

# Artificial Intelligence in NSW Health

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Jun 2024

Mona Thind

Transitional Research Grant Scheme  
Round 9

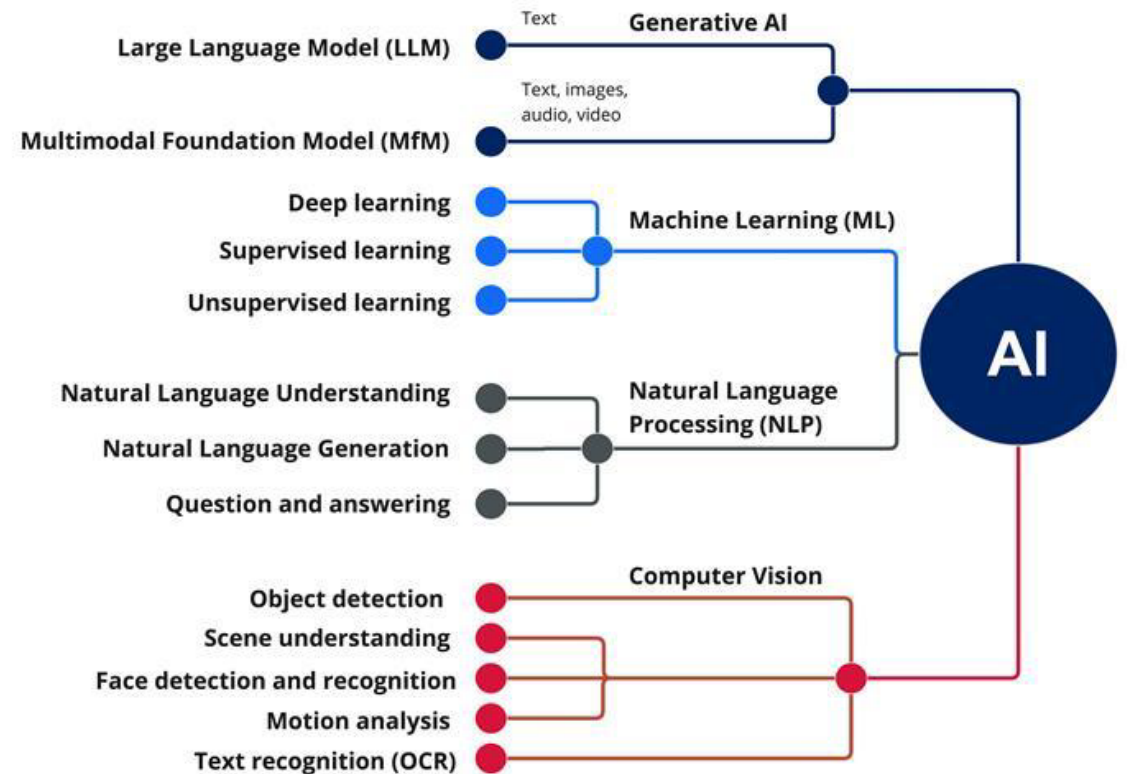
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AI Rx: Prescribing AIAF  
for Smarter Healthcare  
Risk Management

# What is Artificial Intelligence

Artificial Intelligence (AI) is the ability of a computer system to perform tasks that would normally require human intelligence, such as learning, reasoning, and making decisions.

AI encompasses various specialised domains that focus on different tasks. Examples include Machine Learning, which enables computers to learn from data; Computer Vision, allowing them to interpret visual information; and Natural Language Processing, for understanding and generating human language.



*Ref: A common understanding: simplified AI definitions from leading standards / Digital.NSW*

# Artificial Intelligence

*And managing the prevalence of AI in NSW Health...*



Artificial intelligence (AI) development and use within NSW has been increasing and is now in use across multiple agencies.

NSW Government is committed to ensuring the safe, ethical, and responsible deployment of AI across NSW.

As NSW Health continues to harness the potential of AI, NSW Health also remains committed to managing its risks.

NSW Health has adopted the mandated NSW AI Assessment framework (AIAF)

In applying the AIAF, opportunities for improvement have been identified around clinical use of AI, especially in the areas of clinical safety, governance, data, ethics, and legal.

