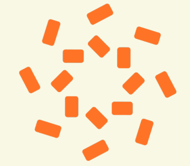
Sparked Clinical Design Group

Tuesday 13 February Workshop

Melbourne

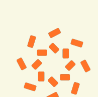


Acknowledgement of Country

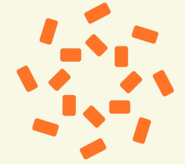
We acknowledge the Traditional Custodians of the land on which we all gather today.

We pay our respect to elders past, present, and emerging and extend our respect to all Aboriginal and/or Torres Strait Islander people, acknowledging the First Peoples as the first scientists, educators and healers.

Start Time	Item	Item	Time	Lead/facilitator
9.00am	1	Welcome •Intro to Sparked •Who's who in the room •Objectives	20mins	Kate Ebrill Chris Moy
9.20am	2	Co-Lead Update What's been achieved so far Co-Lead Intros	10mins	Chris Moy
9.30am	3	eRequesting Perspectives	1hr	Michael Hosking
10.30am		**Morning tea**	**30min**	
11.10am	4	Workshop #1 Use Case Identification and prioritisation	20mins	Group Activity Michael Hosking
11.40am	5	Workshop #2 - Part 1 Foundational workflow problem identification	40mins	Group Activity Michael Hosking
12.30 - 1.15pm		**Lunch**	**45mins**	
1.15pm	6	Workshop #2 - Part 2 Foundational Workflow priorities	45mins	Group Activity Michael Hosking
2.15pm	7	Workshop #3 - Part 1 eRequest Data Model	45mins	Group Activity Kylynn Loi Heather Leslie
3.00 – 3.30pm		**Afternoon tea**	**30mins**	
3.30pm	8	Workshop #3 - Part 2 Data model priorities	30mins	Group Activity Kylynn Loi Heather Leslie
4.00pm	9	Agreement and Priorities – MLM, Scope and Data Model	30mins	Kate Ebrill
4.45pm	10	Next steps and close	15mins	Kate Ebrill Chris Moy



Objectives

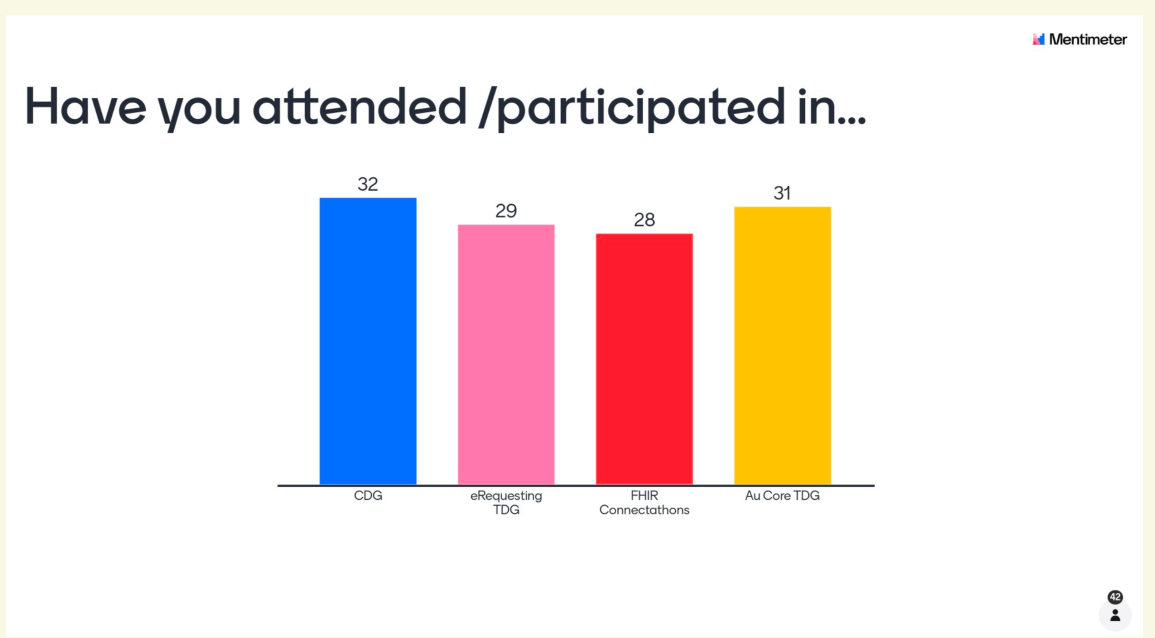


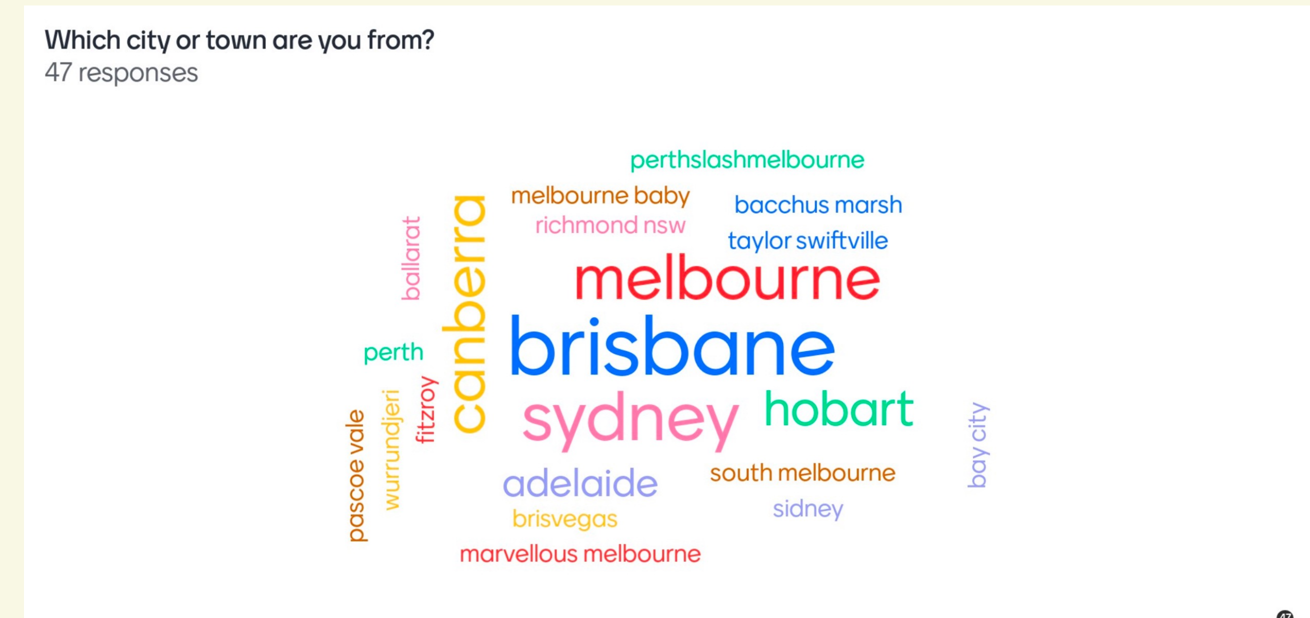
Objectives for the day

- Understand what has been achieved in the last 6 months
- Understand the challenges/pain points as well as opportunities and benefits for eRequesting
- Identify priority use cases and scope- what's going to make a "MLM"- Minimum Loveable Model?
- Identify the key data model requirements & priorities for eRequesting R1
- Identify backlog use cases and data model requirements to ensure a consistent reusable approach

Introductions – who's who in the room!

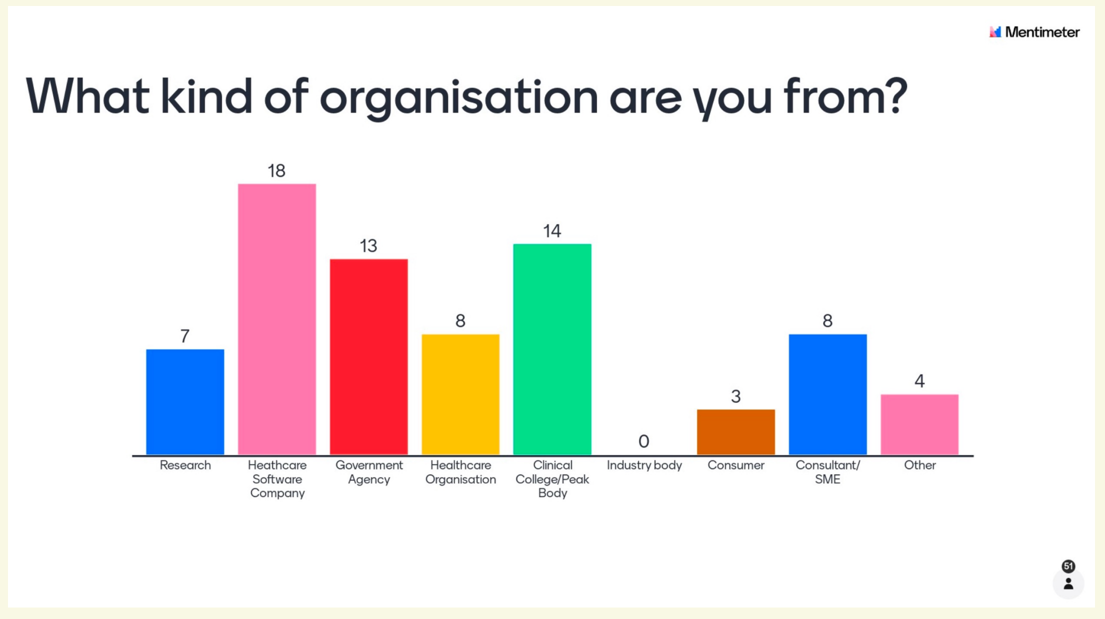
Results from activities held at the 13 Feb 2024 workshop

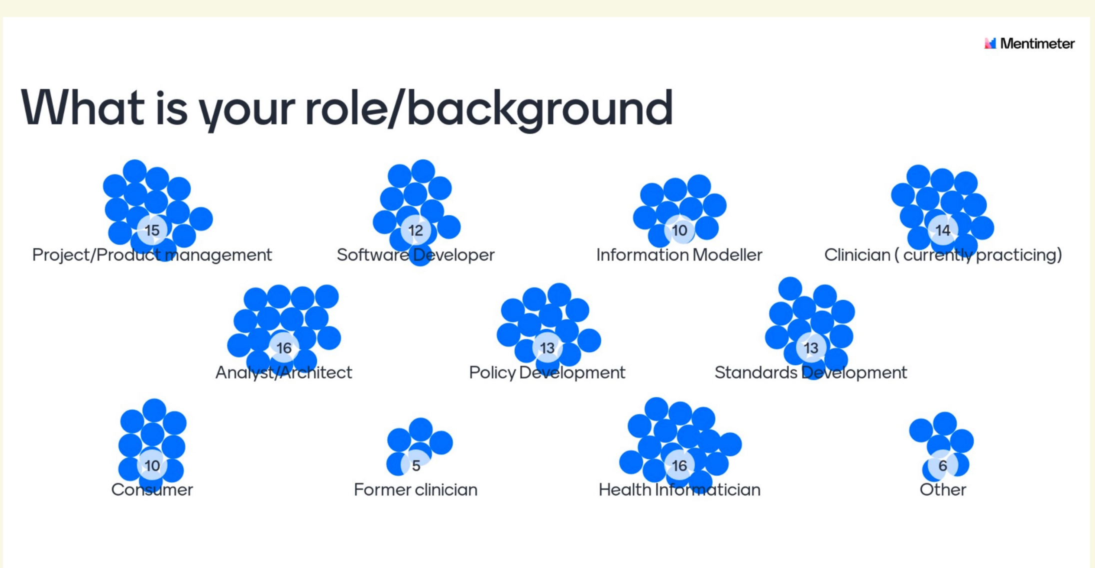


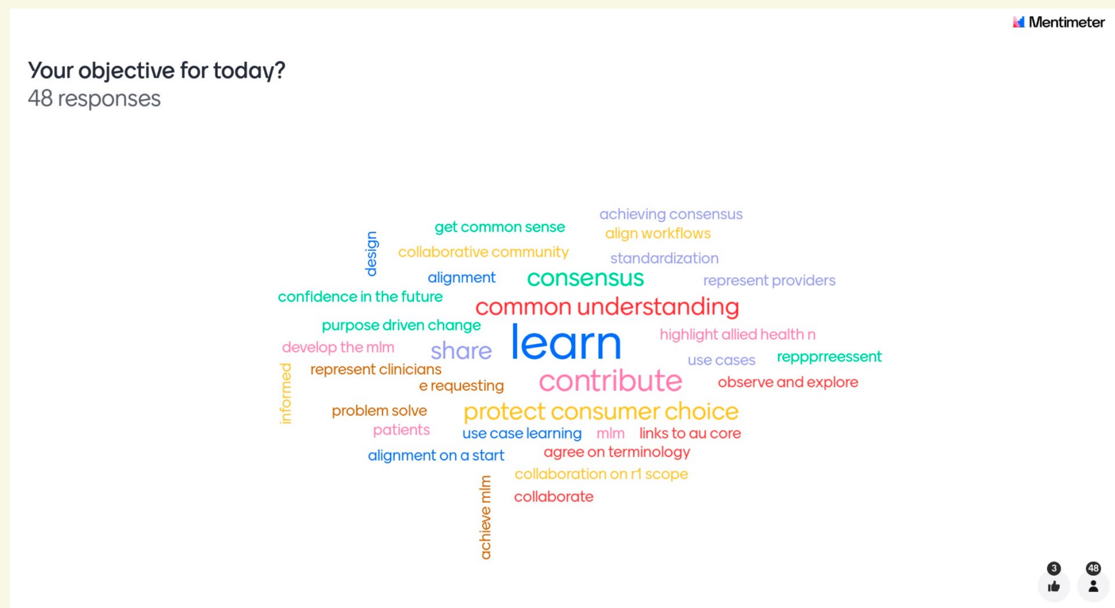


Sparked
HL7 FHIR

Results from activities held at the 13 Feb 2024 workshop



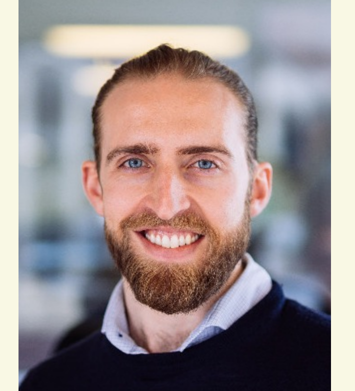




Sparked Team

FHIR@csiro.au

Kate Ebrill –
Sparked Lead



Michael Hosking –
Sparked Deputy Lead

Kylynn Loi –
Clinical Design Lead

Dr Heather Leslie – Lead
Clinical data Modeller

Arush Pushkarna –
Test Lead

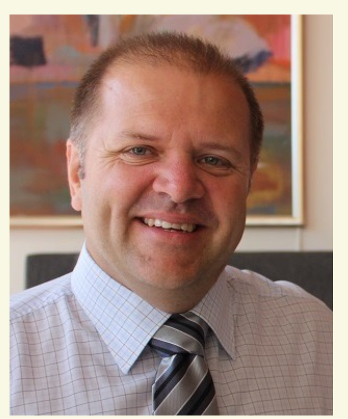
Nisha Subramanian –
Business Analyst

Danielle Tavares-Rixon
– FHIR technical lead

Dusica Bojicic -
FHIR IG Author

Brett Esler –
FHIR Expert

Matt Cordell – Clinical
Terminology Specialist



Michael Osborne –
FHIR Terminologist

Heath Frankel –
FHIR Expert

Chris Kellalea-Maynard -
Snr Business Analyst

Bernadette Cranston
– Program Manager

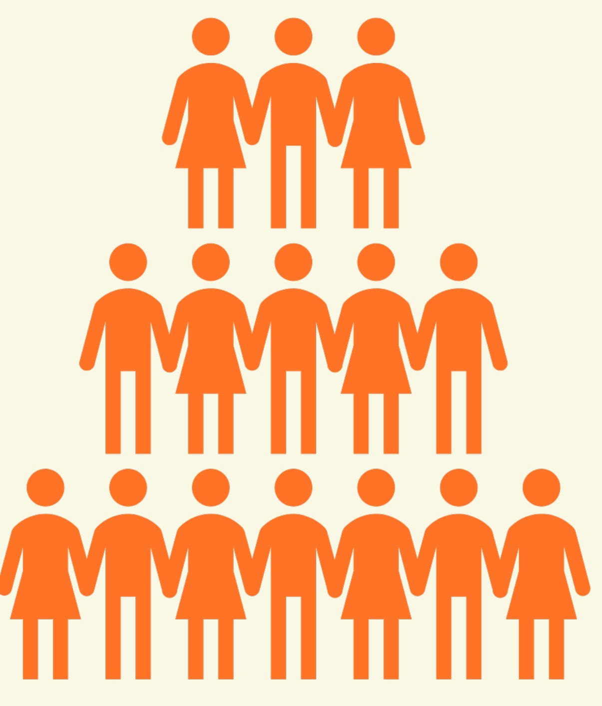
What is Sparked?

Sparked is a **community** comprising **government, technology vendors, provider organisations, peak bodies, practitioners, and domain experts** to **accelerate the creation and use of national FHIR standards** in health care information exchange.

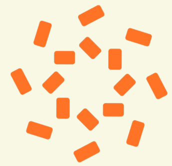
Sparked is supported through a partnership of HL7 Australia, Department of Health and Aged Care, Australian Digital Health Agency, and CSIRO.

