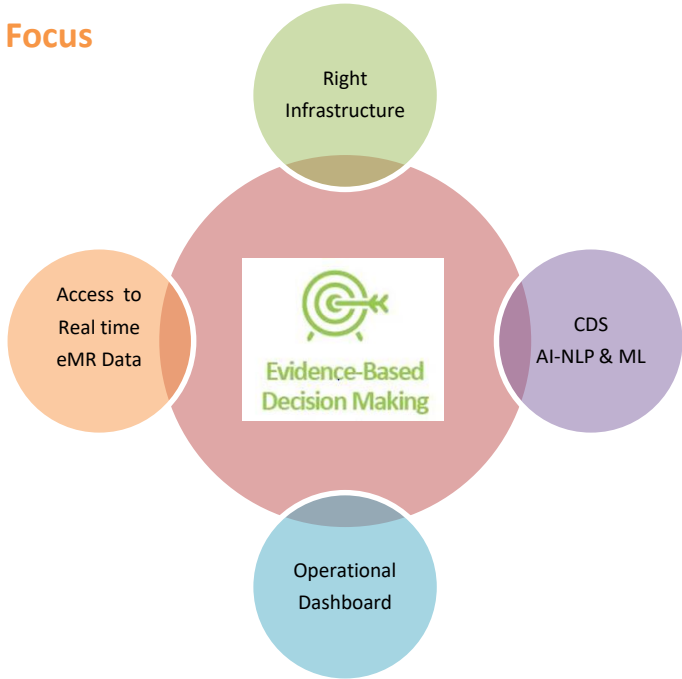
## OUR VALUES

Collaboration | Openness | Respect | Empowerment



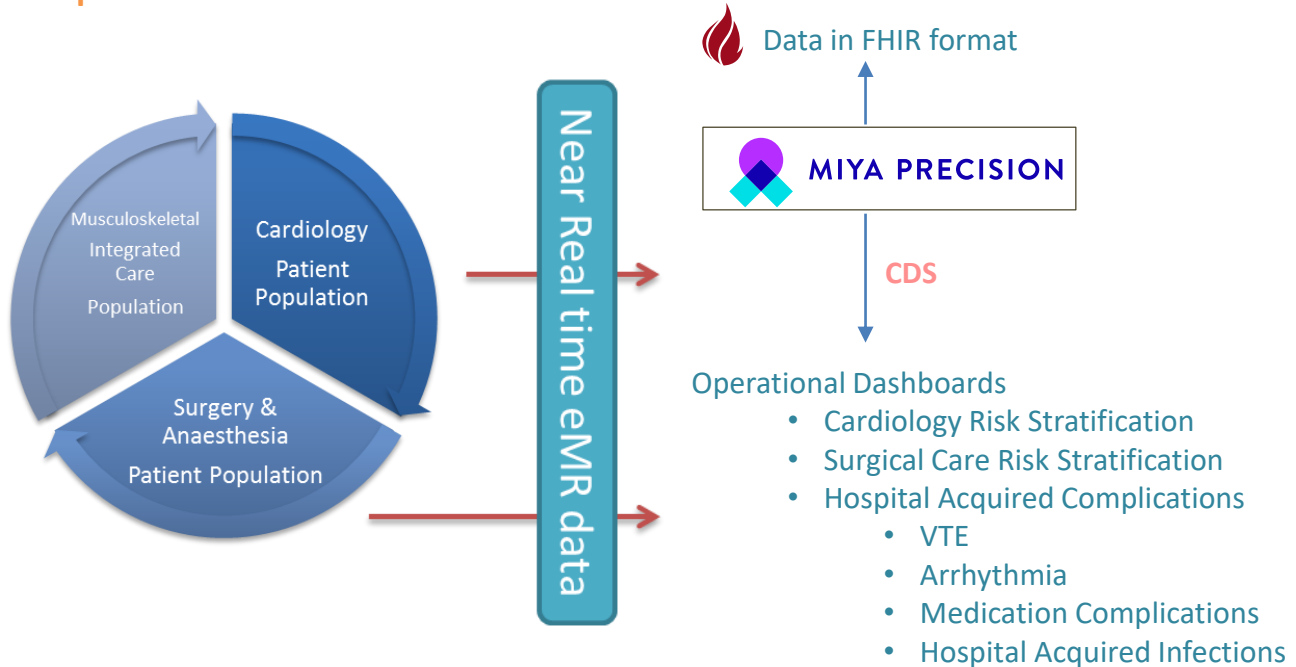
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## Focus

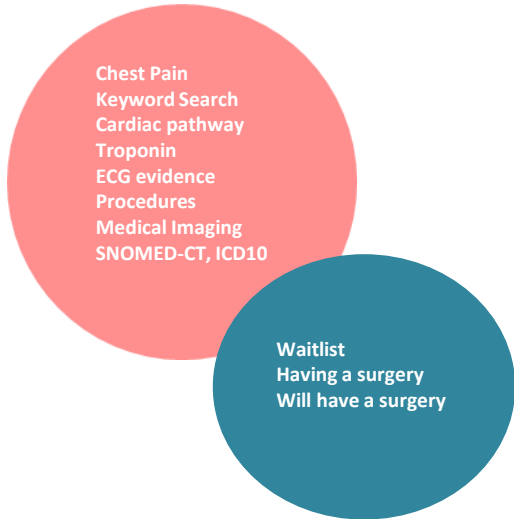


- Improve quality and safe care
- Improve the patient experience of care
- Improve health outcomes
- Improve clinical, business and organisational practice

## Project Scope



## Targeted patient cohorts



## Patient Level

Demographics, Providers  
Allergies, Alerts  
Chronic Conditions  
Histories – Family, Social, Past Medical

