

## Telephone conference meeting notes - DRAFT

**Subject/purpose:** Representation of Allergies, Adverse Reactions, Warnings (alerts) in Electronic Health Record (EHR) systems – initiatives, issues, standards.

**Date/time:** Tuesday 9 March 2004 2 pm until 3.30 pm

<b>Participants:</b>	<b>Area of interest/role</b>
Peter MacIsaac	Meeting Chairperson Senior Medical Adviser, Information and Communications Division (ICD) Australian Government Department of Health and Ageing (DOHA)
Lorraine Anderson	ICD, DOHA
Geoff Miller	ICD, DOHA – HealthConnect and MediConnect
Lin May	Clinical Information Project, National Infostructure Development
Lorraine Rayson	Clinical Information Project, National Infostructure Development
Eleonor Royle	OACIS project, South Australia DHHS
John Barned	Alfred Hospital, Melbourne
Ken Harvey	Therapeutic Guidelines, La Trobe University, HL7
Sari McKinnon	National Infostructure Development, National Strategy for Terminologies in Health
Sam Heard	openEHR, HL7 EHR , Brisbane HealthConnect Trial,
John Glanville	Hatrix
Denis Armstrong	Hatrix
<b>Apologies</b>	
Trish Ryan	Australian Institute of Health and Welfare (AIHW)
Meera Rajendran	Australian Institute of Health and Welfare

### Relevant documents/Attachments:

Attachment A: Draft Discussion paper – by Peter MacIsaac and Lin May

Attachment B: CIP paper – data element definitions - draft

Attachment C: E-mail from Sam Heard

Attachment D: E-mail from Trish Ryan

### Background to meeting:

- As explained in the draft discussion paper (Attachment A), there has been a renewed call about the importance of exploring ways to consistently represent data for allergies, adverse reactions, and warnings (alerts) in Electronic Health Record (EHR) systems

- There is now some urgency to this issue, with the progression of work on the data architecture and content for HealthConnect and other e-health initiatives.
- Work under way for the Clinical Information Project (CIP) has resulted in the development of data models and definitions for relevant data elements defined across several proposed national health event summaries.
- The implementation of the OACIS system in South Australia has identified this as one of the areas to enable integration and comparability of data.
- The national Health Data Standards Committee (HDSC) has indicated this as a priority area for further development.

### **Key discussion points and findings**

- Lin May and Peter MacIsaac have produced a discussion paper (Attachment A) which outlines the scope of the problem;
- There is a requirement in hospital prescribing to use allergies and adverse reaction information to enable electronic decision support. In a pilot of hospital prescribing in NZ (Dunedin), the patient administration system receives information on allergies from a national allergies/warnings database. This information includes intolerance to drugs, non-drug allergies and brand-level allergies (eg. Amoxil) – although it does not currently provide allergies at the ‘salt’ level (eg “metoprolol succinate”). Some of the information is free text, eg ‘carries a gun’.
- Ken Harvey noted that the Therapeutic Goods Administration (TGA) has a system that collects data about adverse reactions (ADRAC) and uses WHO-based coding. There are longer-term objectives for this system to link in with hospital and other clinical systems. Identifying how ADRAC requirements overlap with other clinical use cases would be useful – there may be areas of commonality and opportunities for enabling improved integration.
- Sam Heard advised that he had sent an e-mail to this group, for consideration re the relative approaches of the CIP, SNOMED and use of archetypes. (See Attachment C)
- Lin May and Lorraine Rayson explained the CIP Phase 1 work which is under way as part of the National Infrastructure Development program, and the need now to build on the work they have done in modelling and defining data elements for allergies, warnings, alerts and adverse reactions. (See attachment B.) Where feasible, they have suggested vocabularies and domains, but there are a number of data elements that need more work on terminologies/vocabularies.
- The OACIS (Open Architecture Clinical Information System) project in South Australia has an issue now with allergies and alerts – a lack of standardisation has meant that these elements are recorded and used in many different ways, hindering potential integration, data comparability and decision support. Key implementations being planned for OACIS are drug ordering and electronic discharge separation communication – and these would benefit from standardisation of data structure and terminology. SA is also considering the development of data collection protocols and procedures, and clear specification of data definitions and requirements will be vital.
- The Peter McCallum Institute in Melbourne is facing the same issues. The Quality and Safety Council has also identified the need for agreed data definitions for allergies, alerts and related data elements.
- The Victorian Department of Human Services has a state-wide prescribing and ordering system initiative under way.

