

Revolutionising LIMS: Integrating NSW Health Pathology 66 Labs with a Unified Lab Information Management System



Australian Healthcare Week
19/20 March 2025

Presenter: Juliana Iles-Mann,
Program Director, NSW Health
Pathology





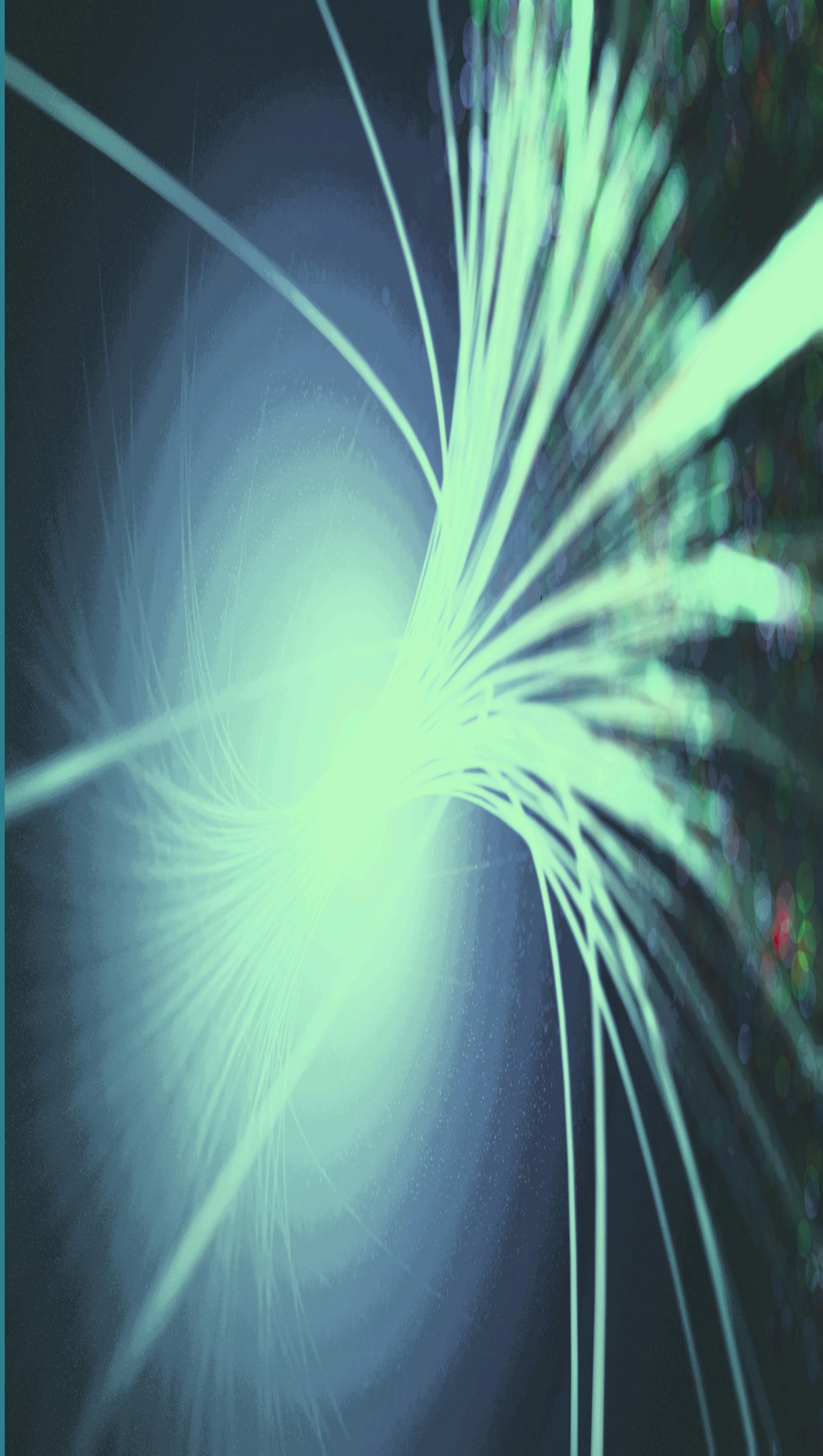
Acknowledgement of Country

NSW Health Pathology acknowledges Aboriginal and Torres Strait Islander peoples of New South Wales and their special place as Traditional Custodians of this land.

Through their sacred cultures and customs, they have nurtured and cared for this land for thousands of years and continue to do so today. We would like to pay our respects to the Elders past, present and emerging, for they hold the memories, the traditions, the cultures and hopes of Aboriginal and Torres Strait Islander peoples across the state.

This artwork was created by Aboriginal artist, Elsie Randall, a proud Yagel/ Bundjalung woman from Maclean and Yamba on the NSW Far North Coast.



Start with “why”	1
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Getting ready for change	5



Start with “WHY”

1



NSW HEALTH PATHOLOGY
SYDNEY SOUTH WEST PATHOLOGY SERVICE
 Locked Bag 7090 Liverpool NSW 1571

APA 1142
 Liverpool BC NSW 1571

Site of Collection: (tick box)
☐ Liverpool ☐ Bankstown ☐ Campbelltown ☐ Camden ☐ Fairfield ☐ Bowral

PATIENT DETAILS
 Surname _____ Patient Identifier (MRN) _____
 No. and Street _____
 Suburb / Town _____
 Account Address (if different from above) _____
 Date of Birth _____ First name _____ Sex M/F _____
 Post Code _____ Ward/Clinic _____
 URGENT: YES/NO _____ FASTING: YES/NO _____

TESTS REQUESTED

CERVICAL CYTOLOGY
 Consent for PTR Yes/No _____
 Site: Cervix Vaginal Other _____
☐ Pregnant ☐ O.C.
☐ Post menopause ☐ Postnatal
☐ Hemorrhage ☐ SUCD
 Appearance: _____
☐ Normal ☐ Ectopic
☐ Suspicious ☐ Abnormal bleeding
☐ Dysplasia ☐ Other tests:
☐ Thin Prep ☐ HPV DNA

CLINICAL NOTES (include medication details e.g. current antibiotics)

Your doctor has recommended that you use _____
 You are free to choose your own pathology provider. However, if your doctor has specified a particular pathologist (APP) on clinical grounds a Medicare rebate will only be payable if that pathologist performs the service. You should discuss this with your doctor.