NSW Health has established a time-limited AI Taskforce to develop an operation and strategic framework to guide the use of AI across the health system.

# NSW Health Alignment to AI Framework



Australian Government

## Australia's Artificial Intelligence Ethics Framework

National framework for the assurance of artificial intelligence in government  
**(UNDER REVIEW)**

Voluntary AI Safety Standard  
**(UNDER REVIEW)**



NSW Artificial Intelligence Strategy

NSW Artificial Intelligence Ethics Policy

NSW Artificial Intelligence Assurance Framework



NSW Health

1. NSW Health AI Taskforce
2. Inputs to support an AI risk assessment
  - a) NSW Government AI Self Assessment Checklist
  - b) NSW Health Extended AI questions
3. Support for conducting an AI risk assessment
  - a) eHealth NSW AI Request Submission Form
  - b) eHealth AI review and advisory service
4. Guidance on AI use across NSW Health (under development)

# eHealth NSW AI Advisory Service Overview



*From experimentation to execution-delivering outcomes through targeted, scalable AI solutions*

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## About the eHealth Interim AI Advisory Service

Provides advice and guidance to NSW Health on the NSW Health specific AI considerations in addition to the mandated NSW AI Assessment Framework.

Comprising of representatives from relevant eHealth directorates, eHealth Interim AI advisory service provides the following:

- **Responds to customer request for advice** on AI projects, including on matters of AI model design, use of health datasets, ethics and legal implications etc.
  - **Reviews and triages** incoming AI request submissions with advice from relevant NSW Health SMEs.
  - Guides and advices project teams on AI **self-assessment and submission of documentation** to NSW Government.
  - **Enabling Proof of Concept** across NSW Health for common AI requests.
  - Operationalisation of the **NSW government AI Assessment Framework** to meet compliance.
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# NSW Health AI Centre of Excellence



*From experimentation to execution-delivering outcomes through targeted, scalable AI solutions\**

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As we look ahead to the coming year, NSW Health will focus on establishing an AI Centre of Excellence (CoE) dedicated to advancing the implementation of high-priority, high-impact AI solutions across our system.

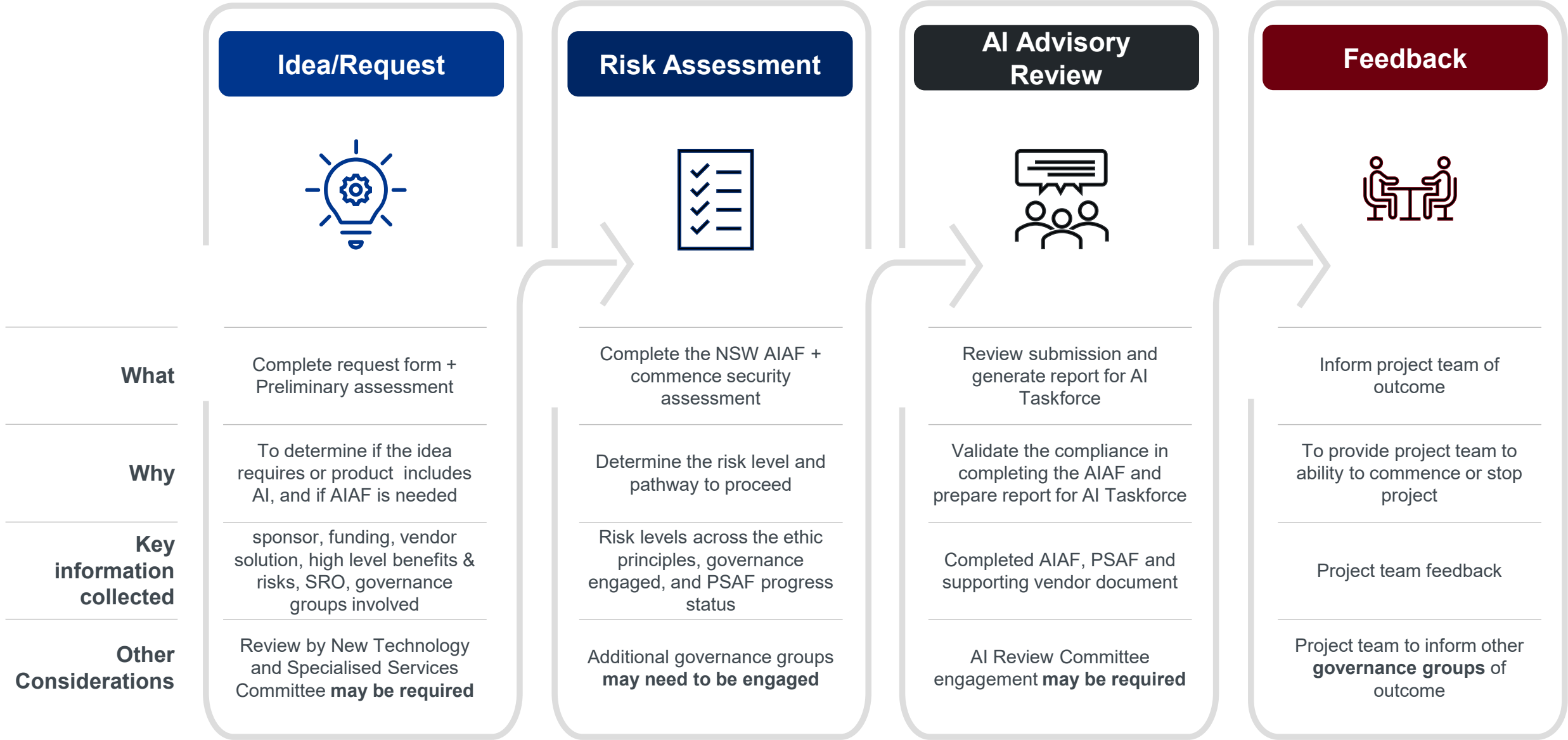
The CoE will balance innovation, governance, and equitable healthcare delivery while ensuring scalability and ethical AI adoption.

