Mapping from generic IDSR COVID-19 data to OMOP 6.0

Section: 05 The Assay

Contents

Source Data Mapping Approach to CDMV6.0

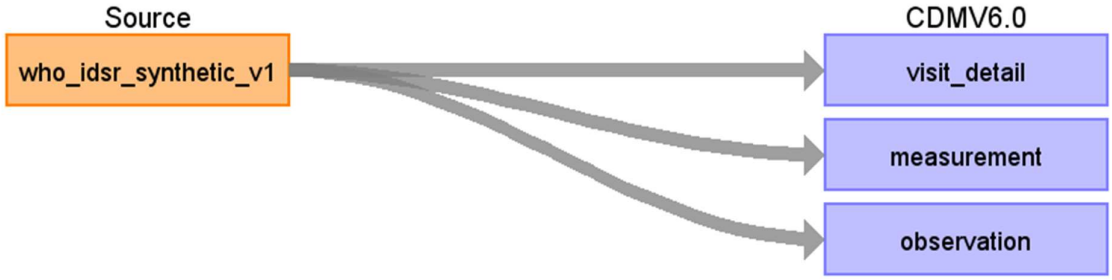
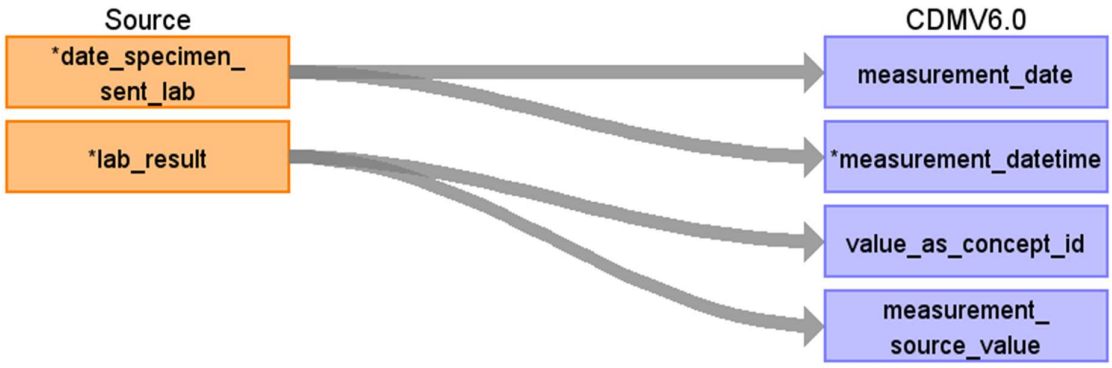


Table name: measurement

The MEASUREMENT table contains records of Measurements, i.e. structured values (numerical or categorical) obtained through systematic and standardized examination or testing of a Person or Person's sample. The MEASUREMENT table contains both orders and results of such Measurements as laboratory tests, vital signs, quantitative findings from pathology reports, etc. Measurements are stored as attribute value pairs, with the attribute as the Measurement Concept and the value representing the result. The value can be a Concept (stored in VALUE_AS_CONCEPT), or a numerical value (VALUE_AS_NUMBER) with a Unit (UNIT_CONCEPT_ID). The Procedure for obtaining the sample is housed in the PROCEDURE_OCCURRENCE table, though it is unnecessary to create a PROCEDURE_OCCURRENCE record for each measurement if one does not exist in the source data. Measurements differ from Observations in that they require a standardized test or some other activity to generate a quantitative or qualitative result. If there is no result, it is assumed that the lab test was conducted but the result was not captured.

Reading from who_idsr_synthetic_v1



Destination Field	Source Field	Logic	Comment
measurement_id			The unique key given to a Measurement record for a Person. Each instance of a measurement present in the source data should be assigned this unique key. In some cases, a person can have multiple records of the same measurement within the same visit. It is valid to keep these duplicates and assign them individual, unique, MEASUREMENT_IDs, though it is up to the ETL how they should be handled. This is to be an auto generated number (integer) for every recorded inserted.

person_id			Data type: bigint Required: yes Primary key: yes Foreign key: no Foreign key table: n/a Foreign key domain: n/a The PERSON_ID of the PERSON for whom the measurement is recorded. This may be a system generated code. Data type: bigint Required: yes Primary key: yes Foreign key: no Foreign key table: n/a Foreign key domain: n/a Important note for ETL: This is a foreign key referencing to the person_id in the PERSON table.
measurement_concept_id			The MEASUREMENT_CONCEPT_ID field is recommended for primary use in analyses, and must be used for network studies. The CONCEPT_ID that the MEASUREMENT_SOURCE_CONCEPT_ID maps to. Only records whose SOURCE_CONCEPT_IDs map to Standard Concepts with a domain of Measurement should go in this table. COVID-19 Lab Test -> 706170 Data type: integer