REQUESTING PRACTITIONER DETAILS
 Doctor's Name _____
 Address _____
 DOCTORS PROVIDER NO: _____
 SIGNATURE _____
 Date _____ Phone _____ Fax _____
 Attending Medical Officer

MEDICARE ASSIGNMENT
 I offer or assign my right to benefits to the approved pathology practitioner who will render the requested pathology service(s) and any eligible pathologist determinable service(s).
 PRACTITIONERS USE ONLY
 PATIENT STATUS _____
 Privacy Note: The information provided will be used to assess any Medicare benefit payable for the services rendered and to facilitate the proper administration of government health programs, and may be used to update electronic records. The collector is authorized by provisions of the Health Insurance Act 1973. The information may be disclosed to the Department of Health and Ageing or to a person in the medical practice associated with this claim, or as otherwise required by law.

COLLECTION DATE: _____
TIME: _____
COLLECTOR'S SIGNATURE: _____
MEDICARE NUMBER: _____
DATE: _____

SCA	CT	PLAS	HEP	FLUC	PY	ROSA	URIC	SPOT	EM	CSF	HAECES	SPIC	1 DAY	SVNS	SPITERS	BC	SLUC	TEST	FORMALIN	FIXED	OTHER	CHECKED BY
-----	----	------	-----	------	----	------	------	------	----	-----	--------	------	-------	------	---------	----	------	------	----------	-------	-------	------------









<input checked="" type="checkbox"/>	Haematology
<input checked="" type="checkbox"/>	Haematology
<input checked="" type="checkbox"/>	Coagulation Studies
<input checked="" type="checkbox"/>	Therapeutic Drug Monitoring
<input checked="" type="checkbox"/>	Endocrinology
<input checked="" type="checkbox"/>	Immunology

<input type="checkbox"/> Sodium Level	133 mmol/L	140 mmol/L	141 mmol/L
<input type="checkbox"/> Potassium Level	4.0 mmol/L	4.2 mmol/L	3.8 mmol/L
<input type="checkbox"/> Chloride Level	92 mmol/L L	102 mmol/L	103 mmol/L
<input type="checkbox"/> CO2 Level	37 mmol/L H	31 mmol/L H	27 mmol/L
<input type="checkbox"/> Anion gap	14 mmol/L	11 mmol/L L	15 mmol/L
<input type="checkbox"/> Urea Level	9.2 mmol/L H	5.0 mmol/L	4.5 mmol/L
<input type="checkbox"/> Creatinine Level	151 umol/L H	76 umol/L	79 umol/L
eGFR	NA mL/min/1.73m	NA mL/min/1.73m	NA mL/min/1.73m
<input type="checkbox"/> Total Bilirubin	5 umol/L	6 umol/L	6 umol/L
<input type="checkbox"/> Serum Protein	90 g/L H	76 g/L	86 g/L H
<input type="checkbox"/> Albumin	45 g/L	41 g/L	41 g/L
<input type="checkbox"/> Tot Globulin	45 g/L H	35 g/L	45 g/L H
<input type="checkbox"/> ALT	14 U/L	61 U/L H	28 U/L
<input type="checkbox"/> AST	36 U/L	54 U/L H	46 U/L H
<input type="checkbox"/> GGT	61 U/L H	149 U/L H	126 U/L H
<input type="checkbox"/> Alkaline Phosphatase Level	163 U/L	156 U/L	283 U/L
<input type="checkbox"/> Calcium Level	2.33 mmol/L	2.33 mmol/L	2.36 mmol/L
<input type="checkbox"/> Calcium Level Corrected	2.23 mmol/L	2.31 mmol/L	2.34 mmol/L
<input type="checkbox"/> Magnesium Level	0.80 mmol/L	0.67 mmol/L	0.55 mmol/L L
<input type="checkbox"/> Phosphate Level	1.72 mmol/L H	1.26 mmol/L	1.55 mmol/L H
<input type="checkbox"/> Iron Level	4.7 umol/L L	13.4 umol/L	5.1 umol/L L, 4.9
<input type="checkbox"/> Transferrin	2.6 g/L	2.8 g/L	2.5 g/L
<input type="checkbox"/> Transferrin Saturation	0.08 % L	0.21 %	0.09 % L
<input type="checkbox"/> Ferritin	25 ug/L * L	29 ug/L * L	63 ug/L *
<input type="checkbox"/> C-Reactive Protein	10 mg/L	2 mg/L	4 mg/L



Harry before septic shock



Harry after septic shock



Place

Time

Knowledge

System



The current landscape

2

NSW Health Pathology | for all of us NSW Health Pathology | for all of us NSW Health Pathology | for all of us