- The CTWG (Classification and Terminologies Working Group) will be interested in any proposed projects and initiatives with development of terminologies, and may form a useful way of obtaining expert advice, direction and potentially endorsement.
- HealthConnect will require standardised definition and coding of adverse reactions, allergies, and alerts. There may also be a data quality issue when views and lists are derived from other data, for eg “current” alerts/allergies, “current” medications.
- A next step might be to explore the various use cases, and to model the data elements, including vocabularies to support these. This group could form the core of a project team to take that work forward. This approach would require the scoping and specification of a project, including resourcing requirements.
- Any work proposed/undertaken should be consistent with national strategies for terminologies in health.
- The HL7 EHR conference in Melbourne provides an opportunity to use this particular problem as a workshop example in defining archetypes.
- Discussion included the following potential requirements and issues which would help to inform the development of use cases:
  - It may be important to record the non-existence of an allergy, eg no allergy to latex in a health worker.
  - The need for trusted sources and credibility of data. For example – how reliable is a reported allergy to penicillin? Is the allergy to a generic class of drug or to a particular brand? The data definitions, including structure, context and coding become vital. For example, additional field(s) describing what actually happened in an adverse reaction event – a rash, oedema, the severity of the reaction, will help in decision making when considering using the drug again. Perhaps even a field for recommendation for future use?
  - An alert or warning may have a start and end date, or may change over time – for example the warning ‘bad payer’ may not always be applicable. Some warnings may apply to certain conditions/treatment – eg breastfeeding, pregnancy, elite athlete.
  - An adverse event may be a true sensitivity to a particular drug or drug class – detected via clinical administration, or may relate to an iatrogenic overdose.
  - There may be additional data items to those already discussed and modelled, for example. Factors such as ‘pregnancy, breastfeeding, age, weight’ may be better modelled within an EHR as ‘patient factors/variables’ rather than alerts or problems. Often such data items have been bundled together with other items because of the limitations of current systems. Humans can decipher and derive meaning from these, whereas electronic decision support systems are not able to.
  - There should be consideration of the recording of information about patient preference for a drug/drug class. For example – a patient may have a history of thrush as a side effect with a certain type of antibiotic, or may prefer not to have blood-derived products. Consumers may require this information to be recorded in order to influence drug selection.
  - The need to access an IOC-approved list of drugs for elite athletes.
  - Person specific contraindications, ie the ability to record for a patient/condition – medications which should never be given – for example ‘folic acid should never be given’.
  - The need to record override of a contraindication and the reason for this.

### Meeting Actions/Outcomes

Write up meeting notes from this meeting and distribute to participants	Lorraine Anderson and Peter MacIsaac	As soon as possible
Investigate TGA ADRAC system initiatives and future objectives	Peter MacIsaac and Lorraine Anderson	
Investigate NZ alerts/warnings national database system and potential for collaboration	Peter MacIsaac	
Use alerts/warnings/allergies/adverse events as an example for development of archetypes in the HL7/EHR conference	Sam Heard and Peter MacIsaac	HL7/EHR conference workshop
Organise another meeting after the HL7 conference to determine next steps	Peter MacIsaac and Lorraine Anderson	Early April

## **Attachment A – DISCUSSION PAPER**

Representation of Allergies, Adverse Reactions, Warnings (alerts) in Electronic Health Record (EHR) systems.

### **The Problem**

Clinicians need and use patient information regarding previous allergies and adverse reactions relating to exposure to drugs and other agents - issues which should alert or warn clinicians to inform future actions.

Some of this information will just inform clinician action through being factored into consideration at the time of consultation. Other information is expected to be processed by the computer in the light of planned actions and provide automated alerts.

One of the early implementations of Drug related Electronic Decision Support (EDS) has been allergy checking. For such systems to work reliably there needs to be a method of coding drug allergens so that they can be linked via the drug terminology and classifications with drug interaction knowledge resources. One of the primary benefits is using the same language in relation to allergies and warnings in that it promotes interoperability of electronic health systems and therefore would support future decision support requirements.

There is also a requirement to record in the EHR information on the presence or absence<sup>1</sup> of :

- Drug adverse reactions (not allergy mediated) eg side effects, intolerances
- Food allergies and intolerances eg. nut allergy, gluten or milk intolerance;
- Environmental intolerances eg animals, dusts, pollens
- Warnings (alerts) which cover a range of administrative, clinical, behaviour, and patient preference issues.