			Required: yes Primary key: no Foreign key: no Foreign key table: CONCEPT Foreign key domain: MEASUREMENT
measurement_date	date_specimen_sent_lab	We need the nearest date for the measurement, so we take the date the specimen was sent to laboratory.	Store it in YYYY-MM-DD format. Use this date to determine the date of the measurement. If there are multiple dates in the source data associated with a record such as order_date, draw_date, and result_date, choose the one that is closest to the date the sample was drawn from the patient. Data type: date Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
measurement_datetime	date_specimen_sent_lab	We need the nearest date for the measurement, so we take the date the specimen was sent to laboratory.	Store it in YYYY-MM-DD HH:MM:ss format. Since no time is specified in the source data so set it to midnight (00:00:00). Use this date to determine the date of the measurement. If there are multiple dates in the source data associated with a record such as order_date, draw_date, and result_date, choose the one that is closest to the date the sample was drawn from the patient. If a source does not specify datetime the convention is to set the time to midnight (00:00:0000)

			Data type: datetime (without time zone) Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
measurement_time			This is present for backwards compatibility and will be deprecated in an upcoming version. Set it to NULL. Data type: varchar(10) Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
measurement_type_concept_id			This field can be used to determine the provenance of the Measurement record, as in whether the measurement was from an EHR system, insurance claim, registry, or other sources. Measurement type concept id: 32809 for case report form Data type: integer Required: yes Primary key: no

operator_concept_id			Foreign key: yes Foreign key table: CONCEPT Foreign key domain: Type concept Important note for ETL: If no code is found, set it to 0. Operators are <, <=, =, >=, > and these concepts belong to the Meas Value Operator domain. Set it to NULL. Data type: integer Required: no Primary key: no Foreign key: yes Foreign key table: CONCEPT Foreign key domain: n/a
value_as_number			This is the numerical value of the Result of the Measurement, if available. Set it to NULL Data type: float Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
value_as_concept_id	lab_result	Map the lab result to populate this variable	If the raw data gives a categorial result for measurements those values are captured and mapped to standard concepts in the Meas

		by mapping it to the following OMOP vocabulaties. Positive = 9191 Negative = 9189	Value domain. Data type: integer Required: no Primary key: no Foreign key: yes Foreign key table: CONCEPT Foreign key domain: n/a
unit_concept_id			There is no standardization requirement for units associated with MEASUREMENT_CONCEPT_IDs. Set it to NULL. Data type: integer Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
range_low			Ranges have the same unit as the VALUE_AS_NUMBER. These ranges are provided by the source and should remain blank (NULL) if not given. Set it to NULL. Data type: float Required: no Primary key: no Foreign key: no

range_high			Foreign key table: n/a Foreign key domain: n/a Ranges have the same unit as the VALUE_AS_NUMBER. These ranges are provided by the source and should remain blank (NULL) if not given. Set it to NULL. Data type: float Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
provider_id			The provider associated with measurement record, e.g. the provider who ordered the test or the provider who recorded the result. This is a foreign key referencing to the provider_id in the PROVIDER table. Set it to NULL. Data type: bigint Required: no Primary key: no Foreign key: yes Foreign key table: PROVIDER Foreign key domain: n/a
visit_occurrence_id			The visit during which the Measurement occurred. This is a foreign key referencing to the visit_occurrence_id in the

			VISIT_OCCURRENCE table. Set it to NULL. Data type: bigint Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
visit_detail_id			The VISIT_DETAIL record during which the Measurement occurred. This is a foreign key referencing to the visit_detail_id in the VISIT_DETAIL table. Data type: bigint Required: yes Primary key: yes Foreign key: no Foreign key table: n/a Foreign key domain: n/a
measurement_source_value	lab_result	Store verbatim the laboratory test result	This field houses the verbatim value from the source data representing the Measurement that occurred. Data type: varchar(50) Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a