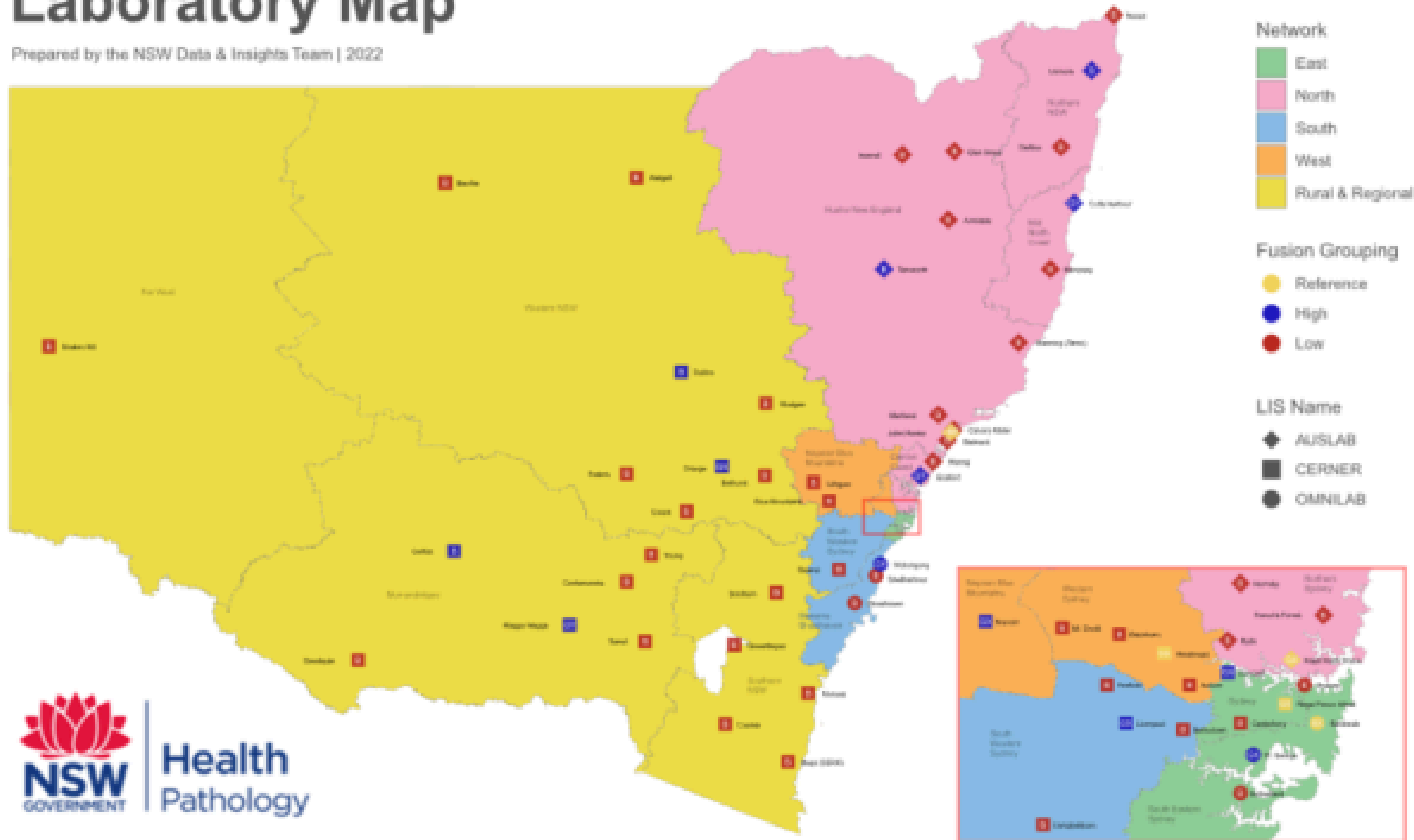
NSW Health Pathology | for all of us NSW Health Pathology | for all of us NSW Health Pathology | for all of us