The CoE will specifically:

- **Prioritise & Scale:** Focus on high-value AI use cases with system-wide benefits.
- **Build Capability:** Develop internal skills, tools, and frameworks for sustainable AI adoption.
- **Ensure Quality:** Promote best practices, governance, and ethical AI standards.
- **Foster Collaboration:** Connect teams, share learnings, and reduce duplication.

# eHealth NSW AI Advisory Service Process

While we establish future governance state...



# Thank you

## Questions?

[ehnsw-aiadvisory@health.nsw.gov.au](mailto:ehnsw-aiadvisory@health.nsw.gov.au)



# Appendix

# A1

## Overview of AI Taskforce

# NSW Health AI Taskforce

As NSW Health continues to harness the potential of Artificial Intelligence (AI), NSW Health also remains committed to managing its risks.

NSW Health has adopted the mandated NSW AI Assessment framework (AIAF) which assists stakeholders to analyse AI system risks, implement mitigation controls, and establish accountabilities.

In applying the AIAF, opportunities for improvement have been identified around clinical use of AI, especially in the areas of clinical safety, governance, data, ethics, and legal.

NSW Health has established a time-limited AI Taskforce to develop an operation and strategic framework to guide the use of AI across the health system



# NSW Health AI Taskforce (con't)



## NSW Health AI Taskforce

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- In early 2024, NSW established a time-limited Taskforce of senior leaders / experts to guide AI use in healthcare.
- The Taskforce meets every two months and reports to the Ministry of Health Executive.
- It aims to adapt a whole-of-government approach to the healthcare context.
- Responsible for developing a **strategic and operational framework** to guide the use of AI in the public health system.

## Working Groups

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- Four Working Groups were established, each allocated with developing specific components of the Framework:
  1. Ethics, legal and workforce
  2. Data assurance, policy, governance, and procurement
  3. Clinical safety and governance
  4. Communication, change management, consumer awareness and expectations, training and education

# A2

## Overview of NSW Health AI Framework

# Development of the NSW Health AI Framework



## AAAIH Roadmap

Provides guidance  
for AI priority areas in  
healthcare



## Taskforce Working Groups and Workshops

Consultation provided  
recommendations  
from across NSW  
Health for  
consideration by the  
Taskforce



