

APAC Workshop 26 January 2022

- 1. What's the updates and challenges so far?
 - a. We recently released CDM v5.4 (http://ohdsi.github.io/CommonDataModel/cdm54.html). So far there have been many challenges but the main one we have been struggling with is how fast to update the CDM. We want to be responsive to the needs of the community but with an understanding that any change we make to the model has huge impacts down the line.
- 2. Tips for ETL conventions? Personal hints?
 - a. Keep it as simple as possible at first. Many people want to use complex logic to make their data fit the model but I have found that the simplest approach is usually best because it makes it easier to error check later.
- 3. Where to start learning about ETL?
 - a. The EHDEN academy is a great place to start! https://academy.ehden.eu/
- 4. What kind of level of statistical or program skills requirement for CDM?
 - a. This one depends on what you are planning to do. If you are responsible for developing the ETL you need strong SQL skills or a good understanding of the database management system you will be using for the conversion. If you are the one designing the ETL then only some SQL skills will be enough. If you plan on designing studies using existing R packages then strong R skills are required. However, if you plan on only running studies or packages then you only need some R skills, you don't need to be an expert.
- 5. Is there any best practices for CDM mapping for pediatric survey questions?
 - a. I am not sure about pediatric surveys but, in general, I usually use the OBSERVATION table for survey questions. You can set the OBSERVATION_CONCEPT_ID as the question (it is ok if you create your own concepts in the 2billion range for these, as long as you document), and then set the VALUE_AS_CONCEPT_ID with the answer to the question.
- 6. I'm curious about your opinion on encryption when extracting CDM. There is a limit to the utilization of the loaded CDM data.
 - a. Since we use a federated network and only the results of a study are shared (not person level data), we don't usually need to encrypt the data since it still sits behind the data owner's firewall. When results are shared we use a "lock and key" system to make sure that the results are shared in a secure way.
- 7. On the tech for OMOP and how to perform data mapping?
 - a. I could interpret this two ways; the first being about the underlying infrastructure where the data sits and that is used to power the data mapping. This is really dependent on your company or institution, how big your dataset it, and how fast you need your ETL to run. Most OHDSI packages assume that your data are contained in a SQL relational database so I typically suggest starting there (but of



- course there are many, many options). Our packages support PostgreSQL, SQL Server, Amazon Redshift, Impala, Google BigQuery, Spark, Netezza, Oracle, and Microsoft Parallel Data Warehouse.
- b. I can also interpret this to mean what tools are available to help with mapping your data? White Rabbit and Rabbit In A Hat are great tools to use to get started but they will not write the code or perform the actual data processing. Talend is a potential option but has not been vetted by the OHDSI community.
- 8. How to ensure data quality during ETL process?
 - a. I usually start high-level during the ETL process to make sure I am seeing things I expect. For example, I start out making sure that each person only has one birth year. Then as I go through the tables and fields I run frequencies on the fields to get an understanding of what the database contains and if it complies with the data dictionary. Once I have an initial ETL, I then run the Data Quality Dashboard, limiting to conformance and completeness checks. Once any issues have been fixed then I move on to the plausibility checks.
- 9. Could you explain more about the ETL conventions?
 - a. The ETL conventions are meant to be the "rules" that we all follow when we transform our data into the CDM. Even if we all have the same data structure but don't follow the same rules, we could introduce unintended bias into our study results.
- 10. Could we customize thresholds of DQD by some parameters directly in codeToRun.R?
 - a. Unfortunately no, not at this time. Right now the only way to customize the DQD thresholds are to open up the underlying csv files and edit them there. This is a need for the package and we would love your contribution if you have thoughts on how to build this functionality!
- 11. When can you disregard records and map it to "0"? What is the meaning of "little and disregardable"?
 - a. This is a good question, we usually aim for mapping at least 90% of your data. This of course depends on the "junk" codes that you have, junk being the term for codes that we cannot accurately interpret.
- 12. Will episodes in the Oncology WG extensions be included in a future core CDM definition, given that many disease are episodic, not just cancers?
 - a. Yes! The Oncology tables are now available in CDM v5.4
- 13. How to map injections (e.g., injection vs. injectable solution/suspension vs. pre-filled syringe vs. cartridge vs. (sometimes) topical solutions)
 - a. I usually map these to the concepts with the CONCEPT_CLASS_ID = "Clinical Drug Form". https://athena.ohdsi.org/search-terms/terms?conceptClass=Clinical+Drug+Form&page=1&pageSize=15&query=injection&boosts
- 14. How do we create locally valid custom target concepts eg aboriginal status etc and how do they become standard concepts?
 - a. You can create your own custom concepts by utilizing the concept ids 2,000,000,000 2,147,000,000. These of course will be specific to your site and any others who use