NSWHP Current technology landscape



NSW Health Pathology Laboratory Map

Prepared by the NSW Data & Insights Team | 2022



>5,500 staff

>100,000 tests/day

66 labs +

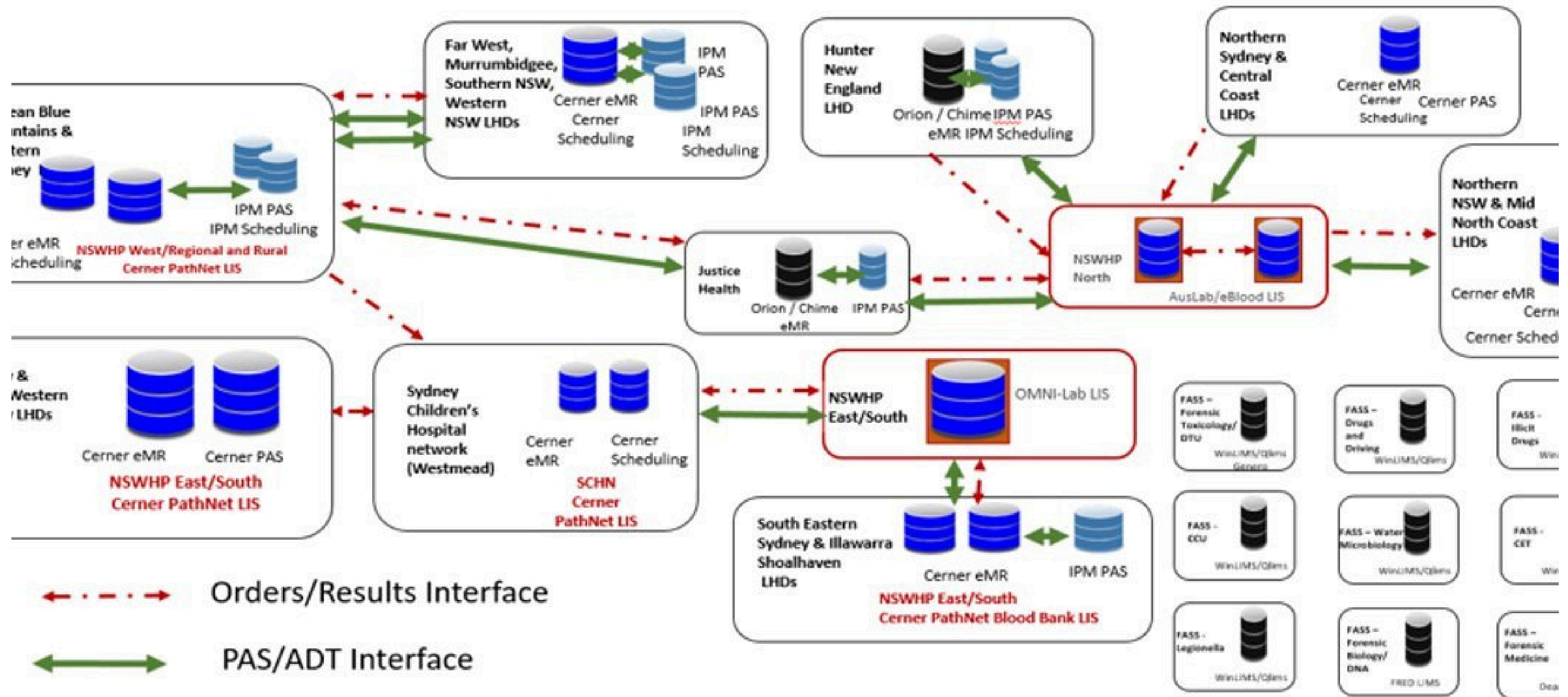
+150 collection centres

220 hospitals (>20,000 beds)

>1,200 Instrument interfaces

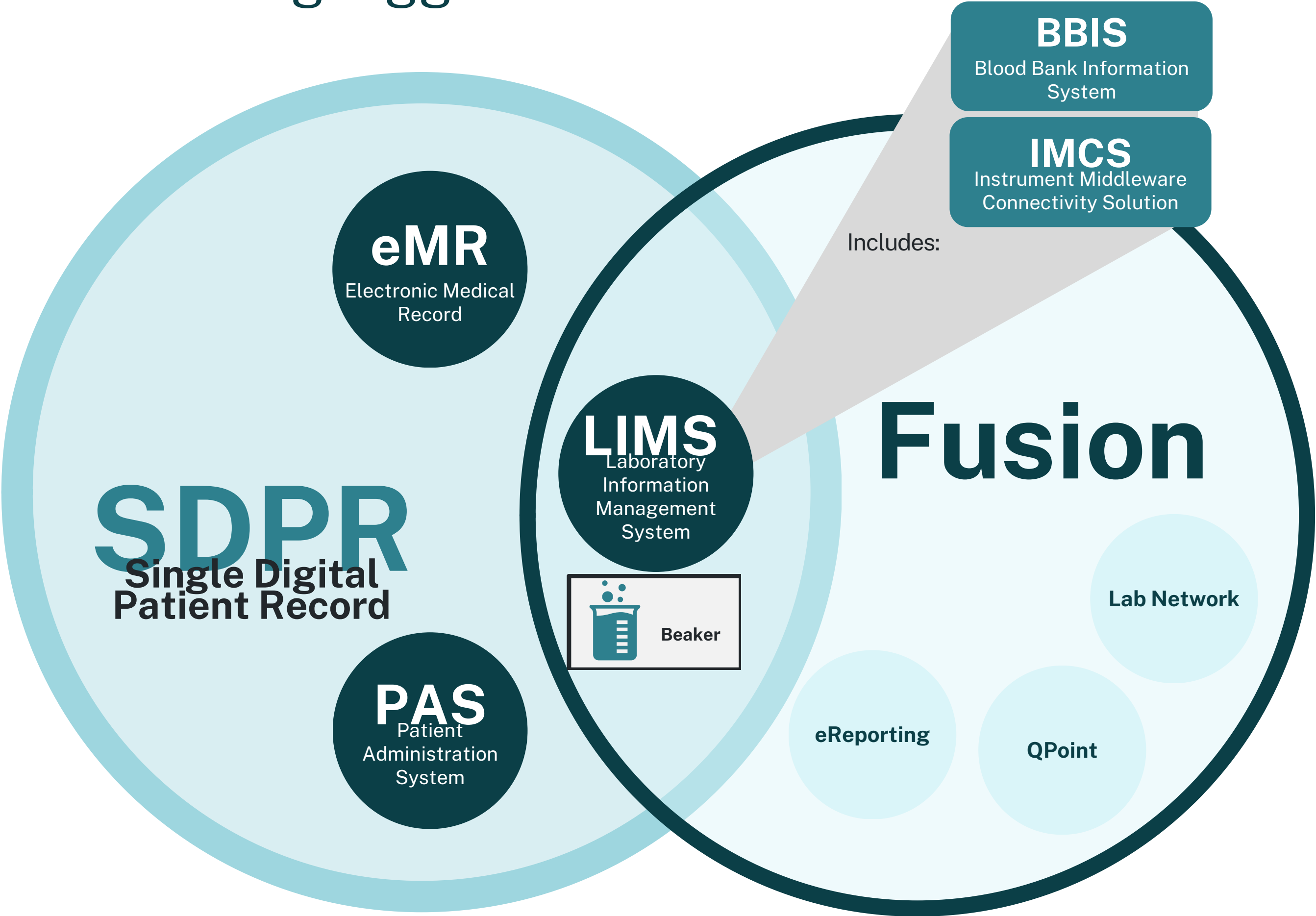


NSWHP Current technology landscape





We're part of something bigger

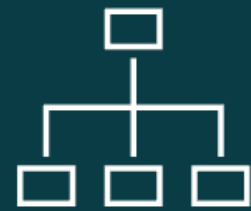


Doing things differently

3

Laboratory Information Management System

Approach



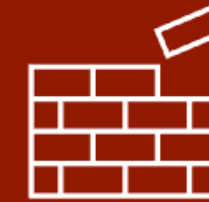
Strong governance

- Clear decision making and escalation pathways
- Connection points to the business
- Flexibility and adaptability in the governance model
- Focus on change management and training



Defining the scale

- Identifying requisite activity
- Consider the ecosystem
- Understanding the current environment
- Making profound and significant case of change
- Learn from the past



Building from within

- 95% of SMEs and Analysts are from the business
- Credibility and trust
- Resource plan in place
- Focus on leadership aspects – change, comms, training and program management



Clinical and scientific leadership

- Established positions early in the program
- Commitment to system design to meet NSWHP needs
- Focus on equitable access and safe, quality care for patients

Laboratory Information Management System

What's different?



