

#### Sparked Clinical Design Group

Tuesday 19 March Workshop

Online



#### 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.





## Agenda

ltem	Item	Time	Lead/facilitator
1	Welcome	5 mins	Kate Ebrill
2	Recap of eRequesting workshop Introduction to Australian eRequesting Data for Interoperability (AUeReqDI) AUeReqDI Scope	30 min	Kate Ebrill
3	<ul> <li>Dive into the clinical model</li> <li>Current pregnancy status</li> <li>Estimated date of delivery</li> <li>Last menstrual period</li> <li>Menstruation summary</li> <li>Medical device summary</li> </ul>	50 mins	Heather Leslie
4	AUCDI R1 draft update	2 min	Kylynn Loi
5	Wrap up and close	3 min	Kate Ebrill



#### Sparked Team



Kate Ebrill – Sparked Lead



Michael Hosking -Sparked Deputy Lead



Kylynn Loi – **Clinical Design** Lead



Dr Heather Leslie – Lead Clinical Data Modeller



Danielle Tavares-Rixon – FHIR **Technical Lead** 





Steph Ong – Infrastructure Lead



Dusica Bojicic -FHIR IG Author



FHIR@csiro.au



Olivia Carter-Engagement Analyst



Matt Cordell -Clinical Terminology Specialist



Michael Osborne

– FHIR

Terminologist

Heath Frankel -FHIR Expert



Nisha Subramanian – **Business Analyst** 



Chris Kellalea-Maynard -Snr Business Analyst

Michael Wilson -**FHIR Solution** Architect



Ilya Beda – FHIR Expert



FHIR Expert



Bernadette Cranston -**Program Director** 









#### Sparked CDG team



Kate Ebrill – Sparked Lead



Michael Hosking – Sparked Deputy Lead



Kylynn Loi – Clinical Design Lead



Dr Heather Leslie – Lead Clinical Data Modeller



Matt Cordell – Clinical Terminology Specialist



Michael Osborne – FHIR Terminologist





#### Sparked CDG Clinical Co-Leads

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



Chris Moy



Harry Iles-Mann



Charlotte Hespe



Andrew Hugman



Chaturica Athukorala





**CDG** is

**TDG** is

here

What is AU eReq IG and Australian eRequesting Data for Interoperability (AUeReqDI)?

Specifies "WHAT" <u>clinical information</u> (and corresponding data elements and terms) should be included for data entry, data use and sharing information supporting eRequesting



ΑL

eReq

Specifies *"HOW"* the core set of data (above) and information should be <u>structured, accessed</u> and <u>shared</u> between systems for the eRequesting use case





#### **AUeRequestDI**

**Role of AU eRequest DI** 

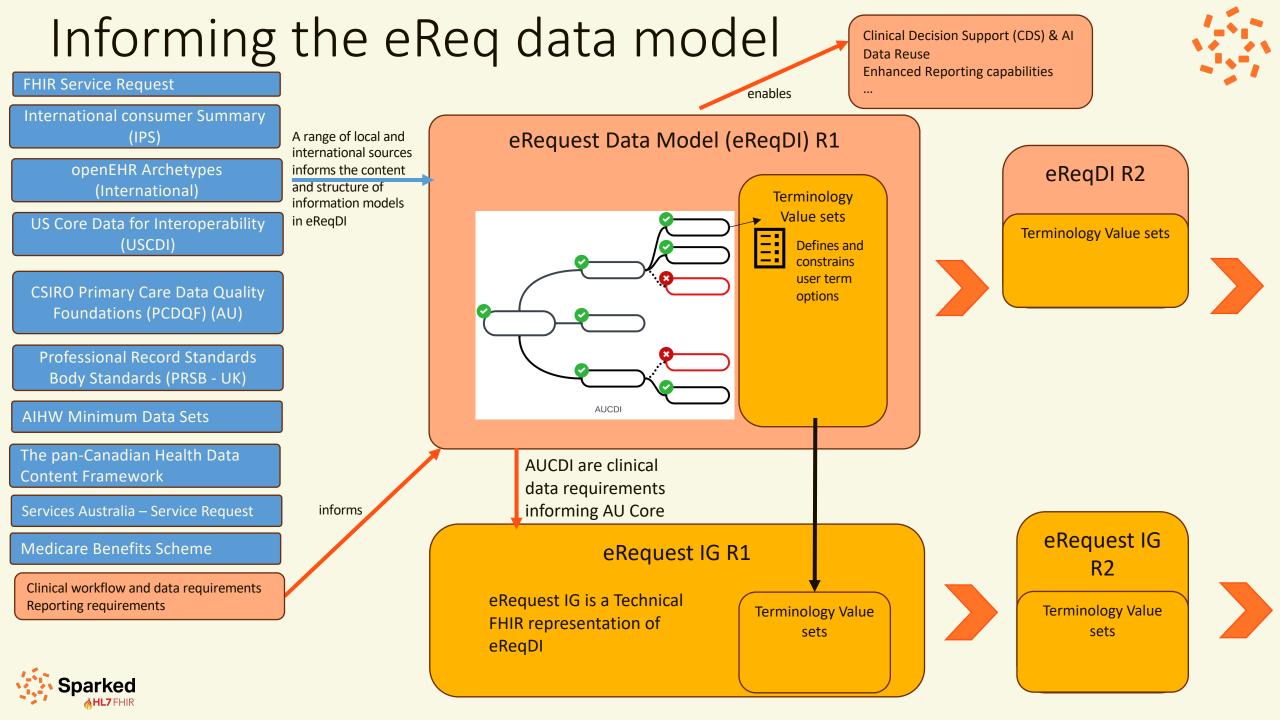
## A consistent and standardised set of structured data to be captured, used and shared for eRequesting

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?

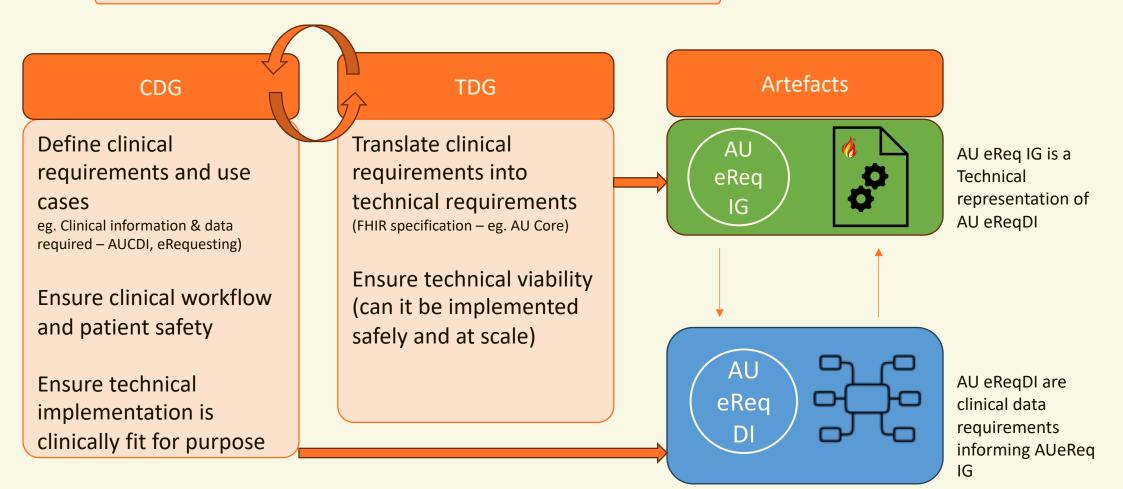






### High-level process and feedback loop

- CDG (or delegate) clarifies clinical requirements/scenarios
- TDG provides technical advice