The Clinical Information Project (CIP) is focussing on the clinical information content of shared Electronic Health Records (EHRs) and involves the development of a framework and model for determining clinical information capture and representation, and the development of prototype priority 'health event summaries' (inputs into the EHR) and 'views' (outputs that users' access) for HealthConnect. The prototype data structure specifications shall include recommended terminologies and/or codesets.

The issue of how to deal with adverse reactions and warnings has arisen during development of the priority prototypes including the GP Consultation and Hospital Discharge summaries. This issue has likewise arisen in the fast track HealthConnect trials, and it is clear that many hospital systems are tackling this in an inconsistent fashion.

It is proposed that adverse reactions and warnings be one of the areas where the data from the various types of event summaries are consolidated into various user friendly views. To allow this a consideration of standards for the representation of this data in the originating systems or for the transformation of this data into a

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<sup>1</sup> It is regarded as important that there be an active recording of "no known allergies/sensitivities/warnings" as lack of data prevents the effective use of checking systems.

standard HealthConnect format will be required. The representation of these concepts will require agreement on both the structure and terminologies for the specific data elements.

Current clinical systems lack uniform data structures and coding systems for such concepts. It is unlikely that a single field for text or coded allergy entries will suffice as this precludes secondary processing unless there is the use of highly complex pre-coordinated codes. Even though there are current health systems that do this, the approach is inconsistent across Australia.

This area is an excellent example of the need to find the appropriate balance between the data structure and coding system (terminology) needed to represent complex concepts. Subsequently, standards will need to be developed.

### **What is being done now**

- Kaiser Permanente have implemented a allergies subset of SNOMED-CT (Dr. Bob Dolin).
- Qld. Health CIS project is examining/developing a suitable allergy and waning coding system
- The Medical Software Industry Association may provide input from vendors.
- The Quality and Safety Council have a medication adverse events group (John Youngman- Chair)
- The AIHW are reviewing the structure of the Knowledgebase to allow storage of clinical data items such as these.

A further list of references, websites are;

<http://www.allergy.net/>

<http://www.immune.com/allergy/allabc.html>

<http://www.allergy.mcg.edu/>

<http://www.niad.nih.gov/default.htm>

<http://www.allergyfoundation.com/>

<http://www.worldallergy.org/>

<http://www.allergy.org.au/>

<http://www.annallergy.org/>

<http://www.jcaai.org/>

<http://www.theallergyreport.com/>

<http://www.who-umc.org/>

[http://allergen.csl.gov.uk/Search\\_Screen.cfm](http://allergen.csl.gov.uk/Search_Screen.cfm)

<http://www.allergenonline.com/asp/public/login.asp>

The following table represents examples of a structure or archetype that has emerged from general discussions with the CIP. These data elements (except for mechanism and negation) arose from the preliminary CIP stakeholder consultations to scope the topic. There has not yet been a formal process to consider this issues.

1	Adverse Reaction	Data Element	Example value domain	Vocabulary	XML tag name
2		Class of Agent	Drug, Food, Environment (animal type, pollen)	HL7 V2.3 table 127	
2		Agent	Amoxicillin, peanuts, bee-sting,	Specific to agent class	
2		<i>Mechanism</i>	Allergic, drug interaction, drug adverse event	???	
2		Reaction description	Rash, anaphylaxis,	?????	
2		Severity	Mild, moderate, severe, life threatening	Locally defined value set.	
2		Certainty (of agent causing reaction)	certain / uncertain		
2		Notes	Free text	N/A	
2		<i>Negation</i>			
2		Identification Date			
1	<b>Warning</b>				
2		Date (or age) of onset			
2		End Date			
2		Class (or Type)	Administrative, Health related, Behavioural, Preference, Infections, General, Legal		
2		Description	Violent, Pregnant, Elite Athlete,		
2		Notes	Free text		

The issue of recording allergies has been discussed at the recent HL7 Electronic Decision Support Technical Committee meeting (Melbourne, December 2003).

A paper is to be delivered to the HDSC in February 2004 to stimulate discussion and promote proactive action.

### What is proposed

A project to identify different types of user requirement for structured recording of adverse reactions and warnings. This will lead to consideration of data structures, and vocabulary/terminology requirements to populate these structures.