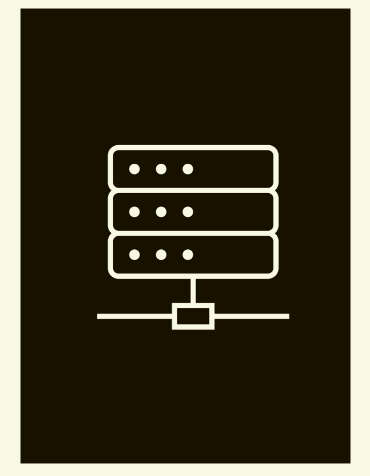
We are:

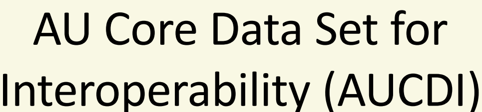
- ✓ Creating open standards in high priority national use cases
- ✓ Government initiated and funded
- ✓ Working collaboratively with the international FHIR community, and other FHIR initiatives

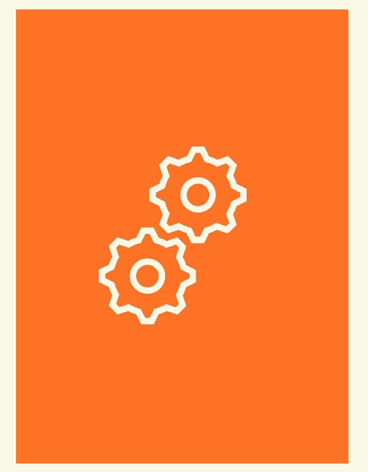


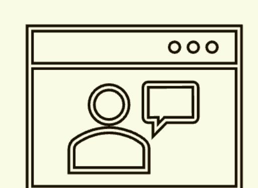
AU FHIR Accelerator Scope











AU Core Data Set for Interoperability (AUCDI)

- AU Core- R1 for Comment
- AU eRequesting- Scoping

We are here

FHIR Implementation Guides

- AU Core
- AU eRequesting

Piloting of FHIR Standards

- Piloting of FHIR Standards, supported by infrastructure & tooling

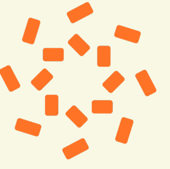
Reference Implementations

- Services that support implementation and testing of FHIR based applications

Clinical Terminology Value Sets

- SNOMED CT and LOINC Value sets
- RANZCR
- RCPA

We are here



AUCDI Release 1 at a glance (Feb 2024)

Problem/Diagnosis
- Problem/diagnosis name
- Body site/laterality
- Status
- Comment

Procedure completed
- Procedure name
- Body site/laterality
- Clinical indication
- Date performed
- Comment

Vaccination administered event
- Vaccine name
- Sequence number
- Date of administration
- Comment

Adverse reaction risk summary
- Substance name
- Manifestation/s
- Comment

Medication use statement
- Medication name
- Form
- Strength
- Route of administration
- Dose amount and timing
- Clinical indication
- Last administration
- Endpoint
- Comment

Sex and Gender
- Sex assigned at birth
- Gender identity
- Pronouns

Tobacco smoking summary
- Overall Status

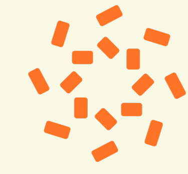
Biomarkers
- HDL
- LDL
- Total cholesterol
- Triglycerides
- HbA1c
- eGFR
- uACR

Vital signs
- Blood pressure
  - Systolic
  - Diastolic
- Pulse
  - Rate
- Body temperature
- Respiration
  - Rate

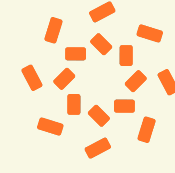
Measurements
- Height/length
- Body weight
- Waist circumference

Encounter – clinical context
- Reason for encounter
- Modality

Dr Chris Moy



BUILDING THE “adapter”



Failure to Communicate

The **lack of interoperability** is a major roadblock to moving health care forward. But some hospitals are finding ways to make essential data accessible to those who need it.

BY JOHN MORRISSEY

The once arcane concept of interoperability among information technology systems has become a mainstream issue, rising from the back rooms of IT departments up to C-suites and the boardroom. Health systems nationwide have invested billions of dollars in electronic health records and IT only to realize the EHR data troves they own now also have to work with that of others. For the most part, they can't.

As long as that holds true, some of the foundational principles of value-based approaches to care — clinical integration, coordinated patient treatment plans among providers, population heath management — will be difficult to realize. To deliver extraordinary quality, "you're going to have to deliver integrated care, and integrated care requires integrated information — no two ways about it," says Randall Gaboriault, senior vice president for innovation and strategic development and chief information officer of Christiana Care Health System, Wilmington, Del.

Urgent initiatives by data standards organizations, the federal government and others seek to remedy the basic lack of interoperability stemming from uncoordinated, proprietary decisions by IT vendors about how to represent, create, send and store computerized data — a fragmented state of affairs more than 20 years in the making. The common goal is to bring data sharing closer to the definition of interoperability: the ability of two or more systems to exchange and use information without special effort on the part of the user.

In a major move to organize the health care industry around a clear set of interoperability targets, the Department of Health & Human Services has extracted pledges from the largest developers of EHRs — responsible for 90 percent of the health records used by the nation's hospitals — to follow nationally recognized standards in their ongoing development plans and to eliminate any practices that have the effect of blocking information flow from their EHRs.

Sixteen provider systems, including the five largest, also pledged their support, and several professional organizations, including the American Hospital Association, added their backing after HHS Secretary Sylvia Burwell made the announcement Feb. 29 at the Healthcare Information and Management Systems Society's annual convention.

The timelines of most of these efforts are measured in years. But being able to take any discrete element of data in one system and pass it usably to another is an imperative when value-based contracts assigning financial risk for the overall health costs of defined populations of individuals are coming soon or already inked. True interoperability "would be ideal, and I hope we get there someday," says Jan Lee, CEO of the Delaware Health Information Network in Dover, a thriving outlet for health information exchange. "But that doesn't mean you can't do anything now."

What happened?

To grasp how health IT got into its morass, we need to understand how it started out. Early IT focused on revenue-producing departments — laboratory, radiology, pharmacy — and spread to nursing floors, because revenue production required physician orders from nursing stations and results to be reported back, says Mark Braunstein, associate director for health systems at the Institute for People and Technology at Georgia Institute of Technology, Atlanta. As with

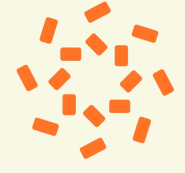
FRAMING THE ISSUE:

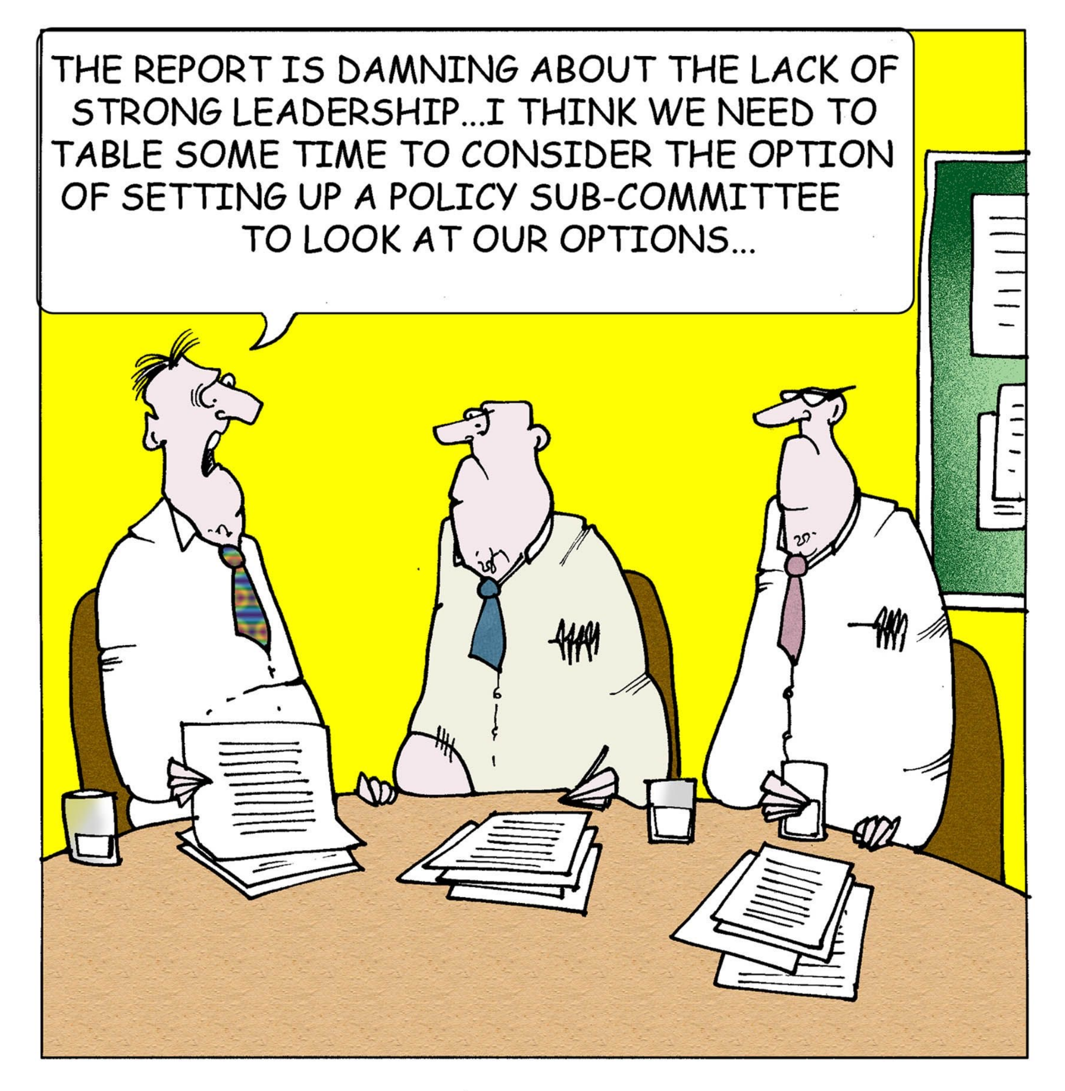
- Interoperability — the capacity of different information technology systems to exchange information for easy use — long has been a problem in health care.
- The explosion in electronic health records has added to the interoperability challenge.
- Value-based care and alternative payment models make sharing information more and more of a necessity.
- Interoperability isn't just a problem for IT professionals: It requires business and care strategies developed by hospital and health system leaders.

Illustration by Lou Brooks

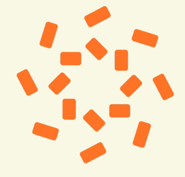
Sparked HL7 FHIR

Lack of Leadership





Closed Shop Decision-Making

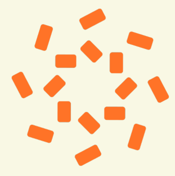


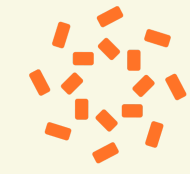
PERCIVAL

"We have a new face amongst us."

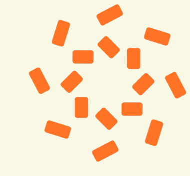
CartoonStock.com

Free Market / Competition

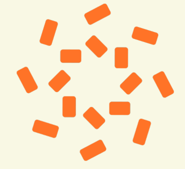




- **Fast Healthcare Interoperability Resources** (FHIR, pronounced "fire") standard is set of **rules & specifications for exchanging electronic health care data**.
- **Flexible & adaptable**, so can be used in wide range of settings & different health care information systems.
- Goal is **to enable seamless & secure exchange** of health care information
- Standard describes **data formats & elements** (known as "**resources**") & an application programming interface (API) for exchanging electronic health records (EHR).
- Standard was created by Health Level Seven International (HL7) health-care standards organisation.



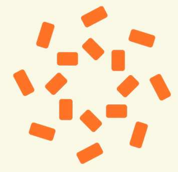
- Sparked is **community** comprising government, technology vendors, provider organisations, peak bodies, practitioners, & domain experts to accelerate the creation & use of national FHIR standards in health care information exchange.
- Sparked programme is partnership of HL7 Australia, Department of Health & Aged Care, Australian Digital Health Agency & CSIRO.
- We are:
    - Creating open standards in high-priority national use cases
    - Government-initiated & funded
    - Working collaboratively with international FHIR community & other FHIR initiatives
- We are not:
    - A separate legal entity
    - A proprietary activity



A Community Open to All

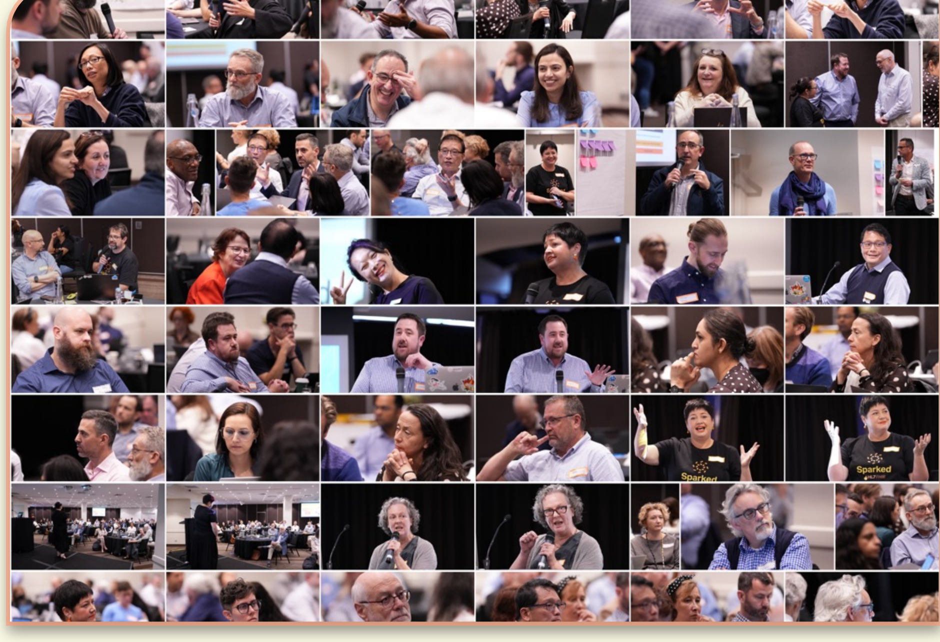
WELCOME TO THE TEAM!