## Sparked: Australian eRequesting Data for Interoperability (AUeReqDI)

#### Support current workflows

#### Start small and grow iteratively

- First priorities are imaging examinations and laboratory/pathology tests
- No simple "undo" impact of change can be high
- Data elements can be added to over time
  - Work through backlog
  - Add more use cases
  - More functionality available

#### Stick with our design principles

#### Leverage and align with AUCDI

• Identify core data elements that should go into future releases of AUCDI

#### Leverage and align with work locally and internationally were possible

• Where we differ, need to understand the impact







#### Core Draft Principles of Data Set Design





## Additional Principles of AU eReqDI design

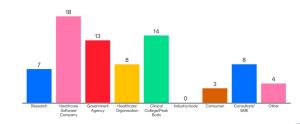
- Supports current workflows for laboratory/pathology test and imaging examination requests
- eRequesting DI will focus on the clinical aspects
  - Responsibility of the technical items will fall to the TDG/AU eRequesting FHIR IG with CDG support. This includes
    - Administrative
    - Billing
    - Technical data items
      - Security
      - Privacy/Consent
    - Non-clinical context e.g. provenance information
    - MBS workflow items Self determined (SD), Rule 3 exemptions
  - Other out of scope areas include
    - User interface/form implementation requirements eg. MBS mandated requirements, such as patient advisory statements, privacy notes, etc.



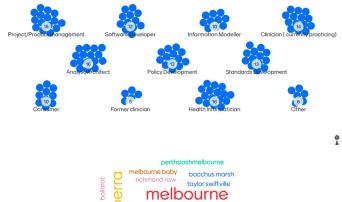


# First eReq workshop held in Melbourne



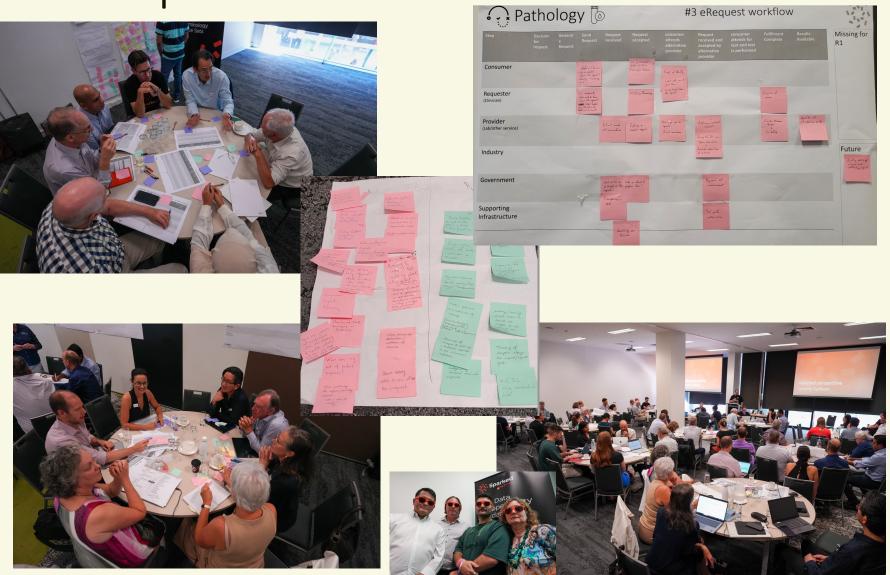


What is your role/background





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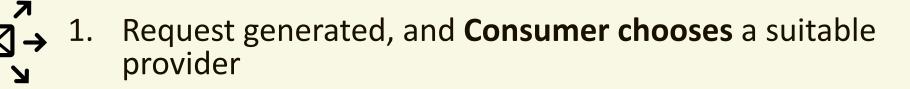
### Objectives of first workshop