Learn from the past



Its cultural transformation



Engage broadly



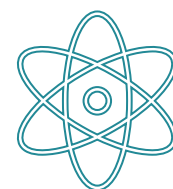
Invest in our people



Build the future
Operating Model



Commitment from
the business



Alignment to the
Outcomes



Embed quality into the
program



Our journey to Working Groups



CoP Subgroups

General Chemistry	Therapeutic drug monitoring / toxicology	Special Chemistry	Endocrinology - Functional	Endocrinology - hormones
Tumour Markers	Special haematology	Special coagulation	haemoglobinopathies	Compatibility testing
Antibody investigation	Data entry - electronic / paper based	Send-aways	Customer service / result enquiry	Specimen management
Collections services	Histology	cytopathology	Non-coronial autopsy	bacteriology
virology	mycology	Infectious Diseases	Public health	Flow cytometry
Proteins	Autoimmunity	Constitutional Genetics	Somatic molecular genetics	Pathogen genomics
CCU Lab	Bone marrow investigations	parasitology	Research	General coagulation
General haematology	Flow Cytometry	Cellular Therapies	Specialist Testing	Product / Inventory Management
Electron Microscopy	Serology	allergy	Newborn Screening	DDTL Lab
Reproductive medicine	Perinatal postmortem	Specimen transfer	Courier services	Reporting
PoCT	DTU lab	TIL Lab	FTL Lab	CETL lab
MDL Labs	ERDNA Lab	CCU Lab	DDT Lab	
		LPL Lab	WM Lab	IDA Lab

CoP Advisory Groups

(incl Clinical Stream Lead)

Anatomical Pathology	Reproductive Medicine
Genetic Pathology	Microbiology
Chemical Pathology	Research
Haematology	Transfusion
Immunopathology	Middleware
FASS	Point of Care
Multidisciplinary	Billing
Pre and Post Analytical	Data & Analytics

SDPR Working Groups

- Anatomical Pathology WG
- Clinical Pathology Specialty WG
- Clinical Pathology Multidisciplinary WG
- Molecular and Microbiology WG
- Pathology Council

Communities of Practice

Outcomes

Orderables



4,636

standardised and endorsed

Reportables



> 60k

Standardised and endorsed

Workflows



747

Workflows reviewed over 105 site visits

CoP Meetings



980

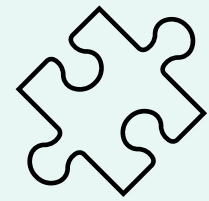
Working Group, subgroup, advisory and committee meetings held