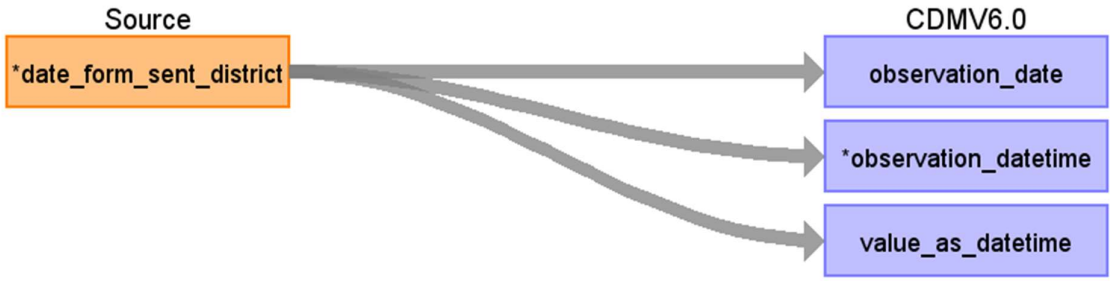
measurement_source_concept_id			This is the concept representing the MEASUREMENT_SOURCE_VALUE and may not necessarily be standard. If not available, set to 0. Set it to 0 (zero). Data type: integer Required: yes Primary key: no Foreign key: yes Foreign key table: CONCEPT Foreign key domain: n/a
unit_source_value			This field houses the verbatim value from the source data representing the unit of the Measurement that occurred. Set it to NULL. Data type: varchar(50) Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
value_source_value			This field houses the verbatim result value of the Measurement from the source data . Set it to NULL. Data type: varchar(50)

			Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a

Table name: observation

The OBSERVATION table captures clinical facts about a Person obtained in the context of examination, questioning or a procedure. Any data that cannot be represented by any other domains, such as social and lifestyle facts, medical history, family history, etc. are recorded here. New to CDM v6.0 An Observation can now be linked to other records in the CDM instance using the fields OBSERVATION_EVENT_ID and OBS_EVENT_FIELD_CONCEPT_ID. To link another record to an Observation, the primary key goes in OBSERVATION_EVENT_ID (CONDITION_OCCURRENCE_ID, DRUG_EXPOSURE_ID, etc.) and the Concept representing the field where the OBSERVATION_EVENT_ID was taken from go in the OBS_EVENT_FIELD_CONCEPT_ID.

Reading from who_idsr_synthetic_v1



Destination Field	Source Field	Logic	Comment
observation_id			A unique key given to an Observation record for a Person. Each instance of an observation present in the source data should be assigned this unique key. This is to be an auto generated number (integer) for every recorded inserted. Data type: bigint Required: yes Primary key: yes Foreign key: no Foreign key table: n/a Foreign key domain: n/a
person_id			The PERSON_ID of the Person for whom the Observation is recorded.

			Data type: bigint Required: yes Primary key: no Foreign key: yes Foreign key table: PERSON Foreign key domain: n/a Important note for ETL: This is a foreign key referencing to the person_id in the PERSON table.
observation_concept_id			The CONCEPT_ID that the OBSERVATION_SOURCE_CONCEPT_ID maps to. There is no specified domain that the Concepts in this table must adhere to. The only rule is that records with Concepts in the Condition, Procedure, Drug, Measurement, or Device domains MUST go to the corresponding table. Informing health care professional of test result = 46272695 Data type: integer Required: yes Primary key: no Foreign key: yes Foreign key table: CONCEPT Foreign key table: Observation Important note for ETL: If no code is found, set it to 0.
observation_date	date_form_sent_district	Store the date the form	Store it in YYYY-MM-DD format. The date of the Observation.

		was sent the to the district to populate this field.	Data type: date Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain : n/a
observation_datetime	date_form_sent_district	Store the date the form was sent the to the district to populate this field.	Store it in YYYY-MM-DD HH:MM:ss format. Since no time is specified in the source data so set it to midnight (00:00:00). The date of the Observation. If no time is given set to midnight (00:00:00). Data type: datetime (datetime without timezone) Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
observation_type_concept_id			The CONCEPT_ID that the OBSERVATION_SOURCE_CONCEPT_ID maps to. There is no specified domain that the Concepts in this table must adhere to. Observation type concept id: 32809 for case report form Data type: integer Required: yes Primary key: no

			Foreign key: yes Foreign key table: CONCEPT Foreign key domain: Type concept Important note for ETL: If no code is found, set it to 0
value_as_number			This is the numerical value of the Result of the Observation. It is not expected that all Observations will have numeric results, rather, this field is here to house values should they exist. Set it to NULL. Data type: float Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
value_as_string			This is the categorical value of the Result of the Observation, if applicable and available. Set it to NULL. Data type: varchar(60) Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a

value_as_concept_id			Set it to NULL. Data type: integer Required: no Primary key: no Foreign key: yes Foreign key table: CONCEPT Foreign key domain: n/a
qualifier_concept_id			Set it to 0 (zero). Data type: integer Required: no Primary key: no Foreign key: yes Foreign key table: CONCEPT Foreign key domain: n/a
unit_concept_id			There is no standardization requirement for units associated with OBSERVATION_CONCEPT_IDs. Set it to NULL. Data type: integer Required: no Primary key: no Foreign key: yes Foreign key table: CONCEPT Foreign key domain: n/a
provider_id			This is a foreign key referencing to the provider_id in the PROVIDER table.