## Latest Evidence

CIU continues to  
gather latest evidence  
on AI supporting  
healthcare



## Principles Policy and Practice

Applying guidance,  
recommendations and  
latest evidence to the  
NSW Health context

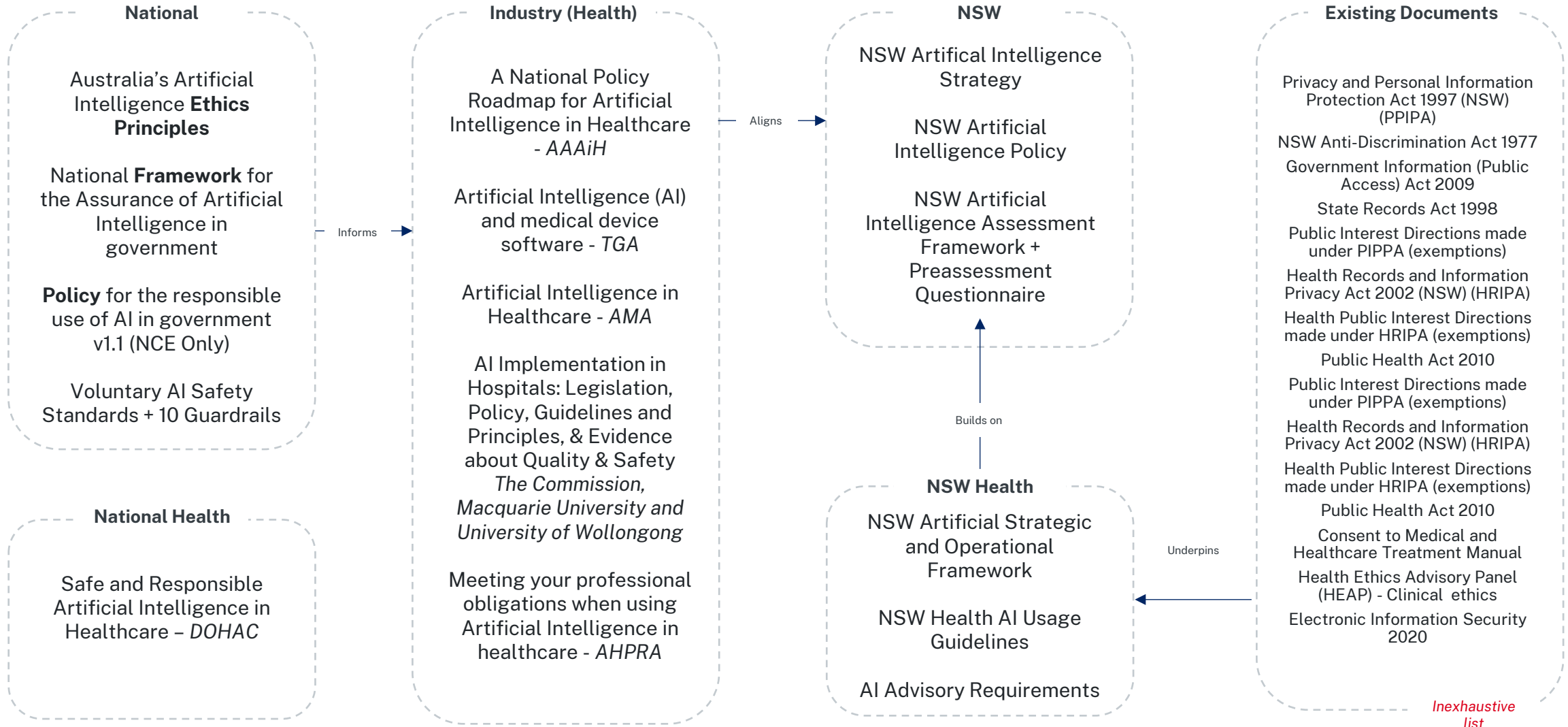


## Taskforce Review and Targeted Consultation

*Feedback and  
guidance from the  
Taskforce and key  
governance groups*

# Relevant Documents

For NSW Health to consider....



