

# Expanding the Primary Care clinical data model in Australia

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INTRODUCTION



## Abstract

- The Primary Care Data Quality Improvement Project was tasked with establishing a community approach to the co-design of a common data model to improve data quality in Primary Care. The model was developed as part of a collaborative process with Clinical and Vendor system participants.
  - Phase 1 of the project focussed on core common data to support multiple clinical data exchange use cases (such as practice to practice patient transfer) with the key focus of single provision of data and multiple reuse.
    - Phase 2 expanded upon this model to include Family History, Ethnicity, Health Behaviours and Social Determinants of Health to enable better capture of data for common health assessments (e.g. Indigenous Health Assessment, Over 40, and other Age Health Assessments).
  - A reusable repeatable data model collecting the information was developed and SNOMED CT and LOINC value sets developed. A FHIR Implementation Guide developed and the FHIR profiles will be published into the HL7 AU base enabling reuse across the industry

## Objectives

- Increase standardisation of data definitions in primary care systems through the development of an agreed core clinical primary care data dictionary.
- Adoption of a common clinical language in primary care systems through the development of SNOMED CT value sets.
- Demonstrate reuse of core common data items.



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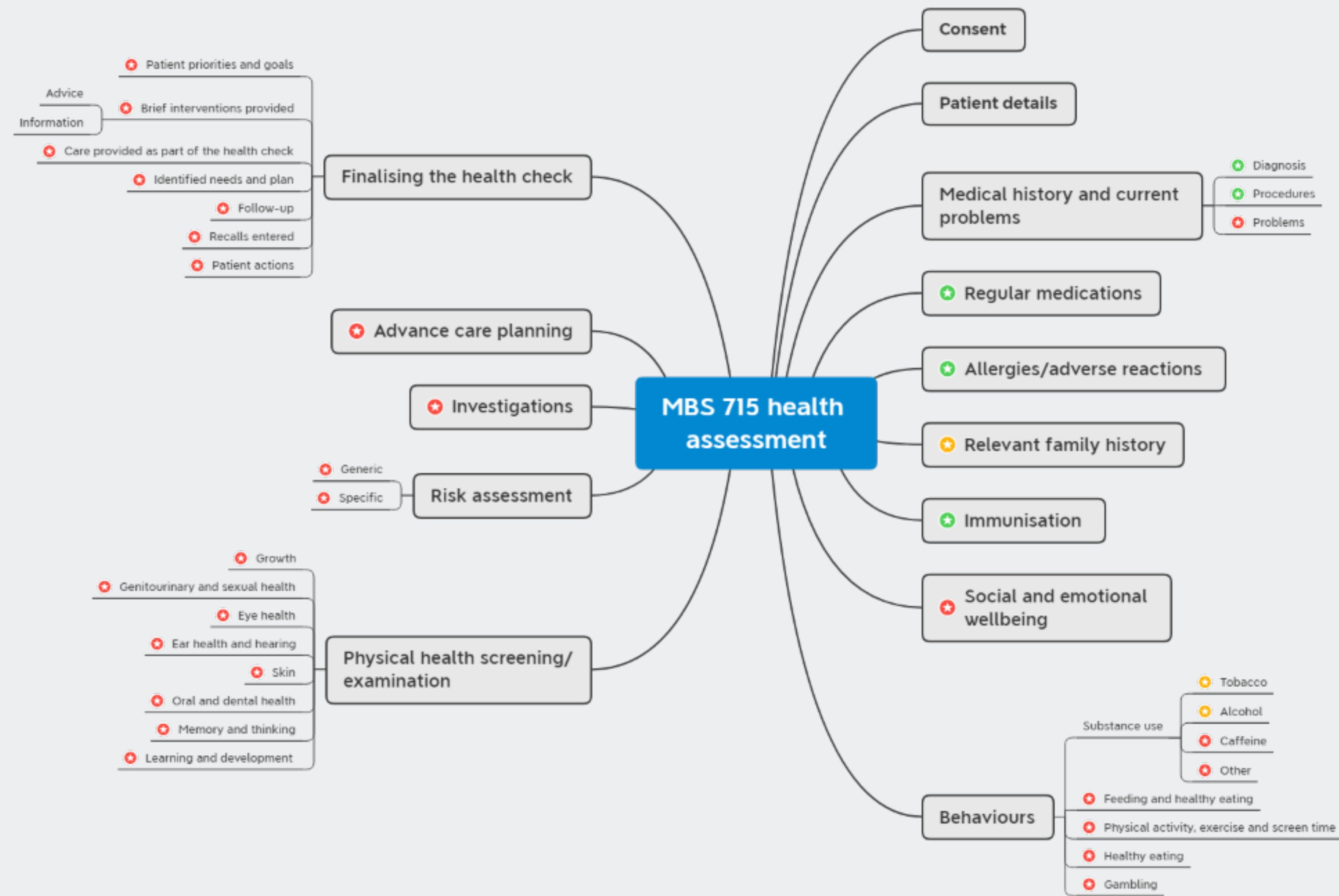
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METHODS



## Develop information models covering Health Assessment data elements



## FHIR IG

FHIR Implementation Guide under development for the Practice to Practice patient transfer with view to expanding to enable health assessment information.