visit_occurrence_id			Data type: bigint Required: no Primary key: no Foreign key: yes Foreign key table: Provider Foreign key domain: n/a The visit during which the condition occurred or has been reported. This is a foreign key referencing to the visit_occurrence_id in the VISIT_OCCURRENCE table. Set it to NULL. Data type: bigint Required: no Primary key: no Foreign key: Yes Foreign key table: VISIT_OCCURRENCE Foreign key domain: n/a
visit_detail_id			The VISIT_DETAIL record during which the condition occurred or has been reported. This is a foreign key referencing to the visit_detail_id in the VISIT_DETAIL table. Data type: bigint Required: no Primary key: no Foreign key: Yes Foreign key table: VISIT_DETAIL Foreign key domain: n/a
observation_source_value			This field houses the verbatim value

			from the source data representing the Observation that occurred. Data type: varchar(50) Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
observation_source_concept_id			If the OBSERVATION_SOURCE_VALUE is coded in the source data using an OMOP supported vocabulary put the concept id representing the source value here. If not available, set to 0. Set it to 0 (zero) Data type: integer Required: yes Primary key: no Foreign key: yes Foreign key table: CONCEPT Foreign key domain: n/a
unit_source_value			This field houses the verbatim value from the source data representing the unit of the Observation that occurred. This code is mapped to a Standard Condition Concept in the Standardized Vocabularies and the original code is stored here for reference. Set it to NULL.

qualifier_source_value			Data type: varchar(50) Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a This field houses the verbatim value from the source data representing the qualifier of the Observation that occurred. This code is mapped to a Standard Condition Concept in the Standardized Vocabularies and the original code is stored here for reference. Set it to NULL Data type: varchar(50) Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a
observation_event_id			If the Observation record is related to another record in the database, this field is the primary key of the linked record. Set it to NULL. Data type: bigint Required: no Primary key: no Foreign key: no

obs_event_field_concept_id			Foreign key table: n/a Foreign key domain: n/a If the Observation record is related to another record in the database, this field is the CONCEPT_ID that identifies which table the primary key of the linked record came from. Set it to 0 (zero). Data type: bigint Required: no Primary key: no Foreign key: Yes Foreign key table: CONCEPT Foreign key domain: n/a
value_as_datetime	date_form_sent_district	Populate this variable verbatim from the date the form was sent to district.	Store it in YYYY-MM-DD HH:MM:ss format. Since no time is specified in the source data so set it to midnight (00:00:00). It is possible that some Observation records might store a result as a date value. Data type: datetime (datetime without timezone) Required: no Primary key: no Foreign key: no Foreign key table: n/a Foreign key domain: n/a

Appendix: source tables

Table: who_idsr_synthetic_v1

Field	Type	Most freq. value	Comment
recnr	bigint		
rec_identifier	text		
report_country	character varying	Wakanda	
report_province	character varying	Northern	
report_district	character varying	Mena Ngai	
report_site	character varying	Public Healthcare Services Center	
diagnosis	character varying		
patient_type	character varying	Out-Patient	
date_health_facility	date	2022-03-25	
patient_name	character varying	Baba P	
patient_dob	date	2003-12-29	
age_years	integer	21	
age_months	integer	0	
age_days	integer	15	
patient_sex	character varying	Male	
patient_residence	character varying	Lion cult	
patient_town_city	character varying		
patient_district	character varying	Mena Ngai	
patient_area_type	character varying	Urban	
patient_address	character varying		
patient_occupation	character varying		
date_onset_symptoms	date	2021-01-08	
travel_history	character varying	No	
travel_destination	character varying		
vaccine_doses_received	integer	99	
date_last_vaccine	date		
vaccine_name	character varying		

date_specimen_collected	date	2020-08-15	
date_specimen_sent_lab	date	2021-07-03	
lab_result	character varying	Negative	
outcome	character varying	Transferred out	
final_classification	character varying		
date_form_sent_district	date	2022-05-18	
date_facility_notified_district	date	2022-08-19	
person_form_complete	character varying	Everett Ross	