Founding Industry Members

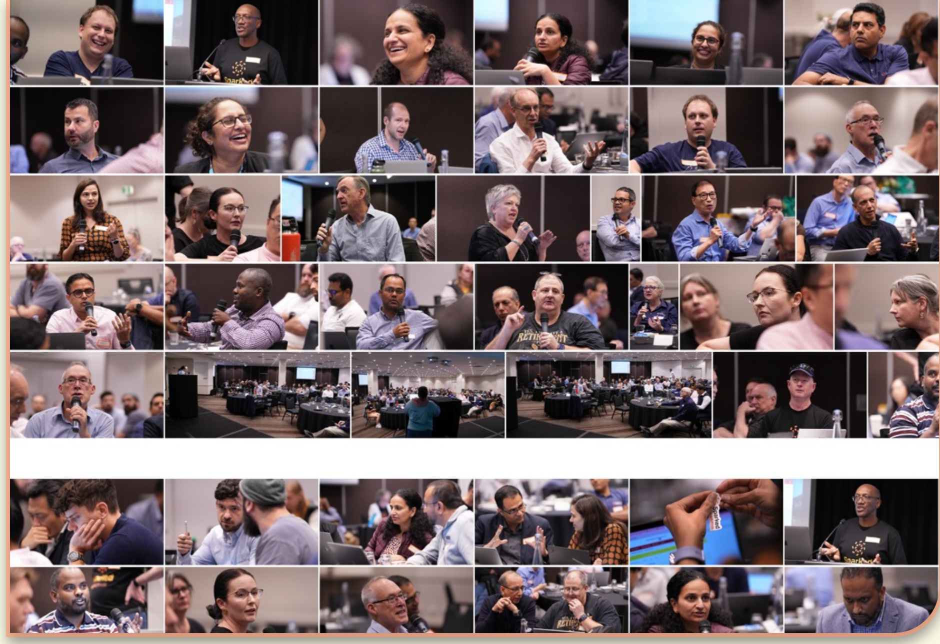


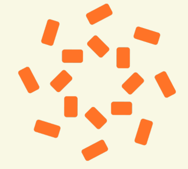
Health

CLINICAL DESIGN GROUP



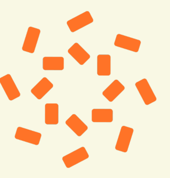
TECHNICAL DESIGN GROUP

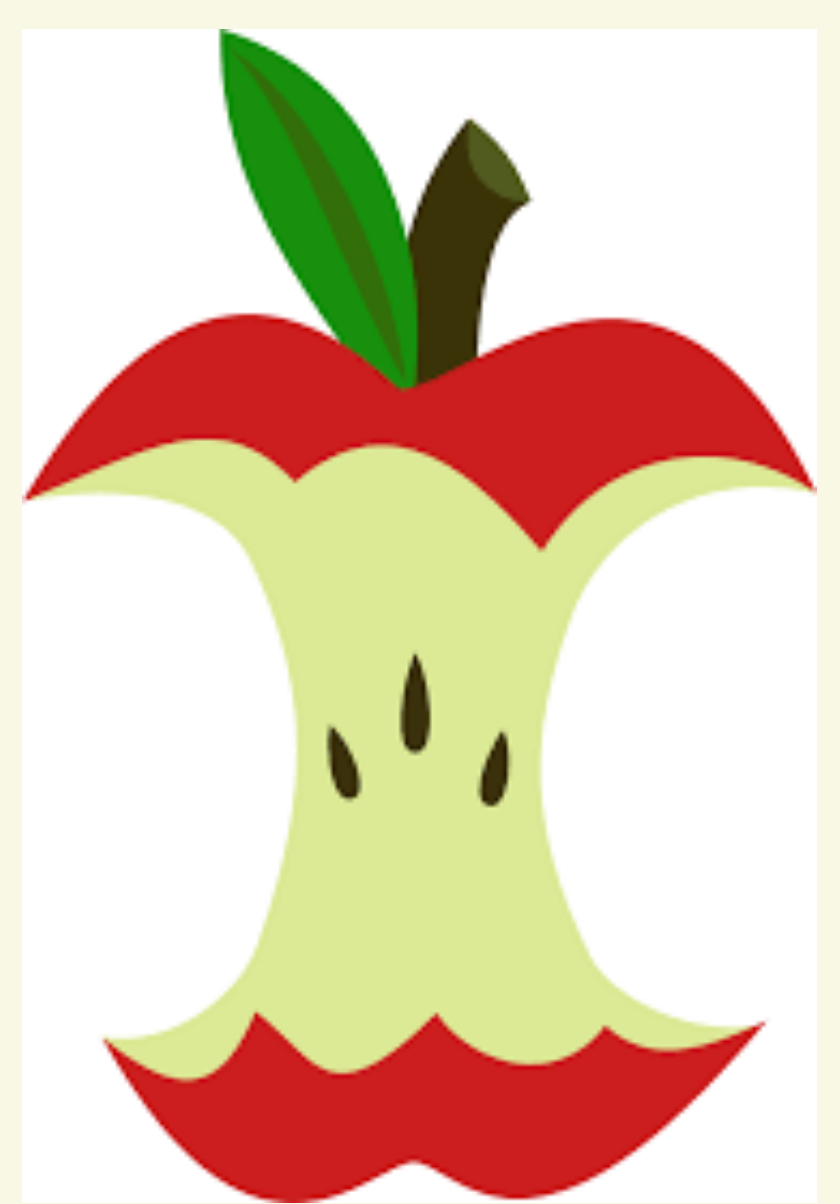




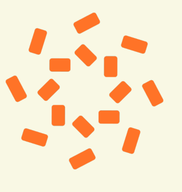
One step at a time

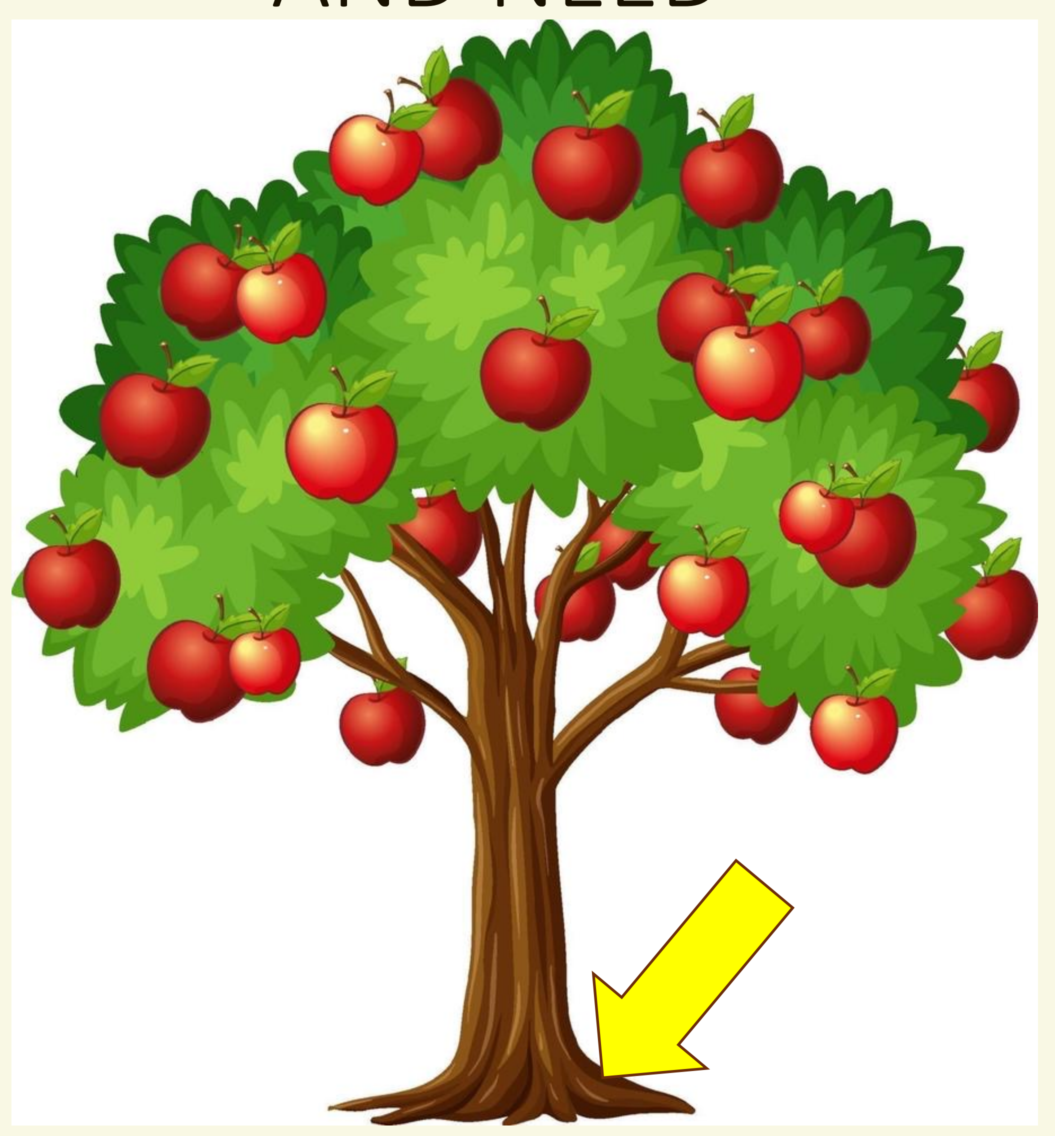
Starting with “core of the core”





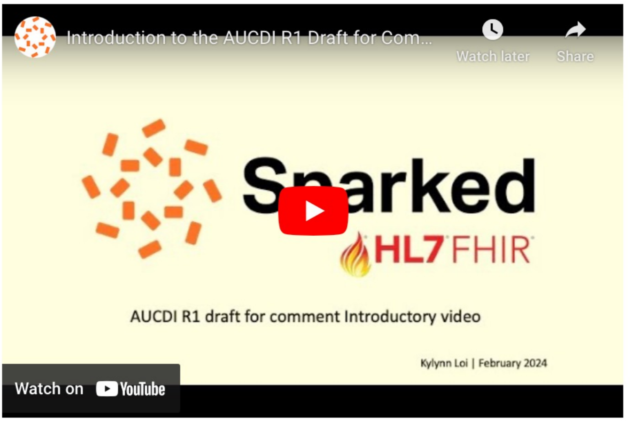
WILL GROW INTO THE TREE THAT WE WANT AND NEED





AUCDI Release 1

Created by Black, Madison (Voronoi), last modified by Black, Madison (H&B, Herston) yesterday at 6:37 PM



The Australian Core Data for Interoperability (AUCDI) Release 1 Draft for Comment

The AUCDI aims to standardise the capture, structure, usage, and exchange of health data to counteract the current fragmentation of Australia's health data systems. This initiative is pivotal in enhancing patient care, promoting clinical safety, improving clinical decision-making, and facilitating seamless health information exchange.

Scope of Release 1

The scope of AUCDI R1 is a subset of the International Patient Summary and some encounter information. It is intended that the scope will expand in further iterations of the AUCDI.

The scope of AUCDI R1 includes:

- Problem/Diagnosis,
- Adverse reaction risk (allergies and intolerances),
- Medications,
- Procedures,
- Vaccinations (immunisations),
- Vital signs, measurements and other biomarkers for chronic disease and preventative health with an initial scope of cardiovascular risk calculation and diabetes care, and
- Encounter information that are required to give clinical context.

Problem/ Diagnosis
- Problem/diagnosis name
- Body site
- Laterality
- Status
- Comment

Vaccination administered
- Vaccination name
- Sequence
- Administration date
- Comment

Tobacco smoking summary
- Overall Status

Medication statement
- Medicine name
- Strength
- Form
- Dose Route of Administration
- Dose Frequency
- Duration
- Instructions
- Clinical Indication
- Comment
- Status
- Start date
- Long term indicator

Encounter – clinical context
- Reason for encounter
- Type of encounter

Key Biomarkers
- HDL
- LDL
- Total Cholesterol
- Trigs
- HbA1c
- eGFR
- UACR

Vital signs and measurements
- Blood pressure item
  - Systolic
  - Diastolic
- Pulse item
  - Rate
  - Rhythm
- Body temperature item
- Respiration item
  - Rate
- Height/length item
- Body weight item
- Waist circumference

Gender
- Gender identity
- Sex assigned at birth
- Pronouns

Adverse Reaction Risk
- Substance
- Manifestation
- Comment

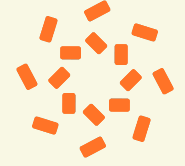
Procedure completed
- Procedure name
- Body site*
- Laterality
- Date performed
- Comment
- Clinical indication

AUCDI Release 1 Draft for Comment

Themes for the day

- Today is about data not business
- Aim is "core of the core" – minimum data elements that:
  - ➢ meets needs
  - ➢ feasible now
  - ➢ will not need to be corrected retrospectively
- Join in & don't feel shy if need to clarify
- Have some fun

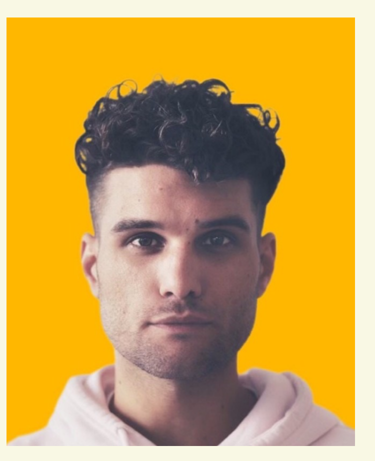
"I take the fun out of everything. What do you do?"



CDG Co-Leads

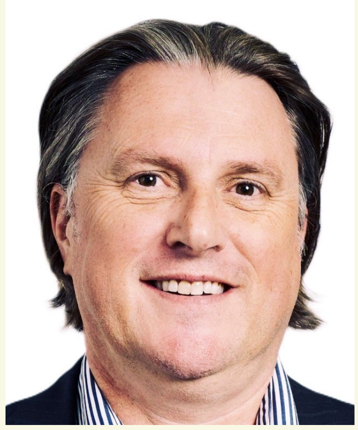
To remind us and keep us focused & on track based on scope

Chris Moy



Harry Iles-Mann

Charlotte Hespe



Andrew Hugman

Sparked..... 6 Months of igniting healthcare connectivity with FHIR

Meetings
27 Sep 23 F2F
9 Nov 23
5 Dec 23
17 Jan 24
13 Feb 24

Sparked Clinical Design

Attendees: 65 (avg.)
Members: 243

Congratulations to the tribe for relentlessly proceeding towards this important milestone

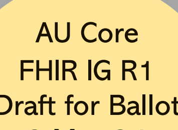
Sparked Launch
100 attendees
23 Aug 23
Connectathon HL7 AU – Sparked Overview
100 attendees

A super day 1 at the #FHIR Connectathon in Brisbane with thanks to HL7 AU, CSIRO, ADHA, DOHAC

What a fantastic point in time for those of us who have dreamt about interoperability in our eHealth systems

8 Posts

Generated over 5000+ impressions



AUCDI 60hrs post live
LinkedIn annoucement initial post 14 reposts, 81 interactions, 4212 impressions
Intro video 79 views
Page view 125 views

AUCDI R1
Draft for Comment
10 Feb 24

Connectathon HL7 AU – Sparked
20-21 Nov 23
100 attendees

AU Core
FHIR IG R1
Draft for Ballot
8 Mar 24

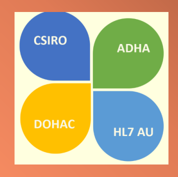
Sparked AU Core Technical Design Group

Attendees: 66 (avg.)
Members: 180

Meetings
24 Aug 23 F2F
21 Sep 23
28 Sep 23 F2F
+ 11 meetings

Validation Pilots
Apr 24

Sparked Partnership



20 Founding Members

Sparked Infrastructure & Tooling

Testing Service
Apr 24

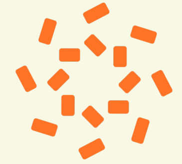
Sparked Leadership Events
21 Feb 24

Sparked AU eRequesting Technical Design Group

Attendees: 55 (avg.)
Members: 150

eRequesting Webinar
17 Nov 23

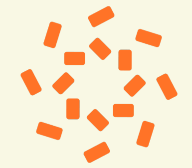
Meetings
7 Dec 23
21 Dec 23
18 Jan 24
1 Feb 24
14 Feb 24



Core Draft Principles of Data Set Design

1. Reduce duplication - Single entry, single development (multiple use and reuse)
2. Supports patient centred care - driven by a clinical quality and safety use case
3. Not data for data's sake
4. Driven by primary clinical data use not secondary data use needs
5. Supports best practice care, clinical guidelines and clinician workflow
6. Systems can support now or with minimal effort, supporting a strategic roadmap with an agile iterative process
7. Leverage agreed national health data standards
8. Involve and consider all healthcare domains and care modalities

Why eRequesting Perspectives



eRequesting perspective questions

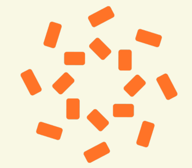
3 top challenges

Opportunities & Future state

What’s the one thing to fix?

Consumer perspective

Harry Iles-Mann



eRequesting perspective questions

3 top challenges

Opportunities & Future state

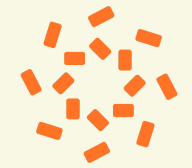
What’s the one thing to fix?

Requester perspectives

Rob Hosking (RACGP)

Chris Pearce (ACCRM)

Jackie O'Connor (AHPA)



eRequesting perspective questions

3 top challenges

Opportunities & Future state

What’s the one thing to fix?

Pathology perspective

Jennifer Kim (RCPA)

Perspectives on eRequesting

SPARKED CDG WEBINAR

13 February 2024

A leading specialty in the digital transformation of healthcare

QUDI

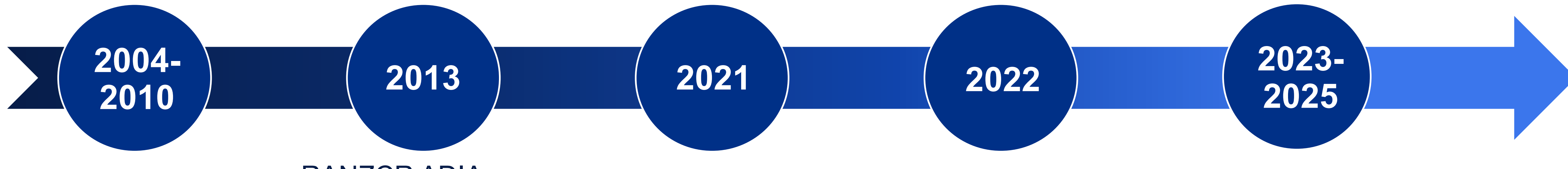
- Scoping Study of e-health
- Diagnostic Imaging Request Template

RANZCR and ADIA White Paper

Towards Interoperability: Clinical Radiology forging the path ahead.

Radiology Referral Set

- Full development of RRS
- FHIR position statement



RANZCR ADIA roadmap to support image sharing by clinicians across different health providers

- Landscape analysis
- RRS position statement
- RRS standards and proof of concept sample set

eRequesting Challenges

Patient Choice

- appropriate support for patient choice of provider, allowing for referrer preference, and asymmetric information about available providers

Mappings

- mapping from the referrer EHR catalogue of tests to the RRS (FHIR)
- mapping from the RRS to RIS terms

Contact Information

- adequate and appropriate identification of the referrer and / or the clinician(s) to be contacted (urgent and "copy to" results)

eRequesting Opportunities

Patient Information

- **more accurate and reliable patient identification ("Key thing to fix")**
- more complete patient history including:
  - allergies
  - medications
  - existing conditions

Clinical information

- provision of more complete clinical notes, and a clear statement of the purpose of the request

Registries

- request registry or federated registries could provide basis for referral tracking
- registries can also be used as an index of previous studies

The Royal Australian and New Zealand College of Radiologists®

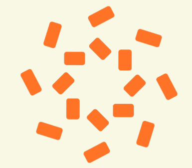
The Faculty of Clinical Radiology

Thank you

Contact us at Standards@ranzcr.edu.au

Radiology perspective

Nick Ferris (RANZCR)



eRequesting perspective questions

3 top challenges

Opportunities & Future state

What’s the one thing to fix?