- your custom concepts. Right now the best way to get these added into the standard vocabulary is to open an issue on the <u>vocabulary github</u>, though I know there is active work on how to make that process easier.
- 15. Mostly interested in NLP applications and the oncology extension / models of chronic disease.
 - a. This year the CDM working group is focused on these extensions and what makes a good extension, what the owners of the extensions need to provide, etc. so that an extension can get a stamp of approval. Needless to say this is an active area of research but this is the best_documentation I have seen for how to use the Oncology tables. We are still trying to understand the use cases surrounding these tables and welcome any feedback and/or collaboration!



CDM-Vocabulary Working Group 18 January 2022 - Special meeting

Agenda and meeting minutes		
Agenda Item	Lead	Discussion Notes and Decision
Action items		
Discussion	Jake	Race & Ethnicity concept discussion => Jake to present - Granularity and use cases (!) - Mixed races - Connection to determinants of health - EHRs (+ other sources) data available? Current OMOP Race & Ethnicity vocabularies originally derived from OMB standards. Also explained here Other potential sources: CDCREC, Example from Tufts: Race + Ethnicity combinations collected from Soarian EHR Scenarios: split into 2 fields (filled either from one or two vocabularies / domains) going a little beyond the OMOP CDM conventions or HL7 resources to be used as template: - Detailed Race - Detailed Ethnicity - OMB Ethnicity - OMB Race Consider OMH data standards as input
Decisions		
Next Steps		Returning to intended scheduling cadence with an inception meeting 2022 next week (Jan 25): - Retrospective 2021 - Outlook and priorities 2022
The Parking Lot	Andrew	Neuropsychiatric scales (Dmitry Dymshyts)



Mik	Versioning of individual concepts - Reach conclusion Determine additional input for the <i>roadmap</i>



CDM-Vocabulary Working Group 4 January 2022

Agenda and meeting minutes			
Agenda Item	Lead	Discussion Notes and Decision	
Action items	Mik	OKRs for the Vocabulary Subgroup - Task review	
Discussion		"end user" struggles with OHDSI vocabularies: - Where to get your initial information? (Book of OHDSI) for more details: various links (some older, some newer) => github page (dashboard; recording Dec 7th) - Issues experienced: SNOMED hierarchies (sometimes not as straightforward as expected, duplication), Plan for 2022 - Description for community input for a) an entire vocabulary [AB1] and b) a change request - A) how to get to stage table format to be delivered to the Vocabulary team - B) instructions on which issues to report in what way - Transparency of new vocabulary load "impact" - This depends on the local OMOP CDM! Tantalus can check against actively used concepts in a specific CDM (ETL adjustment required). A further improvement could also take cohort definitions into consideration. - Q1: SNOMED / RxNorm / LOINC refreshes; ICD10 "repairs", HCPCS/CPT4 refresh; Cancer modifiers (Staging / Grading, Episode modifiers); ICD-O refresh; RxNorm Extension: improvements, harmonization; Precise Ingredients "fixes" (e.g. biosimilars), MedDRA release - Next "Main Release" around mid Q1	



	- Vocabulary version field (free text, CDM table cdm_source) - fill this field during the vocabulary import, e.g. as in ETL Synthea - Athena improvements - funding + community involvement? - Task: how have (custom) mappings been done at various sites (source to target different by site?) - reproducibility of the extraction / transformation process; analyze starting from standard target codes (a phenotype) and find which sources would map into those in the respective site => Data Quality, similar approaches can be found @ AoU Do we have instances of ambiguity or undesirable duplication in the standardized vocabularies? => Karthik - explain approach for comparing sites, create a definition, provide examples (e.g. descendants of a code mapped to SNOMED, map to CPT4?), to be provided by Jan 18 2022 HemOnc @ OMOP shortcomings? N3C oncology requests => Andrew W. facilitates contact Race & Ethnicity concept discussion => Jake to present on Jan 18 2022 - Granularity and use cases (!) - Mixed races - Connection to determinants of health - EHRs (+ other sources) data available? Vaccine Vocabulary status: - Possibly using the Vaccine Ontology as one source - Decomposing Vaccine products to fill gaps / provide a full vaccine vocabulary
Decisions	 Refine and present OKRs and put them up for voting Review requirements for Vocabulary Versions in Athena
Next Steps	Special meeting next week: - Retrospective 2021 - Outlook and priorities 2022



