**CIMI WG Meeting Notes 2018-10-11 13:00**

Nathan Davis presenting Serum Glucose Tolerance Test Models

2018-10-14 Update, Steve Hufnagel, scribe

*“The best way to determine PRAGMATIC-CIMI COMPLIANCE CHECKLIST*

*is to work through examples” [Stan Huff 2018-10-11]*

**PRAGMATIC-CIMI COMPLIANCE CHECKLIST DRAFT** as of 2018-10-14

CIMI Compliance Checklist for approving LIMs and PSMs as “official CIMI” models, based-on

"HSPC Serum Glucose Intolerance Lab Test FHIR profile" 2018-10-11 CIMI WG discussion

| **CATEGORY** | **CIMI COMPLIANCE CRITERIA (CCC)**; where, exceptions must be submitted to the CIMI Management Board for adjudication and potential inclusion in the CIMI-FHIM BMM. |
| --- | --- |
| * 1. **LIM Data Types**   **Value Sets** | **CCC 01-1** LIM data types and value sets must be consistent with a layered Reference and Pattern Archetype flattened-file set of CIMI-FHIM LIM data types and terminology bindings, which are easily expandable to realm, clinical domain and implementation specific PSMs.   * + Layered data-type and terminology bindings may be added at Archetype Pattern layers [2018-10-11, Stan]   + **ISSUE CCC 01-1A (2018-10-11]**: Are Reference Archetypes international realm with minimal set of ~12 XML data types, as suggested by William Goossen?   + **ISSUE CCC 01-1B [2018-10-11]**: Reference Patterns can be realm, clinical-domain specific [Stan]. Should leaf nodes be implementation specific (e.g., FHIR, V2, C-CDA)? [2018-10-11]   + **CCC 01.2**: LIMS & PSMs must be consistent with the flattened leaf-node CIMI-FHIM BMM Archetype Pattern data-types and terminology bindings. Exceptions must be submitted to the CIMI Management Group for adjudication and potential inclusion in the CIMI-FHIM BMM.   **ISSUE CCC 01.2 (2018-10-11]**: HL7 balloted CIMI BMM should include FHIM and should show flattened CIMI-FHIM Reference and Pattern Archetypes. |
| * 1. **Data Elements** | **CCC 02-1**: LIM and PSM data elements must be consistent with CIMI-FHIM flattened file Reference and Pattern Archetypes. [2018-10-11, Stan, Galen, Claude] |
| * 1. **Style** | **CCC 03-1**: CIMI-compliant LIM style must meet implementation requirements of stakeholders (CQI, CDS, FHIR, CDA, V2, LIS, EHRs). [2018-10-11, Stan] |
| * 1. **PSM Term. Binding** | **CCC 04-1**: PSM Terminology bindings, (e.g., glucose tolerance test) are context-specific (e.g., US realm, lab clinical domain, FHIR implementation) data-types, harmonized (e.g., SOLOR) and most-appropriately post-coordinated terminology (e.g., HSPC Glucose Challenge value set). Other commonly used pre-coordinated forms are possible; but, they must have a publicly available iso-semantically mapped post-coordinated form.   * + **ISSUE CCC 04-1 (2018-10-11]:** Where will pre/post coordinated mappings be published?   + US clinical laboratories must be compliant with the 1988 Clinical Laboratory Improvement Amendment (CLIA regulations), included in the V2.51 LRI guide, which is part of the Meaningful Use (MU) requirements.   + Glucose Challenge (aka amount and timing) are most commonly pre-coordinated [Nathan]   + Glucose Tolerance Test pattern has separate (initial, 1h, etc.) glucose challenge DCM [Stan]   + Delta flag & focal subject should never be part of a glucose tolerance [Stan] |
| **Products** | * + Use Case Scenarios/Storyboards composed of ordered Events specified within a SOA; where, an Event is specified as an Object (EHR-S FM task mapped to a FHIM Reference and Pattern Archetypes and data elements) preferred.   + CIMI Logical DCMs, KNARTS and quality measures, optionally expressed as FSDs   + Realm, domain, implementation-specific PSMs late bindings of data types and value sets   + SOLOR ANF for efficient/effective knowledge-based systems analytics/reasoning preferred or iso-semantic equivalents. |

**NOTES:**

* CIMI Basic Meta Model (BMM) is a top-down hierarchical derivation of realm, clinical domain and implementation specific CIMI Reference and Pattern Archetypes; where, data types and value sets are bound at appropriate levels.