Industry perspectives

Angus Millar (Sonic Healthcare)

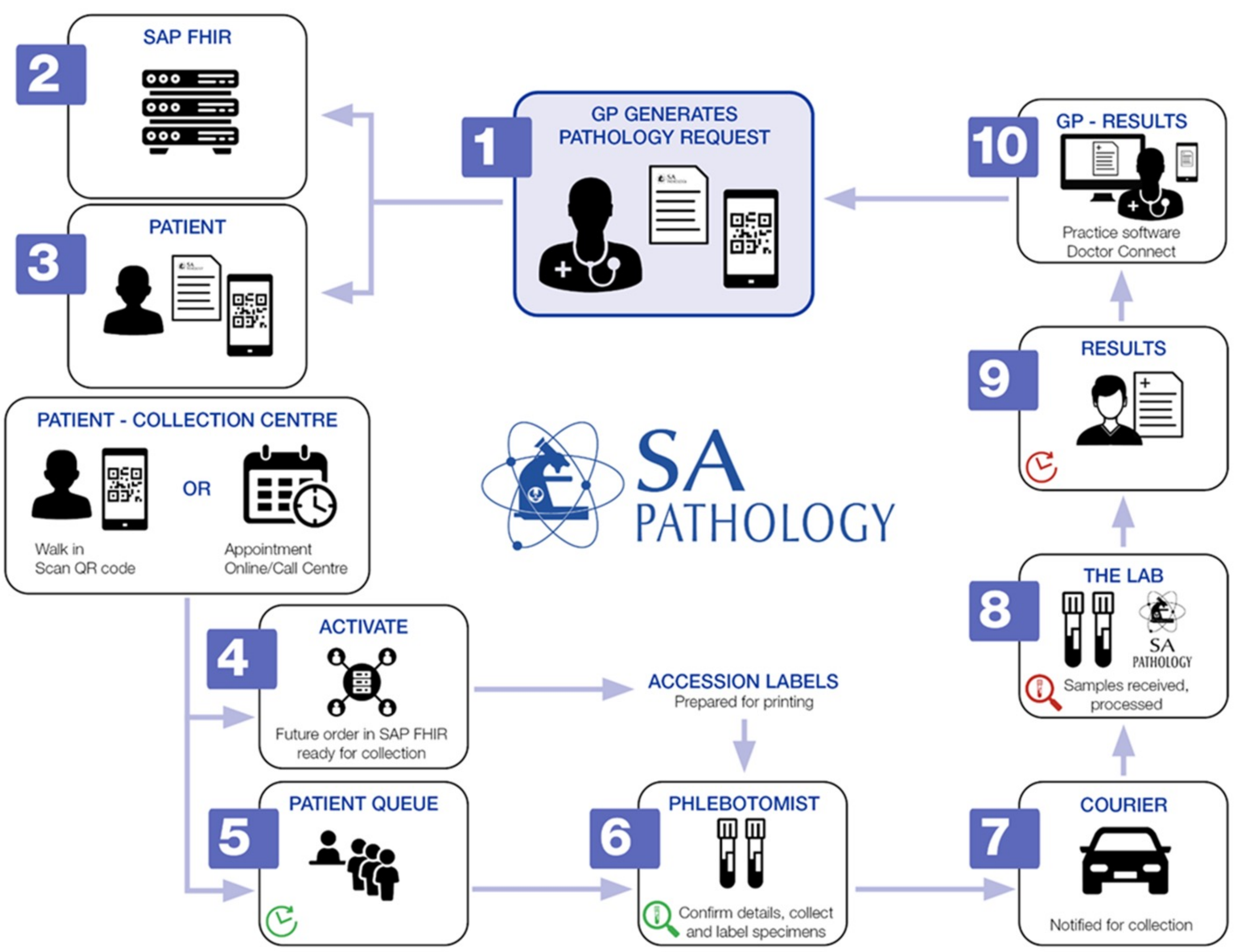
Keith Kranz (SA Pathology)

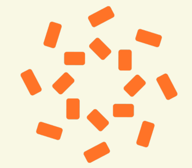
O^2 (obstacles/objectives)

- ❖ Application and information islands
- ❖ Data collectors not data motivators
- ❖ Prisoners of demand

- ❖ A connected system - Standards
- ❖ Less waiting time - collection centres
- ❖ Turn around time - diagnosis to treatment

Workflow & Process change





eRequesting perspective questions

3 top challenges

Opportunities & Future state

What’s the one thing to fix?

TDG Perspective
What the TDG would like from the CDG

Andy Bond (TDG Co-Chair)

National perspective

Jeremy Sullivan

Workshop 1- Challenges and Opportunities

Reminder - High-level process and feedback loop

Feed back loop to clarify between CDG & TDG

CDG

Define clinical requirements and use cases
eg. Clinical information & data required – AUCDI, eRequesting)

Ensure clinical workflow and consumer safety

Ensure technical implementation is clinically fit for purpose

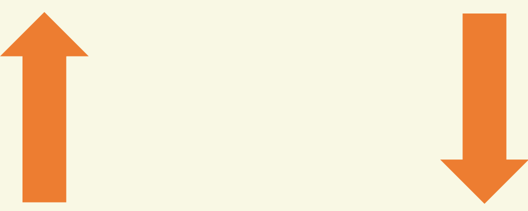
TDG

Translate clinical requirements into technical requirements (FHIR specification – eg. AU Core)

Ensure technical viability (can it be implemented safely and at scale)

Inform design of

Artefacts



FHIR IG is a Technical representation of CDI

Inform content of

CDI

CDI are clinical data requirements informing FHIR IG

Workshop overview

CDG

Workshop 1

1. Identify pain points / challenges
2. Prioritise

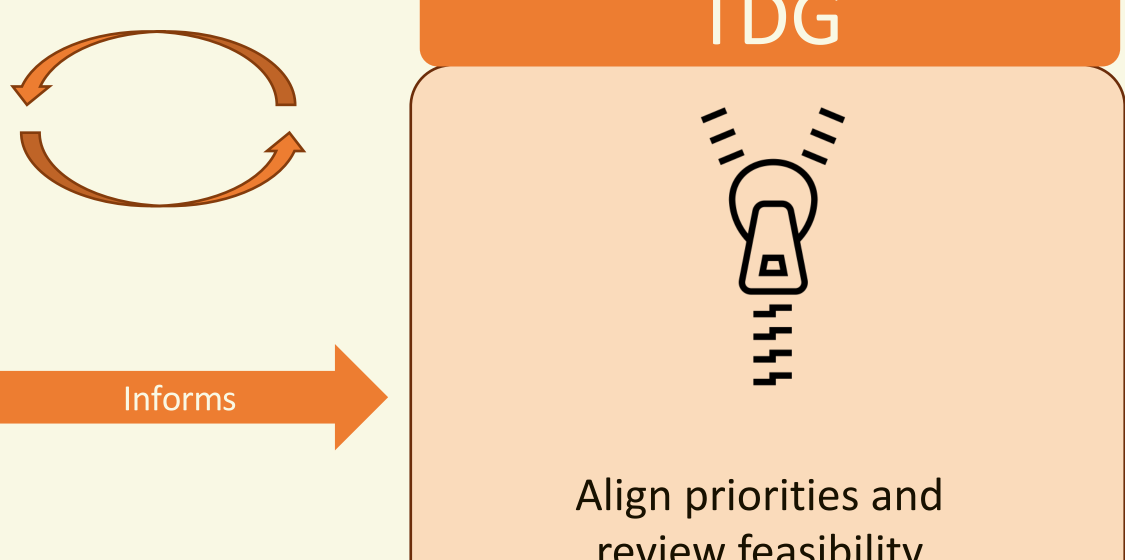
Workshop 2

3. Identify workflow
4. Prioritise challenges

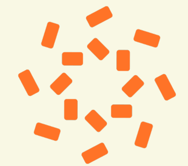
Workshop 3

5. Identify scope of minimum data required to support use cases R1/future

Measurements



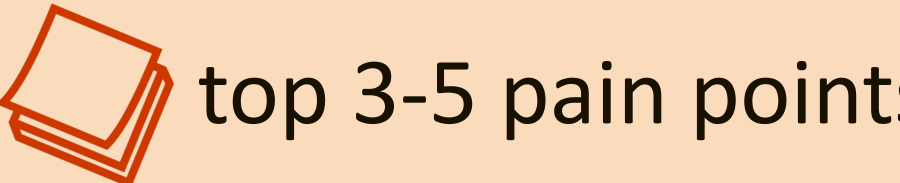
Clarify priorities and requirements



Workshop 1

1. Identify
2. Prioritise

As an individual, identity:



top 3-5 pain points

top 3-5 opportunities

Use cases to think about

Candidate R1

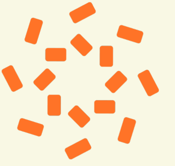
- Pathology and Diagnostic Imaging/Radiology
- Community -> Private lab
- Community -> Public hospital lab
- Hospital (outpatient) -> Community
- Community -> Interstate lab

Candidate R2 / Future

- Hospital Orders
- In-hospital requests
- Interhospital requests (hospital -> hospital)
- Lab -> Lab
- Bookings / scheduling of requests
- Sample collection
- Result linking to request (priority for R2)

Other scenarios for consideration

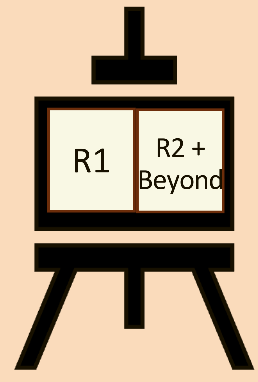
- Request cancelled by consumer
- Request cancelled by clinician
- Request declined by provider
- Request expires
- Request expanded/amended by provider
- Request expanded/amended by clinician
- Clinician requests a future test
- Urgent request with contact instructions
- Services for one episode provided by multiple providers
- Consumer loses token/paper request
- Consumer opted out of digital records and/or My Health Record
- Pathology – Rule 3 exemptions



Workshop 1

1 Identify

Prioritise



<u>As a table – report back</u>

What is most important to <u>your table</u> for eRequesting?

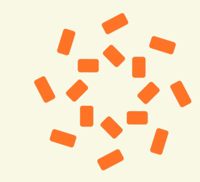
1. Which pain points or opportunities are the most important <u>for R1</u>?

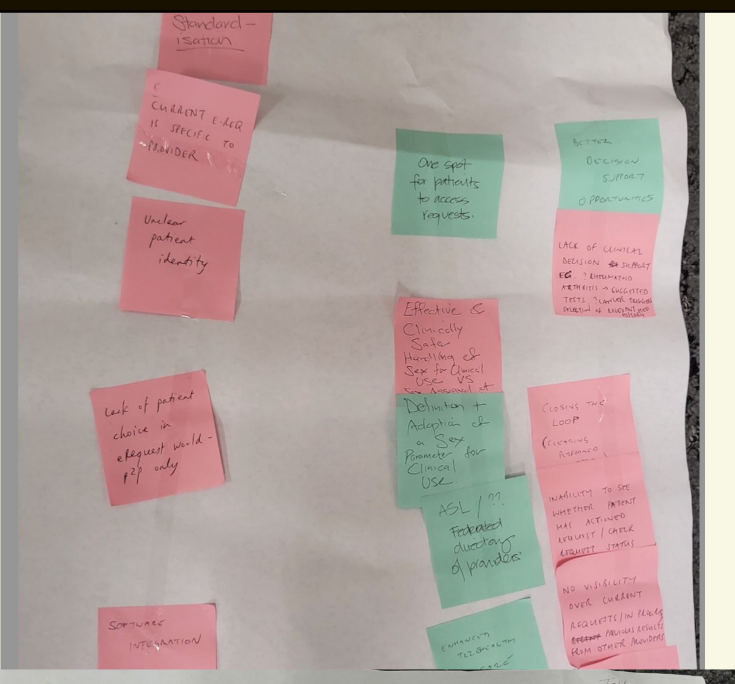
As a table, discuss and agree on the top 5 of each that must be addressed in R1
Report back (and stick on Large Post it pad)

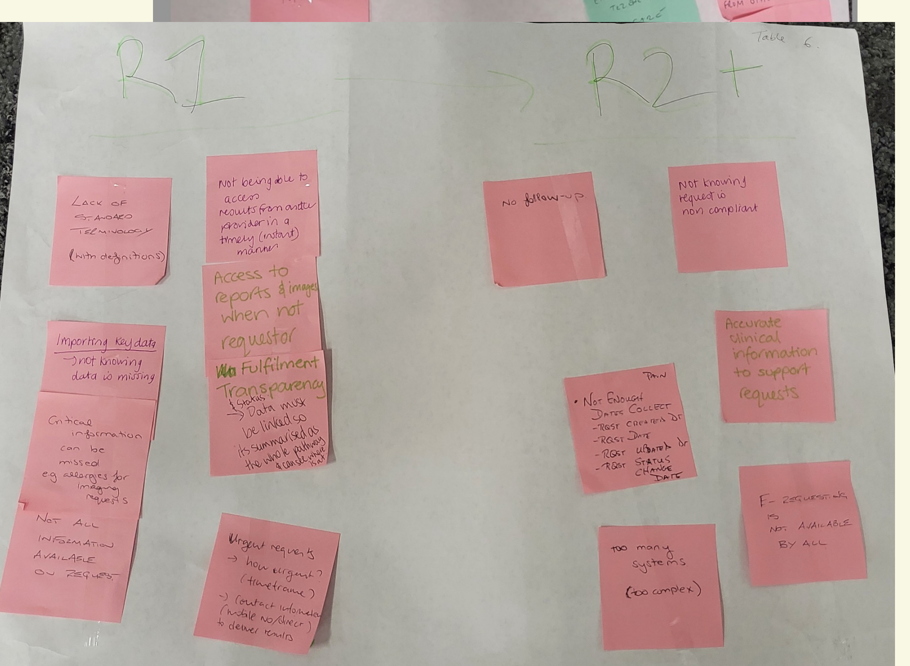
2. Which challenges are most important to achieve in the future, <u>R2 + beyond</u>?

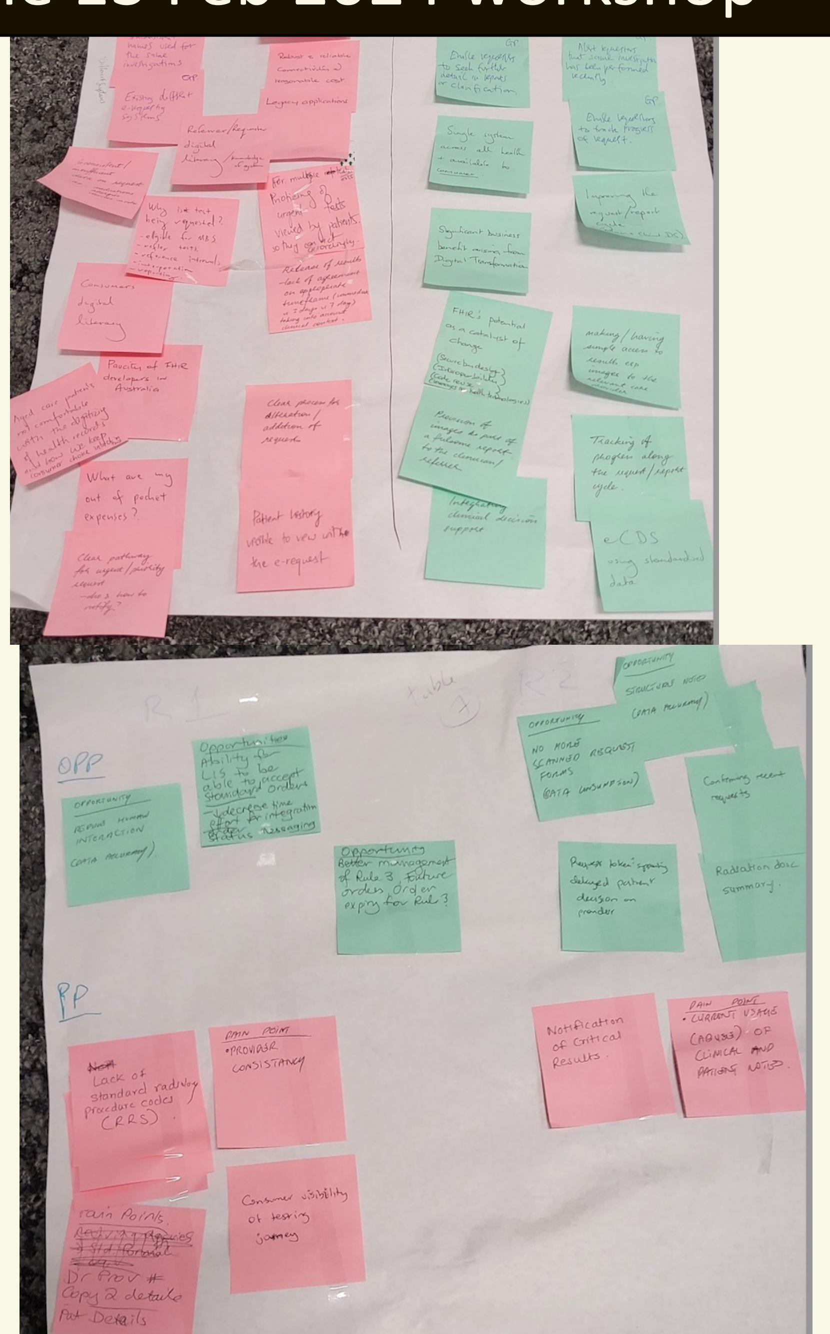
As a table, discuss and agree on the top 5 of each, which must be addressed beyond R1
Report back (and stick on Large Post it pad)