## Principles

Safety, ethics  
and quality

Privacy and  
security

Governance  
and regulation

Research and  
development

Workforce

Consumers

Industry

Human-centred values  
Fairness  
Inclusiveness & equity  
Transparency &  
explainability  
Balance benefits &  
harms

Safeguard patient  
privacy  
Secure data

Accountability  
Intersectoral /  
interjurisdictional /  
international cooperation  
and coordination

Harness expert  
guidance in AI  
development and  
implementation  
Foster an AI research  
ecosystem  
Transparency and  
explainability in new  
models

Democratise AI  
Understand knowledge  
and skills gaps  
Build trust  
Build human capacity

Help **all** citizens benefit  
from AI / Equity  
Build trust  
Patient rights and choice  
Contestability

Support local industry to  
develop clinical and  
economic benefits

## Policy

Invest in human capacity  
Foster AI risk / benefit  
mgt  
Policy mapping and  
testing  
Legal protections  
Consumer / social  
licence

Cybersecurity  
Codify developer  
minimum standards  
Guide data governance  
and use  
Procurement standards  
Intellectual property

Embed distributed  
leadership  
Foster enabling policy  
environment / digital  
ecosystem for AI  
Regulation / Standards  
Financial models  
Leverage NSW Health  
data assets

Support creation and  
translation of new  
technologies  
Engage R&D ecosystem  
Advocate for funding  
programs  
Access to secure data

AI literacy framework  
Career enhancements /  
pathways / skillmix  
Accredit training  
programs  
Codify clinical  
accountability

Foster AI literacy  
Agree social licence  
Foster equity  
measurement  
Require user testing

Engage with whole of  
government innovation  
strategies  
Provide support and  
incentives to invest  
Industry standards  
Procurement policy  
Timely assessment

## Practice

NSW assurance  
framework + health lens  
Risk assessment  
Clinical governance  
Incident management  
Validation  
Disclosures  
Training / Education

Assessment for model  
bias  
Training and education  
SOPs  
Privacy preserving  
models

Thinktanks  
Communities of Practice  
Post marketing  
surveillance  
Steering Committees  
AI Clinical guidance

AI fellowship program  
Establish AI lab  
AI pipeline  
Support clinician  
researchers  
Implementation support

Communication and  
culture change  
Training / Education  
Job enrichment  
Time for care  
Change management  
Clinical and non-clinical  
decision support

Foster self-care  
Socialise use of safe  
chatbots  
Communication  
Demonstration

Provide access to data in  
secure environment  
Facilitate safe access to  
the health ecosystem  
Procurement processes  
Partnerships



# A3

## Overview of AI Initiatives

# AI Register

The AI Register, managed by the eHealth NSW interim AI advisory service, serves as a centralised register to track all AI initiatives across NSW Health.