- 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





### Proposed foundational workflows





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** 



#### Results from activities held at the 13 Feb 2024 workshop

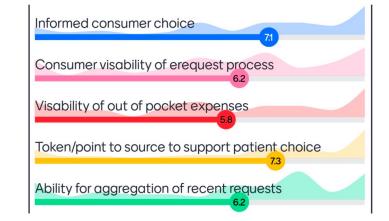


🛃 Mentimeter

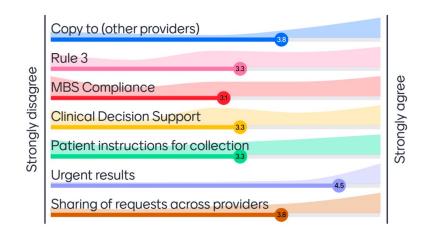
**Priorities R1** 

#### **Priorities R1**

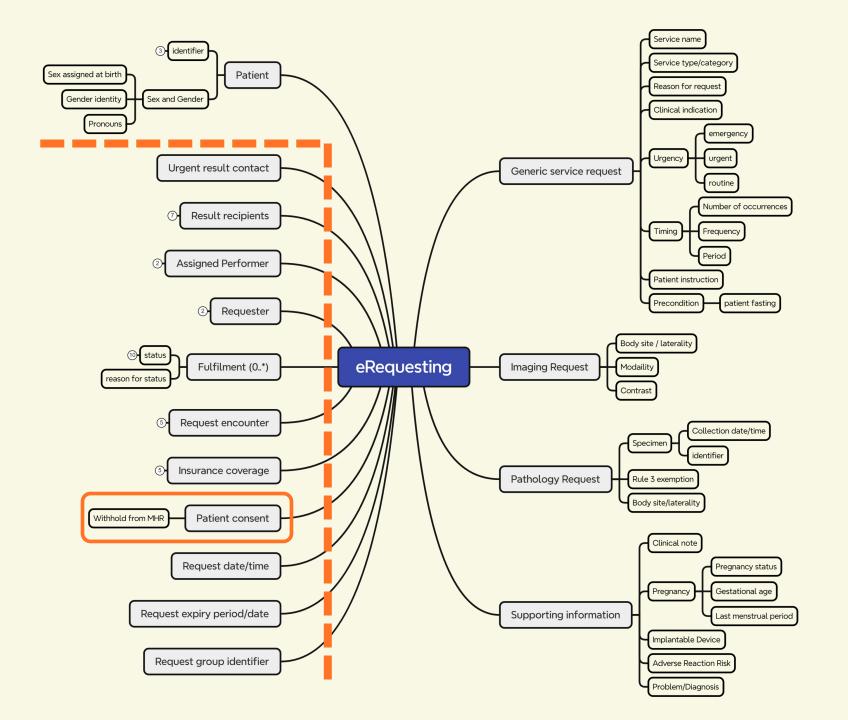




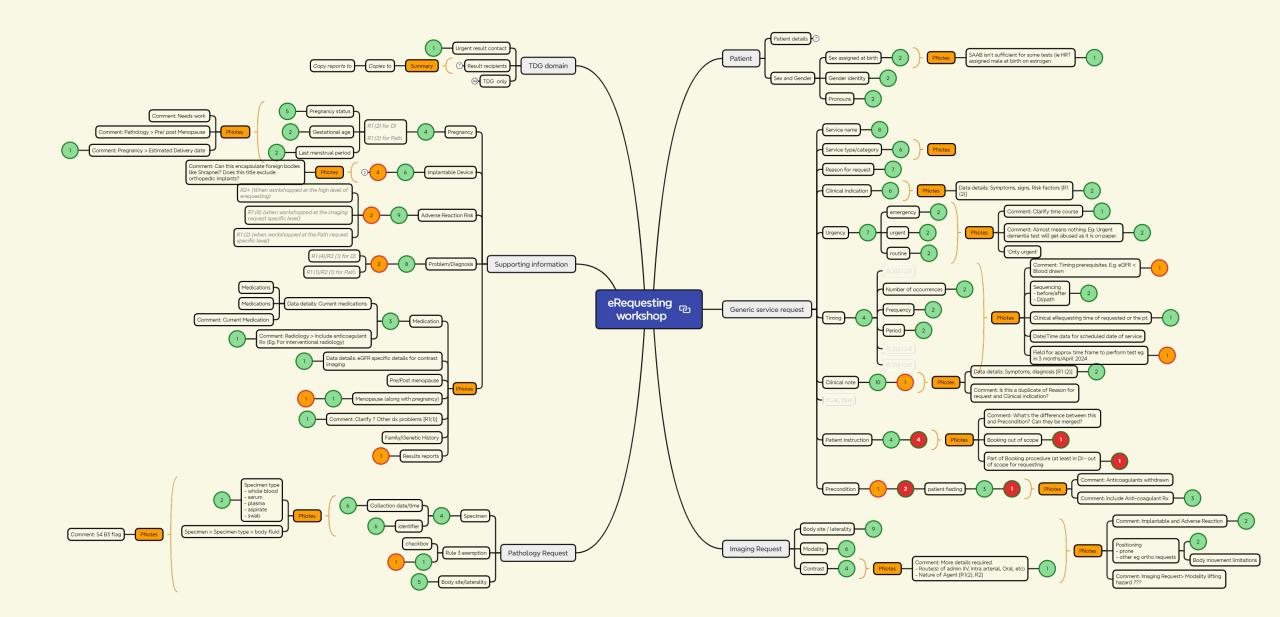
#### **Priorities R1**



Sparked