<http://build.fhir.org/ig/aehrc/primary-care-data-technical/>

## Valueset/subset development

FHIR Valuesets developed utilizing ECL:

28 new  
12 still in development

- Audiometry outcome
- Birth sex
- Employment, occupation and finance issues
- Encounter patient location
- Eye examination finding
- Family and social connection issues
- Food insecurity issues
- Gambling issue
- Gender
- Genitourinary and sex issues
- Household composition
- Housing issues
- Housing status
- Learning and education issues
- Legal and safety issues
- Misuse substances
- Nutrition issues
- Oral and dental issues
- Otoscopy examination finding
- Pattern of substance use
- Physical activity issues
- Red reflex examination finding
- Sleep issues
- Transportation issues
- Type of residence
- Type of tobacco





## SNOMED CT- AU content requests

14 Description/Preferred Term changes  
37 New concepts

Examples (included in AU release as of June 2020):

- 1472091000168102 | Stable housing|
- 1471851000168109 | Unstable housing|
- 1472081000168100 | Transient housing|
- 1473881000168103 | Restraining order in place|
- 1473891000168100 | No restraining order in place|
- 1471821000168101 | Feels unsafe around family|
- 1471831000168103 | Feels unsafe around friends|
- 1472941000168106 | Problem gambler in family|
- 1471781000168106 | Feels unsafe in neighbourhood|
- 1471791000168109 | Feels unsafe at home|
- 1471811000168108 | Financial insecurity|
- 1471761000168102 | Manual labour job|
- 1471771000168108 | Works long hours|
- 1471751000168104 | Overemployed|
- 1471801000168105 | Underemployed|
- 1471841000168107 | Employment insecurity|
- 1471741000168101 | Employment security|
- 1472931000168102 | Unstable employment|

## ECL example for ‘Housing Issues’

```
(((<< 365512000|Characteristics of home environment - finding|OR << 160720000|Harassment by landlord|OR << 32911000|Homeless|OR 224226001|No fixed abode|OR 443314009|Lives as illegal tenant|OR 1472091000168102|Stable housing|OR 1472081000168100|Transient housing|OR << 105531004|Housing unsatisfactory|OR 397756006|Lives in damp conditions|OR << 308899009|Unsatisfactory living conditions|)) MINUS ((^ 171991000036103|Clinical finding grouper exclusion reference set|OR 714085000|No stairs in residence|OR << 365515003|Personalisation of home - finding|OR << 224246006|Private areas available in accommodation|OR << 365519009|Finding related to decoration of home|OR 224269009|Clean home|OR 224262000|House in good repair|OR << 365521004|Presence of communal areas in accommodation - finding|)))
```

## Results in a Valueset of 80 Concepts

Examples:

224256005	Mould on surfaces in home
224255009	Mould growth in home
105532006	Overcrowded in house
224231004	Sleeping in night shelter
160700001	Homeless single person
266936002	House in poor repair
276051005	Fixed equipment in home
71099008	Living in residence with no sanitation
160715000	House infested
160716004	House liable to vandalism
266935003	Housing lack
160706007	Lack of space in house



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## Outcomes

Collaborative co-design, both clinical and technical communities, has promoted adoption of SNOMED CT and FHIR in the primary care sector.

Use and re-use of repeatable data models are better understood by stakeholders, and enthusiasm for data access, transparency and exchange, with patients also, a feature.

## SNOMED CT Valueset developments

SNOMED ValueSets are being absorbed into national FHIR AU-Base specifications; terminology-to-information model binding and functionality considered for Questionnaires and Assessments

Interoperation and alignment with Child Health Record terminology artefacts also considered.

Terminology development for Social Determinants of Health concepts will be ongoing, along with Ethnicity.

## Value Outcomes

- Agreed Sex and Gender model with valuesets
  - Already implemented in one software vendor
- Expanded tobacco & alcohol models to include other substances
- Social determinants of health
  - With a focus on collection of issue information to supplement the outcomes of Gravity project
- Data about Health Issues/Goals/Achievements will ultimately be accessible also to Patients
- Awaiting screening tool development/ratification in Australia

## Future Directions

- FHIR compositions for Practice to Practice patient transfers
- Expansion with all Data models from Health assessment content
- Development of specific FHIR questionnaires for different Health Assessments
- Contact: [aehrc@csiro.au](mailto:aehrc@csiro.au)

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