

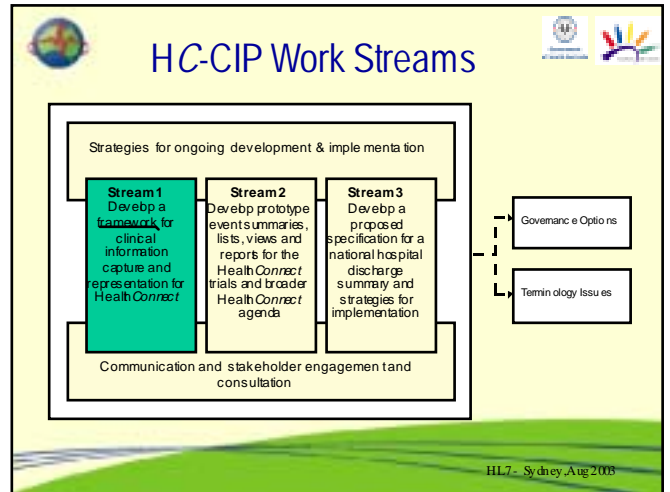


# HealthConnect Clinical Information Project (HC-CIP)



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## Stream 1

### Framework & Model




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## What is the framework, and why?

The Framework is for specifying Clinical Information for shared EHRs

Should help answer:


- what information to record?
- how to describe information?
- how to classify information?
- how to prioritise information?
- when to enter/update information?



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## Clinical Information Framework


- Principles
  - project
  - information collection and representation
- Definitions / Glossary of terms
- Properties and Constraints
  - Level 1 - general content issues pertaining to entire EHR.
  - Level 2 - issues pertaining to EHR transactions.
  - Level 3 - issues pertaining to individual EHR data elements.
- Information Model
  - Clinical concept diagrams.
  - Clinical concept definitions and attribute descriptions.



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## Why develop a new model?

- No other model addresses scope of clinical content of EHR.
- HL7 RIM focussed around health service acts - does not cater well for patient state, risks/preventive factors. Too abstract. Quirky.
- OpenEHR RM too low level. No collection or ontology of archetypes yet.
- CEN ENV13606 too complex, biased towards administration, misses concepts.



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## What is the model?

The Health Information Model is a simplified representation of the domain of health and healthcare. It is a hierarchical classification and a set of definitions of concepts and concept relationships including the events, event participants and other concepts that influence the health of a subject of care.

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## Model – What is it not?

- The Clinical Information Model is not a model of HealthConnect.
- The Clinical Information Model is not a model of a software architecture.
- The Clinical Information Model is not a model of an event summary.

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## Model – Purpose

- To inform discussion and assist communication regarding content of shared Electronic Health Records (EHRs).
- To assist in defining the scope, granularity and organisation of inputs (outputs) to shared EHRs.
- To assist in the specification of subsets of an EHR that might be subject to consent, deidentification or other processes.

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## The Healthcare System 19th Century

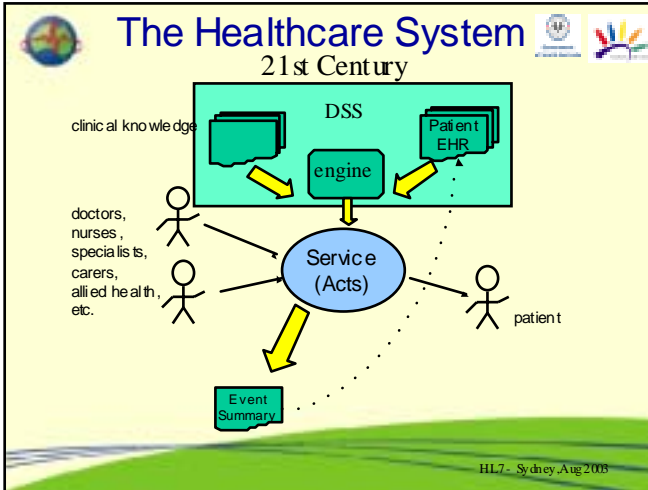
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## The Healthcare System 20th Century

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## The Healthcare System 21st Century