A different implementation model

A new approach

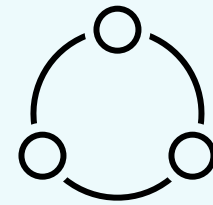


Build Approach



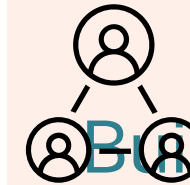
All at once

Implementation Approach



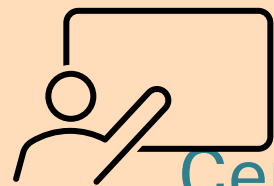
Big bang

Resourcing Model



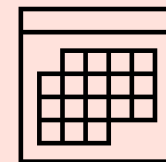
Build with people operating system

Training



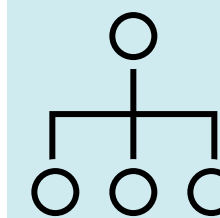
Certification req'd

Implementation Schedule



Multiple LHDs
5 Tranches

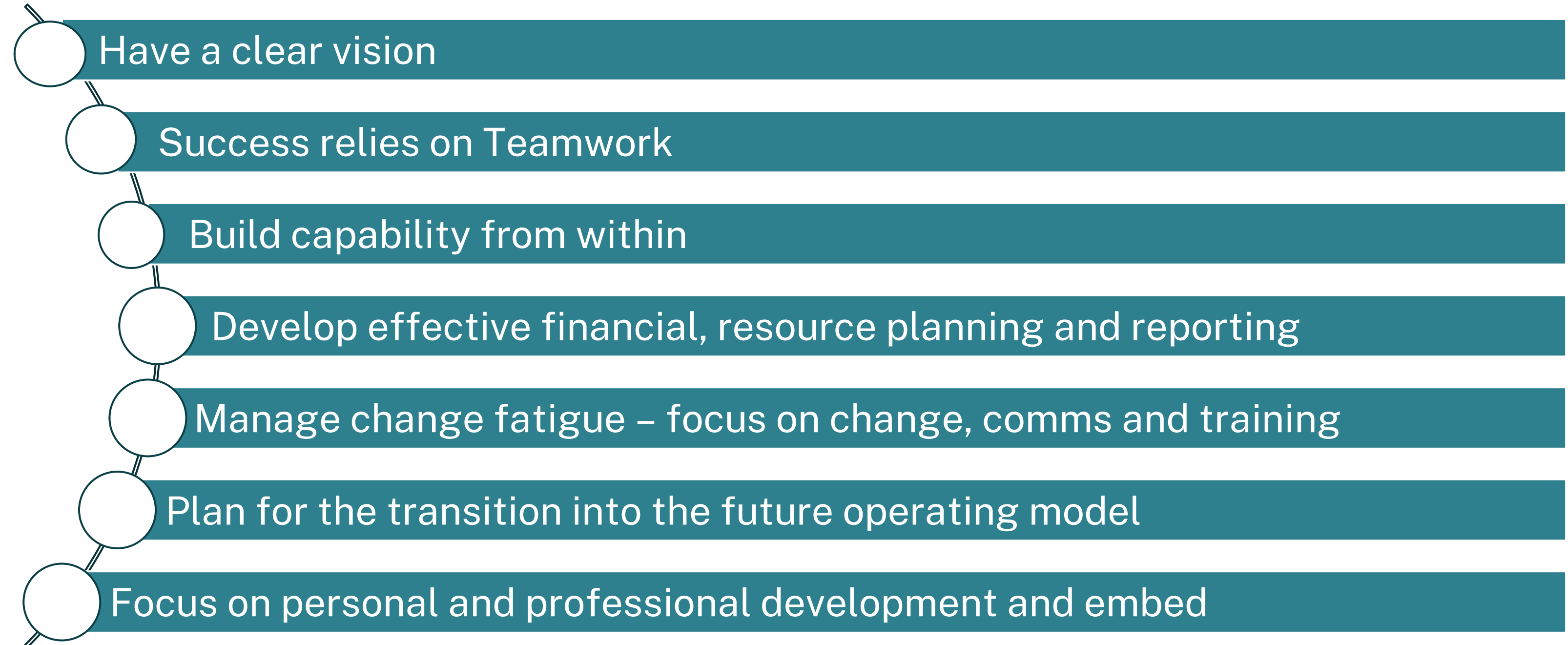
Transition to Operations



BAU roll-off
Code upgrades

Lessons Learned so far

We still have a long way to go....



Alignment with the National Digital Health Strategy

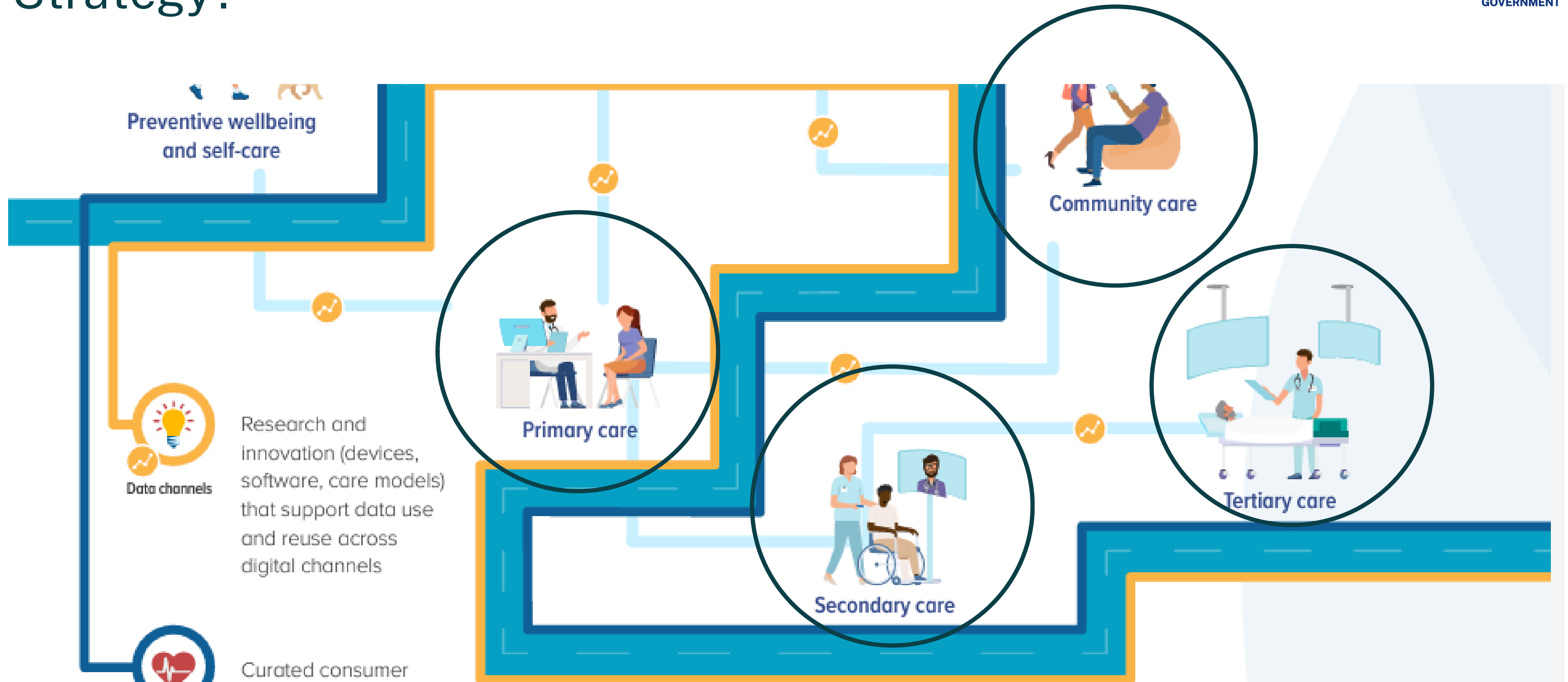
4

How does it align with the National Digital health Strategy?



Source: Digital Health Blueprint 2023-2033

How does it align with the National Digital health Strategy?



Source: Figure 6: Digital health capabilities can support health and wellbeing services across the continuum of care; Digital Health Blueprint 2023-2033

How does it align with the National Digital health Strategy?

HEALTH LEGISLATION AMENDMENT (MODERNISING MY HEALTH RECORD- SHARING BY DEFAULT) BILL 2024

OUTLINE

The purpose of the Health Legislation Amendment (Modernising My Health Record - Sharing by Default) Bill 2024 (the Bill) is to establish a legislative framework for requiring key health information to be shared with the My Health Record system, subject to exceptions.

The Bill has been developed in response to recommendations in the Strengthening Medicare Taskforce Report released in 2022. The report highlighted that **access to real time health information is a critical foundation for a modern and connected healthcare system.** To support this objective, the Taskforce recommended that key health information should be required to be *shared by default* – rather than by exception – to a healthcare recipient's My Health Record.