CIMI-BMM should be tool generated and is NOT intended for Clinician and Implementer use; where, they should iteratively refine the CIMI-compliant flattened CIMI-FHIM Reference and Pattern Archetypes (classes and data elements) into FHIR, C-CDA, V2, etc. compliant implementation profiles and extensions.

* Periodic Configuration Management Baseline CIMI BMM and CIMI-FHIM flattened Reference and Pattern Archetype DCM LIMs should be listed or referenced in the *CIMI Architecture and Style Guides and on the CIMI.HL7.org web site.*

**AUDIO LINK**: <https://1drv.ms/u/s!AlkpZJej6nh_l9wJmOcD7mzNgy1RBQ> <<CIMI WG Call Audio 2018-10-11-1300.m4a>>

**REFERENCE:** CIMI-HSPC Serum Glucose FHIR profile URL:

* <https://github.com/nrdavis1/HSPCFHIRtestGluc>
* The file we were looking at was in the demo subdirectory:
  + StructureDefinition-Glucose1Hpost75gglucosePOMCncPtSerPlasQnLabObs-definitions.html
* You’ll have to clone the repository locally and open that file in a web browser for it to work correctly. [Patrick Langford]

**Attendee List (23)**

1. +1 (781) 271-7311
2. +1 (801) 442-5112
3. Andrea Pitkus apitkus@gmail.com
4. Anonymous
5. Asim Muhammad (Philips) muhammad.asim@philips.com
6. Claude cnanjo@gmail.com
7. Galen Mulrooney galen.mulrooney@jpsys.com
8. Gary Gryan ggryan@mitre.org
9. Joe Quinn (Optum) joseph.quinn@optum.com
10. Joey Coyle joey@xcoyle.com
11. Mark mkramer@mitre.org
12. May mayt@mitre.org
13. Michael Denton msdenton@mmm.com
14. Nathan Davis nathan.davis2@imail.org
15. Patrick patrick.langford@imail.org
16. Rebecca Baker rbaker@acc.org
17. Richard richard.esmond@gmail.com
18. Stan Huff stan.huff@imail.org
19. Stan stan.huff@imail.org
20. Steve Bratt sbratt@mitre.org
21. Steve Hufnagel stephen.hufnagel.h17@gmail.com
22. Susan susan.matney@imail.org
23. Todd.Stevenson@imail.org

**Claude**: week after next, I will be out. We need an agile bottom up (FHIR) and top down BMM methodology.

**Galen**: We need to show flattened logical models. **Stan**: agreed all inherited attributes should be shown with appropriate bindings. **Galen**: unneeded BMM constrained out stuff should not be shown! The flattened archetypes and DCM LIMs should be what SMEs validate. **Claude**: I have a flattened BMM example. I don't yet have the flattened constrained patterns. You will/should be able to see flattened BMM and flattened DCMs to see concrete examples. **Galen**: there are different pre/post coordinated ways to flatten models leading to stakeholder confusion.

**Mark**: Each attribute has pre/post coordinated forms is n combinatorial. Body site can have code, code & laterality, body site and distance. Can we make this more modular?

**Patrick**: OpenCIMI.org model viewer has ability to look at older models. <http://models.opencimi.org/#/>

**Stan**: We will refine CIMI compliance criteria based on concrete examples. For lab, we will look at the FHIR profiles first and later look at ADL logical DCMs. Ultimately, we will walk up the BMM Reference and Pattern Archetypes. Bindings will be added at appropriate layers. LIM style must meet requirements of stakeholders (CQI, CDS, FHIR, CDA, V2). CIMI prefers "most-appropriately post-coordinated" form. We prefer the most appropriately post-coordinated data from a server. There will be other preferences for clinician data capture or display; where, we only make the pre/post coordinated values that are commonly used. Glucose tolerance test are always operationally pre-coordinated; but, they should be represented in post-coordinated form.

**Susan**: reviewing Architecture & Style Guide. Susan at SNOMED next week.

Machine generated alternative text:
Current Build 
Content 
D.4.1 
Resources Profiles Extensions Operations 
Home Documentation Modules 
HSPC Implementation Guide 
Glucose Post Coordinated Details 
StructureDefinition: glucosePostCoordinated 
XML 
JSON 
Formal Views of Profile Content 
The official URL for this profile is: 
http://h17.org/fhi r/hspc/StructureDefi nit ion/gIucosePostCoordinated 
Glucose Post Coordinated is a representation of a post-coordinated data structure where specific LOINC elements, such 
as specimen type, method, and timing that are usually precoordinated into the term have been de-constructed from it 
and placed into thier own discrete data elements. 
This profile builds on US Core Results Profile. 
This profile was published on Fri Aug 31 00:00:00 MDT 2018 as a draft by Healthcare Services Platform Consortium. 