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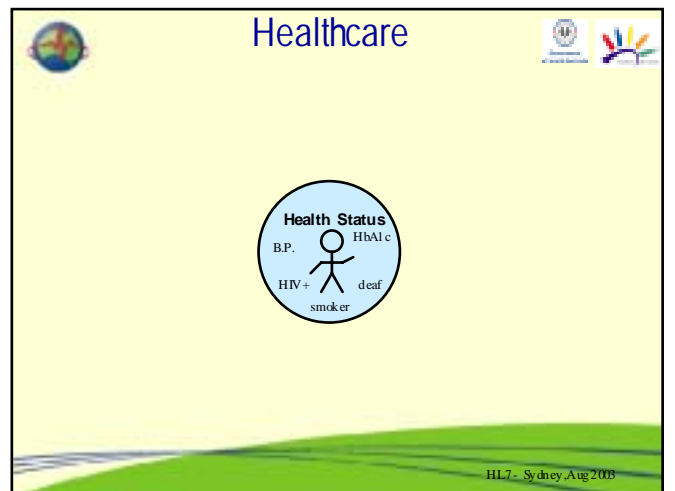
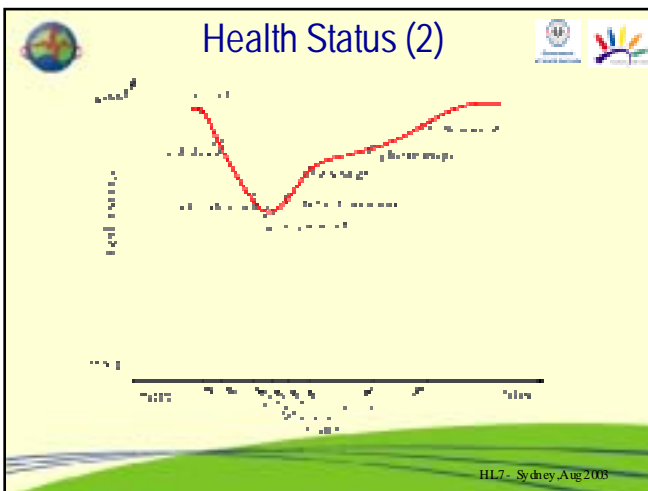
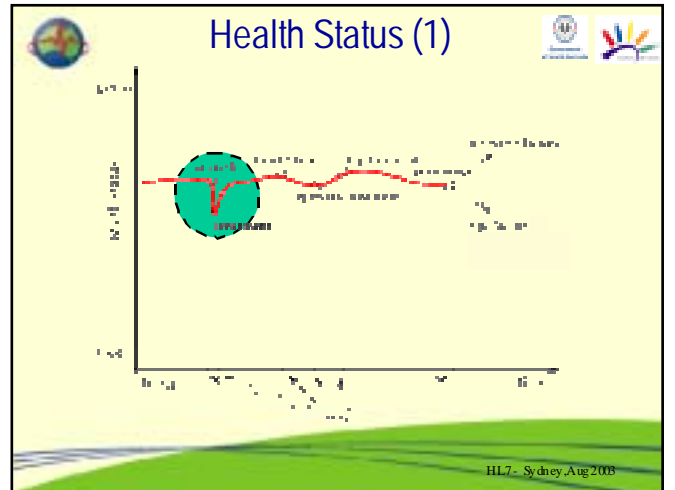
- ## Focusing on Acts
- Biases data capture to the way things are done
    - not on what should be captured
  - Promotes a sickness model rather than a wellness model
    - reactive not pro-active