Consideration will be given to an implementation strategy covering issues and pragmatics of working within the constraints posed by existing EHR systems architecture.

Comments or further information:

peter. [macisaac@health.gov.au](mailto:macisaac@health.gov.au)

## Attachment B: - from the work of the CIP project

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### Adverse Reaction-Onset Date <sup>HL7 IAM-11</sup>

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#### Identifying and Definitional Attributes

<i>Label on Output</i>	Date
<i>Identifier</i>	CIP-DS-001
<i>Version Number</i>	01
<i>Metadata Type</i>	Data Element
<i>Definition</i>	This field contains the actual date of the first reaction. <sup>HL7 IAM-11</sup> If the exact date is not known, enter an approximate date. <sup>CIP</sup>
<i>Synonymous Name</i>	
<i>Context</i>	

#### Relational and Representational Attributes

<i>Type of Relationship</i>	
<i>Representation Datatype</i>	Numeric <sup>CIP</sup>
<i>Representation Class</i>	Date <sup>CIP</sup> TS-Time Stamp <sup>HL7</sup>
<i>Unit of Measure</i>	
<i>Unit of Measure Precision</i>	
<i>Layout</i>	MMYYYY
<i>Maximum Size</i>	26 <sup>HL7 TS</sup>
<i>Data Domain</i>	
<i>Data Domain Source</i>	
<i>Guide for Use</i>	
<i>Derivation Rules</i>	
<i>Verification Rules</i>	
<i>Collection Methods</i>	

#### Administrative Attributes

<i>Submitting Organisation</i>	HealthConnect-Clinical Information Project
<i>Steward</i>	HealthConnect
<i>Source Standard</i>	HL7 IAM-11 Onset Date.YYYY[MM[DD]]
<i>Comments</i>	

#### Data Set Specifications

<i>HealthConnect Data Group</i>	HCDG-Adverse Reaction
<i>Date From</i>	
<i>Date To</i>	

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## Adverse Reaction-Allergen Type <sup>HL7 IAM-2</sup>

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### Identifying and Definitional Attributes

<i>Label on Output</i>	Type
<i>Identifier</i>	CIP-DS-002
<i>Version Number</i>	01
<i>Metadata Type</i>	Data Element
<i>Definition</i>	This field indicates a general allergy category (drug, food, pollen, etc.). <sup>HL7 IAM-2</sup>
<i>Synonymous Name</i>	
<i>Context</i>	

### Relational and Representational Attributes

<i>Type of Relationship</i>	
<i>Representation Data type</i>	
<i>Representation Class</i>	ST-String in CE-Coded Element <sup>HL7</sup>
<i>Unit of Measure</i>	
<i>Unit of Measure Precision</i>	
<i>Layout</i>	
<i>Maximum Size</i>	250 <sup>HL7</sup>
<i>Data Domain</i>	DA Drug Allergy FA Food Allergy MA Miscellaneous Allergy MC Miscellaneous Contraindication EA Environmental Allergy AA Animal Allergy PA Plant Allergy LA Pollen Allergy
<i>Data Domain Source</i>	HL7 User-Table 0127-Allergen Type This data still needs endorsement
<i>Guide for Use</i>	Where no suitable description can be found, the option of entering free text is available but this will not be coded. <sup>CIP</sup>
<i>Derivation Rules</i>	
<i>Verification Rules</i>	
<i>Collection Methods</i>	

### Administrative Attributes

<i>Submitting Organisation</i>	HealthConnect-Clinical Information Project
<i>Steward</i>	HealthConnect
<i>Source Standard</i>	HL7 IAM -2 Allergen Type Code.Text
<i>Comments</i>	

### Data Set Specifications

<i>HealthConnect Data Group</i>	HCDG-Adverse Reaction
<i>Date From</i>	
<i>Date To</i>	

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# Adverse Reaction-Description<sup>CIP</sup>

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## Identifying and Definitional Attributes

<i>Label on Output</i>	Description
<i>Identifier</i>	CIP-DS-003
<i>Version Number</i>	01
<i>Metadata Type</i>	Data Element
<i>Definition</i>	This field uniquely identifies a particular allergen. This element may conform to some external, standard coding system (that must be identified), or it may conform to local, largely textual or mnemonic descriptions. <sup>HL7IAM-3</sup>
<i>Synonymous Name</i>	Allergy <sup>CIP</sup>
<i>Context</i>	

