

Options

- Option 1: Sections & Entries
- **Option 2: Entries & Clusters/Elements**
- Option 3: Templated 'Uber Model'
- Option 4: Entries with Links
- Option 5: Entries with External Panels
- **Option 6: Compound & Indivisible Statements**

Option 2 – Entries & Clusters

- Panels defined using Entries
- Tests defined using Clusters
- **Pros**
 - No changes required to reference model
 - Allows arbitrary level of grouping
- **Cons**
 - Does not recognise atomic pieces of information
 - Query path not stable for a particular type of test

Option 2a – Entries & Clusters

ENTRY: Hematocrit Result

ELEMENT: Information Subject: 7549

ELEMENT: Date: 27th June 2013

ELEMENT: Test Name: |Hematocrit|

ELEMENT: Result Value: 42%

ELEMENT: Interpretation: |Normal|

ENTRY: Complete Blood Count

ELEMENT: Information Subject: 7549

ELEMENT: Date: 27th June 2013

ELEMENT: Panel Interpretation: ...

CLUSTER: Hematocrit Result

ELEMENT: Test Name: |Hematocrit|

ELEMENT: Result Value: 42%

ELEMENT: Interpretation: |Normal|

CLUSTER: Hemoglobin Result

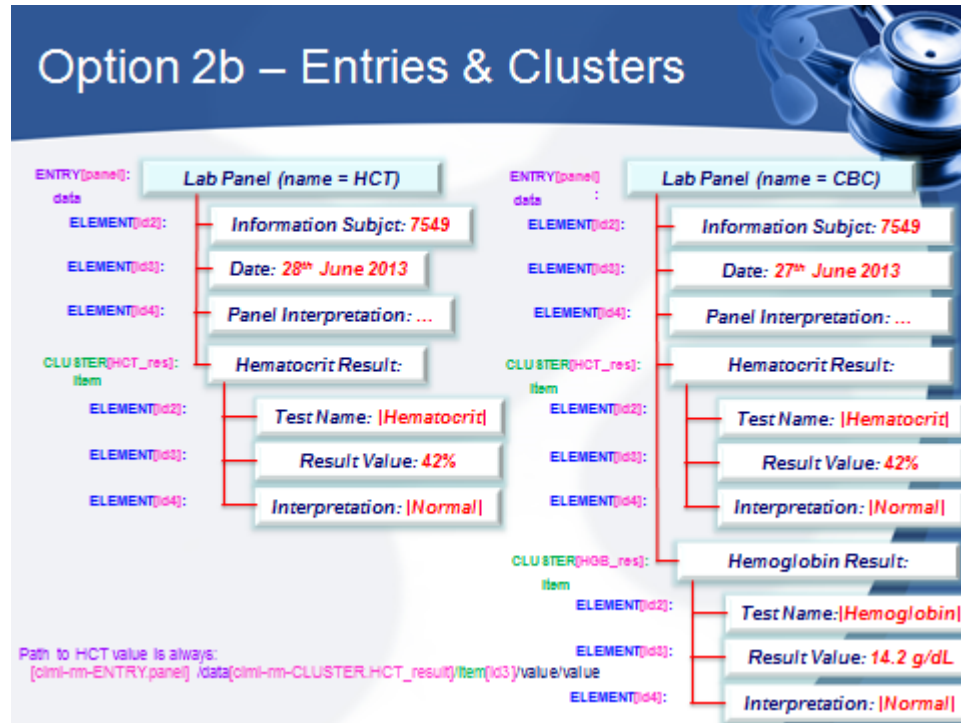
ELEMENT: Test Name: |Hemoglobin|

ELEMENT: Result Value: 14.2 g/dL

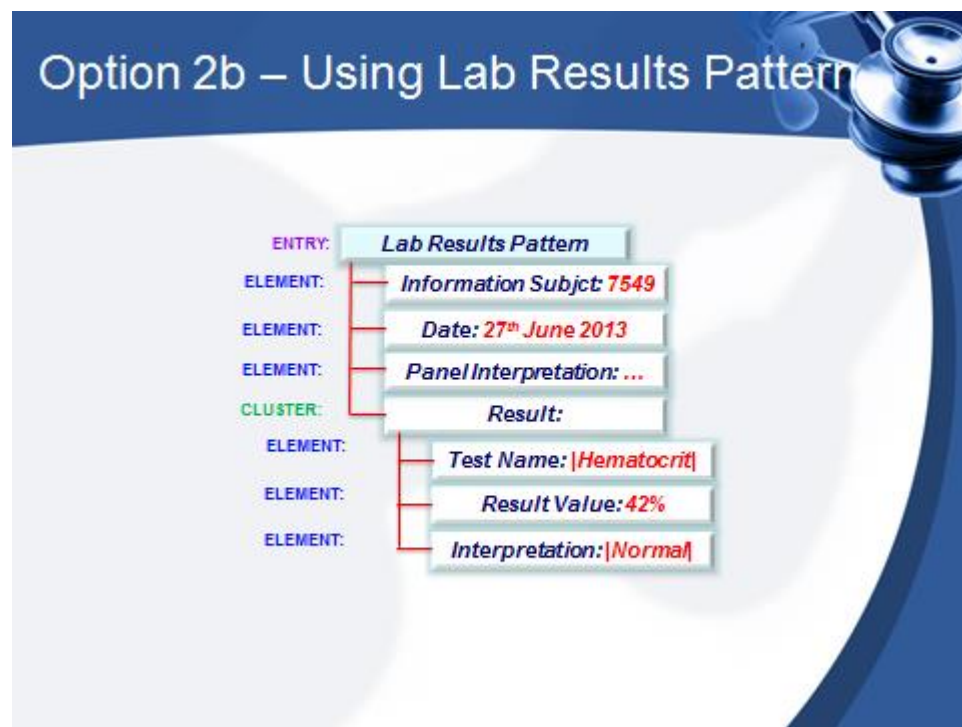
ELEMENT: Interpretation: |Normal|

Q: List the Date and Result of all Hematocrit Tests for Information Subject 7549.

[Slide #4] - Option 2b - Entries & Clusters



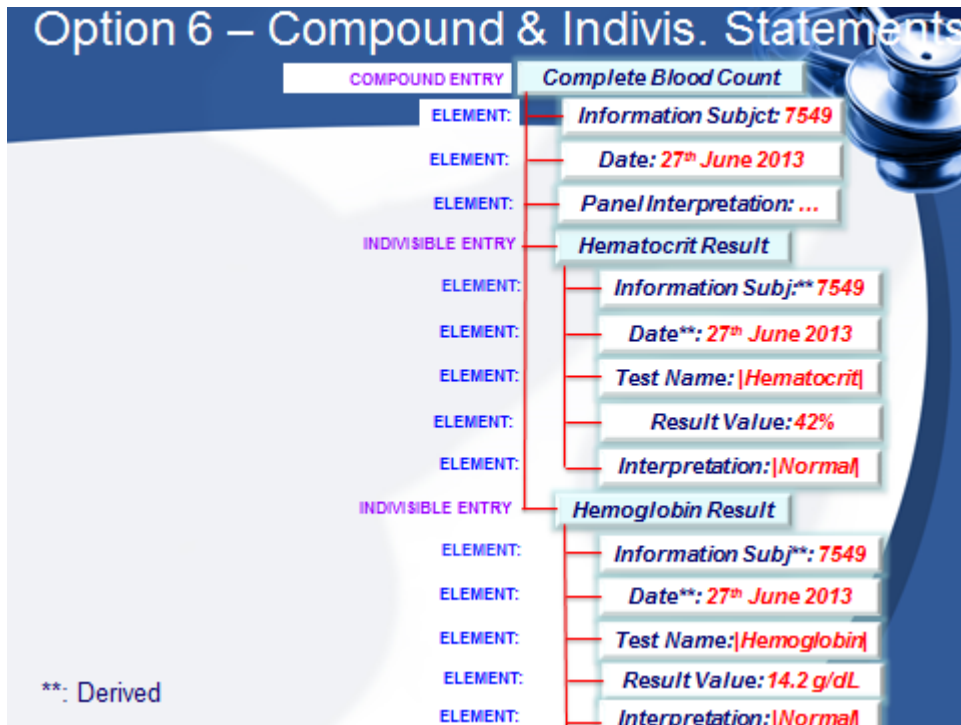
[Slide #5] - Option 2b - Using Lab Results Pattern