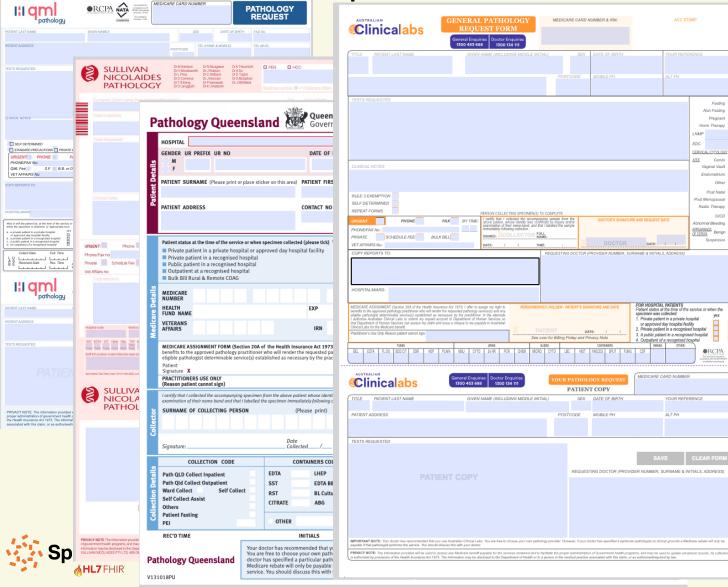


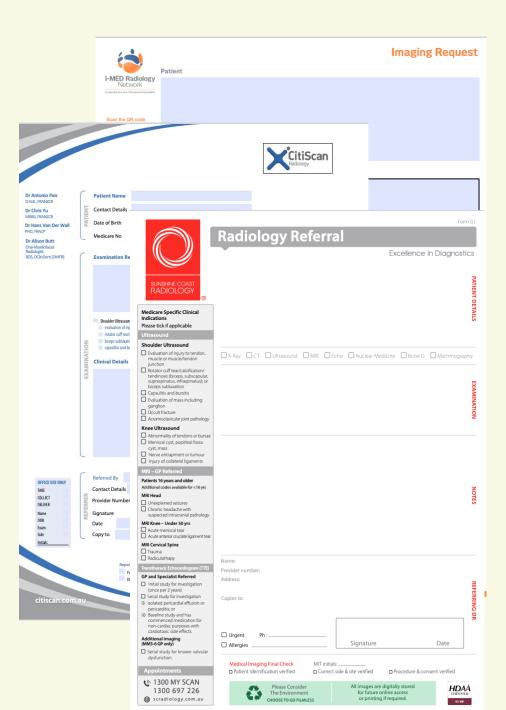






## Current request forms





Fasting

Pregnant

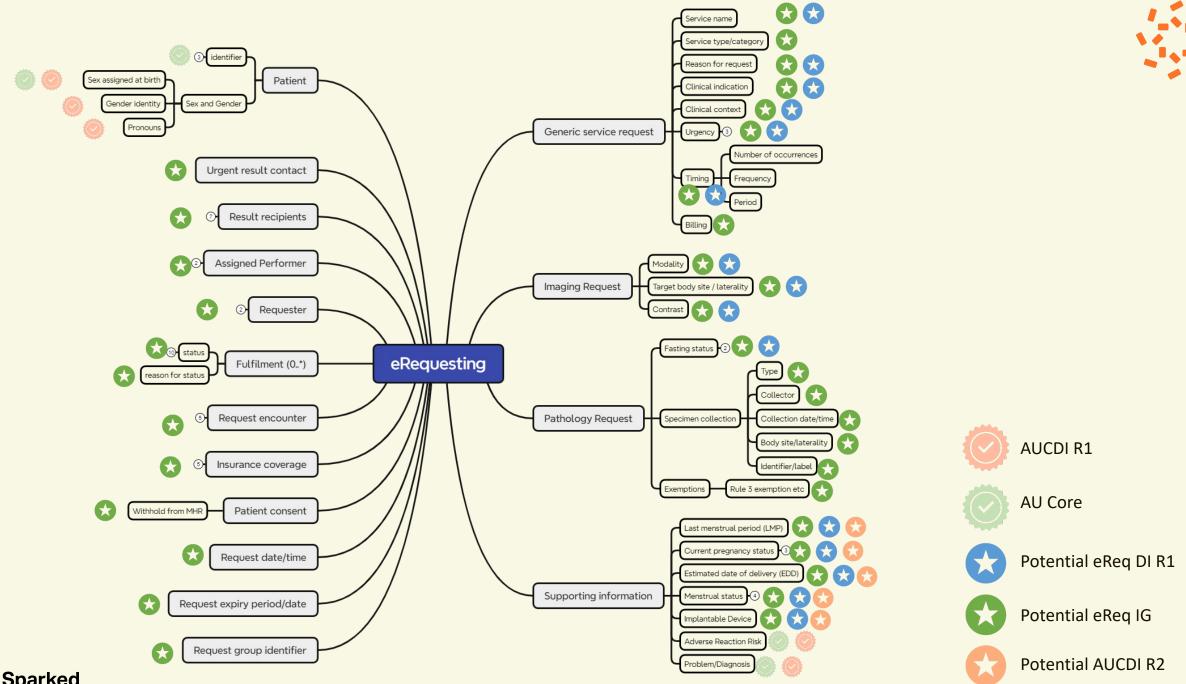
Cervi

Other

IUCD

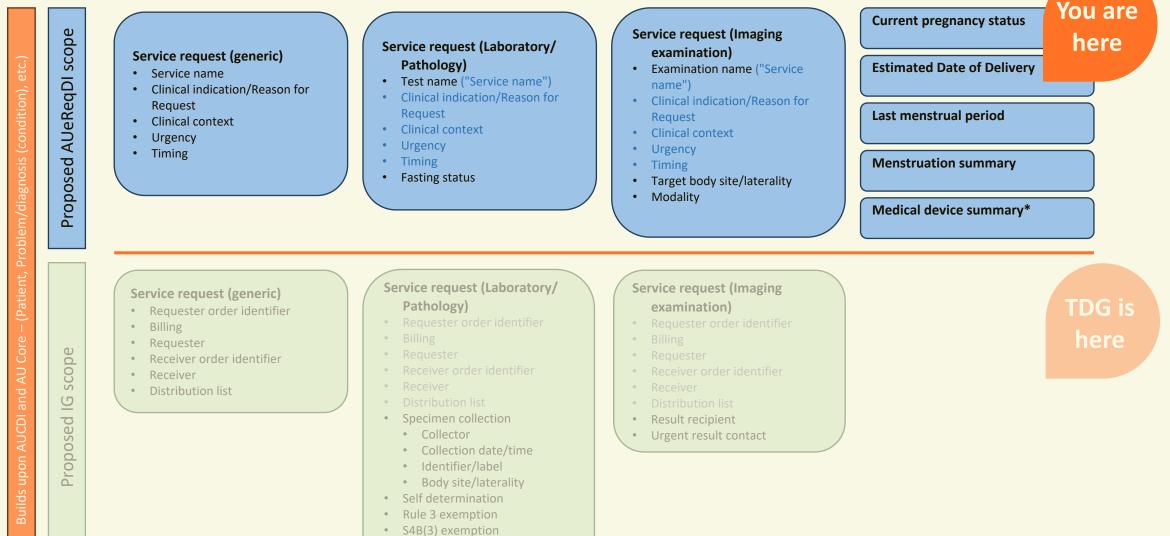
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SATA



Sparked

#### AUeReqDI R1 proposed scope

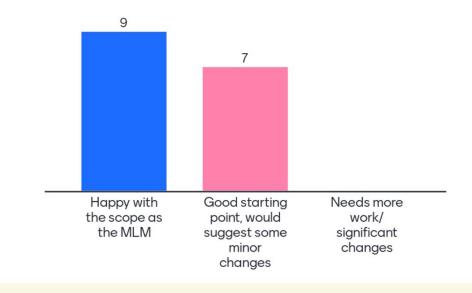


Sparked

Result recipient
Urgent result contact

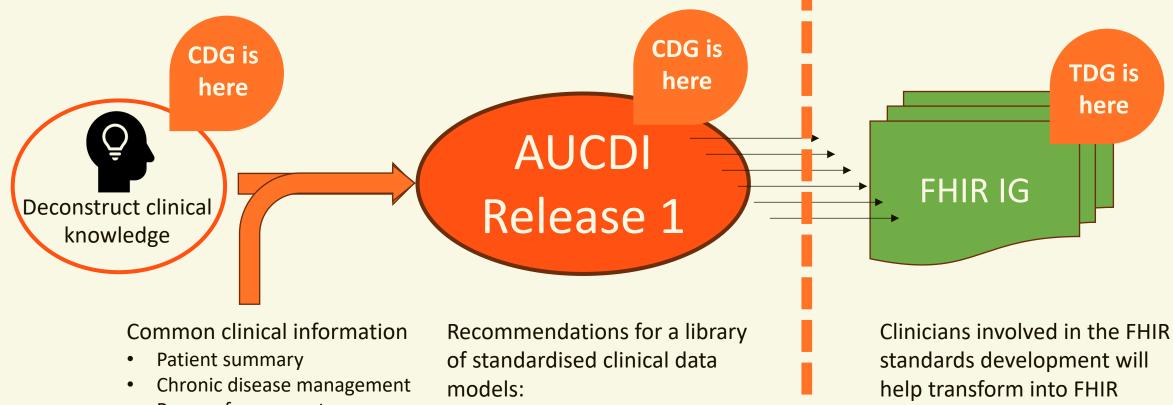
#### Answered in the online meeting 19 March 2024