The Parking Lot	Andrew	Neuropsychiatric scales (Dmitry Dymshyts)
	Mik	Versioning of individual concepts - Reach conclusion
		Determine additional input for the <u>roadmap</u>



CDM-Vocabulary Working Group 21 December 2021

	Agenda and meeting minutes		
Agenda Item	Lead	Discussion Notes and Decision	
Action items		OKRs for the Vocabulary Subgroup - Task review	
Discussion		Long CoViD changes New OMOP Extension "bucket" concept New OMOP Extension visit to Long Covid Clinic Plan for 2022 Description for community input for a) an entire vocabulary and b) a change request A) how to get to stage table format to be delivered to the Vocabulary team B) instructions on which issues to report in what way Transparency of new vocabulary load "impact" Q1: SNOMED / RxNorm / LOINC refreshes; ICD10 "repairs", HCPCS/CPT4 refresh; Cancer modifiers (Staging / Grading, Episode modifiers); ICD-0 refresh; RxNorm Extension: improvements, harmonization; Precise Ingredients "fixes" (e.g. biosimilars) Next "Main Release" around mid Q1 Athena improvements – funding + community involvement? Task: how have (custom) mappings been done at various sites (source to target different by site?) - reproducibility of the extraction / transformation process; analyze starting from standard target codes (a phenotype) and find which sources would map into those in the respective site => Data Quality, similar approaches can be found @ AoU Do we have instances of ambiguity or undesirable duplication in the standardized vocabularies? => Karthik - create a definition,	



Decisions		provide examples (e.g. descendants of a code mapped to SNOMED, map to CPT4?) HemOnc @ OMOP shortcomings? N3C oncology requests => Andrew W. facilitates contact Race & Ethnicity concept discussion => Jake to present on Jan 18 2022 - Granularity and use cases (!) - Mixed races - Connection to determinants of health - EHRs (+ other sources) data available? - Refine and present OKRs and put them up for
		voting - Review requirements for Vocabulary Versions in Athena
Next Steps		
The Parking Lot	Andrew Mik	Neuropsychiatric scales (Dmitry Dymshyts) Versioning of individual concepts - Reach conclusion Determine additional input for the <i>roadmap</i>



CDM-Vocabulary Working Group 7 December 2021

Agenda and meeting minutes			
Agenda Item	Lead	Discussion Notes and Decision	
Action items		OKRs for the Vocabulary Subgroup - Task review	
Discussion	Anna	Review Anna Ostropolet's prototype for a vocabulary dashboard and discuss requirements - Tool / place to allow easy access to o vocabulary statistics o Instructions / FAQ o Actual specific vocabulary documentation o Releases - Intro page with world map and latest news (keep origin as country) - Table view with sortable overview of all vocabularies and their status o Maturity column (metrics?) - Additional user requirements: o See source vocabulary version / last update (previous updates and link to release) o # of editorial requests (pending) - What could be substrate for maturity metrics? o % of non-standard to standard mappings o % of standard concepts o Degree of hierarchy representation o Quality of mapping (harder to determine, e.g. extent of 1:1, 1:n mapping) o "unused" / unmapped / deprecated concepts without replacement information o Additional manual assessment / score of trustworthiness or accuracy (e.g. for	



Decisions		cancer modifiers) per vocabulary or individual concept (like in Usagi)? Score of validation efforts (e.g. calculated from # of QA levels and iterations passed through) Completeness, conformance Maybe keep snapshot information for current as well as previous releases Make clear distinction of imported and created vocabularies plus if the relationships are reused or built by OHDSI Unit test for making sure that external terminology information is processed correctly Explain mapping process per vocabulary Refine and present OKRs and put them up for voting Review requirements for Vocabulary Versions in Athena
Next Steps		
The Parking Lot	Andrew Mik	Neuropsychiatric scales (Dmitry Dymshyts) Versioning of individual concepts - Reach conclusion Determine additional input for the <i>roadmap</i>