Option 6 – Compound & Indivis. Statements

- **Specialise Entry into 2 new reference model classes:**
 - Compound Entry
 - Used for panels, and may contain data elements, compound statements or atomic statements; Contains shared context.
 - Indivisible Entry
 - Used for individual tests, and represent indivisible unit of information about the patient; All context is self-contained or derivable.
- **Pros**
 - Consistent query paths
 - Identifies indivisible units of information
 - Allows arbitrary levels of nesting
 - Allows context derivation rules to be applied
- **Cons / Implications**
 - Requires reference model to be changed
 - Requires the implementation to ensure atomic statements are complete, and independently queryable

[Slide #7] - Option 6 - Compound & Indivisible Statements



Option 4 – Entries With Links

- Panels defined using Entries
- Tests defined using Entries
- Panel entry includes links to test entries
- **Pros**
 - No changes to the reference model
 - Query paths are consistent
 - Tests can stand independently with own context
 - Allows arbitrary levels of groupings
- **Cons/Implications**
 - Requires queries to navigate links and understand the semantics of the links
 - Need to repeat information in each test entry
 - Are reverse links also required?

Option 4 – Entries With Links

The diagram illustrates two data entry structures for a medical record system. On the left, a 'Lab Panel' entry (ENTRY (C)) contains five elements: 'Information Subject: 7549', 'Date: 27th June 2013', two 'Result:' fields, 'Test Name: |CBC|', and 'Panel Interpretation: ...'. On the right, there are two 'Lab Test' entries (ENTRY (A)). The top one contains four elements: 'Information Subject: 7549', 'Date: 27th June 2013', 'Test Name: |Hematocrit|', and 'Result Value: 42%'. The bottom one contains five elements: 'Information Subject: 7549', 'Date: 27th June 2013', 'Test Name: |Hemoglobin|', 'Result Value: 14.2 g/dL', and 'Interpretation: |Normal|'. Red arrows point from the 'Result:' fields in the Lab Panel to the 'Result Value' field in the top Lab Test, and from the 'Test Name: |CBC|' field to the 'Test Name: |Hemoglobin|' field in the bottom Lab Test. A question is posed at the bottom left: 'Q: List the Date and Result of all Hematocrit Tests for Information Subject 7549.'

ENTRY (C): **Lab Panel**

- ELEMENT: Information Subject: 7549
- ELEMENT: Date: 27th June 2013
- LINK: Result:
- LINK: Result:
- ELEMENT: Test Name: |CBC|
- ELEMENT: Panel Interpretation: ...

ENTRY (A): **Lab Test**

- ELEMENT: Information Subject: 7549
- ELEMENT: Date: 27th June 2013
- ELEMENT: Test Name: |Hematocrit|
- ELEMENT: Result Value: 42%
- ELEMENT: Interpretation: |Normal|

ENTRY (A): **Lab Test**

- ELEMENT: Information Subject: 7549
- ELEMENT: Date: 27th June 2013
- ELEMENT: Test Name: |Hemoglobin|
- ELEMENT: Result Value: 14.2 g/dL
- ELEMENT: Interpretation: |Normal|

Q: List the Date and Result of all Hematocrit Tests for Information Subject 7549.