## Relational and Representational Attributes

<i>Type of Relationship</i>	
<i>Representation Datatype</i>	
<i>Representation Class</i>	ST-String in CE-Coded Element <sup>HL7</sup>
<i>Unit of Measure</i>	
<i>Unit of Measure Precision</i>	
<i>Layout</i>	
<i>Maximum Size</i>	250 <sup>HL7</sup>
<i>Data Domain</i>	
<i>Data Domain Source</i>	The WHO Adverse Reaction Terminology for coding clinical information in relation to drug therapy may be worth looking into but it only covers drugs. <a href="http://www.who-umc.org">www.who-umc.org</a> This data still needs endorsement
<i>Guide for Use</i>	If no adverse reactions are known, indicate "None Known"
<i>Derivation Rules</i>	
<i>Verification Rules</i>	
<i>Collection Methods</i>	

## Administrative Attributes

<i>Submitting Organisation</i>	HealthConnect-Clinical Information Project
<i>Steward</i>	HealthConnect
<i>Source Standard</i>	HL7 IAM -3 Allergen Code/Mnemonic/Description.Text (Component 2)
<i>Comments</i>	

## Data Set Specifications

<i>HealthConnect Data Group</i>	HCDG-Adverse Reaction
<i>Date From</i>	
<i>Date To</i>	

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## Adverse Reaction-Allergy Severity <sup>HL7 IAM-4</sup>

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### Identifying and Definitional Attributes

<i>Label on Output</i>	Severity
<i>Identifier</i>	CIP-DS-004
<i>Version Number</i>	01
<i>Metadata Type</i>	Data Element
<i>Definition</i>	The field indicates the general severity of allergy. <sup>HL7IAM-4</sup>
<i>Synonymous Name</i>	
<i>Context</i>	

### Relational and Representational Attributes

<i>Type of Relationship</i>	
<i>Representation Datatype</i>	Alphabetic <sup>CIP</sup>
<i>Representation Class</i>	Text <sup>CIP</sup> ST-String in CE-Coded element <sup>HL7</sup>

*Unit of Measure*

*Unit of Measure Precision*

*Layout*

*Maximum Size* 250 <sup>HL7CE</sup>

*Data Domain*

SV	Severe
MO	Moderate
MI	Mild
U	Unknown

*Data Domain Source* HL7 User-Table 0128 - Allergy Severity Code  
This data still needs endorsement

*Guide for Use*

*Derivation Rules*

*Verification Rules*

*Collection Methods*

### Administrative Attributes

<i>Submitting Organisation</i>	HealthConnect-Clinical Information Project
<i>Steward</i>	HealthConnect
<i>Source Standard</i>	HL7 IAM-4 Allergy Severity Code.Text (Component 2)
<i>Comments</i>	

### Data Set Specifications

<i>HealthConnect Data Group</i>	HCDG-Adverse Reaction
<i>Date From</i>	
<i>Date To</i>	

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## Adverse Reaction-Allergy Reaction <sup>HL7 IAM-5</sup>

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### Identifying and Definitional Attributes

<i>Label on Output</i>	Reaction
<i>Identifier</i>	CIP-DS-005
<i>Version Number</i>	01
<i>Metadata Type</i>	Data Element
<i>Definition</i>	The field indicates the specific allergic reaction that was documented. This element may conform to some external, standard coding system, or it may conform to a local, largely textual or mnemonic descriptions (eg convulsions, sneeze, rash, etc.). <sup>HL7 IAM-5</sup>
<i>Synonymous Name</i>	
<i>Context</i>	

### Relational and Representational Attributes

<i>Type of Relationship</i>	
<i>Representation Datatype</i>	Alphabetic <sup>CIP</sup>
<i>Representation Class</i>	Text <sup>CP</sup> CNE-Coded with no exceptions <sup>HL7</sup>
<i>Unit of Measure</i>	
<i>Unit of Measure Precision</i>	
<i>Layout</i>	
<i>Maximum Size</i>	250 <sup>HL7 CNE</sup>
<i>Data Domain</i>	
<i>Data Domain Source</i>	This data still needs endorsement
<i>Guide for Use</i>	
<i>Derivation Rules</i>	
<i>Verification Rules</i>	
<i>Collection Methods</i>	

### Administrative Attributes

<i>Submitting Organisation</i>	HealthConnect-Clinical Information Project
<i>Steward</i>	HealthConnect
<i>Source Standard</i>	HL7 IAM-5 Allergy Reaction Code.Text (Component 2)
<i>Comments</i>	