## Will this scope support a minimum lovable model (MLM)?





### CDG task $\rightarrow$ AU Core Data for Interoperability



Reason for encounter

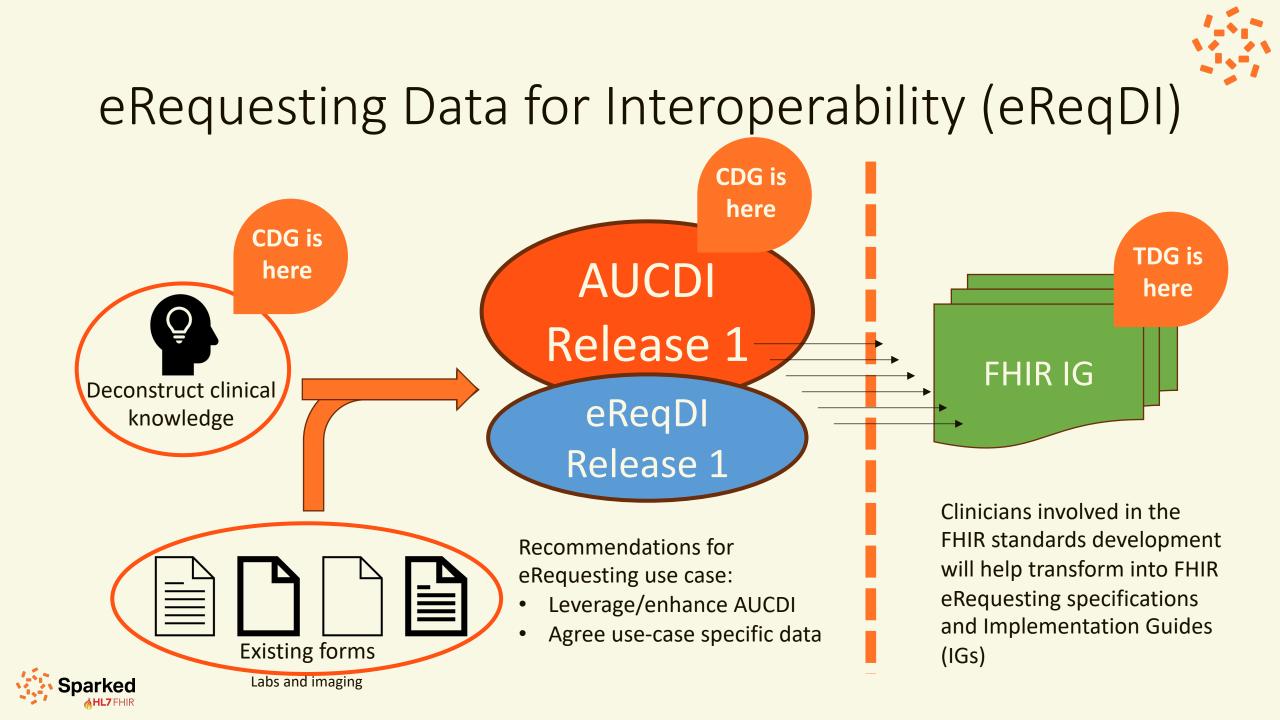
A use-case agnostic guidance for •

- data entry and reuse:
- To inform FHIR IGs

specifications:

- AU base/core
- Implementation Guides (IGs)





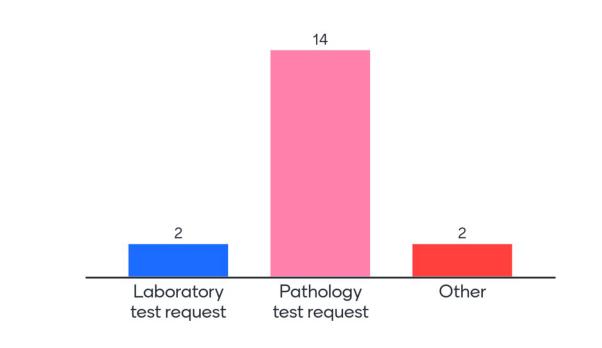
#### Concept names

- Labs/Path
  - "Laboratory test request"
    - OR
  - $_{\circ}~$  "Pathology test request" may be confused with 'anatomical pathology'
- Imaging
  - "Imaging examination request"
     OR
  - "Imaging request" may be confused with medical photography OR
  - "Radiology request" may confuse by limiting to the requesting of only radiation-based imaging



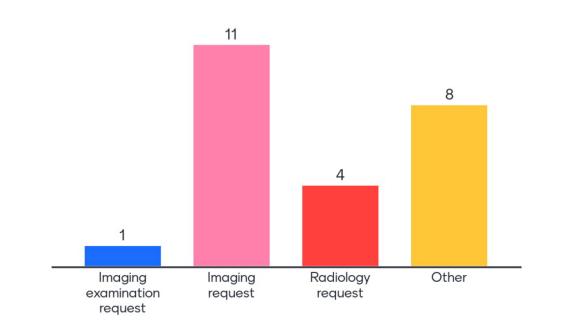


#### Naming -lab/path











#### eRequesting: clinical screening



	Lab1	Lab2	Lab3	Lab4	Lab5	Lab6	Imaging1	Imaging 2
Pregnant	[X]			[X]	[X]	[X]	[Yes/No]	
LMP/LNMP	LMP			LNMP	LNMP	LMP		LMP
EDC	EDC			EDC		EDC		
Gestational age		Pregnant weeks	Gestational Age		Gestational age (weeks)			
Hormone therapy	[X]			[X]	[X]	[X]		
Postnatal/ postpartum	[X]			[X]		[X]		
Post menopause				[X]				

Identify/communicate risk/issues/clinically important information

Considerations:

- Source forms often historical; original reasoning lost; worth replicating?
  Questionnaires messy, inconsistent, poorly defined, reactive; no coordination

- Opportunity to reimagine: What should be in scope? "Not go backwards" How should it be represented?

  - Does standardising this information matter?



### eRequesting: Pregnancy screening



	Lab1	Lab2	Lab3	Lab4	Lab5	Lab6	Imaging1	Imaging 2
Pregnant	[X]			[X]	[X]	[X]	[Yes/No]	

- Screening for pregnancy current pregnancy status
   Correct interpretation of results

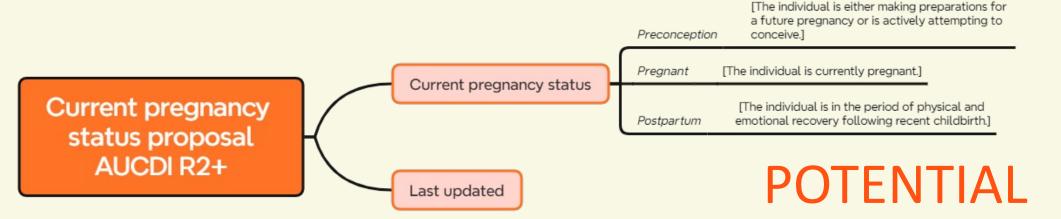
  - Imaging prevent radiation exposure to the fetus
- Current representations:
  - Boolean (True only) single tickbox/'X'
    Boolean (True/False) 'Yes' or 'No' options
- Should 'No' be a screening option?
  - Possible/safe to assert?/Legal ramifications?
- Safe communication?
  - Assumes binary answers are all that is necessary
     Consider a Coded value set Yes/No/???
  - What about the clinical shades of grey?
    - Pre-conception;
  - Certainty of pregnancy possible/likely/unlikely/don't know;
    Yes/No/Indeterminate; Yes/No/Maybe or Yes/No/Don't know;
    What is understood by 'Pregnant'? For sender/receiver? Is it the same?
- Existing clinical EHRs
  - Reinvent or perpetuate?



**FUTURE STATE** 

or NOW?

