NSW Health Pathology
ICT Strategic Snapshot

A summary of the **NSW Health Pathology ICT Strategic Plan 2015-2020**
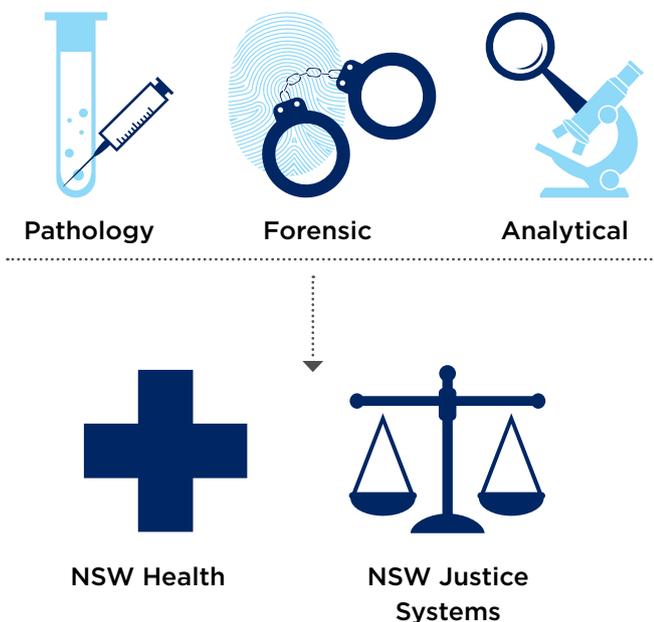
NSW GOVERNMENT | **Health** Pathology

Overview & Outlook of ICT Environment

NSW Health Pathology

NSW Health Pathology is responsible for delivering pathology, forensic and analytical science services to the NSW health and justice systems.

Our pathologists and scientists collaborate with clinical teams, providing interpretation and advice critical to the delivery of quality care. Our forensic science teams are world leaders in providing the analysis and intelligence investigators need to solve crimes.

Pathology   Forensic   Analytical

NSW Health   NSW Justice Systems

Information and Communications Technology (ICT)

ICT is required to support these activities at both the corporate level (Corporate ICT) and as a tightly integrated element of the specialist medical and scientific activities carried out within the laboratory environment (Clinical IT).
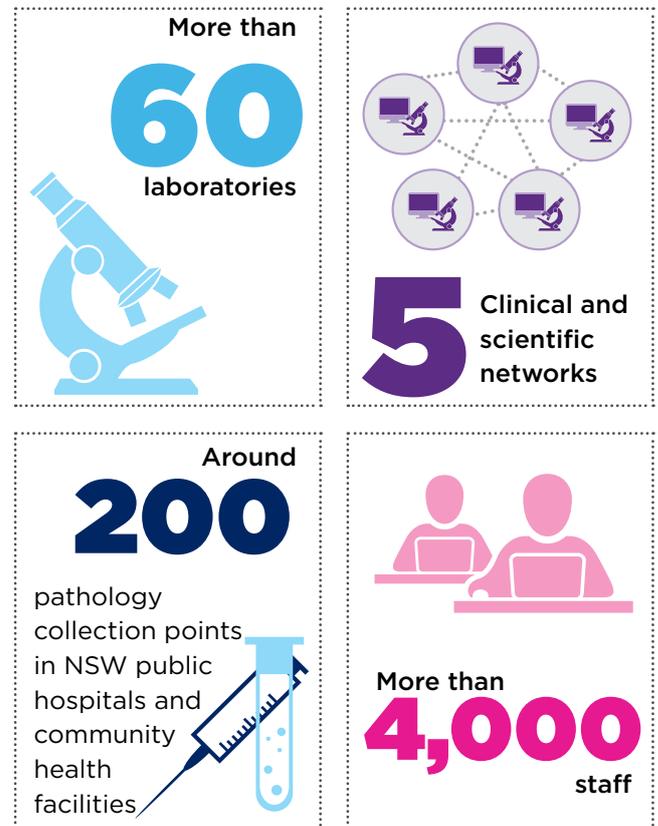

Corporate ICT   Clinical IT

A Complex System

When NSW Health Pathology was created, it brought together five clinical and scientific networks, each with their own ICT systems and applications intentionally designed to ensure their clinical and scientific services met the very specific needs of their customers.