  - An individual's health becomes an attribute of an act rather than a first class citizen.
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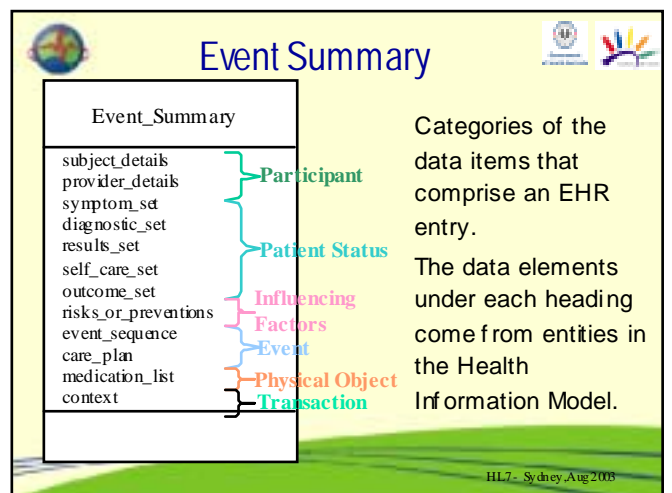
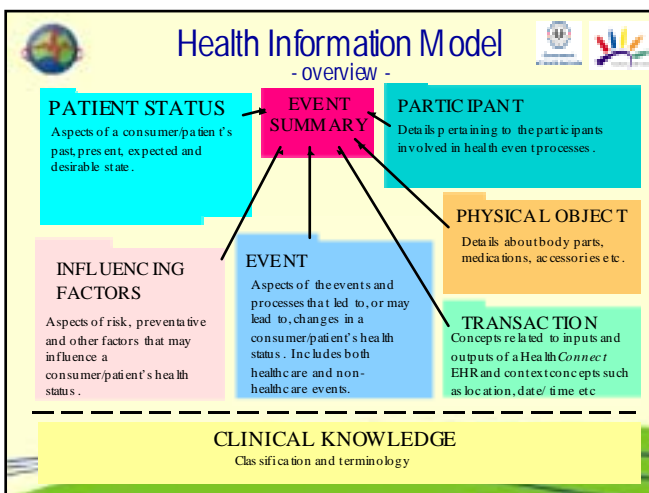
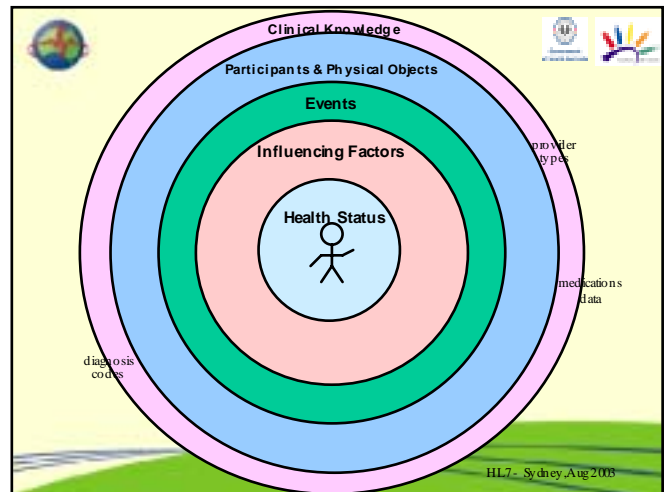
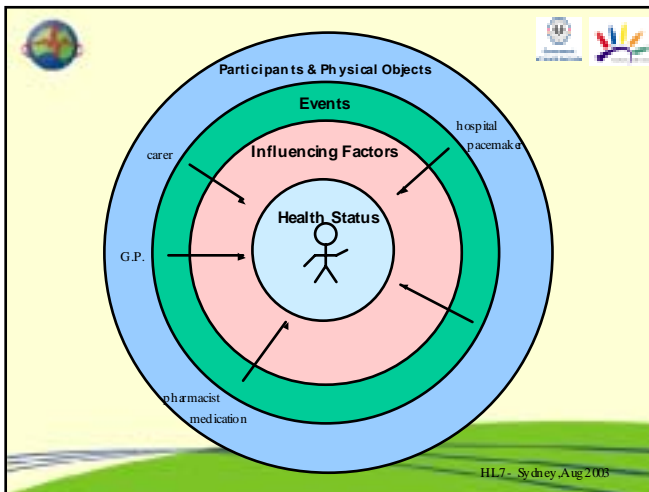
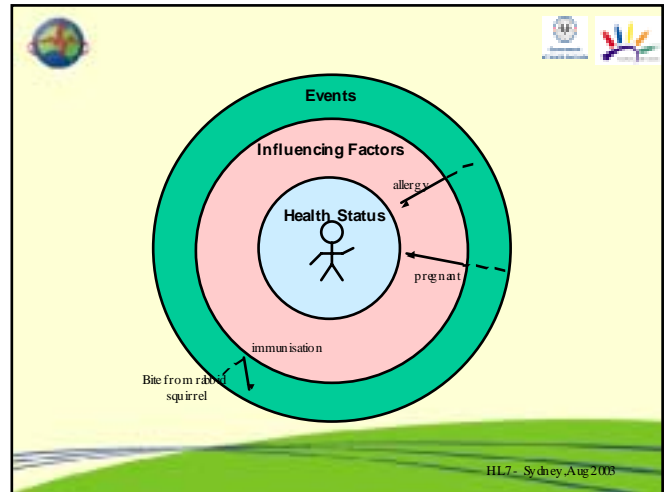
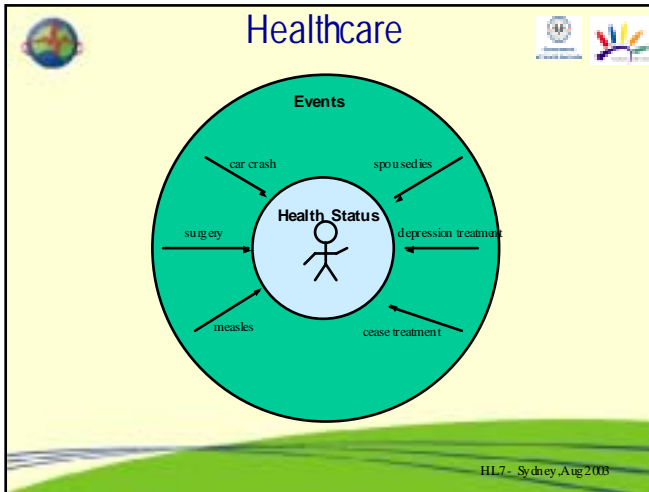
## Healthcare System