### Data Set Specifications

<i>HealthConnect Data Group</i>	HCDG-Adverse Reaction
<i>Date From</i>	
<i>Date To</i>	

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## Alert-Type <sup>CIP</sup>

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### Identifying and Definitional Attributes

<i>Label on Output</i>	Type
<i>Identifier</i>	CIP-DS-006
<i>Version Number</i>	01
<i>Metadata Type</i>	Data Element
<i>Definition</i>	Name or description of the type of alert. <sup>CIP</sup>
<i>Synonymous Name</i>	
<i>Context</i>	

### Relational and Representational Attributes

<i>Type of Relationship</i>	
<i>Representation Datatype</i>	Text <sup>CIP</sup>
<i>Representation Class</i>	ST-String in CE-Coded Element <sup>HL7</sup>
<i>Unit of Measure</i>	
<i>Unit of Measure Precision</i>	
<i>Layout</i>	
<i>Maximum Size</i>	250 <sup>HL7</sup>
<i>Data Domain</i>	H Health B Behavioural R Beliefs or Religious Issues P Patient Preferences O Other
<i>Data Domain Source</i>	CIP table Where would "elite athlete" go? This data still needs endorsement
<i>Guide for Use</i>	Where no suitable description can be found, the option of entering free text is available but this will not be coded. <sup>CIP</sup>
<i>Derivation Rules</i>	
<i>Verification Rules</i>	
<i>Collection Methods</i>	

### Administrative Attributes

<i>Submitting Organisation</i>	HealthConnect-Clinical Information Project
<i>Steward</i>	HealthConnect
<i>Source Standard</i>	HL7 OBX-3 Observation Identifier.Text (Component 2)
<i>Comments</i>	

### Data Set Specifications

<i>HealthConnect Data Group</i>	HCDG-Alert
<i>Date From</i>	
<i>Date To</i>	

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## Alert-Description <sup>CIP</sup>

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### Identifying and Definitional Attributes

<i>Label on Output</i>	Description
<i>Identifier</i>	CIP-DS-007
<i>Version Number</i>	01
<i>Metadata Type</i>	Data Element
<i>Definition</i>	This field uniquely identifies a particular alert. <sup>CP</sup>
<i>Synonymous Name</i>	Warnings
<i>Context</i>	

### Relational and Representational Attributes

<i>Type of Relationship</i>	
<i>Representation Datatype</i>	Text <sup>CP</sup>
<i>Representation Class</i>	ST-String in CE-Coded Element <sup>HL7</sup>
<i>Unit of Measure</i>	
<i>Unit of Measure Precision</i>	
<i>Layout</i>	
<i>Maximum Size</i>	250 <sup>HL7</sup>
<i>Data Domain</i>	Elite Athlete Pregnant Do not give blood products Violent
<i>Data Domain Source</i>	CIP table This data still needs expansion and endorsement
<i>Guide for Use</i>	
<i>Derivation Rules</i>	
<i>Verification Rules</i>	
<i>Collection Methods</i>	

### Administrative Attributes

<i>Submitting Organisation</i>	HealthConnect-Clinical Information Project
<i>Steward</i>	HealthConnect
<i>Source Standard</i>	HL7 OBX-5 Observation Value.Text (Component 2, Sequence 1-Description)
<i>Comments</i>	

### Data Set Specifications

<i>HealthConnect Data Group</i>	HCDG-Alert
<i>Date From</i>	
<i>Date To</i>	

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## Alert-Onset Date<sup>CIP</sup>

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### Identifying and Definitional Attributes

<i>Label on Output</i>	Date
<i>Identifier</i>	CIP-DS-008
<i>Version Number</i>	01
<i>Metadata Type</i>	Data Element
<i>Definition</i>	The date when the alert was first experienced, notified or reported. <sup>CIP</sup>
<i>Synonymous Name</i>	
<i>Context</i>	

### Relational and Representational Attributes

<i>Type of Relationship</i>	
<i>Representation Datatype</i>	Numeric <sup>CIP</sup>
<i>Representation Class</i>	Date <sup>CIP</sup>
	TS-Time Stamp <sup>HL7</sup>
<i>Unit of Measure</i>	
<i>Unit of Measure Precision</i>	
<i>Layout</i>	MMYYYY
<i>Maximum Size</i>	26 <sup>HL7 TS</sup>
<i>Data Domain</i>	
<i>Data Domain Source</i>	
<i>Guide for Use</i>	
<i>Derivation Rules</i>	
<i>Verification Rules</i>	
<i>Collection Methods</i>	