### AUCDI R2: Current pregnancy status

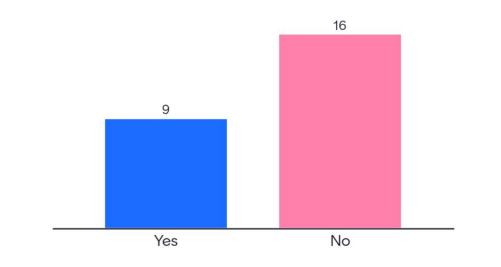


- Definition: "The present phase of a pregnancy."
- Recorded once in the EHR; updated over time
- Person-centric approach
  - Supports continuum of a single pregnancy before, during, after
- Single data field as a target for decision-support
- No data if not pregnant
  - NOTE: An assertion of 'Not pregnant' at a given point in time should be modelled separately to support medicolegal documentation, where appropriate





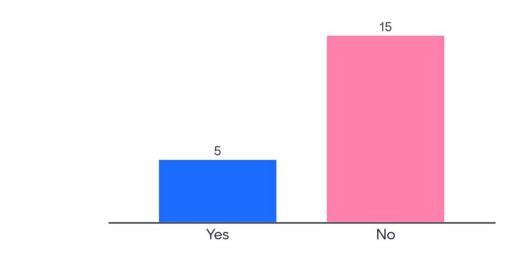
## Pregnancy information - do we want pregnancy information in AUeReqDI?







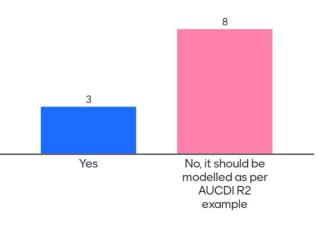
## Do we want pregnancy duration information in AUeReqDI for pathology?







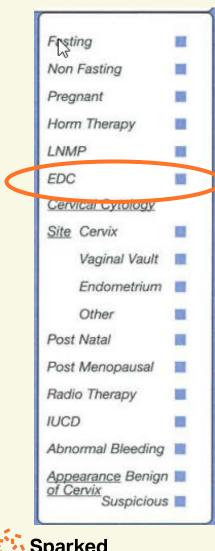
Do we agree with proposed approach of screening questionnaire for pregnancy screening/status?







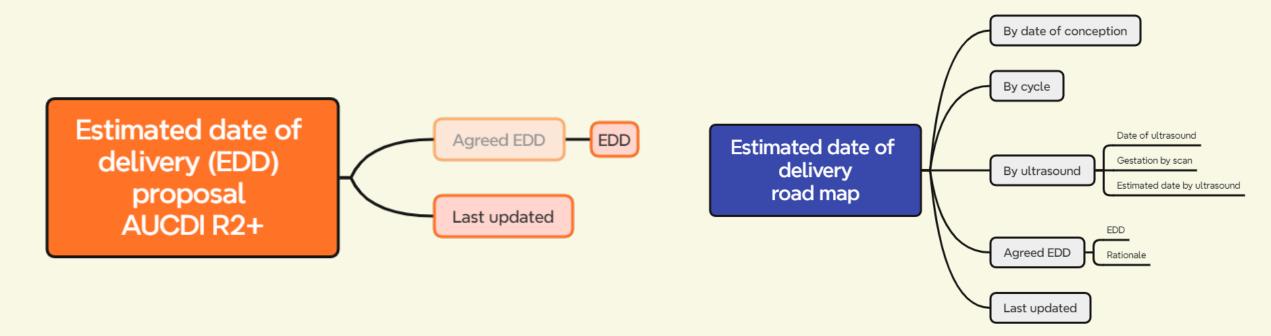
### eRequesting: Pregnancy duration screening



	Lab1	Lab2	Lab3	Lab4	Lab5	Lab6
EDC	EDC	-	-	EDC	-	EDC
Gestational age	-	Pregnant weeks	Gestational Age	-	Gestational age (weeks)	-

- Different approaches to representation:
  - Gestation duration of pregnancy (wks)
  - Gestational age age of fetus (wks)
    - In a request context, both are 'relative' only accurate on the day of recording
    - Better suited as an assertion or observation to provide context for related data
      - eg estimated gestation at the time of an antenatal visit
  - EDD/EDC estimated end point of the pregnancy (date)
    - Absolute/'fixed'
    - Estimated date of confinement (EDC)/Estimated due date (EDD)/Estimated date of delivery (EDD)
- Which EDD?
  - Unspecified? Does it matter?

#### AUCDI R2+: Estimated date of delivery

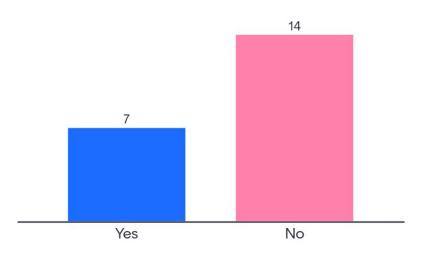


'Agreed EDD' definition: "The EDD to be used as the basis for clinical decision-making." (Think of it as the 'operational' EDD!)





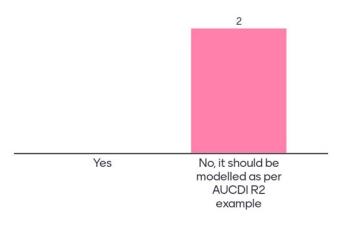
### Do we want pregnancy duration information in AUeReqDI for radiology?







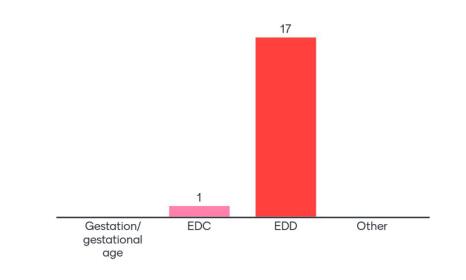
Do we agree with proposed approach of screening questionaire for pregnancy duration information?







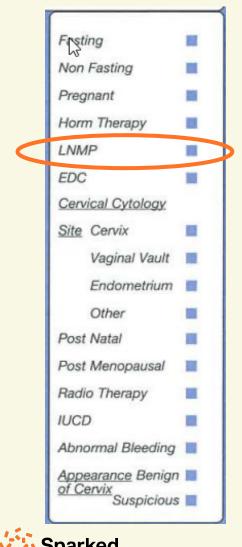
## How should pregnancy duration be represented?







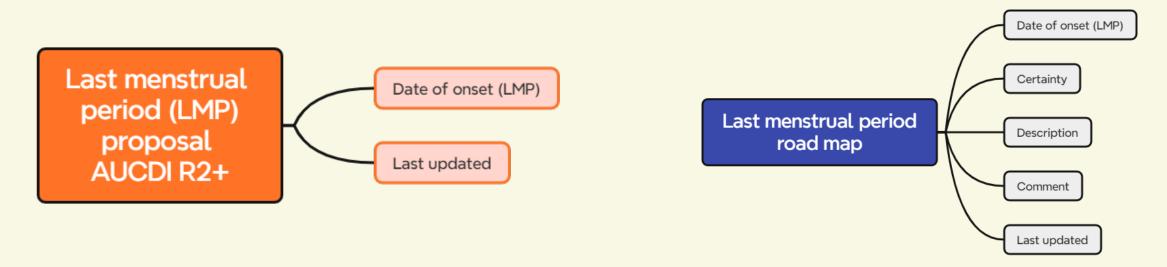
### eRequesting: Last menstrual period screening



	Lab1	Lab2	Lab3	Lab4	Lab5	Lab6	Imaging1	Imaging 2
LMP/LNMP	LMP			LNMP	LNMP	LMP		LMP

- Representations:
  - Boolean (True only) single tickbox/'X' 😕
  - Date
- 2 concept variations:
- LMP Last menstrual period
- LNMP Last \*normal\* menstrual period more specific
- 'Normal'?
  - What is the definition of normal?
  - Is that too limiting/semantically loaded?