CDM-Vocabulary Working Group 9 November 2021

Agenda and meeting minutes		
Agenda Item	Lead	Discussion Notes and Decision
Action items		OKRs for the Vocabulary Subgroup - Task review
Discussion	Davera	FHIR / OMOP collaboration: - Provide OIDs and URIs for OMOP Vocabularies in this spreadsheet - Davera to present possible use cases Codesystem URI for CDA patient information transmission: Use case of sharing patient information Add administrative data for documenting / referencing the codesystem Other use cases: Into OMOP: FHIR source for ETL (e.g. EHR with FHIR API), Out of OMOP: quality measures,
		Add URI to OMOP vocabulary metadata where needed?
Decisions		 Refine and present OKRs and put them up for voting Review requirements for Vocabulary Versions in Athena
Next Steps		Provide some more input to HL7/FHIR by editing the spreadsheet based on use cases
The Parking Lot	Andrew Mik	Neuropsychiatric scales (Dmitry Dymshyts) Versioning of individual concepts - Reach conclusion
		Determine additional input for the <u>roadmap</u>



Anna	Review Anna Ostropolet's prototype for a dashboard (next week)
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Date: 26 October 2021 **Time:** 12 noon EST **Location:** <u>Teams</u>

CDM-Vocabulary Working Group 26 October 2021

Agenda and meeting minutes		
Agenda Item	Lead	Discussion Notes and Decision
Action items		OKRs for the Vocabulary Subgroup - Task review
Discussion	Davera	FHIR / OMOP collaboration: - Provide OIDs and URIs for OMOP Vocabularies in this spreadsheet - Davera to present possible use cases (next time)
	Mik	 Versioning of individual concepts Current status and possible approaches => conventions needed for code re-use. Discussion about keeping concepts "standard" even when they get deprecated in source
	Jake	Health Equity Workgroup - Vocabulary needs: Social Determinants of Health, GRAVITY
	Anna	Determine additional input for the <u>roadmap</u> - Review Anna Ostropolet's prototype for a dashboard in the next meeting
Decisions		 Refine and present OKRs and put them up for voting Review requirements for Vocabulary Versions in Athena
Next Steps		Provide some more input to HL7/FHIR by editing the spreadsheet based on use cases





Date: 12 October 2021 **Time:** 12 noon EST **Location:** <u>Teams</u>

CDM-Vocabulary Working Group 12 October 2021

Agenda and meeting minutes		
Agenda Item	Lead	Discussion Notes and Decision
Action items		OKRs for the Vocabulary Subgroup - Task review FHIR / OMOP collaboration: - Provide OIDs and URIs for OMOP Vocabularies in this spreadsheet - do we have the use case? Davera to present possible use cases next time
Discussion		 Determine additional input for the <u>roadmap</u> github: what other information is valuable? Review Anna Ostropolet's prototype for a dashboard in the next meeting
		Repository of Concept Sets - Sigfried: more structured way of keeping and exchanging concept sets (Clair: expressions allow csets to stay current with updated vocabulary versions; Siggie: true; in HL7-land, concept set expressions are called intensional (with an s) value sets.)
		Multiple Vocabulary Versions in Athena - Development request to provide more than the current vocabulary version
		Family / Past medical history representation - Find timeslot for a discussion of conventions around that => pick up in CDM WG
		Versioning of individual conceptsCurrent status and possible approaches => conventions needed for code re-use.



	 We should have discussion about keeping concepts standard even when they get deprecated in source vocabs because we still need them in order to refer to older data
Decisions	 Refine and present OKRs and put them up for voting Review requirements for Vocabulary Versions in Athena
Next Steps	Provide some more input to HL7/FHIR by editing the spreadsheet



Date: 28 September 2021

Time: 12 noon EST **Location:** Teams

CDM-Vocabulary Working Group 28 September 2021

Agenda and meeting minutes		
Agenda Item	Lead	Discussion Notes and Decision
Action items		OKRs for the Vocabulary Subgroup - Task assignment FHIR / OMOP collaboration: - Provide OIDs and URIs for OMOP Vocabularies in this spreadsheet - Breakout session: what to contribute?
Discussion		Determine additional input for the <u>roadmap</u> - github: what other information is valuable? Multiple Vocabulary Versions in Athena - Development request to provide more than the current vocabulary version Family / Past medical history representation - Find timeslot for a discussion of conventions around that Versioning of individual concepts - Current status and possible approaches
Decisions		 Refine and present OKRs and put them up for voting Review requirements for Vocabulary Versions in Athena
Next Steps		Provide some more input to HL7/FHIR by editing the spreadsheet



(sorry – no recording for this meeting)