Under the framework, constitutional corporations providing health services will be required to register with My Health Record and to upload health information to healthcare recipients' My Health Records.

In addition, Medicare benefits for specific health services will be conditional upon upload of information about those health services.

Getting ready for change

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NSW Health Pathology | for all of us NSW Health Pathology | for all of us NSW Health Pathology | for all of us

5

“In 2026,
laboratory
medicine will be
fundamentally
different to
practice.”

by John J. O’Leary - Professor/Chair of Pathology, Trinity College

So, how do we
navigate this change
and get ourselves
ready?



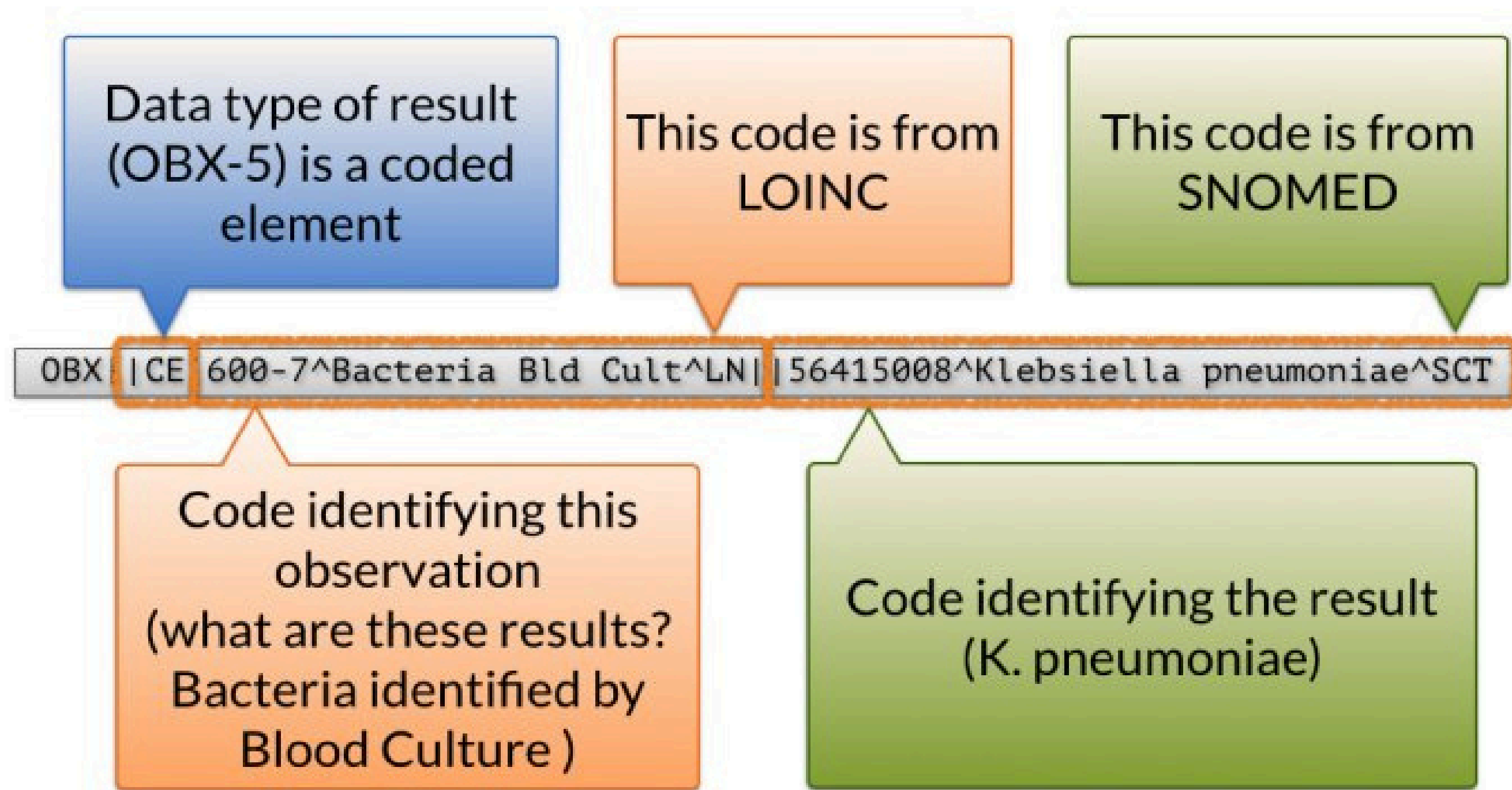
Investment and a clear strategy to transform