### Administrative Attributes

<i>Submitting Organisation</i>	HealthConnect-Clinical Information Project
<i>Steward</i>	HealthConnect
<i>Source Standard</i>	HL7 OBX-5 Observation Value.Text (Sequence 2-Onset Date)
<i>Comments</i>	

### Data Set Specifications

<i>HealthConnect Data Group</i>	HCDG-Alert
<i>Date From</i>	
<i>Date To</i>	

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## Alert-Age at Onset <sup>CIP</sup>

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### Identifying and Definitional Attributes

<i>Label on Output</i>	Age at Onset
<i>Identifier</i>	CIP-DS-009
<i>Version Number</i>	01
<i>Metadata Type</i>	Data Element
<i>Definition</i>	The age that the alert was first experienced, notified or reported. <sup>CIP</sup> . If the exact age is not known, enter an approximate age. <sup>CIP</sup>
<i>Synonymous Name</i>	
<i>Context</i>	

### Relational and Representational Attributes

<i>Type of Relationship</i>	
<i>Representation Datatype</i>	Alphanumeric <sup>CIP</sup>
<i>Representation Class</i>	Text <sup>CIP</sup> ST-String in CE-Coded element <sup>HL7</sup>
<i>Unit of Measure</i>	
<i>Unit of Measure Precision</i>	
<i>Layout</i>	
<i>Maximum Size</i>	250 <sup>HL7CE</sup>
<i>Data Domain</i>	
<i>Data Domain Source</i>	
<i>Guide for Use</i>	Include age units (eg 10 mths, 50 yrs, 9 days)
<i>Derivation Rules</i>	
<i>Verification Rules</i>	
<i>Collection Methods</i>	

### Administrative Attributes

<i>Submitting Organisation</i>	HealthConnect-Clinical Information Project
<i>Steward</i>	HealthConnect
<i>Source Standard</i>	HL7 OBX-5 Observation Value.Text (Component 2, Sequence 3-Age at Onset)
<i>Comments</i>	

### Data Set Specifications

<i>HealthConnect Data Group</i>	HCDG-Alert
<i>Date From</i>	
<i>Date To</i>	

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## Alert-End Date<sup>CIP</sup>

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### Identifying and Definitional Attributes

<i>Label on Output</i>	End Date
<i>Identifier</i>	CIP-DS-0010
<i>Version Number</i>	01
<i>Metadata Type</i>	Data Element
<i>Definition</i>	The date of when the alert was no longer applicable. <sup>CIP</sup>
<i>Synonymous Name</i>	
<i>Context</i>	

### Relational and Representational Attributes

<i>Type of Relationship</i>	
<i>Representation Datatype</i>	Numeric <sup>CIP</sup>
<i>Representation Class</i>	Date <sup>CIP</sup>
	TS-Time Stamp <sup>HL7</sup>
<i>Unit of Measure</i>	
<i>Unit of Measure Precision</i>	
<i>Layout</i>	MMYYYY
<i>Maximum Size</i>	26 <sup>HL7 TS</sup>
<i>Data Domain</i>	
<i>Data Domain Source</i>	
<i>Guide for Use</i>	
<i>Derivation Rules</i>	
<i>Verification Rules</i>	
<i>Collection Methods</i>	

### Administrative Attributes

<i>Submitting Organisation</i>	HealthConnect-Clinical Information Project
<i>Steward</i>	HealthConnect
<i>Source Standard</i>	HL7 OBX-5 Observation Value.Text (Component 2, Sequence 4-End Date)
<i>Comments</i>	

### Data Set Specifications

<i>HealthConnect Data Group</i>	HCDG-Alert
<i>Date From</i>	
<i>Date To</i>	

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## Alert-Notes<sup>CIP</sup>

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### Identifying and Definitional Attributes

<i>Label on Output</i>	Notes
<i>Identifier</i>	CIP-DS-0011
<i>Version Number</i>	01
<i>Metadata Type</i>	Data Element
<i>Definition</i>	Additional comments associated with this Alert. <sup>CIP</sup>
<i>Synonymous Name</i>	
<i>Context</i>	