#### AUCDI R2+: Last menstrual period (LMP)

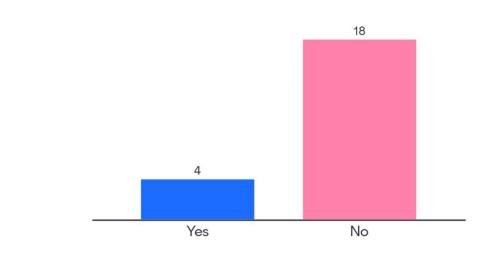


'Date of onset (LMP)' definition: "Date of onset of menstrual bleeding."





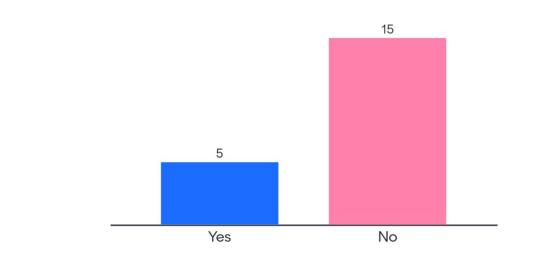
# Do we want LMP in AUeReqDI for pathology?







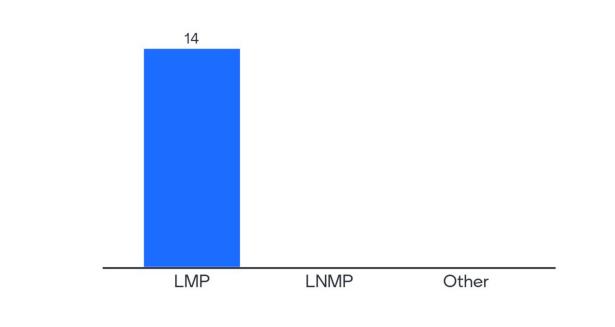
## Do we want LMP information in AUeReqDI for radiology?







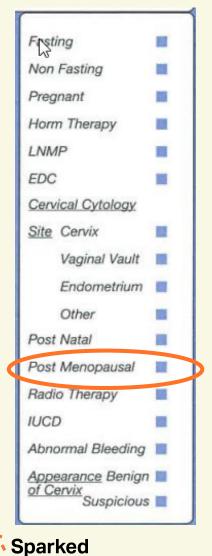
#### How should it be represented?







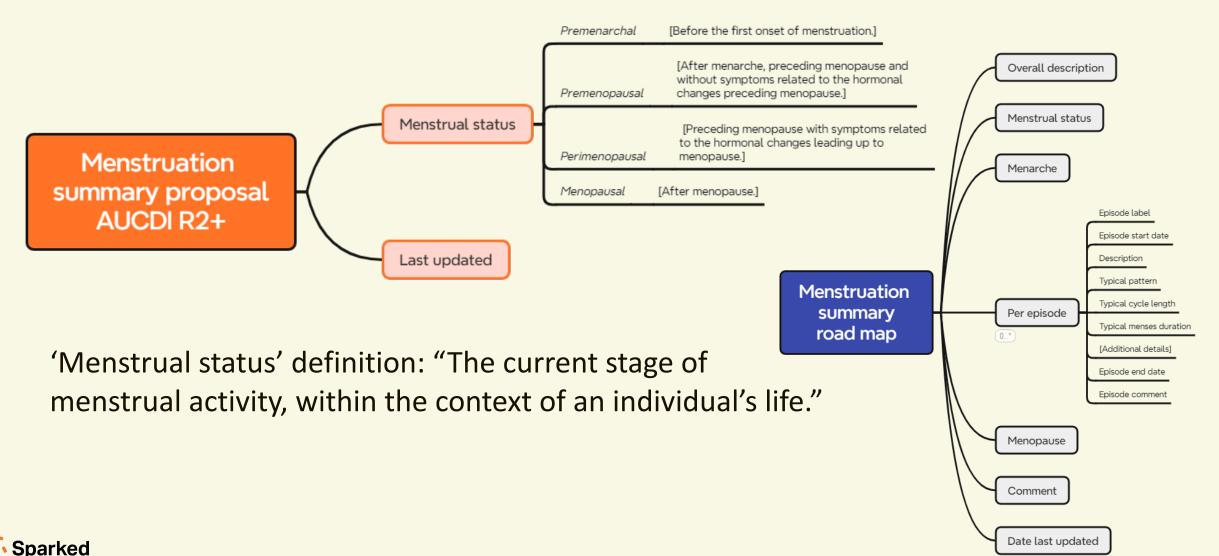
### eRequesting: Postmenopausal screening



	Lab1	Lab2	Lab3	Lab4	Lab5	Lab6	Imaging1	Imaging 2
Post menopause				[X]				

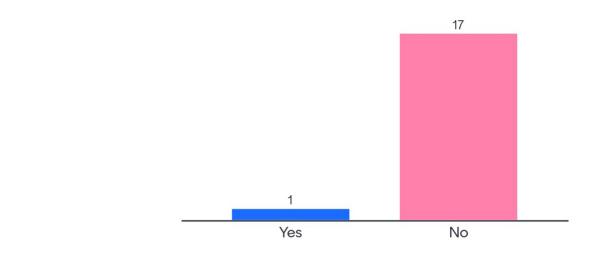
- Current representation:
  - Boolean (True only) single tickbox/'X'
- Related concepts should we screen for these too?
  - Premenarchal
  - Premenopausal
  - Perimenopausal
- \*Pre\*menopausal
  - Neutral way to flag this person is biologically female/may be pregnant
  - If combined with no 'Current pregnancy status' recorded...
    - Implies not pregnant without having to assert it?

#### AUCDI R2+: Menstruation summary data group





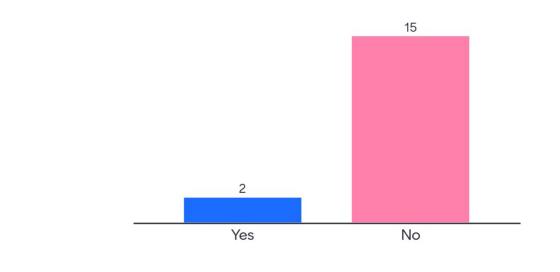
## Do we want perimenopausal information in AUeReqDI for pathology?







### Do we want perimenopausal information in AUeReqDI for radiology?







#### eRequesting: Medical device screening

- Clinical safety issue
  - Imaging risk
  - Potential for recalls
- No standardisation
  - Ad hoc in imaging forms
  - Ad hoc in clinical systems at best
  - ?Standardised value set
- Representation
  - Boolean (True/False) 'Yes' or 'No' options
  - Is 'No' necessary?