Results from activities held at the 13 Feb 2024 workshop









Top 5 Opportunities R1

Understandable request data

Patient choice - activate request - which provider

clinical information/history incl to fulfill request

7 day delay of results - expediency of access

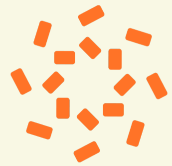
Tracking of request - transparency - urgency

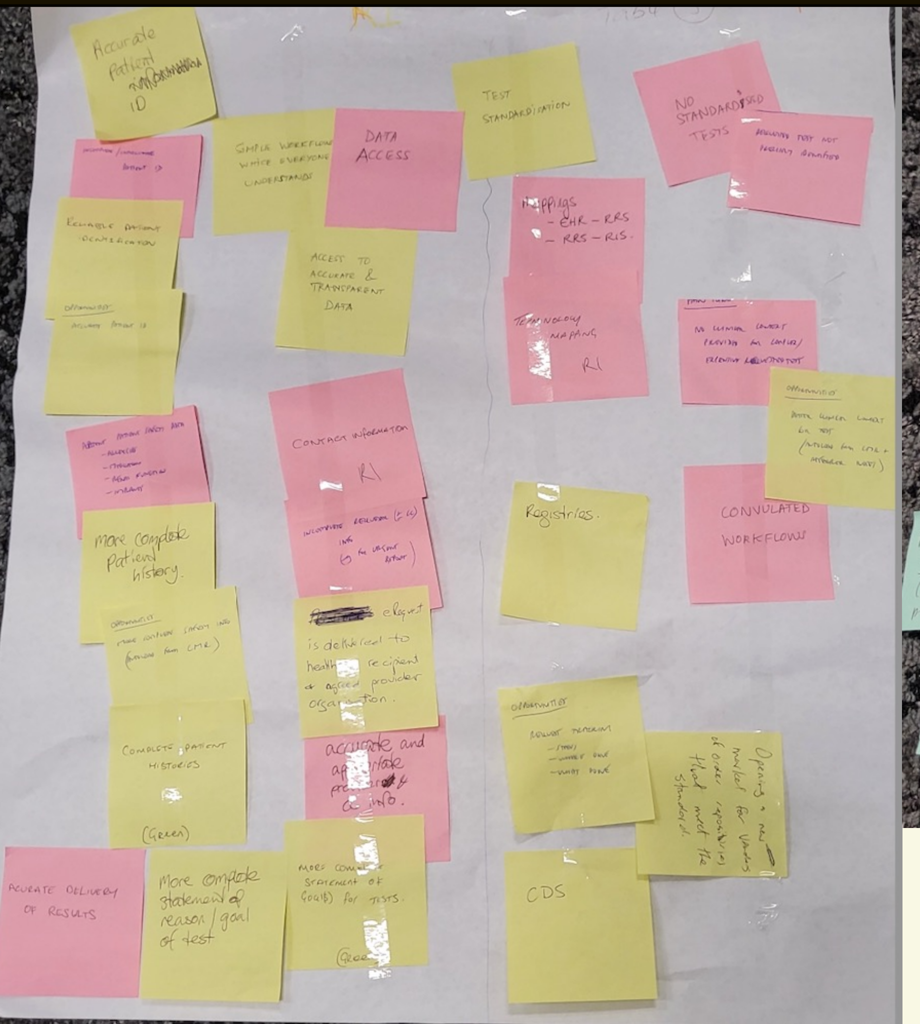
R2

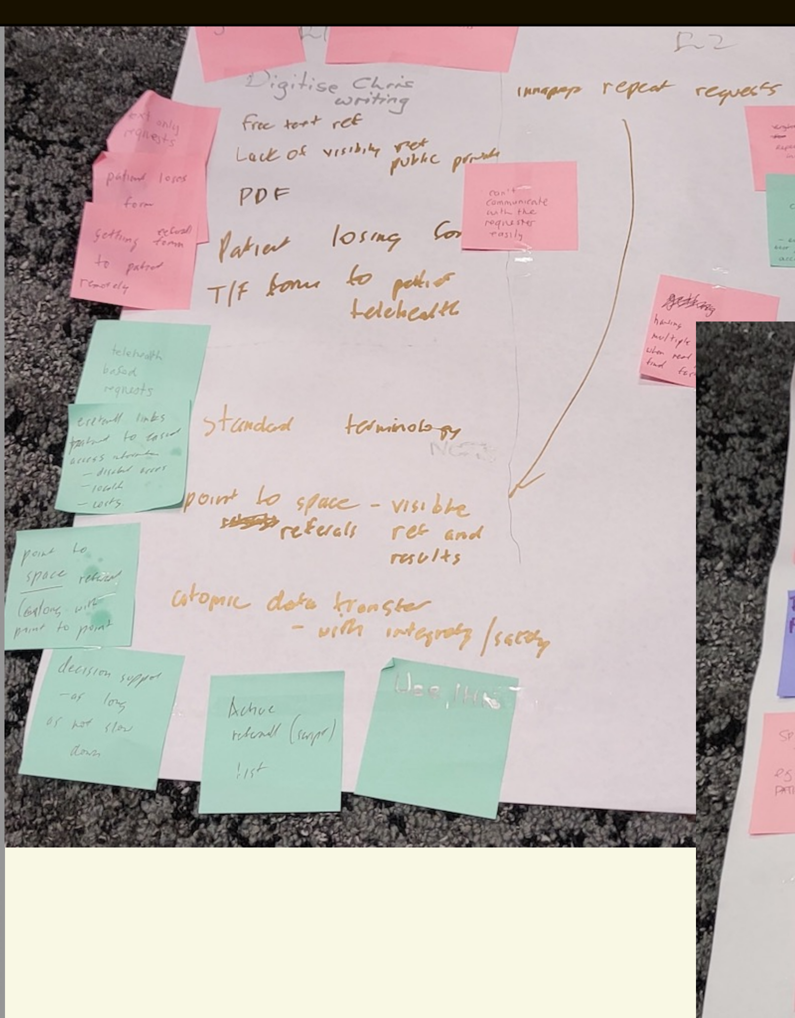
Safe, quality e-Requests + actioning

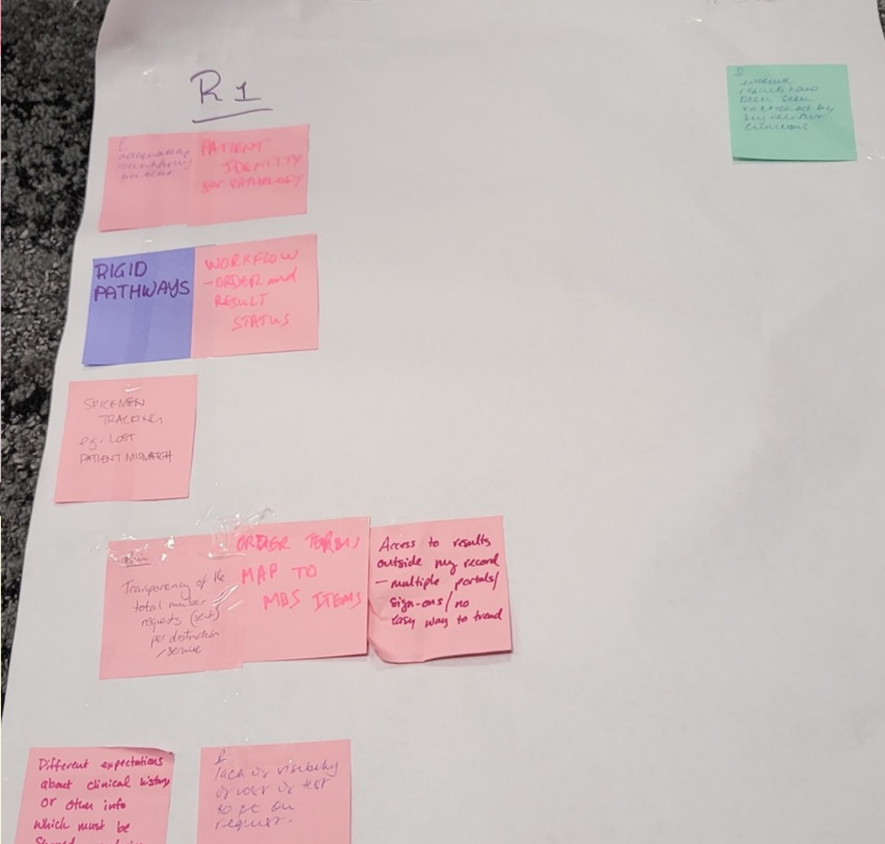
- Monitor

Results from activities held at the 13 Feb 2024 workshop

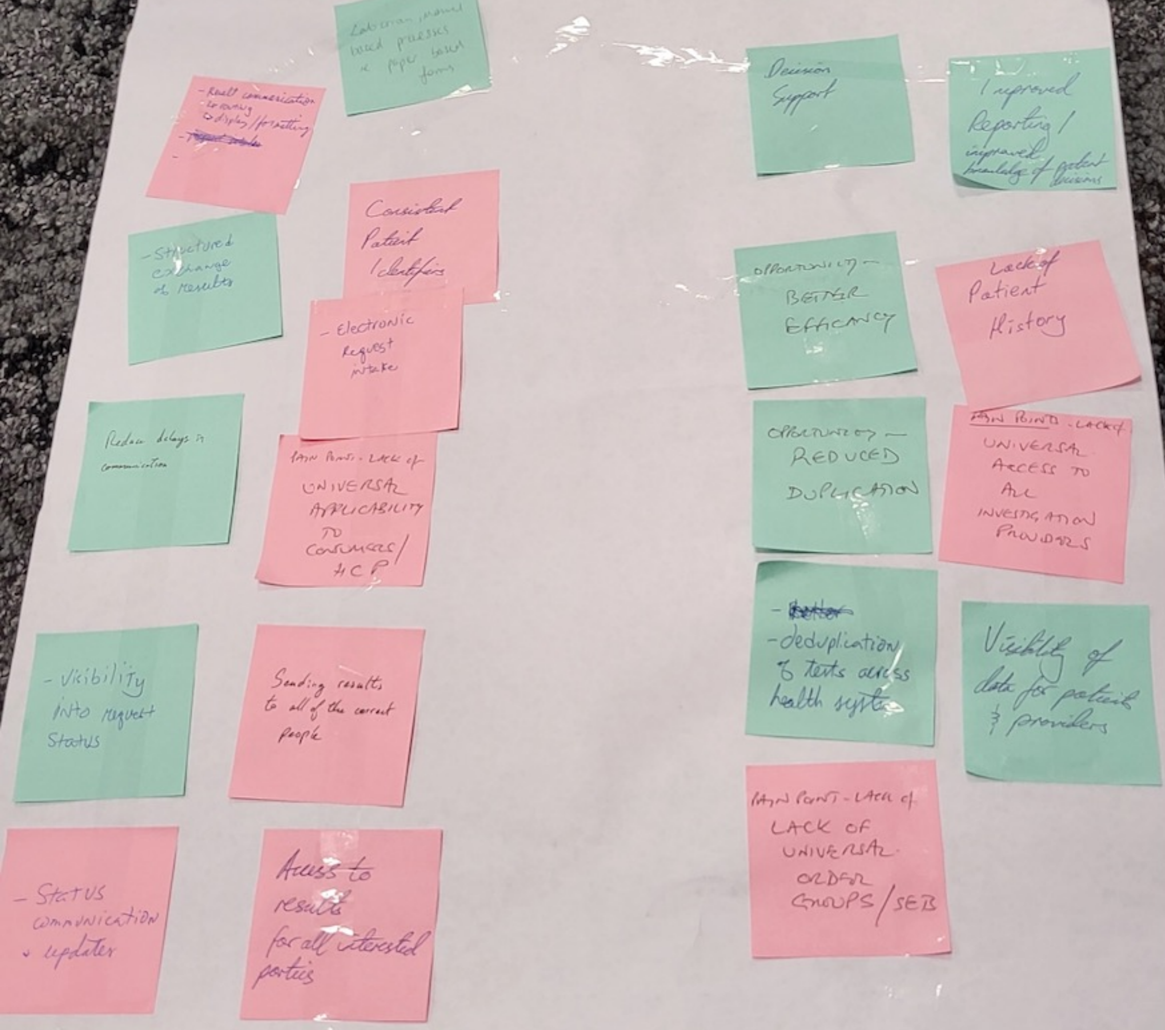








Results from activities held at the 13 Feb 2024 workshop

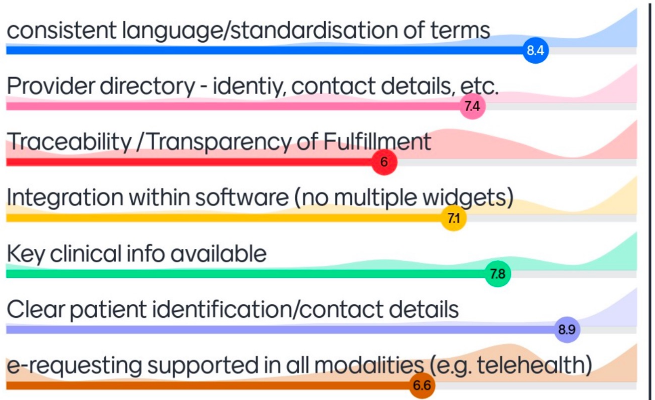


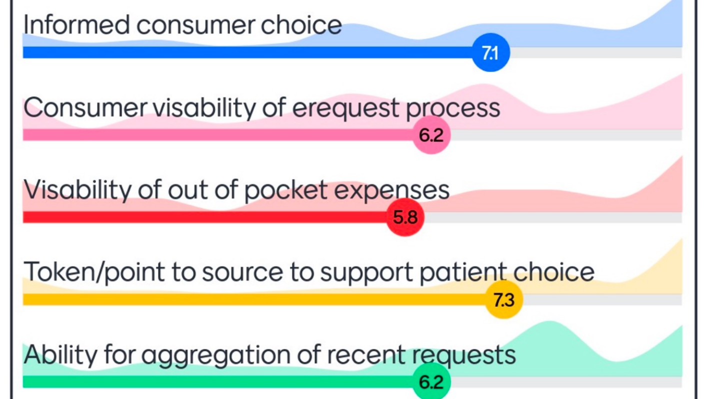
CONSENT

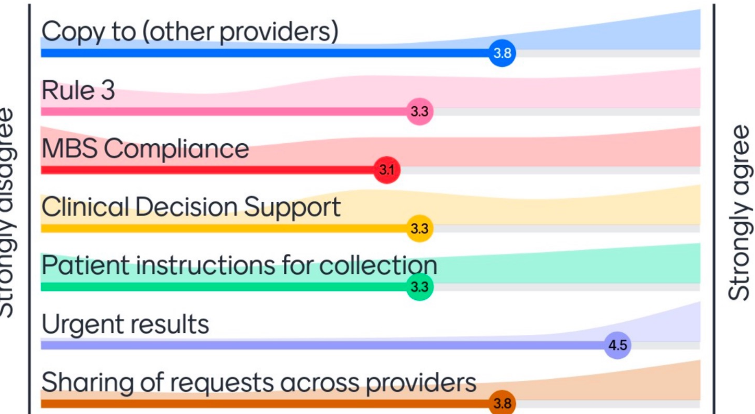
INFORMATION BLOCKING

IDENTITY (IHIs)

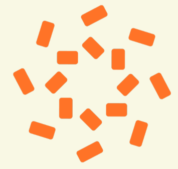
Results from activities held at the 13 Feb 2024 workshop







Workshop 2 – Workflows and priorities

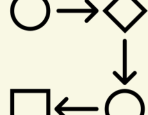


Context

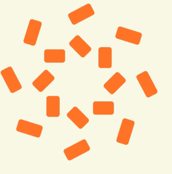
We're not introducing anything new

We're supporting current definitions/policies in the digital context

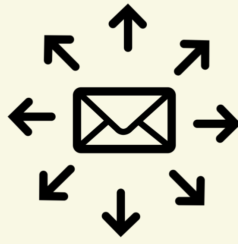
We are creating FHIR Implementation Guides that support current requirements & ensuring they are future-proofed



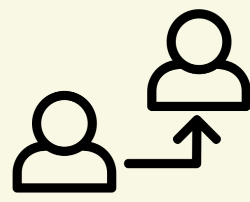
Today we're discussing 3 model workflows that are foundational to continue to support consumer choice in a digital ecosystem



Workshop 2 - Proposed foundational workflows



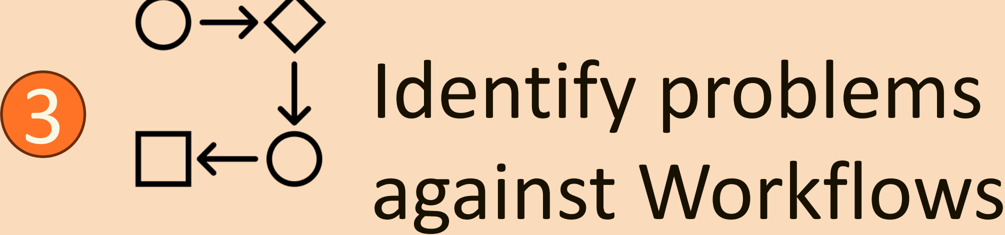
1. Request generated, and **Consumer can choose** a suitable provider