Should optimise the health of each individual.

- patient health status

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## Event Summary Prototypes

- National Health Priority Areas
  - Asthma
  - Cancer Control
  - Diabetes Mellitus
  - Cardiovascular Health
  - Mental Health
  - Arthritis and Musculoskeletal Control
- Registration to HealthConnect
  - patient demographics
- Initial healthcare event
  - health history, current meds, warnings, allergies, etc

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## E. S. Prototypes (cont)

- Condition-based:-
  - Pregnancy
  - Diabetes
  - Mental Health
  - Heart disease
  - COPD
- Provider-based:-
  - GP consultation
  - Specialist consultation
  - Allied health visit
  - Hospital discharge summary
  - Pathology report
  - Radiology report
  - Community nurse home visit
  - Health assessment

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## E. S. Prototypes (cont)

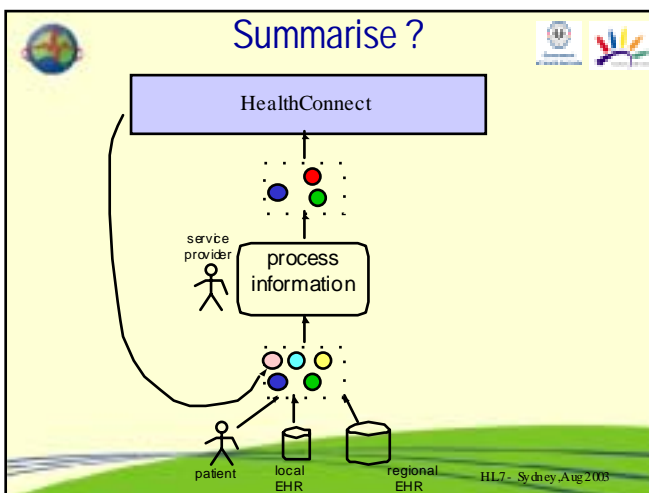
- Registrant (person taking health information at registration)
  - components
  - medication prescription and dispensing
  - care planning
  - health outcomes
- Service-provision-based - (multi-service-provider)
  - Community-shared care / Community-aged care
  - Chronic disease management
  - Palliative care
  - Life-stage based:-
    - Child Health- blue books (CHIN)
    - Aged care

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## E. S. Prototypes (cont)

- Problem based
  - shortness of breath
  - tiredness
- Component based
  - medication prescription and dispensing
  - care planning
  - health outcomes

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## Summarise ? (cont)

- summarise
- distil
- transform
- select
- accept
- reject
- qualify
- augment
- associate
- link/unlink
- join
- merge
- transfer
- correct
- graph

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## Summarise ? (cont)

- update
- subsume
- abstract
- extrapolate
- interpolate
- interpret
- annotate
- compare
- correlate
- classify
- translate
- spellcheck
- transcribe
- aggregate
- deidentify

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## Properties and Constraints

### Level 3

Issues pertaining to individual EHR data elements  
- answers questions relating to such issues as:

- the degree of confidence in measurement/diagnosis
- terminology /code set to use
- data element constraints such as cardinality , completeness etc.
- how persistent the value of this data element is

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## The End

Thank you.