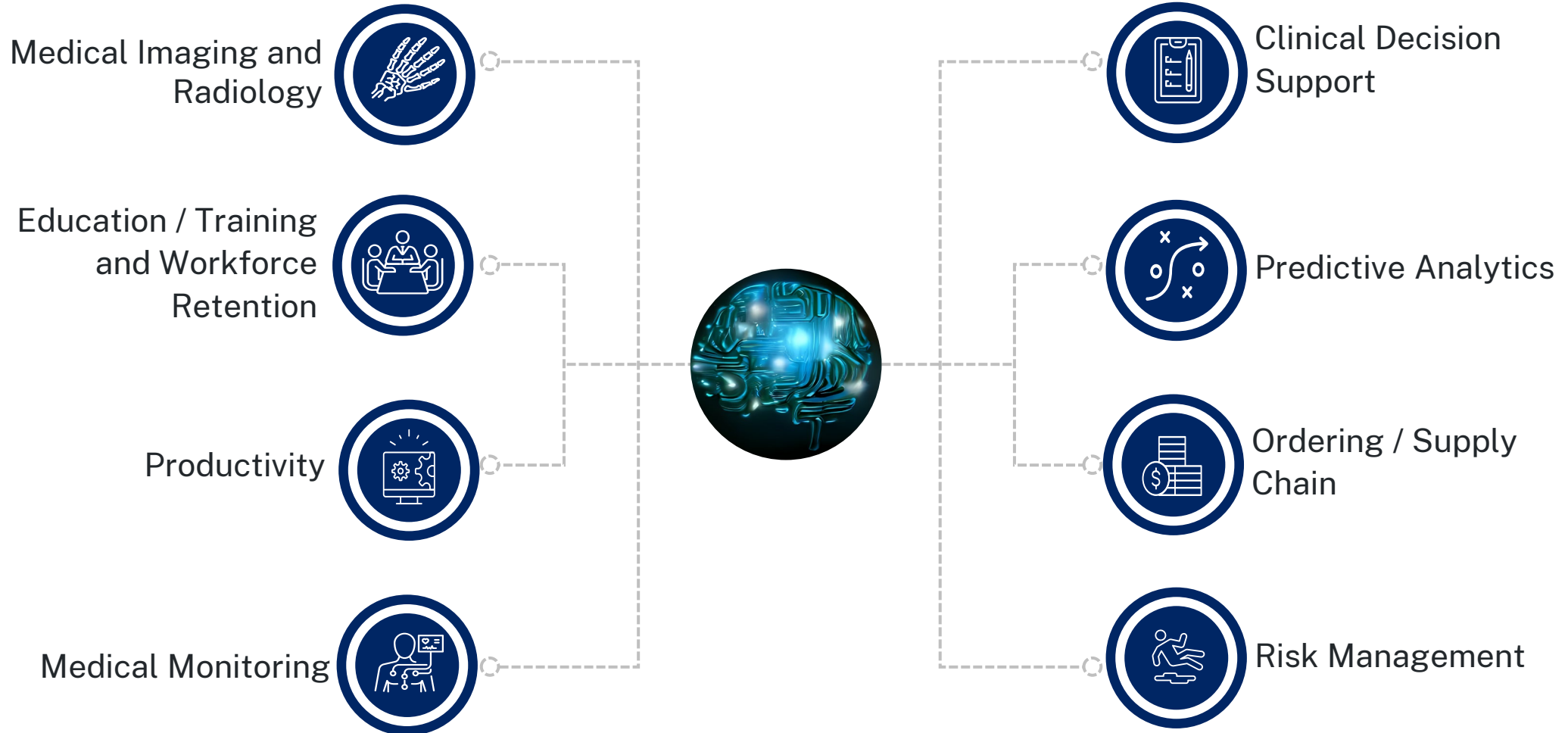
The register:

- Provides transparency on AI projects underway at NSW Health to avoid duplication and enable collaboration
- Provides visibility into the status, progress, and details of each AI project, which is crucial for stakeholders and team members
- Enables monitoring the compliance of AI initiatives against the mandated NSW AI Assessment Framework (AIAF).
- Reporting to help inform strategic decision-making.
- Serves as a valuable repository of historical data, which can be used for future planning and decision-making