### Relational and Representational Attributes

<i>Type of Relationship</i>	
<i>Representation Datatype</i>	Alphanumeric <sup>CIP</sup>
<i>Representation Class</i>	Text <sup>CIP</sup>
<i>Unit of Measure</i>	
<i>Unit of Measure Precision</i>	
<i>Layout</i>	
<i>Maximum Size</i>	65,536 <sup>1 HL7*</sup>
<i>Data Domain</i>	
<i>Data Domain Source</i>	
<i>Guide for Use</i>	
<i>Derivation Rules</i>	
<i>Verification Rules</i>	
<i>Collection Methods</i>	

### Administrative Attributes

<i>Submitting Organisation</i>	HealthConnect-Clinical Information Project
<i>Steward</i>	HealthConnect
<i>Source Standard</i>	HL7 OBX-5 Observation Value (Sequence 6-Notes)
<i>Comments</i>	

### Data Set Specifications

<i>HealthConnect Data Group</i>	HCDG-Alert
<i>Date From</i>	
<i>Date To</i>	

Attachment C: e-mail from Sam Heard (9 March 2004)

Dear Lorraine, Linda, Peter and all

These papers are useful and demonstrate a couple of issues - as you might expect I make these from an 'archetype' generation point of view. The most obvious is the different approaches of the CIP and SNOMED.

The former is using the current data dictionary approach which I would call 'definitional' - as in a dictionary. This approach is obsessional in the specification of each data point and not sustainable in that it would take many hours to review each data point (perhaps annually) and ensure that it is still correctly referenced. Even with this amount of work I am not sure that it specifies the data sufficiently.

The SNOMED approach is relational and precoordinated. The result is defining things by their definitions and causes. Allergies are simply defined as the precoordination of the concept allergy with the concept that is the cause of the allergy. This leads to two problems.

1. The post-coordination explosion - how many things can you be allergic to?
2. The processing overhead
  - query SNOMED to find out the code for the cause
  - map this to the drug knowledgebase codeset
  - determine if the drug is a class name or an individual name
  - determine if the drug to be prescribed is that drug or of that class

Archetypes - the specification of the information to be shared - addresses both these issues. First we can take the notion of adverse reaction generically to allow searching and restriction of a list to a useful set of things. I would not include food 'intolerances' here as they may overwhelm the clinician with information of little use - but others may disagree.

The archetype can then be specialised in the way we decide is of most benefit. Specialisation enables machine readable constraints to be placed on the data points. If the specialisation is to drug reaction and non-drug reaction it is easier for decision support to make use of the data.

Importantly, there is no need to develop a whole set of terms 'Allergy to' as the archetype is quite clear if the reaction type is an allergy or not. Further, an allergic reaction (skin rash) to Fenbufen can be interpreted as a non-class reaction i.e. specific to Fenbufen, but a non-allergic reaction is very likely to be a class reaction. Reactions can be coded/ free text as required.

I hope you can see the advantage of this approach for machine level interoperability.

Cheers, Sam

Attachment D: e-mail from Trish Ryan to this group (5 March 2004)

Florence,

I have an HDSC teleconference at 2pm Tuesday and Meera is involved in that as well. So sorry we can't join in.

Most of our contribution would have been directed at linking any work proposed to NHIG governance structures and processes, on the understanding that the desired outcome is to establish national data standards in this field.

One thing that others might be interested in is that Chair of HDSC is writing to Chair of Aust Safety and Quality council (in response to a letter from them) to establish co-operative effort on matters of common interest and priority and asking them specifically to indicate their view on the priority of data development occurring in the area of adverse events. This was one of the priorities areas of development effort recommended to HDSC by David Rowlands at the last HDSC meeting.

Chairs of HDSC, ICTSC, SIMC, and ICTC will be meeting on 16th (at NHIG's request. Ching is convening.

One matter that will be raised is the need for co-ordinated priority setting for work relevant to each group.

I suggest that if the adverse events/alarms teleconference participants think it is important that work occur on developing and endorsing national standards in this area then having these NHIG groups recognise or support that priority would be very helpful, if not essential to getting the work underway with a defined pathway through the NHIG governance processes.

For better or worse these groups exist and they do provide a pathway for actual endorsement of standards. I imagine that HDSC, ICTSC, C&TWG and probably SIMC would have an interest in this work. Don't know about ICTC.

I would welcome receiving any minutes of the teleconference.

Regards

Trish