**Serum Glucose Differential View**

Machine generated alternative text:
glucoseChallenge 
updateDateTime 
modifierExtension 
identifier 
.0 
identifier 
o 
identifier 
O 
identifier 
code 
coding 
system 
code 
display 
issued 
performer 
performer 
performer 
performer 
Profile: Glucose Post Coordinated - FHIR 
o.. 
0..1 
0..1 
0..1 
0..1 
0..1 
0..1 
0..1 
1. 
1 
.1 
* 
* 
* 
* 
CodeableConcept 
dateTime 
FocalSubject 
Identifier 
Identifier 
Identifier 
Identifier 
CodeableConcept 
Coding 
uri 
code 
string 
instant 
Chat Messages 
Profile: Glucose (Mass/volume) in Serum or Pla 
You have 23 unread messages 
Binding: Abnormal Interpretation Numet 
Extension 
URL: 
http://h17.org/fhir/hspc/StructureDefinition/glucoseChallenge 
Binding: HSPC Glucose Challenge value set (preferred) 
Extension 
URL: 
http://h17.org/fhir/hspc/StructureDefinition/updateDateTime 
focalSubject 
Slice: Unordered, Open by value:Observation.identifier 
accessionNumber 
fillerOrderNumber 
placerOrderNumber 
Fixed Value: http://loinc.org 
Fixed value: 2345-7 
Fixed Value: Glucose [Mass/volume] in Serum or Plasma 
resultedDateTime 
Reference(Practjtioner 
Slice: Unordered, Open by value:Observation.performer 
Organization 
Patient 
Re/atedPerson) 
Reference(HSPC 
Practitioner Profile) 
Reference(HSPC 
Practitioner Profile) 
Reference(HSPC 
performingTech 
performingOrganizationMedicalDirector 
performingLaboratory 

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* Configuration Management Baseline BMM and CIMI-FHIM LIM flattened-file Reference and Pattern Archetypes need to be listed or referenced in the *CIMI Architecture and Style Guides.*