ID	Title	Description	NSW Health	Implementer	Project Lead	Comments	
1	Machine technology in administrative decision-making	Develop and deploy ADM in a way that complies with administrative law and good administrative conduct requirements.	Agency for Child...	Not known	Kashif Magbool	10/8/24 Message on Teams (AKO) 20/4/24 - update via email received from Mel Trindley (20/4) project is under ACI and not an 18/7/22 - Lachlan Ruffin previous Director of Data and Analytics Portfolio NSW Health confirmed in meeting dated 18/07/2023 that this is not an AI project and therefore does not require an AI Assurance assessment. The project follows a 2023 special report to Parliament entitled, 'The new machinery of government: using machine technology in administrative decision-making' that highlighted the need for this research to: a. increase visibility of when and how administrative decisions are automated b. understand the impact of increasing digitalisation in the public sector and c. practically support agencies to develop and deploy ADM in a way that complies with administrative law and good administrative conduct requirements. Contact: Anesh Shetty, Clinical Director, System Sustainability and Performance (anesh.shetty@health.nsw.gov.au) or Ruby Fitzmaurice, A/Chair, Office of the Deputy Secretary, Clinical Innovation and Research (Ruby.Fitzmaurice@health.nsw.gov.au)	Proj prio
2	Procurement Analytics	Program that looks at free text users enter when ordering and using natural language processing prompt appropriate catalogue items to select	eHealth NSW		Ryan Jahn	Ryan Jahn's email dated wed, 1 Nov 2023 The Cash Forecasting and the Procurement Analytics have been in use prior to March 22 and use common ML algorithms over private data sets contained wholly within the StaffLink application and include human in the loop to make any decisions.	1/11
3	Cash forecasting	Predicts cash forecast based on previous periods and accruals in general ledger for treasury in Oracle Enterprise Planning Management cloud	eHealth NSW		Ryan Jahn	See Ryan Jahn's email dated wed, 1 Nov 2023 The Cash Forecasting and the Procurement Analytics have been in use prior to March 22 and use common ML algorithms over private data sets contained wholly within the StaffLink application and include human in the loop to make any decisions.	1/11
4	Scenario Modelling	ED flows and Radiologic Flow of Paramedics are in the ED how does that impact wait times Adding beds to specialist centres, how quickly will people be seen	Agency for Child...	SAX Institute	Kim Sutherland	16/4/24 - as per Lucy's email - this project to be removed as they are not AI or simulation models	189 Proj prio
5	KPI Predictive Analysis, SESLHD	-Predicting likelihood for readmission on day of discharge -Hospital acquired complications- health risk predictors	South Eastern L...		Thao Phan	25/08/2024 - Project put on hold for the financial year 25/08/2024 - message via Teams chat (SL) - "Hi team, the district's AI initiative KPI Predictive Analysis has been put on hold, the focus and priority is on ED/MSD data quality for this financial year"	25/8
6	Elective Surgery	Prediction on when overdue elective surgeries will be seen and alternative facilities to reduce the backlog	Gateway Children	Data Robot	Swarni Nityagatpy	1/10/24 - as per Swarni project not going ahead as this was associated with the vendor Data Robot 25/8/24 SL - Quick chat with Swarni today, she'll take up the project team and confirm status update. She is not the project lead but is across with project and wants to be contact. An email has been sent out today. 25/8/24 - message in Teams chat (SL) Micheline is no longer in project as moved to another LHD. Updated contact as Swarni's. Quick chat planned 26/8/24.	1/10 Proj prio
7	CaSPA	Population projection model	Ministry of Health		Gerard Duck	30/8/24 SL - email sent out. Gerard CaSPA is not an AI initiative and does not contain any AI, so it is not applicable. 25/08/24 - Nicholas has advised to contact Gerard Duck (Director Strategic Analysis and Investment Unit) 24/08/24 - message in Teams chat (SL) Nicholas is no longer in project contact. He will try to find and come back.	30/8
8	Now Assist - Gen AI Enablement	Now Assist uses generative AI that is designed to enhance user productivity and efficiency through conversation and proactive experiences. Key features include: - Explore and configure AI capabilities. - Analyse skill performance. - Customise experiences with the Generative AI Controller.  This will enhance productivity and information is obtained faster therefore will address quicker customer resolution and service experience. In addition, time savings in productivity and	eHealth NSW	ServiceNow	Paul Kim/Stephen Ibbotson	4/12/24 SL - AIAF Feedback with low risk completed and emailed to Paul Kim 14/12/24 SL - AIAF Feedback and sent back to Paul Kim 6/10/24 SL - AIAF documents received	6/12 and