Consequently, the existing ICT environment is complex, fragmented and fiscally and operationally inefficient through the support it provides to:

More than
60
laboratories

5
Clinical and scientific networks

Around
200
pathology collection points in NSW public hospitals and community health facilities

More than
4,000
staff

Fiscal Challenges

Our ICT operational costs are difficult to estimate as our current systems are configured and supported in a variety of ways. These differences obscure our ability to determine value for money of our ICT investments.

$$$$$$????

Benefits of a Statewide Approach

To realise the benefits of a statewide approach to the delivery of Corporate and Clinical ICT, existing systems within NSW Health Pathology need to be integrated and aligned to the organisation's structure and strategy to:

Build a strong, responsive and more contestable organisation

Deliver quality results to support faster, better outcomes

Improve efficiencies to and within our customer organisations

Meet our regulatory requirements

Support integration and standardisation efforts

Remove barriers to collaboration internally and with our customers

Increase transparency in reporting service activity and performance

Promote faster, simpler processes for the trial and deployment of new services

Support the use of new laboratory technologies

Secure fiscal and operational economies of scale through standardisation

ICT Strategic Vision

By leveraging ICT in the Clinical and Corporate settings we will enable NSW Health Pathology to realise the benefits of statewide consolidation and create a more contestable organisation by fostering innovation, driving efficiency gains and facilitating collaboration.

This will be achieved through a strategic focus on:

1. Clinical IT

2. Corporate ICT

3. Governance and Management

Strategic Snapshot

1. Clinical IT

Clinical IT refers to the diverse collection of IT systems supporting our laboratory operations. The Laboratory Information Systems (LIS) are the central system for this support with integration to testing instruments, processing and the capture and reporting of results.
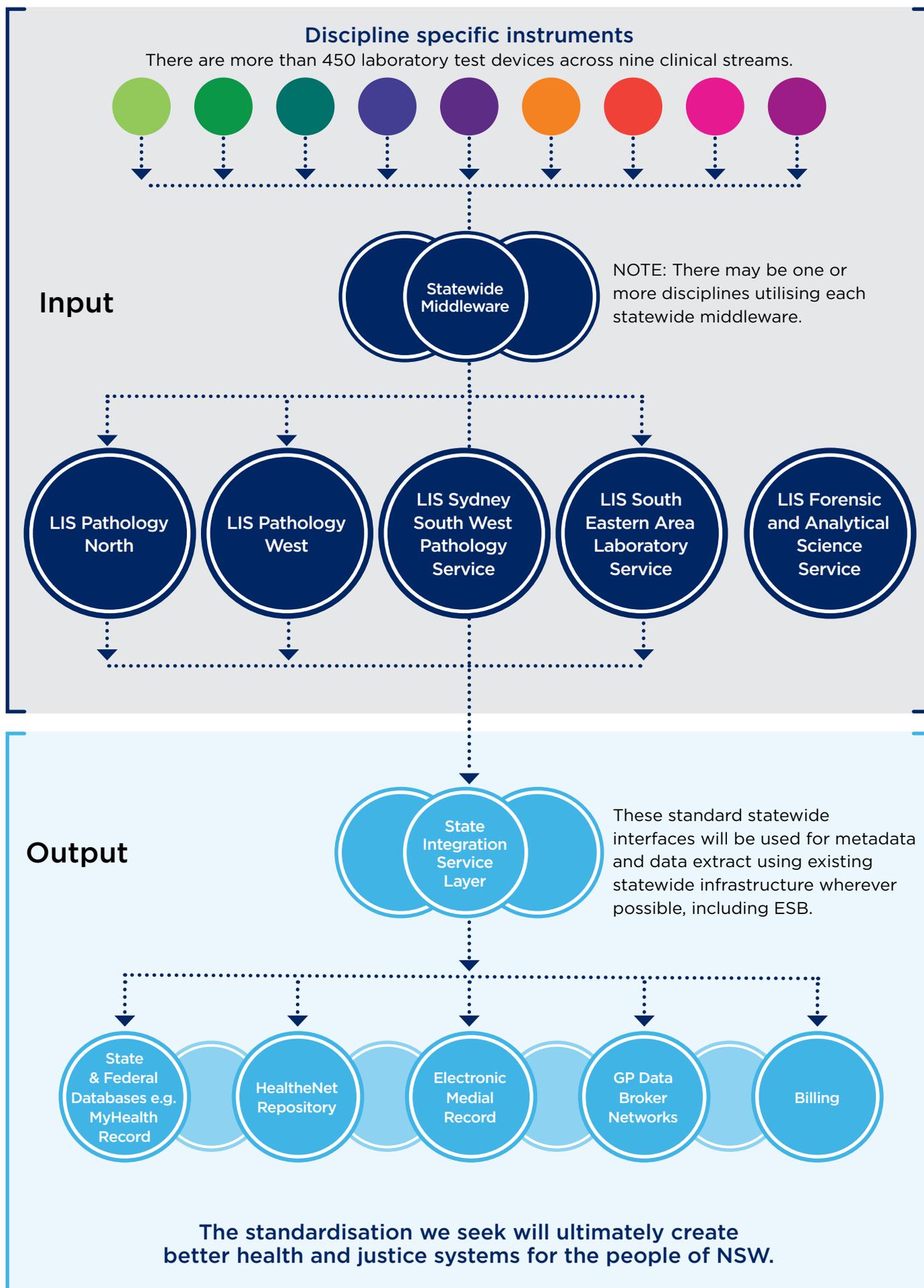
Existing Challenges