Australian Government | National Digital Health Strategy 2023 -28

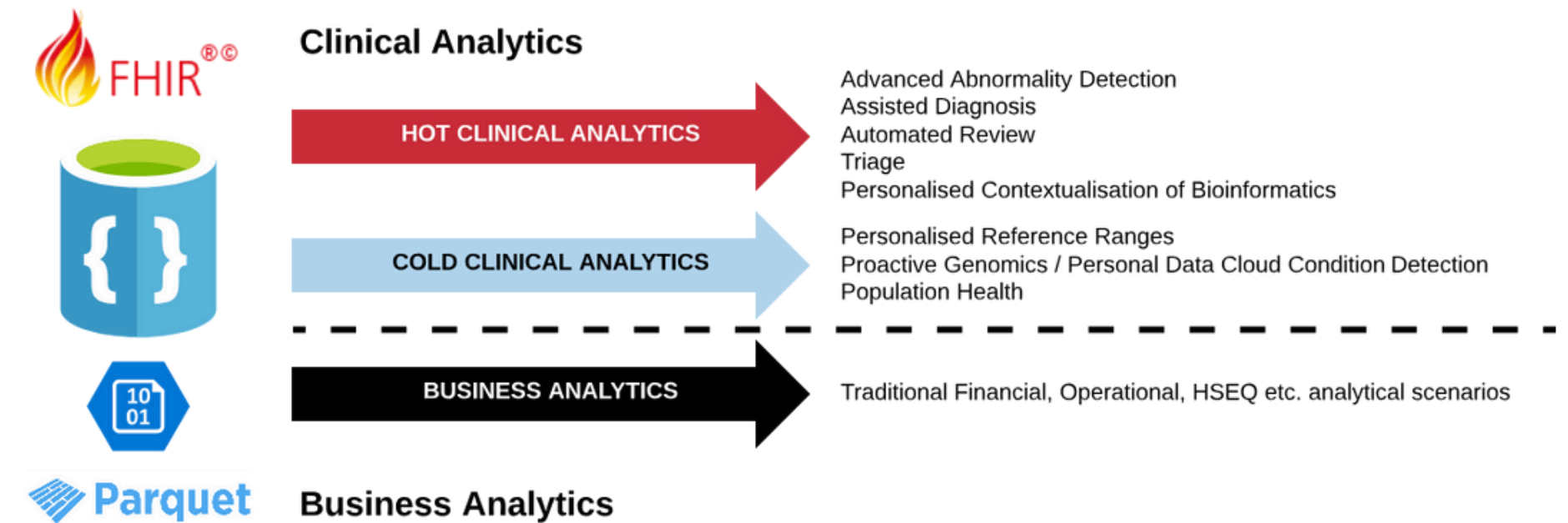
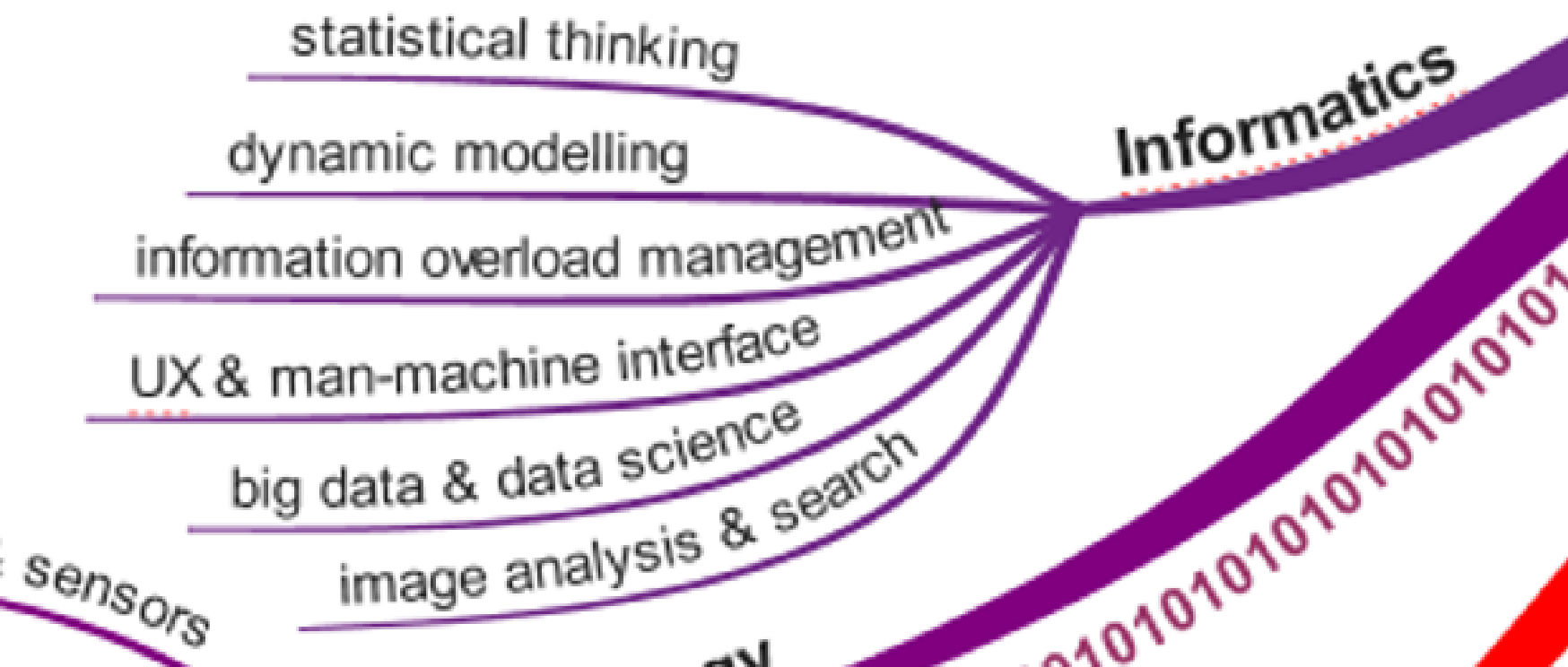


Standardisation and sharing data

Supporting interoperability



New skills and education



Acknowledgement – Michael Legg and Associates

Acknowledgement – Tim Eckersley, NSW Health Pathology

How leaders will support the adoption and integration of the LIMS



Empower staff

Release and empower staff to challenge the way we work as they help design the future State system

Help break down the barriers and work together



Be involved

What we implement in the first Tranche is what will be delivered across the State.

It's important that everyone participates in the decision making about the State configuration.



Be champions and sponsors

Advocate the benefits, be prepared to answer the questions and direct opportunities and challenges

Our leaders are asked to 'Express. Model and Reinforce' as sponsors of this digital transformation

INNOVATION IS AT THE CENTRE

What excites me most?

Patients first

Access to
consistent, safe
care across the
State



Rethink, reshape

More connected,
personalised
care, no
boundaries



Innovate

Lay the
foundations to
support
innovation and
technology
adoption

“THINK differently.....
DO differently.”

Thank you.

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pathology.health.nsw.gov.au

NSW Health
Pathology



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