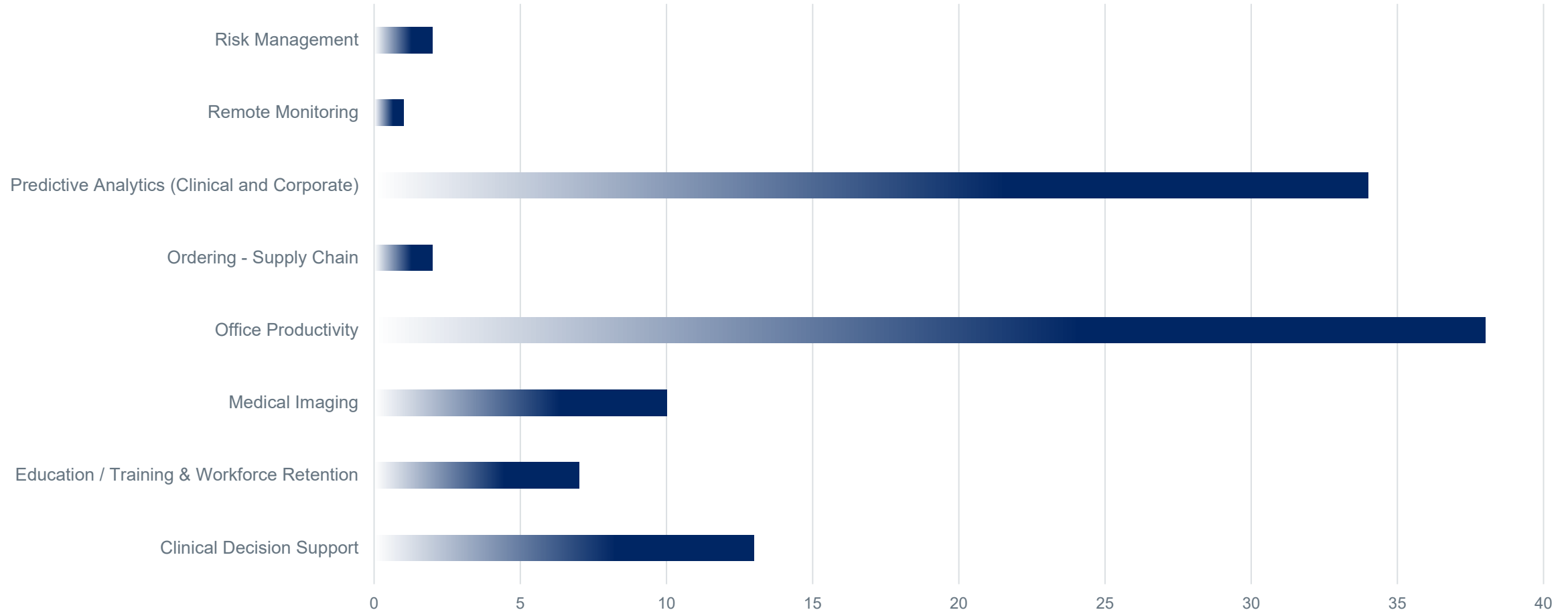
# NSW Health Use Case Themes

*Driving improved health outcomes...*



# What is the spread of requests

*Who is really asking for what...*



# NSW Health AI Initiative

*That have navigated the AIAF...*



## SEPSIS

Clinical decision support tool (CDST) that combines relevant information from EMR. Using an algorithm trained on historic data concerning patients with sepsis to create a risk score for clinicians to be able to identify people at the greatest risk of sepsis.



## Breast Screening

Digital product which uses the latest developments using deep learning derived algorithms in image recognition technology to detect early cancers in screening mammograms.



## Telestroke

A cloud-based service for automating the ingestion, transformation, analysis, and consumption of Telestroke data sources too automate and modernise the operational reporting for assessing the NSW Telestroke Service's.



## Tissue Analytics

App that specialises in virtual assessment and monitoring of wounds. Uses AI to measure wound size, progression, and records this as a photograph and pdf that is uploaded into the electronic medical record (EMR).



## CoPilot

To enhance productivity by simplifying document creation, information gathering, and review processes by acting as a “personal assistant” to streamline support functions and content delivery.

# A4

## Early Lessons Learnt

# What we have learnt so far

And continue to learn...



<p>Interpretation of questions on the NSW Gov AI Assurance Framework is subjective. For example, understanding de-identified health data; non-sensitive data; public datasets</p>	<p>De-identification of any data is complex. <b>How will data be de-identified?</b> Using the IPC NSW Guidelines? <b>Further, will metadata also need to be de-identified?</b></p>	<p>There is confusion about Governance and reporting requirements for different types of projects (In-application release by vendor, PoCs, Pilots, Research, Scaled roll-outs, Private Uni led projects etc.)</p>
<p>Research and Innovation projects are reluctant to complete documentation before outcome of the trial is known.</p>	<p><b>Are all sections relevant for all projects?</b> For example, if project uses public non-sensitive data, and does not integrate with systems, is the complete documentation still required?</p>	<p><b>Do I require a HRIA (Human Rights Impact Assessment)? Is there advice around who determines this? When to apply? What specific Acts are applicable?</b></p>