These systems have evolved alongside related hospital systems and in some cases are closely integrated to them. The diversity and fragmentation of existing systems adds complexity to statewide initiatives for test/data standardisation, financial and performance reporting and consolidated billing. It also reinforces the boundaries which exist between networks, creating a further barrier to collaboration.

Strategic Priorities

Strategic Direction	Where we will be in 5 years
Standardised Test Directory	• Pathology test directories consolidated to a set of standard tests, with standard nomenclature and where possible comparable results
System Standardisation	• Pathology discipline level middleware will support standard statewide services • Key pathology systems should be standardised (e.g. blood management, quality systems) • Work initiated to deliver a single LIS across the state
Data Extracts from Network Laboratory Information Systems (LISs)	• Statewide database implemented with near real-time extraction of metadata from all LISs • Billing system implemented • Business intelligence rules and reporting implemented to provide management visibility of laboratory activity and data visualisation • Benchmarking implemented • Personally Controlled Electronic Health Record (PCEHR) requirements supported • Single statewide result repository
Statewide Test Data Available	• Standardised extraction for clinical and secondary uses • Statewide approach to providing external clinical reporting implemented (portal, app and/or machine to machine interface)
Middleware Applications	• Support Clinical Streams' drive for statewide standards by implementing statewide middleware systems for all new test device purchases, and for new discipline-specific technologies
Inter-LIS Communications	• Electronic orders and results established between networks and externally
LIS Consolidation	• Opportunities identified to reduce the number of LIS implementations ahead of single state LIS

The consolidation to a single statewide LIS is desirable, but practical transition timeframes will be long. Many of the benefits of a single LIS will be achieved in the shorter term by using statewide middleware and service layers to allow integration between LISs.

Statewide Conceptual Architecture

Discipline specific instruments
There are more than 450 laboratory test devices across nine clinical streams.

Input

Statewide Middleware

NOTE: There may be one or more disciplines utilising each statewide middleware.