0 / 1		
Aneurysm clip	Yes	No
Embolisation coils	Yes	No
Inner ear implant	Yes	🗌 No
Neuro/biostimulator	Yes	No
Heart surgery	Yes	No No
Prosthetic cardiac valves	Yes	No
Cardiac pacemaker/wires	Yes	No
Vena cava filter	Yes	No No

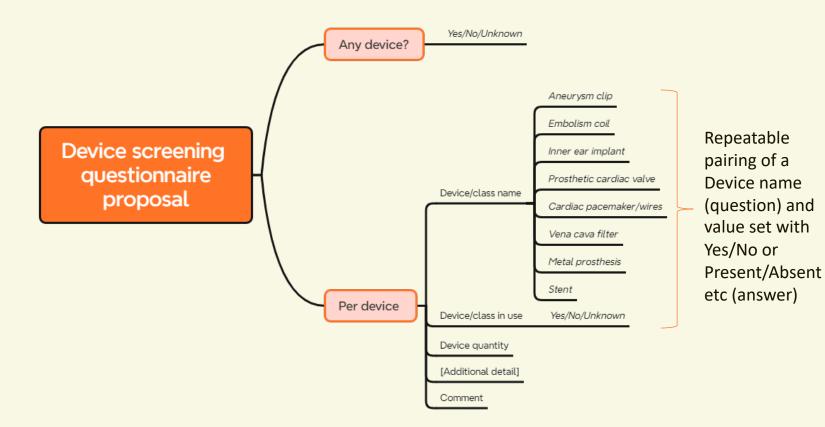
Obligatory **MRI** questionnaire

Programmable shunt	Yes	No
Metal prosthesis	Yes	No
Penetrating eye injury ever	Yes	No
Stent	Yes	No No
Requires sedation/pain relief	Yes	No
Requires sedation/pain relief Requires GA	Yes Yes	No No
20 12		
Requires GA	Yes	No





### Screening questionnaire pattern?



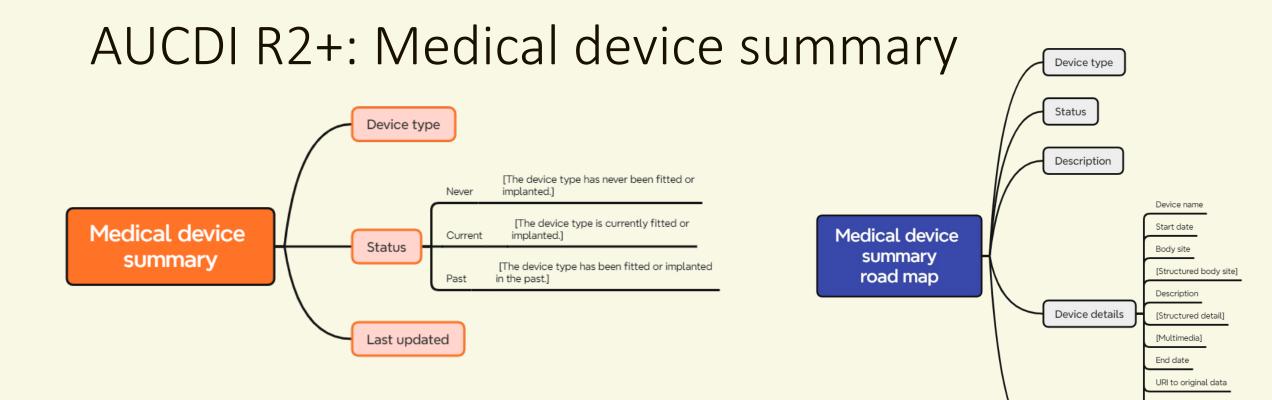
Think of this as a 'Device screening' snapshot at a point in time.

Can we standardise screening questionnaires?

- Any?
- Specific

Swap out 'device' for:

- Adverse reaction
- Medication
- Symptom
- Diagnosis
- Procedure
- Management
- Diagnostic investigation
- Exposure
- Family History
- Physical activity
- Travel



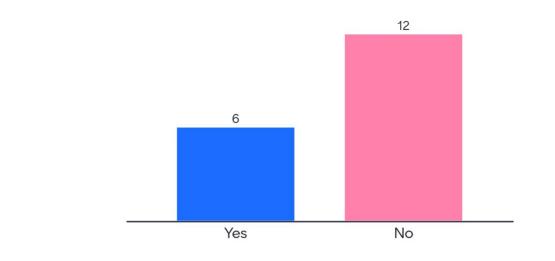
Next review due

Last updated

Think of this as a persistent status/record of medical device classes/types and/or specific devices, with details about a specific device recordable.



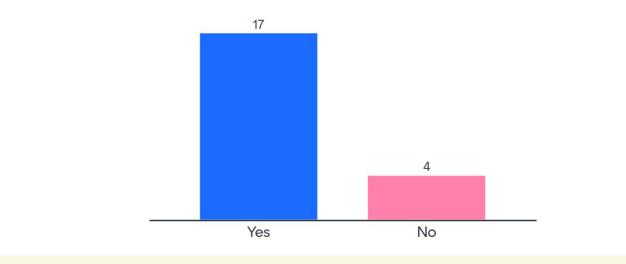
## Do we want medical device information in AUeReqDI for pathology?







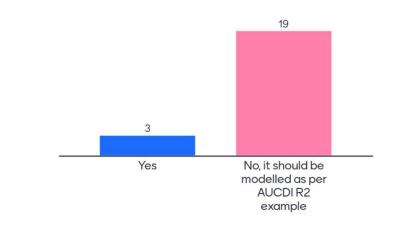
## Do we want medical device information in AUeReqDI for radiology?







Do we agree with proposed approach of screening questionaire for medical device information?







#### Service request

- Generic clinical request
  - Including versions specific for Laboratory test requests and Imaging examination requests
- For discussion in the April 23 online CDG meeting



#### Timelines

- Draft for Community review Mid May
- Publish R1 October



#### AUCDI R1 Draft for Comment Update

- Closed 8<sup>th</sup> March Super big thank you to everyone who has taken the time to read the AUCDI R1
- Number of response received: 38
- Requests for deadline extension: 3





#### AUCDI R1 Draft for Comment Update

- Received feedback from:
  - Clinical peak bodies
  - Medical colleges
  - Government
  - Software vendors
  - Health or care providers
  - Consumer advocacy
  - University/academic
- Mix of individual and group submissions







#### Next steps

- Slides and minutes of this meeting will be posted on Sparked CDG confluence page
  - Please provide feedback by commenting on confluence (you will need a PUMA account) or by emailing <u>fhir@csiro.au</u>





#### Upcoming items

- Upcoming online meetings
  - 17 April out of session meeting Sex and eRequesting (1 hour)
  - 23 April regular meeting Service request (eReqDI) focus
- Next face to face meeting
  - 15 May and 16 May Sydney





### See you next time!