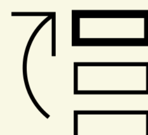
2. Healthcare provider discusses and **agrees with Consumer the recommended provider** with a Request Generated to that provider with the consumer following the recommendation

3. Healthcare Provider discusses and **agrees with Consumer** a recommended provider, request generated and later the **consumer chooses an alternative to the recommended provider**

Workshop 2



3 Identify problems against Workflows



4 Prioritise problems

As an individual at table

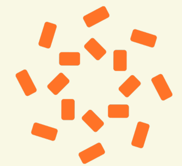
Based on priorities from workshop 1

What are the most important problems to solve from each person's perspective of the foundational use cases? (note these on Post-it notes - Pink)

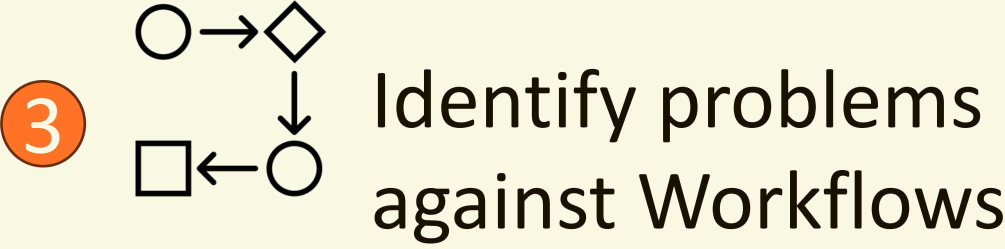
If there are steps you think are missing, or should be a Priority for R1

For R2 + beyond, identify missing steps for referral/service request repeatable workflow patterns

Add those on blue Post-its on the table



Workshop 2

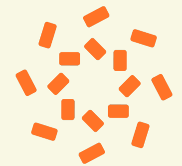


3 Identify problems against Workflows

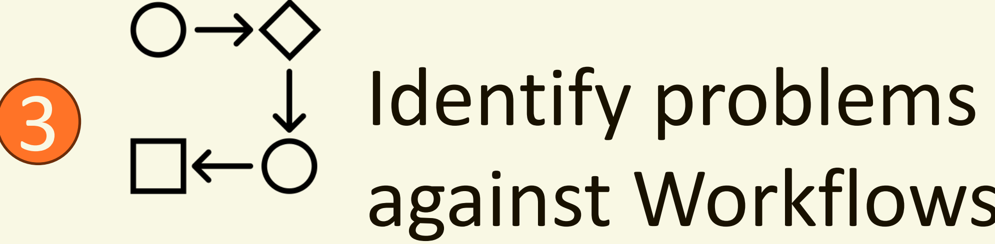
4 Prioritise problems

As a table (at table)
prioritise and agree on what problems must be addressed against the steps in the workflows on table

Table rep
Place priorities on tables printed on the wall printouts & why chosen (explain if R1 or Beyond R1)



Workshop 2



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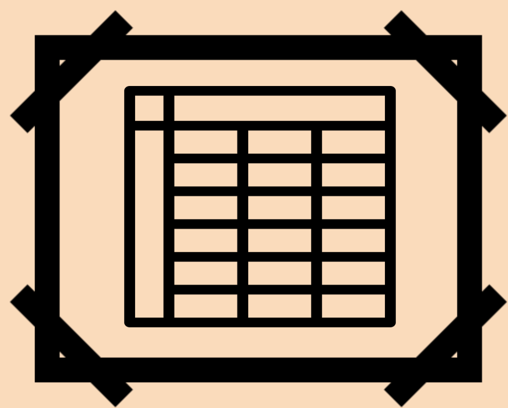
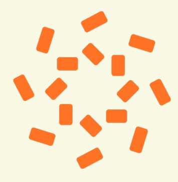
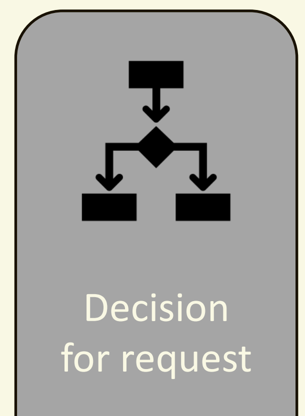


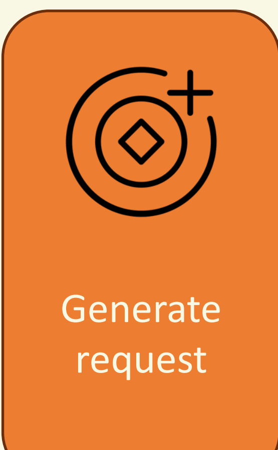
#1 eRequest workflow



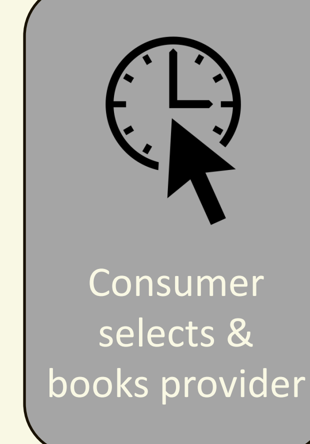
Track request status ●-●-● ○ ○



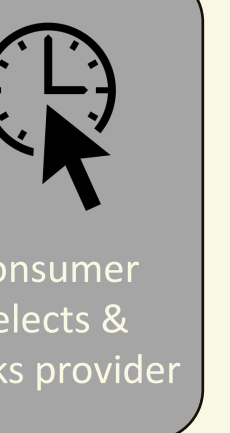
Decision for request



Generate request



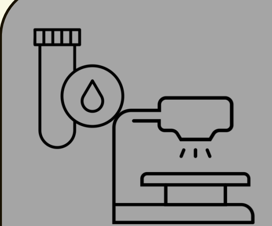
Consumer selects & books provider



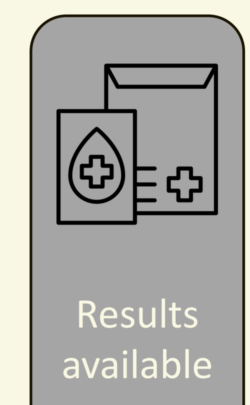
Provider receives request

Request successfully accepted

Test/scan is performed



Fulfilment complete



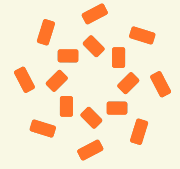
Results available

Provider generates the request allowing the consumer to choose their preferred provider

In scope for R1

Out of scope for R1

Results from activities held at the 13 Feb 2024 workshop



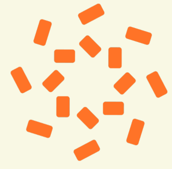
Pathology

Step	Decision for request *After R1	Generate Request	Select/book provider *After R1	Request received	Request accepted	Consumer attends for test and test is performed *After R1	Fulfilment Complete	Results Available
Consumer								
Requestor (Clinician)								
Provider (Lab/other service)								
Industry								
Government								
Supporting Infrastructure								

Missing for R1

Future

Results from activities held at the 13 Feb 2024 workshop



Radiology

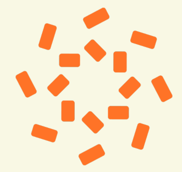
#1 eRequest workflow

Step	Decision for request *After R1	…ok	Request received	Request accepted	Consumer attends for scan and scan is performed *After R1	Fulfilment Complete	Re… Av…
Consumer							
Requester (Clinician)							
Provider (Rad/other service)							
Industry							
Government							
Supporting Infrastructure							

Missing for R1

Future

Results from activities held at the 13 Feb 2024 workshop



#1 eRequest workflow

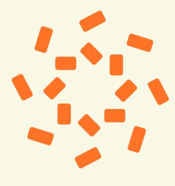
Future – inc. Service request/referrals)

Step	Decision for request *After R1	Generate Request	Select/book provider *After R1	Request received	Request accepted	Consumer attends service *After R1	Service Complete	Service Response (Results/report) Available *After R1
Consumer								
Requester (Clinician)		clinical decision support						
Provider (Service)								
Industry								
Government								
Supporting Infrastructure								

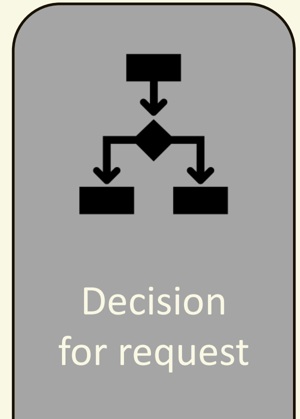
Missing for R1

Future

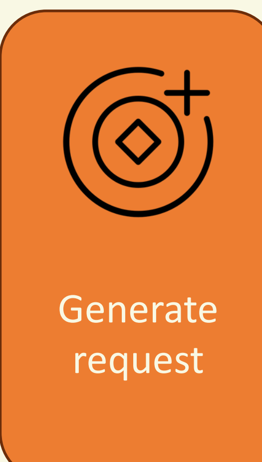
#2 eRequest workflow



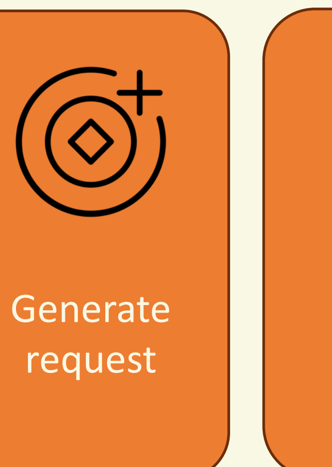
Track request status



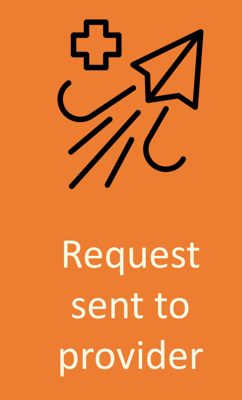
Decision for request



Generate request

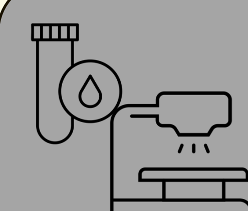


Request sent to provider



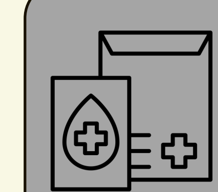
Provider receives request

Request successfully accepted



Test/scan is performed

Fulfilment complete



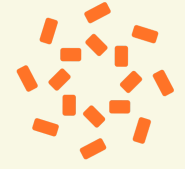
Results available

Healthcare provider discusses and **agrees with Consumer the recommended provider** with a Request Generated to that provider with the consumer following the recommendation

In scope for R1

Out of scope for R1

Results from activities held at the 13 Feb 2024 workshop



#2 eRequest workflow

Pathology

Step	Decision for request *After R1	Generate Request	Send Request	Request received	Request accepted	Consumer attends for test and test is performed *After R1	Fulfilment Complete	Results Available *After R1
Consumer								
Requester (Clinician)								
Provider (Lab/other service)								
Industry								
Government								
Supporting Infrastructure								

Missing for R1

Future

Results from activities held at the 13 Feb 2024 workshop

Radiology

#2 eRequest workflow

Step: Decision for request *After R1 | Generate Request | Send Request | Request received | Request accepted | Consumer attends for scan and scan is performed *After R1 | Fulfilment Complete | Results Available *After R1

Missing for R1

Consumer

Requester (Clinician)

Provider (Rad/other service)

Industry

Government

Supporting

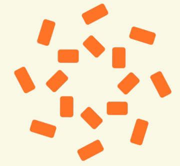
PROVIDER SERVICE REGISTER

Type of examination confirmed (multiple exam request to do what is needful.

Change to requested exam needed. (substitution recommended)

Future

Results from activities held at the 13 Feb 2024 workshop



Future

#2 eRequest workflow

Step: Decision for request | Generate Request | Send Request | Request received | Request accepted | consumer attends for test/scan and is performed | Fulfilment Complete | Results Available

Missin
R1

consumer

registry access to correct provider – with contact info + access info

MULTIPLE CARE PROVIDERS ABLE TO ACCESS RESULTS

Requester (Clinician)

ABILITY TO TRACK REQUEST STATUS (NOT AUTOMATED, PROVIDER DIRECTED) IF NEEDED

VISIBILITY OVER PREVIOUSLY REQ/RESULTS OF TESTS FROM ALL PROVIDERS

CLINICAL DECISION SUPPORT WHEN REASON FOR REQ/ CLINICAL INDICATION SELECTED EG. PROMPT FOR HIGH/LOW EVIDENCE TEST, RELEVANT HISTORY

ABILITY TO COMPARE HISTORIC VALUES IN TABLE AND GRAPH FORM EG. HBA1C TO MONITOR DIABETES CONTROL

LINK RESULT TO REQUEST IE. REQ MARKED COMPLETED WHEN RESULT IS RECEIVED

Provider (Service)

Industry

Data sets for Standard

Fut

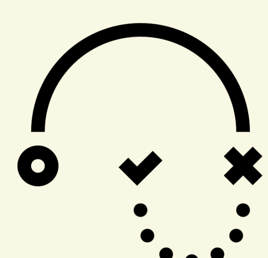
Government

Fulfillment Transparency +

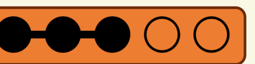
+ point to point plus point to space referrals

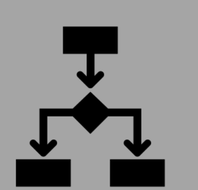
Legislate policy for Standard Governance

Supporting Infrastructure



#3 eRequest workflow

Track request status 



Decision for request

Generate request

Request sent to provider

Provider receives request

Request successfully accepted

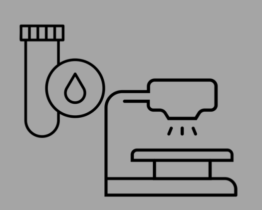
Consumer change of mind

Healthcare Provider discusses and agrees with Consumer a recommended provider, with a request sent to the recommended provider but the **consumer chooses an alternative to the recommended provider**

Consumer selects & books different provider

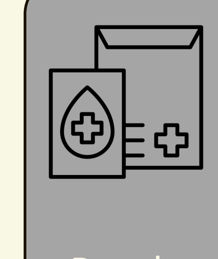
New provider receives request

Request successfully accepted at new provider



Test/scan is performed

Fulfilment complete



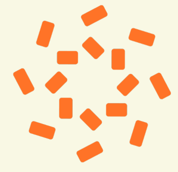
Results available

New tracking request status

In scope for R1

Out of scope for R1

Results from activities held at the 13 Feb 2024 workshop



Pathology — #3 eRequest workflow

Step	Decision for request	Generate Request	Send Request	Request received	Request accepted	consumer attends alternative provider	Request received and accepted by alternative provider	consumer attends for test and test is performed	Fulfilment Complete	Results Available
Consumer			Informed Decision - Who is valid to receive the request? - Quality - Availability - Cost		Is Consumer's data on this Provider's D/Base	Proof of identity; What info can I give them? How do I get them the request?				
Requester (Clinician)			"Cc" recipients - Who needs to know about the request? - What happens when the ordering doc doesn't send the results		Matching terminology				Notification of issues	
Provider (Lab/other service)				Patient needs and circumstances	Enforcing a complete request	Details for specific requests; Patient instructions	Additional clinical context; Knowing the test was taken elsewhere → Accurate expectations of utilisation		Provider Medicare Number → For billing	Results not related to order.
Industry										
Government				What entities can be trusted w/ these requests?	Who is allowed to perform this?		Payment and reimbursement			
Supporting Infrastructure				Transparency in data; Connectivity and Network			3rd party authorisation			

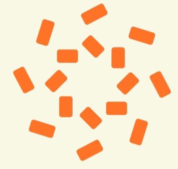
Missing for R1

Future

- Building ~~[illegible]~~ off of prior and outstanding requests

Sparked HL7 FHIR

Results from activities held at the 13 Feb 2024 workshop



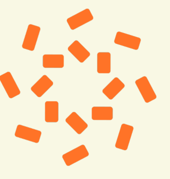
#3 eRequest workflow

Radiology

Step	Decision for request	Generate Request	Send Request	Request received	Request accepted	consumer attends alternative provider	Request received and accepted by alternative provider	consumer attends for scan and scan is performed	Fulfilment Complete	Results Available
Consumer										
Requester (Clinician)		Standardised Terminology. >R1								
Provider/ Fulfiller (Rad/other service)								notification to original provider		
Industry										
Government										
Supporting Infrastructure										

Future

Results from activities held at the 13 Feb 2024 workshop



Future

#3 eRequest workflow

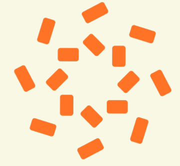
Generic Referral (Lab/Rad/Referral) – Not looking @ specific "sending" workflow

Step	Decision for request	Generate Request	Send Request	Request received	Request accepted	Consumer attends alternative provider	Request received and accepted by alternative provider	Consumer attends for test/scan and test/scan is performed	Fulfilment Complete	Results Available
Consumer	What is my cost?	Consumer informed when results will be available (some tests results take days)	Where do I go?		How do I know something has gone wrong? Waiting for me?				AI vs. Person interpreting results	KNOWING WHERE RESULTS ARE GOING
Requester (Clinician)	What modalities Available → How to send request / which System	DUPLICATE REQUEST Different required for each modality vs. Specialist view	How do I map to test codes + MBS		How do I know Something has gone wrong? Waiting for me?			Different Statuses based on test ? what's workflow		
Provider (Service)	Private/Public choice Named referral				Managing Request for more Info (incomplete requests)					
Industry					Automated triaging based on codified requests (Referral Criteria) Auto allocation		Sharing Request History (Medico Legal req.)	Clear visibility of request fulfillment status for all stakeholders (w/ consent)	Tracking current status of request fulfillment	Discoverability of requests between stakeholders
Government	INFORMED CONSENT		Carrot / Stick to get critical mass adoption		TRANSPARENCY PERMISSIONS					Not hacked No one looking @ results inappropriately
Supporting Infrastructure										

Missing for R1

Future

Workshop 3 – eRequesting Data Model- what is the MLM?