Date: 31 August 2021

Time: 1pm EST **Location:** <u>Teams</u>

CDM-Vocabulary Working Group 31 August 2021

Agenda and meeting minutes		
Agenda Item	Lead	Discussion Notes and Decision
Define Special Interest Groups		 Time Machine: Version Control / Concept Lifecycle Management - Lead: Mik FHIR Terminology alignment - Lead: Davera Code Base consolidation & Automation improvements - Lead: Jake Vocabulary Request Process and Community contribution - Lead: Christian? Vocabulary Dashboard (?)
Discussion		Discuss OKRs for the Vocabulary Subgroup - Jake's suggestions - 2021 vs. 2022 Determine a place for the roadmap - OHDSI web-page / Forum / github (pages) Multiple Vocabulary Versions in Athena - Development request to provide more than the current vocabulary version Family / Past medical history representation - Find timeslot for a discussion of conventions around that
Decisions		Announcement at OHDSI Symposium?



	 Refine and present OKRs and put them up for voting
	Agree on meeting time / cadence - Noon? /
Next Steps	



Date: 27 July 2021 **Time:** 1pm EST **Location:** <u>Teams</u>

CDM-Vocabulary Working Group 27 July 2021

Agenda and meeting minutes		
Agenda Item	Lead	Discussion Notes and Decision
Recap first meeting		When we get a vocabulary update it is unclear what the changes are in the source vocabs - Sometimes one update will remove a code and then a later update will bring it back - What are the unit test requirements for vocab? Needs: - Transparency and quality control are necessary - Information on how to request changes to vocab Technology: - There is a server running a postgres database - Each release a new version of all vocabularies are produced - Each release is then pushed to production, with release notes - Cycles are irregular due to issues, but usually released each month - Should we have fewer releases? - Yes, we are moving to this model of fewer major releases
		- Short answer: no



	- Now all back versions will be available
	Action Item: Create a repository of historical versions of the vocabulary
Discussion	Setting a Vision and OKRs for the Vocabulary Subgroup 1. What should the group focus on between now and the Symposium? a. Jake: How to do a reproducible build of the vocab? b. Christian: a de novo build is theoretically possible but practically impossible. How do I append things to the vocab and get the into the system? c. There are two pieces to this: documentation for how to ask for additions, process to add the additions yourself d. Potential items are: i. Repo of historical versions (will need licensing info) ii. Documentation of contributing vocabularies iii. Symposium session of some kind? 2. What should the group focus on post-Symposium? a. Defining vocabulary request process b. Making this system transparent c. Push to get all code in one repository i. Immediate need vs future need d. How can a community member contribute? i. E.g. unit tests to test issues 3. Assembling a wishlist of topics that are of high interest to the OHDSI community around the Vocabulary structure and maintenance processes
Next Steps	Set up a cadence for our meetings



Questions	Karthik – where are we with the microbiology concepts? - This lack of clarity is precisely the issue and one that we (in this group) are working on

Date: 30 June 2021 **Time:** 10am EST **Location:** <u>Teams</u>

CDM-Vocabulary Working Group 30 June 2021

Agenda and meeting minutes		
Agenda Item	Lead	Discussion Notes and Decision
Inaugural meeting, introduction	Mik	Establish the working group Participants: • What are my stakes in it? What can I contribute? Jake: how to submit a change for a particular fix, help with automation Davera: N3C – standing up terminology products, developing concept sets, standardization Asiyah: Medical Device WG, relations to vocabulary Claudia: issues with downloading and applying vocabularies, trying to help with mapping • What do I expect from participating? Jake: to be involved and get my hands dirty Davera: staying closely connected to changes and adopt them into N3C Asiyah: extend the usability of OMOP for devices • Which shortcoming has the highest priority for me?



		Davera: better understand (and then improve) the terminology change management process
Definition of direction	All	Requirements and Demands Documentation: - Educational material - Release Notes Guidance: - Who are the stakeholders / points of contact? - How to raise an issue or concern? Involvement: - Liaise with other WGs (e.g. GIS, Device, EHR)
Objectives 2021		Transparency: Roadmap, prioritization process Documentation:
Determining time slot for regular meeting		2 nd / 4 th Tuesday at 1pm ET, alternating with core CDM WG Bi-weekly Wednesday at 10am ET, alternating with N3C

Additional notes:

- team up to complete the OHDSI vocabularies paper
- Announcement at OHDSI symposium, highlighting low hanging fruits

Input for next meeting:

- Deliverable: submission process / format for editorial changes
- What is the vision for this group?