**CHAT LOG:**

1. Steve Bratt 13:04PM  
   Mark Kramer will be here in 10 mins
2. Steve Bratt 13:11PM  
   <http://models.opencimi.org/#/>
3. Mark 14:07PM  
   Comments on what's showing: (1) is reporting priority relevant? delta flag?
4. Mark 14:07PM  
   updateDateTime is part of every FHIR resource
5. Mark 14:08PM  
   Rename glucoseChallenge to glucoseChallengeAmount or something that indicates this is not a test name
6. Steve Hufnagel Host 14:09PM  
   Is this correct? Realm, clinical domain and implementation specific data types and preferable SOLOR harmonized most-appropriately (commonly used) post-coordinated terminology form hosted in VSAC is preferred or iso-semantic equivalents. Other pre-post coordinated forms are possible; but, they must be iso-semantically mapped to the most-appropriately post-coordinated form.
7. Andrea Pitkus 14:09PM  
   it is the glucose lab result. challenge is a type
8. Rebecca Baker 14:12PM  
   <https://www.mayoclinic.org/tests-procedures/glucose-challenge-test/about/pac-20394277>
9. Mark 14:13PM  
   Is focalSubject unconstrained. Should it be constrained?
10. Andrea Pitkus 14:15PM  
    should time aspect be split from the challenge so those are not precoordinated?
11. Andrea Pitkus 14:15PM  
    there is a single result value for each result, an order is a defined panel with certain results associated with it
12. Andrea Pitkus 14:16PM  
    The laboratory defines the results in its panels and included in their compendium/CLIA Specimen Collection Manual
13. Mark 14:22PM  
    Comments on slicing from Chris Moesel
14. Mark 14:22PM  
    From FHIR documentation: “When a discriminator is provided, the composite of the values of the elements designated in the discriminator is unique and distinct for each possible slice and applications can easily determine which slice an item in a list is. The intention is that this can be done in generated code, e.g. using a switch/case statement.”
15. Mark 14:22PM  
    And: “Each slice must use the element definition for the element in the discriminator(s) to ensure that the slices are clearly differentiated (by assigning a fixed value, a specific type, or a profile, depending on the discriminator type. If the type is 'value', then the element definition must use either ElementDefinition.fixed[x] or, if the element has a terminology binding, a required binding with a Value Set that enumerates the list of possible codes in the value set ("extensional definition”).”
16. Bret Heale 14:22PM  
    thinking that the 'leaf' nodes you have are useful to keep as examples of leaf node. but focus on filling in the missing upper models.
17. Mark 14:23PM  
    Since the slice base in the screenshot uses a ‘value’ discriminator, then each slice must FIX a value or provide a REQUIRED VS BINDING. The slices in the screenshot do neither. So to summarize… slicing identifiers is okay overall, however the way Nathan did this was incorrect by just putting in a description
18. Mark 14:23PM  
    There may also be issues w/ the slicing on performer. For example, how could you tell the difference between the performingTech slice and the performingOrganizationMedicalDirector? They both use the same profile.
19. Andrea Pitkus 14:25PM  
    priority is mostly a patient instance need. if physician needs results quickly, the order gets a higher priority.
20. Andrea Pitkus 14:27PM  
    challenge testing would be routine priority wise
21. Rebecca Baker 14:29PM  
    yes.. seems like would want to keep the structure the same so it is always there... for labs..
22. Andrea Pitkus 14:30PM  
    per Claude's question, how do you ensure that the post coordinated leaves do not get combined in a clinically inappropriate way? (i.e. adding dipstick test method to a challenge test)
23. Andrea Pitkus 14:31PM  
    need to review, but believe update datetime is when the definition/catalog item is updated
24. Andrea Pitkus 14:34PM  
    ok, thanks.
25. Steve Hufnagel Host 14:35PM  
    PRINCIPLE: PSM Terminology bindings, (e.g., glucose tolerance test) are context-specific (realm (US), clinical domain (lab), implementation paradigm (FHIR)) data-types (Glucose Challenge might be routine priorit), SOLOR harmonized and most-appropriately (HSPC Glucose Challenge value set) post-coordinated terminology form is preferred. Other pre-post coordinated forms are possible; but, they must be iso-semantically mapped to the most-appropriately context-specific post-coordinated form.
26. Andrea Pitkus 14:35PM  
    agree with leaving it out if it's patient instance info.
27. Andrea Pitkus 14:37PM  
    Need also the filler (lab result number)
28. May 14:40PM  
    Regarding the slice... the discriminator needs to be clear. It's just not clear from what I'm seeing in this IG: <https://www.hl7.org/fhir/profiling.html#discriminator>
29. Mark 14:42PM  
    Since this is a series of results, should this standard extension be used? observation-sequel-to
30. Mark 14:42PM  
    <http://hl7.org/fhir/2018May/extensibility-registry.html>
31. Mark 14:45PM  
    Does performingTech have to be an HSPCPractitioner?
32. Mark 14:45PM  
    Why not just a Practitioner?
33. Mark 14:46PM  
    Likewise HSPC Organization versus just plain Organization?
34. May 14:48PM  
    agreed.
35. Andrea Pitkus 14:49PM  
    If the HSPC practioner is used, it looks like the value set needs to include medical technologists as they are the ones verifing the test results...
36. Andrea Pitkus 14:50PM  
    it include does include lab directors and MLT (laboratory technicians)
37. Galen Mulrooney 14:57PM  
    I need to drop for another mtg. Thanks for a good discussion
38. Andrea Pitkus 14:59PM  
    Also a number of these glucose results if in a normal range, may be autoverified by the instrument
39. Mark 15:00PM  
    gotta go, but very interesting and productive discussion
40. Andrea Pitkus 15:00PM  
    Accreditation requires traceback of results to the exact instrument/person performing results. (so if a lab has 3 of the same analyzer perfo
41. Mark 15:01PM  
    Nathan, feel free to contact [cmoesel@mitre.org](mailto:cmoesel@mitre.org) for the slicing issues
42. Mark 15:01PM  
    Thank you for sharing this!
43. Andrea Pitkus 15:01PM  
    performing results, need to know which one a particular result came from.
44. Andrea Pitkus 15:02PM  
    good idea....
45. Andrea Pitkus 15:03PM  
    can we capture the discussion in the chat before the meeting ends?