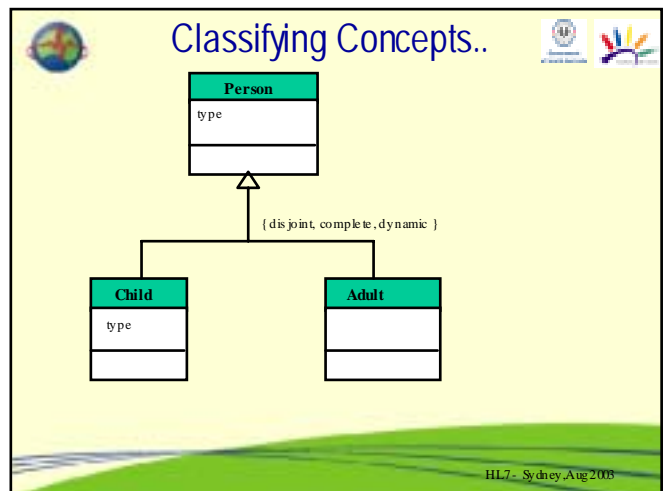
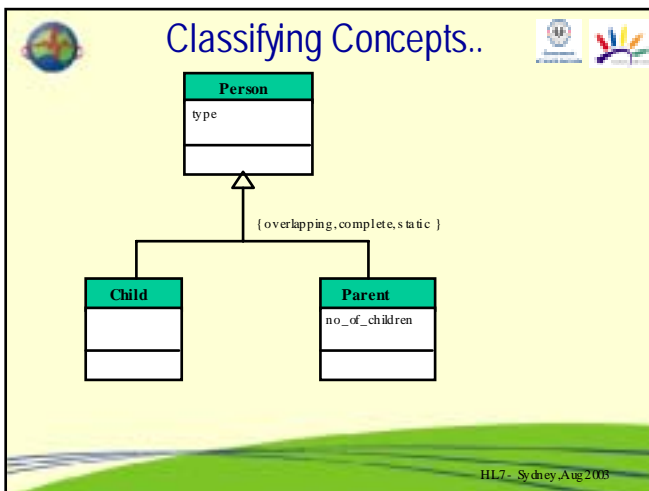
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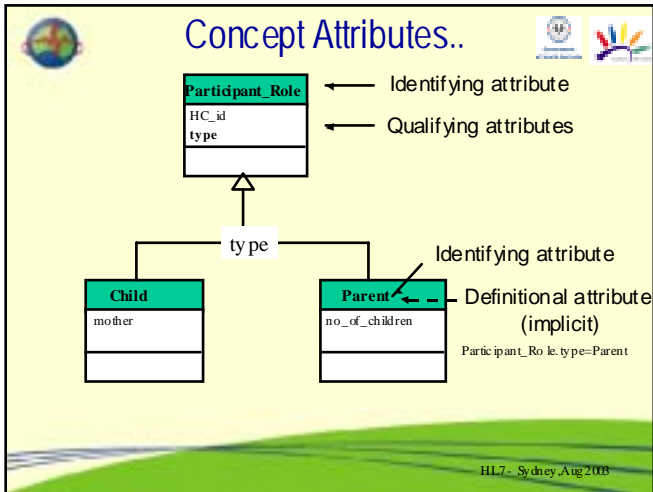
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## UML Issues

- Classification
- Attributes
- Pre/Post Coordination

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- ### .. Concept Attributes
- **Identifying Attribute** - ie name,tag,rubric
    - identifies a concept - applies to ALL instances of a concept.
  - **Definitional Attribute**
    - defines a concept - applies to ALL instances of a concept.
  - **Qualifying Attribute**
    - differentiates instances of a concept.
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