AUeRequestCDI

Role of AU eRequest CDI

A consistent and standardised set of structured data to be captured, used and shared for eRequesting

Informs the design of the eRequest FHIR Implementation Guide

Data:

- To solve the above use case priorities for R1, what data is critical as a foundation to build on?

Informing the eReq data model

- FHIR Service Request
- International consumer Summary (IPS)
- openEHR Archetypes (International)
- US Core Data for Interoperability (USCDI)
- CSIRO Primary Care Data Quality Foundations (PCDQF) (AU)
- Professional Record Standards Body Standards (PRSB - UK)
- AIHW Minimum Data Sets
- The pan-Canadian Health Data Content Framework
- Services Australia – Service Request
- Medicare Benefits Scheme

Clinical workflow and data requirements
Reporting requirements

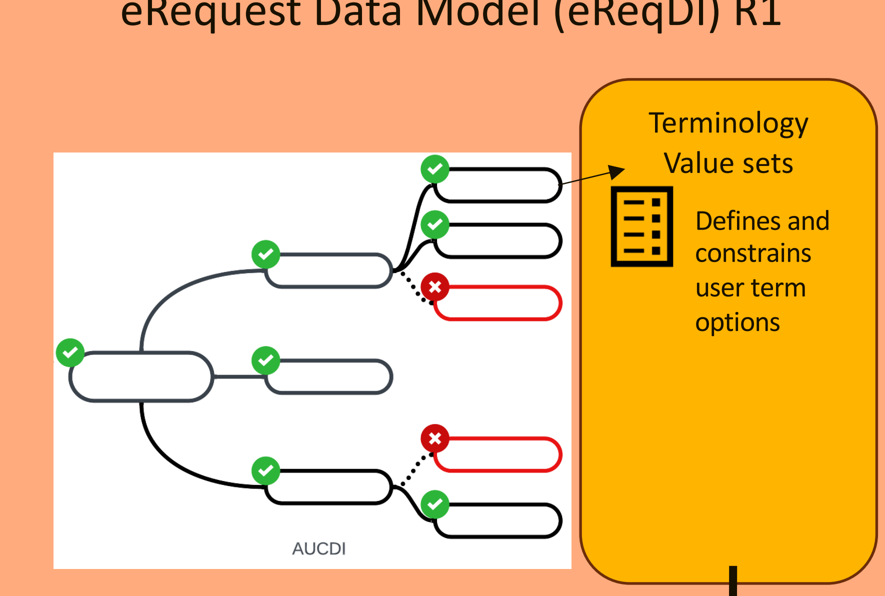
informs

A range of local and international sources informs the content and structure of information models in AUCDI

enables

Clinical Decision Support (CDS) & AI
Data Reuse
Enhanced Reporting capabilities
…

eRequest Data Model (eReqDI) R1



Terminology Value sets

Defines and constrains user term options

AUCDI are clinical data requirements informing AU Core

eReqDI R2

Terminology Value sets

eRequest IG R1

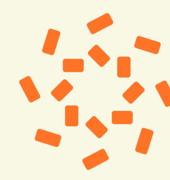
AU Core is a Technical FHIR representation of AUCDI

Terminology Value sets

eRequest IG R2

Terminology Value sets

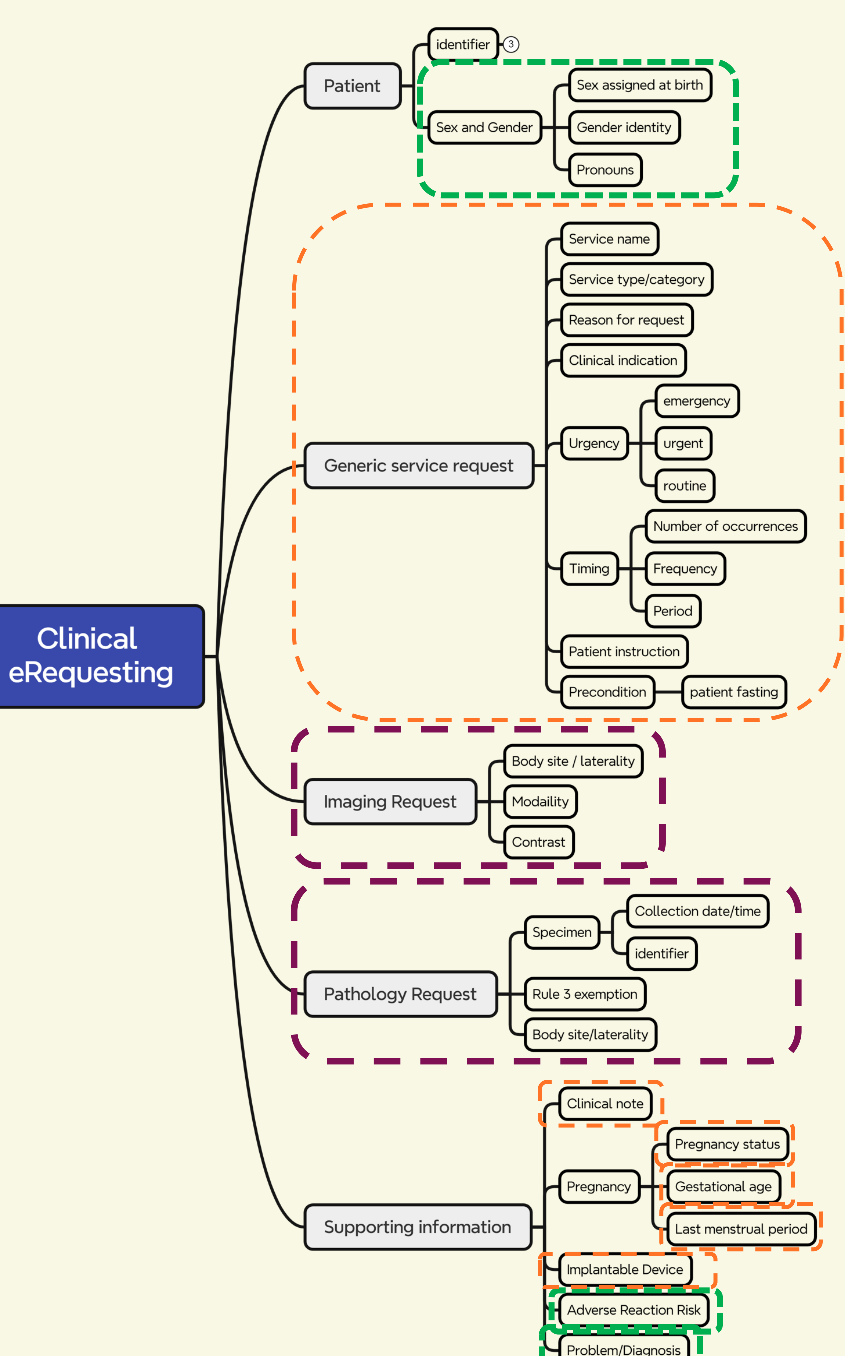
Sparked HL7 FHIR



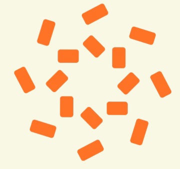
eRequesting

- Patient
  - identifier (3)
  - Sex and Gender
    - Sex assigned at birth
    - Gender identity
    - Pronouns
- Urgent result contact
- Result recipients (7)
- Assigned Performer (2)
- Requester (2)
- Fulfilment (0..*)
  - status (10)
  - reason for status
- Request encounter (5)
- Insurance coverage (5)
- Patient consent
  - Withhold from MHR
- Request date/time
- Request expiry period/date
- Request group identifier
- Generic service request
  - Service name
  - Service type/category
  - Reason for request
  - Clinical indication
  - Urgency
    - emergency
    - urgent
    - routine
  - Timing
    - Number of occurrences
    - Frequency
    - Period
  - Patient instruction
  - Precondition
    - patient fasting
- Imaging Request
  - Body site / laterality
  - Modaility
  - Contrast
- Pathology Request
  - Specimen
    - Collection date/time
    - identifier
  - Rule 3 exemption
  - Body site/laterality
- Supporting information
  - Clinical note
  - Pregnancy
    - Pregnancy status
    - Gestational age
    - Last menstrual period
  - Implantable Device
  - Adverse Reaction Risk
  - Problem/Diagnosis

eRequesting Clinical overview



Data group
- Discrete concept
- 1 or more data elements



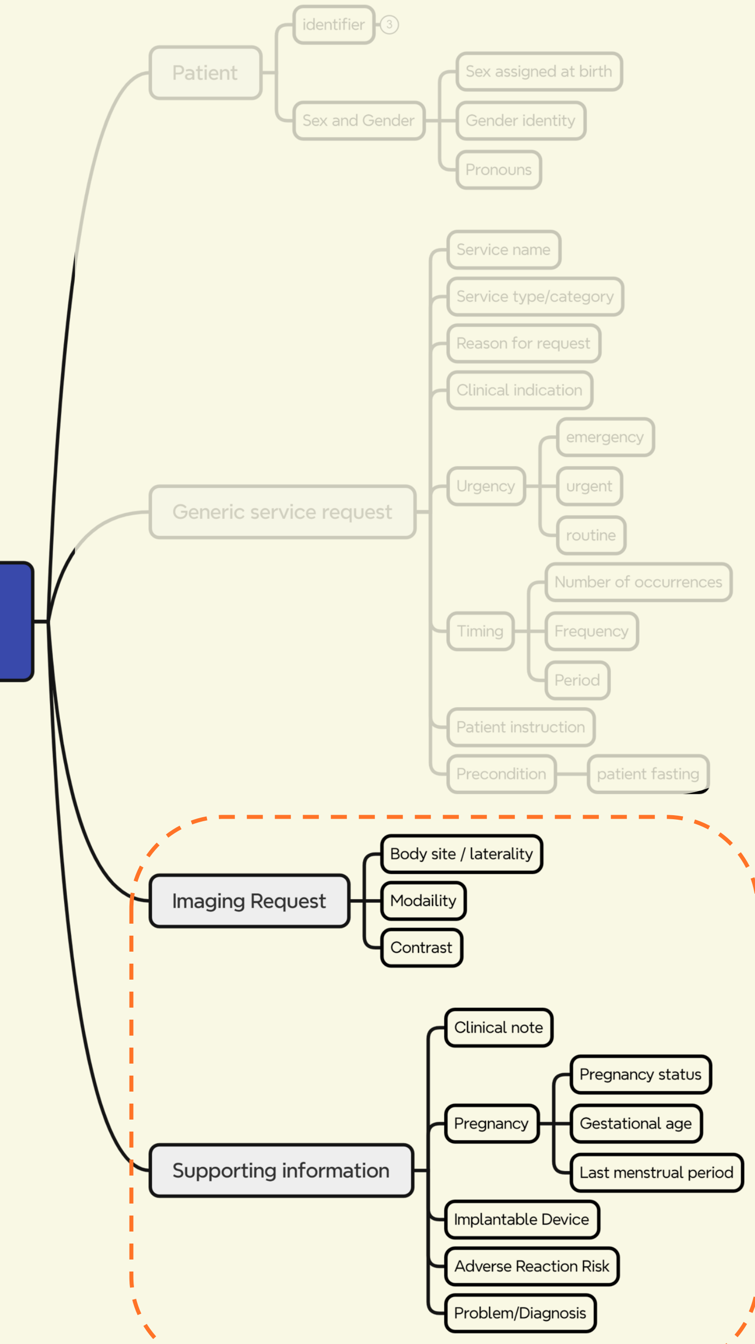
Service request content

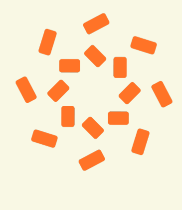
All service requests

Generic service request

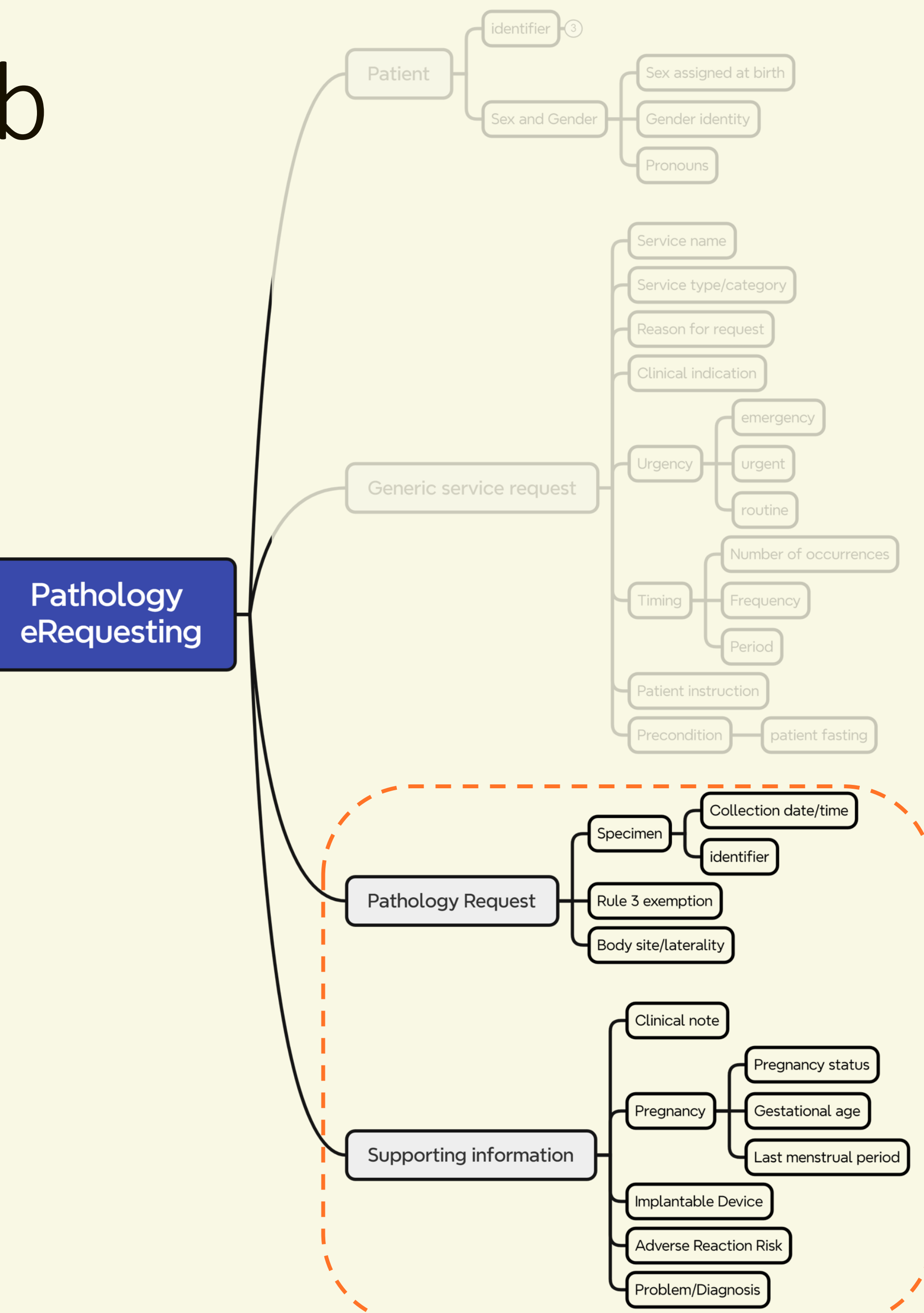
- Service name — **Test name**
- Service type/category — **Lab/Imaging/…**
- Reason for request — **??**
- Clinical indication — **Sign, symptom, diagnosis**
- Urgency
  - emergency
  - urgent
  - routine
- Timing — **Other timings?**
  - Number of occurrences
  - Frequency
  - Period
- Patient instruction
- Precondition
  - patient fasting