LIS Pathology North

LIS Pathology West

LIS Sydney South West Pathology Service

LIS South Eastern Area Laboratory Service

LIS Forensic and Analytical Science Service

Output

State Integration Service Layer

These standard statewide interfaces will be used for metadata and data extract using existing statewide infrastructure wherever possible, including ESB.

State & Federal Databases e.g. MyHealth Record

HealtheNet Repository

Electronic Medial Record

GP Data Broker Networks

Billing

The standardisation we seek will ultimately create better health and justice systems for the people of NSW.

2. Corporate ICT

Corporate ICT comprises computers, communications, telephony and associated software applications. NSW Health Pathology has up to 11 entities including Local Health Districts (LHDs), eHealth and internal groups which provide Corporate ICT services at some level.

Existing Challenges

The LHDs have over a considerable period of time developed their Corporate ICT to ensure pathology services are aligned to the specific needs of their customers. This presents a complex and fragmented Corporate ICT environment and poses major barriers to changing service configurations and improving productivity and workflows.

Strategic Priorities

Strategic Direction	Where we will be in 5 years
Statewide Desktop Computing Environment	• All services will use a Standard Operating Environment (SOE) for desktop computing • All staff will be members of a single user directory • Rich collaboration services will be available including messaging and presence (ability to see others' availability in real time)
Statewide Centralised Data Centres	• New server systems aligned to statewide business initiatives • New (from 2015) Corporate or Clinical IT server systems deployed to be centralised to NSW all-of-Government or NSW Health data centres where possible • Pre-existing server systems will be re-deployed to centralised data centres, triggered by upgrade
Statewide Telephony Environment	• All networks will use a single, statewide telephone system with internal extension dialling to all sites
Mobile Devices	• Support for mobile devices to access SOE and selected applications • Support for personal devices (BYOD)
Desktop and Server Licensing	• NSW Health Pathology will comply with statewide licensing strategy as a distinct entity (not captured within LHD and eHealth licenses) • Transitions will improve licence terms and deliver savings

3. Governance and Management

Good governance and a consolidated ICT team will allow us to realise our strategic ICT priorities, deliver monetary and operational benefits, and ensure NSW Health Pathology remains a contestable organisation.

Strategic Priorities

Strategic Direction	Where we will be in 5 years
Effective and efficient decisions relating to IT procurement, delivery and management	• ICT investment decisions will be made via the standard procurement process, guided by the ICT strategy and architecture • ICT policies will be developed, managed and centrally stored • ICT will provide the underlying infrastructure and management services, while business users will drive acquisition and development of application services

Strategy In Action

Our future is in the cloud

NSW Health Pathology's strategic ICT projects will be delivered using a variety of platforms determined by the project type, location and organisational proficiencies. Where appropriate, cloud services will deliver scale economies, improve efficiency, promote flexibility and sustain contestability within NSW Health Pathology.

ICT Strategic Projects already utilising cloud technology

Artificial Intelligence System

Strategic Outcome: Help deliver public health outcomes in cancer detection and treatment.

Project Status: Operational

Mobile App

Strategic Outcome: Establish a digital service and communication channel with customers.

Project Status: In development (target Q4/2016)

Genomics Systems

Strategic Outcome: Bring state-of-the-art genomics technologies and worldwide expertise to our diagnostic services.

Project Status: In development (target Q4/2016)

Analytics

Strategic Outcome: Extract additional clinical value and public health intelligence from test data.

Project Status: In design (target Q1-2/2017)

How will this benefit

1. Our Customer Organisations

A statewide approach to the delivery of Corporate and Clinical ICT will play a critical role in improving efficiencies, delivering faster and better clinical outcomes and removing barriers to collaboration.

2. Our Staff

Streamlined workflow will create better and more timely access to information. A more collaborative work environment will help staff excel in their roles. New technology will create new and enhanced services and provide skill development opportunities and career pathways for staff.

3. Our Service Users

Our services touch people at every stage of life. The standardisation we seek will ultimately help us create better health and justice systems for the people of NSW.

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