## Visit Level- Patient Journey

Admission, Transfer, Discharge  
Pathology Orders & Results  
Radiology Orders & Results  
Diagnosis , SNOMED CT & ICD10  
Vital signs via BTF & iView  
Medication  
Perioperative surgical care  
Clinical Doc (Clinical Notes, Scanned Doc)  
Discharge process

## Infrastructure – Miya/FHIR

### Cerner to FHIR Mapping

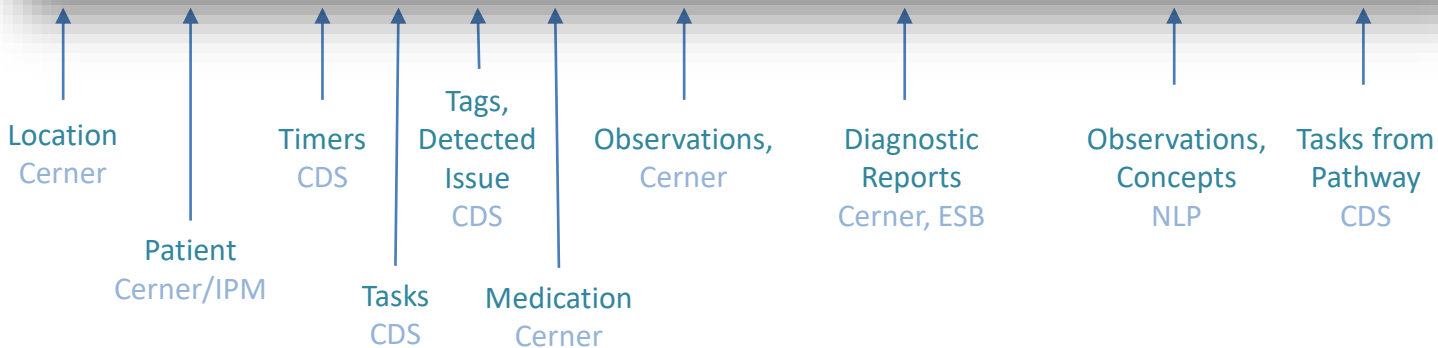
- Patient, Practitioner
- Organisation, Location
- Appointments, Procedure
- Encounter, Episode of Care
- Observation, DiagnosticReport
- ClinicalImpression (Clinical notes)
- Flag, AllergyIntolerance
- MedicationRequest, MedicationAdministration
- Tasks, ServiceRequests (Referrals)

### Generated by AI & CDS in Miya Precision

- DetectedIssues (Clinical risks via CDS)
- Communications, Notifications (via CDS)
- Concept identification within ClinicalImpressions (via NLP)
- CDS Observations (via CDS)
- Tasks, ServiceRequests (via CDS)
- 'Tags' of patient cohorts (via CDS)

## Operational Dashboards (Example Configuration)

Location	Demographics	Presentation	ECG	ACS Status	Asprin	Obs	Troponin & Labs	Risks	Tasks	
ED A Rm 3 Ambulance	<b>Jones, Andrew</b> ID 029348203	M 24 min 76 y	Done Dr to read 8 min	In Progress Int. Risk	Given 300mg @ 15 min	5 min ago BP 185/105 Pulse 78 bpm SpO2 97 %	hs cTN 1 15 ng/mL @ 20 min ago hs cTN 2 in 100 min Delta cTN	Hb pending Cr pending eGFR pending	CAD Risks 2 Symptom Moderate Some atypical Killop Class I	<input checked="" type="checkbox"/> Thrombolysis consent <input checked="" type="checkbox"/> PCI consent <input type="checkbox"/> Dr to review ECG
3A Rm 12 ED Self	<b>Keen, Amanda</b> ID 8239272278	F 145 min 84 y	Persistent ST T 6mm	ACS High Risk	C/I On other anticoag	15 min ago BP 145/85 Pulse 72 bpm SpO2 96 %	hs cTN 1 70 ng/mL @ 10 min hs cTN 2 82 ng/mL @ 140 min Delta cTN 12 ng/mL	Hb 110 µmol/L 15:35 22-Nov Cr 75 µmol/L 15:35 22-Nov eGFR 62 mL/min/ 15:35 22-Nov	CAD Risks ≥ 3 4 risks Symptom High Typical, sustained Killop Class III	<input type="checkbox"/> Thrombolysis excluded <input checked="" type="checkbox"/> PCI booked, team notified <input checked="" type="checkbox"/> PCI consent <input type="checkbox"/> Transfer





## AI support – NLP

Patient not in acute **distress**. **Congestive heart failure** due to **rapid atrial fibrillation** and **systolic dysfunction**.  
First and second **heart sounds** are heard. No **murmur** was appreciated



### Disease or Syndrome

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C0018802 Congestive heart failure  
C1281999 Rapid atrial fibrillation

### Pathologic Function

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C0749225 Systolic dysfunction

### Diagnostic Procedure

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C2230284 auscultation of heart sounds

### Finding

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C0231303 ! Distress  
C0018808 ! Heart murmur

## Next Step

- Enhance the integration layer to use 'Miya Real time' for real time events
- Include other patient cohorts
- Provide enhanced notifications to Medical Officers via mobile devices
- Explore different models of integrating decision support into the clinical workflow
- Leverage the Miya standards based FHIR interoperability platform to support other external algorithms such as the CSIRO readmission prediction model
- Leverage FHIR to support innovation from multiple vendors

## Acknowledgement

- NSCCLHD ICT Unit
- NSLHD Performance & Business Intelligence Unit
- Alcidion
- Centre of Translational Data Science Team, The University of Sydney