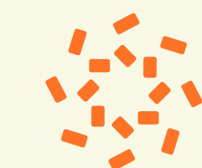
Imaging content



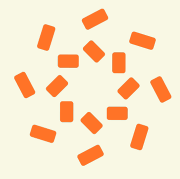


Pathology/Lab content





Release 2+



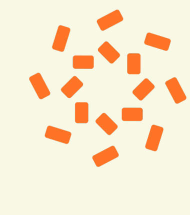
R2+ Specialist eReferral

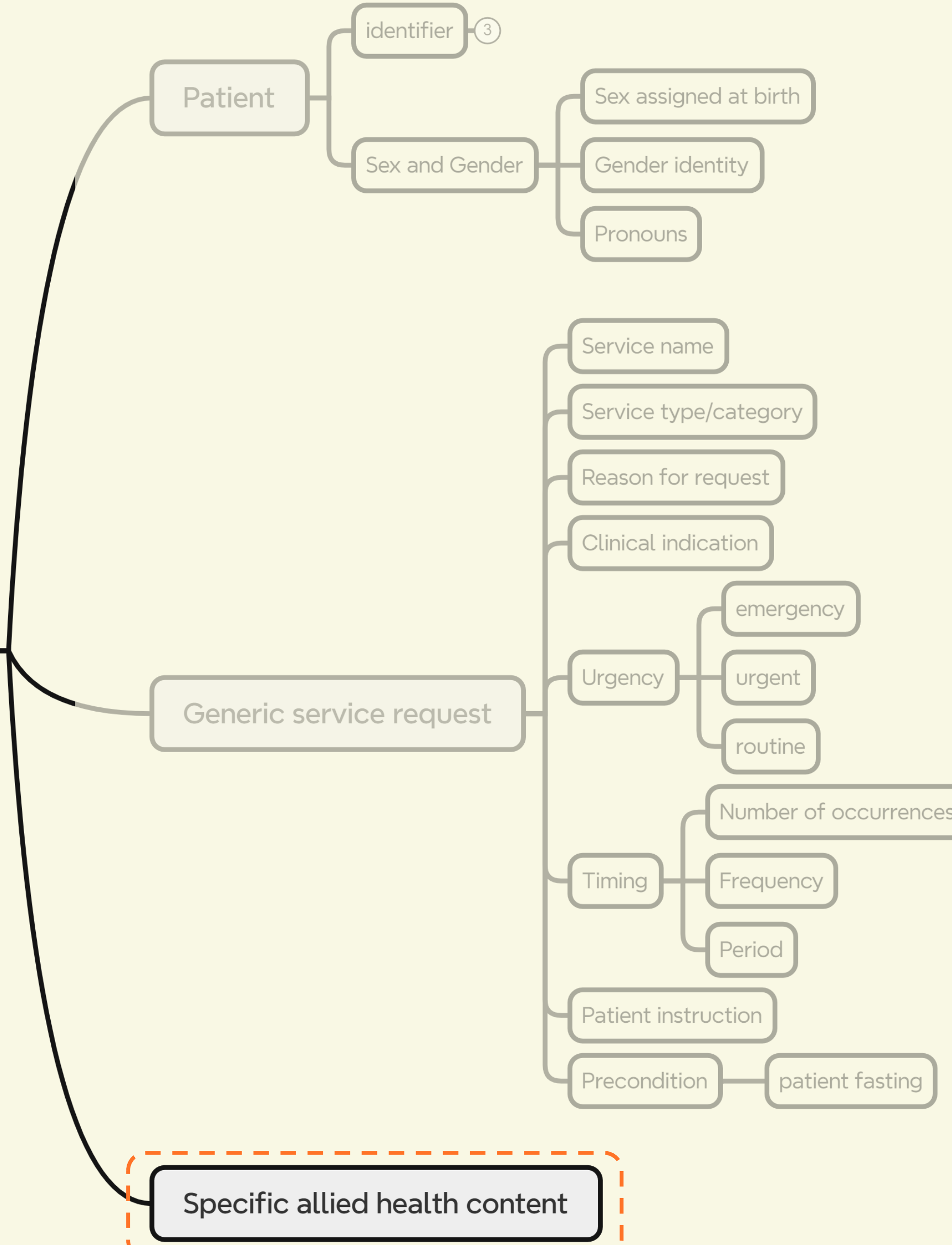
- Patient
  - identifier (3)
  - Sex and Gender
    - Sex assigned at birth
    - Gender identity
    - Pronouns
- Generic service request
  - Service name
  - Service type/category
  - Reason for request
  - Clinical indication
  - Urgency
    - emergency
    - urgent
    - routine
  - Timing
    - Number of occurrences
    - Frequency
    - Period
  - Patient instruction
  - Precondition
    - patient fasting
- Specific specialist content

Release 2+

- R2+ Aged care eReferral
  - Patient
    - identifier (3)
    - Sex and Gender
      - Sex assigned at birth
      - Gender identity
      - Pronouns
  - Generic service request
    - Service name
    - Service type/category
    - Reason for request
    - Clinical indication
    - Urgency
      - emergency
      - urgent
      - routine
    - Timing
      - Number of occurrences
      - Frequency
      - Period
    - Patient instruction
    - Precondition
      - patient fasting
  - Specific aged care content

Release 2+





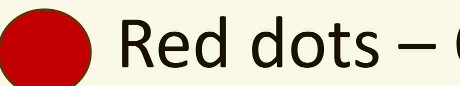
Data Workshop

1. **As a table**, using your table's A3 printouts, **discuss and agree** on what clinical data groups/elements must be in for R1

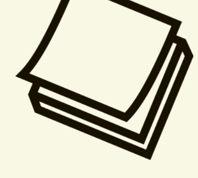
2. **Nominated person** - **transfer your table's agreed decisions** using sticky dots and post-its and place them **on wall printouts**

Green dot - for R1

Orange dots – R2+

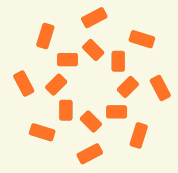


Red dots – Out



Sticky Notes:

- Add missing data
- Comments
- Specify data details



Results from activities held at the 13 Feb 2024 workshop

- eRequesting
  - Patient
    - identifier (3)
    - Sex and Gender
      - Sex assigned at birth
      - Gender identity
      - Pronouns
  - languages spoken
  - Urgent result contact
  - Result recipients (7)
  - Assigned Performer (2)
  - Requester (2)
  - Fulfilment (0..*)
    - status (10)
    - reason for status
  - Request encounter (5)
  - Insurance coverage (5)
  - Patient consent
    - Withhold from MHR
  - Wrong Label
  - Request date/time
  - Request expiry period/date
  - Request group identifier
  - Token (expiry, roles data access)
  - Generic service request
    - Service name
    - Service type/category
    - Reason for request
    - Clinical indication
    - Urgency
      - emergency
      - urgent
      - routine
    - Timing
      - Number of occurrences
      - Frequency
      - Period
    - Patient instruction
    - Precondition
      - patient fasting
  - Imaging Request
    - Body site / laterality
    - Modaility
    - Contrast
  - Pathology Request
    - Specimen
      - Collection date/time
      - identifier
    - Rule 3 exemption
    - Body site/laterality
  - Supporting information
    - Clinical note
    - Pregnancy
      - Pregnancy status
      - Gestational age
      - Last menstrual period
    - Implantable Device
    - Adverse Reaction Risk
    - Problem/Diagnosis
  - Request History

Sparked HL7 FHIR

Results from activities held at the 13 Feb 2024 workshop

Clinical eRequesting

Sex assigned at birth

and Gender

Gender identity

Pronouns

Generic service request

Service name

Service type/category

Reason for request

Clinical indication

Urgency

emergency

urgent

routine

Timing

Number of occurrences

Frequency

Period

Patient instruction

Condition

patient fasting

site / laterality

Modality

Contrast

Body site/laterality

Clinical note

Last menstrual period

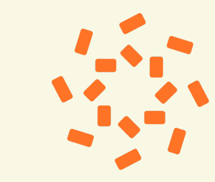
Adverse Reaction

Problem/Diagnosis

Free text option for
- reason
- clinical ind
- problem

Clarify time course

Anticoagulants withdrawn

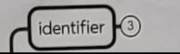


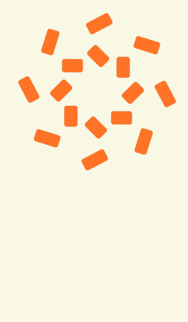
Results from activities held at the 13 Feb 2024 workshop

Imaging eRequesting

- Gen... quest
- ...and Gender
  - Gender identity
  - Pronouns
- ...gory
- Clinical indication
- ...ency
- Urg...
- routine
- ...er of occurrences
- ...uency
- ...od
- patient fasting
- Imaging Request
  - ...ody site / laterality
  - Modaility
  - Contrast
- Supporting information
  - Clinical note
  - ...regnancy
    - Pregnancy status
    - Gestational age
    - Last menstrual period
  - ...plantable Device
  - ...dverse Reaction Risk
  - ...roblem/Diagnosis

Results from activities held at the 13 Feb 2024 workshop





Pathology eRequesting

Pronouns

Service name

emergency

urgent

routine

Number of occurrences

Timing

Frequency

patient fasting

Pathology Request

Collection date/time

Identifier

Rule 3 exemption

Body site/laterality

MODALITY

Supporting information

Clinical note

Pregnancy

Pregnancy status

Gestational age

Last menstrual period

Implantable Device

Adverse Reaction Risk

Problem/Diagnosis

CURRENT MEDICATIONS

Pregnancy Estimated Delivery Date

NEEDS WORK

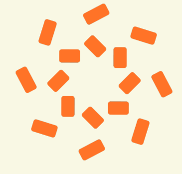
MEDICATIONS

MEDICATIONS

FAMILY / GENETIC HISTORY

Results Reports

Clarify ?other dx or problems



Results from activities held at the 13 Feb 2024 workshop

R2+ Specialist eReferral

Sex and Gender

Gender identity

Pronouns

category

Reason for request

emergency

Generi equest

rgent

umber of occurrences

equency

Period

patient fasting

Specific specialist content

Social situation

Results from activities held at the 13 Feb 2024 workshop

R2+ Aged care eReferral

Sex and Gender

Sex assigned at birth

Gender identity

Pronouns

REFERRAL

patient fasting

Specific aged care content

Allied health Summary information to include under 5

Nutrition
Vision
Communication

Mobility
Cognition &
Psychosocial

Results from activities held at the 13 Feb 2024 workshop

R2+ Allied health eReferral

and Gender

Gender identity

Pronouns

category

emergency

Frequency

patient fasting

Specific allied health content

Medications

Wound management

Pain Management

History relevant to profession referring to

Nutrition information fits where?

Goals of Care

Mobility & Restrictions

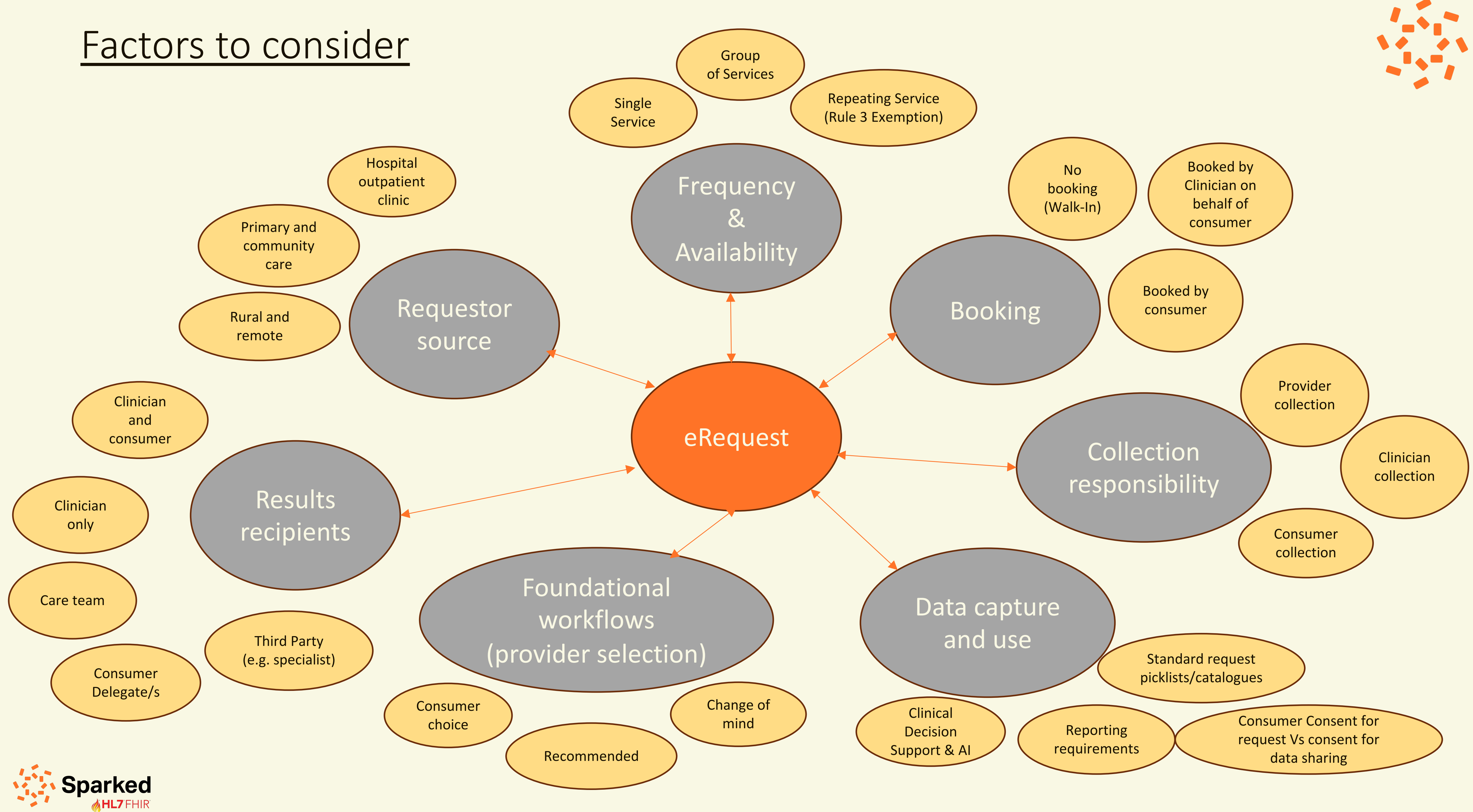
Co-morbidities

Prognosis

Allergies/ adverse reactions/ intolerances

External/ internal implants/ devices

Care team/ Care plans in place



Factors to consider
Group of Services
Single Service
Repeating Service (Rule 3 Exemption)
Frequency & Availability
Hospital outpatient clinic
Primary and community care
Rural and remote
Requestor source
No booking (Walk-In)
Booked by Clinician on behalf of consumer
Booking
Booked by consumer
eRequest
Provider collection
Collection responsibility
Clinician collection
Consumer collection
Clinician and consumer
Results recipients
Clinician only
Care team
Consumer Delegate/s
Third Party (e.g. specialist)
Foundational workflows (provider selection)
Consumer choice
Recommended
Change of mind
Data capture and use
Standard request picklists/catalogues
Clinical Decision Support & AI
Reporting requirements
Consumer Consent for request Vs consent for data sharing
Sparked
HL7 FHIR

Wrap up and reflections of the day

Results from activities held at the 13 Feb 2024 workshop

What does success look like - where would you like us to be in 2 years?

- No more paper requests!!!!!
- R1 Complete and Mandated - R2 Underway
- Industry implementation of IG
- Transparent standardisation at the point of care
- Green shoots of adoption
- Initial requests being sent and received electronically
- Implementation of erequesting in our clinical information system
- Industry engaged with implementation
- Universally utilised workflows
- Industry implementation
- Patient friendly e requesting
- R1 mandated and implemented in systems
- FHIR erequests adopted by at least 50% of the market
- Implementation of the MLM with improved utility for both patients and clinician
- A usable erequesting FHIR standard for path and rad.
- R1 and R2 completed.Patient transparency Patient identifiers habitually
- Beyond just imaging and pathology
- I can go to GP, then go get my pathology/imaging where I want, and not carry a piece of paper.
- Green shoots of adoption
- eRequesting integrated by vendors which speed up current workflows
- Transparency of e-requesting for patients and efficient processes for clinician's to order and retrieve updates
- Industry engaged and choosing to implement.
- No more HIE
- Published and sufficient R1, practical governance and scope for R2
- Lit
- FHIR
- CONSTRAINED
- Digital pathology is coming its like imaging across some modalities a friendly standard for both using the FHIR/DICOM standard.
- A small volume of Erequests are transmitted nationally in anger
- Standardisation of terminology and workflows
- Seamless cross enterprise access
- No paper/faxed requests
- Path and Rad to be friends :'(
- R1 done and dusted. Stakeholders using, and providing brutal feedback. Builders building and listening. Government very happy.
- Patients can access their requests online
- Accurately identified patient, test, result recipients, accurate patient safety & clinical info
- Erquesting is the default and preferred method of requesting
- Industry adoption of electronic referral, underpinned by FHIR
- Consistent terminology for requesting
- Data collected for Quality Indication
- Waaaay more HIE
- Standardised terminology value sets with effective governance to respond to changing needs,
- GPs and Allied Health are requesting a health service
- Really available information for all based on R1. And a bit more...
- AI listens to consultation and cross references health record and suggests relevant tests with associated instructions, approx costs and pt friendly instructions.
- Clear identifiable test request with patient ID and good clinical information
- General public has been updated and don't expect too muchProfession has been educated regarding the needImplementation guide implementedSoftware providers have heads up for R2
- Seamed interoperability
- Standardised Terminology
- Standardised terminology, patient identifiers
- Consumers happy
- System trusted by patients and referrers
- Literacy for electronic records
- Information flows to GP systems to give more visibility would also be nice...
- Diagnostic eRequesting with all green requirements. Receiving orders routinely. Order status response messages. Moving to include more data streams
- Platforms to built future-proofed trust frameworks that protect patient data
- Optimistic
- Geeks know what the GPs want
- FHIR
- Thirsty

Results from activities held at the 13 Feb 2024 workshop

Next steps

- Tomorrow the TDG! They will take out- puts from today
- CDG will progress data model discussions through the CDG calls- dates will be posted on Confluence
- Industry and Clinical Leadership event in Sydney 21 Feb
- HL7 AU and HL7 NZ Interoperability Symposium 20 March
- HL7 AU and HL7 NZ Connectathon 21/22 March
- AU CDI – Commenting period closes 8 March
- Draft eRequesting Data for Interoperability R1 will be published for public comment-before June 2024
- AUCDI R1 will be published as final in June 2024

Thank you