Istituti Clinici Scientifici Maugeri IRCCS OMOP CDM Documentation

At the Istituti Clinici Scientifici Maugeri, the biomedical engineering staff are dedicated to creating and maintaining the ETL process required to populate the OMOP CDM. Currently, the OMOP CDM contains more than 60,000 patients who have been admitted to the Institute in Pavia since 2012. The data collected includes diagnoses, procedures, demographic information, laboratory tests and therapies administered during admissions. ICSM is currently working on the representation of data from outpatient visits, where data are stored in unstructured formats.

The Fondazione IRCCS Maugeri is a network of IRCCS consisting of 9 institutes. Currently, the OMOP database only contains data from the Pavia Institute.

During the ETL development process we worked with an EHEDEN certified SME (Biomeris SRL) who helped us to configure the virtual machines (VMs) hosting the OMOP database and the web API, and to implement the OMOP database structure on the VMs. Biomeris SRL also supported us during the ETL development and quality control process to ensure that the OMOP database was correct in all respects.

To implement the ETL, we used Pentaho Data Integration (PDI), a code-free data orchestration tool that combines disparate data sets into a single source of truth for analysis and reporting. It has a graphical drag-and-drop interface that makes it easy to monitor the source, target and transformation of data.

PDI transformations are highly intuitive, requiring minimal commenting. Each transformation is named as its target table and the transformation sequence is numbered to make it as understandable and intuitive as possible.

The vocabulary mapping process was implemented using both the Usagi tool, ATHENA and the concept_relationship OMOP table.

Considering the concepts of conditions, procedures and observations, we used the concept_relationship table with ICD9 codes as source codes. Instead, to map drugs and measurements concepts, we used the Usagi tool and ATHENA to verify the mapping. The mapping of drug concepts was allowed by the presence of ATC codes in the source database, while the mapping of measurement concepts depended only on the description of the measurements, as no standard codification is used in the source database for this type of concepts.

Each mapping is stored in the table source_to_concept_map, except for a class of measurements records that presented a source code too long for the target table source_code field.

Tabel 1: Shows the percentage of codes that are mapped to the standardized vocabularies as well as the percentage of records.

Domain	#Codes Source	#Codes Mapped	%Codes Mapped	#Records Source	#Records Mapped	%Records Mapped
Condition	4,027	4,027	100%	280,874	280,874	100%
Condition status	0	NA	NA	NA	NA	NA
Death cause	0	NA	NA	NA	NA	NA
Device	0	NA	NA	NA	NA	NA
Drug	2,108	2,108	100%	11,933,557	11,933,557	100%
Measurement	32,479	32,479	100%	9,402,239	9,402,239	100%

Domain	#Codes Source	#Codes Mapped	%Codes Mapped	#Records Source	#Records Mapped	%Records Mapped
Measurement unit	124	123	99.2%	8,940,016	8,786,516	98.3%
Measurement value	0	NA	NA	NA	NA	NA
Observation	388	388	100%	94,885	94,885	100%
Observation unit	0	NA	NA	NA	NA	NA
Observation value	0	NA	NA	NA	NA	NA
Procedure	1,158	1,158	100%	348,064	348,064	100%
Provider Specialty	0	NA	NA	NA	NA	NA
Specimen	0	NA	NA	NA	NA	NA
Visit	1	1	100%	96,200	96,200	100%

Code Mapping

Category	Vocabulary source	OMOP Domain	OMOP Standard Vocabulary
Diagnoses	ICD9 - CM	Condition Occurrence	SNOMED
Observations	ICD9-CM	Observation	SNOMED
Procedures	ICD9-CM	Procedure Occurrence	SNOMED, ICD9Proc
Blood Chemistry Tests	Internal Vocabulary	Measurement	LOINC
Therapies Administered	ATC	Drug Exposure	RxNorm

Data Sources from Hospital Information System

Category	Type	OMOP Table	Count
Demographics	Person	Person	61419
Hospitalisations	Visit Occurrence	Visit Occurrence	97225
Demographic Information	Death	Death	9681
Diagnoses	Condition Occurrence	Condition Occurrence	283560
Observations	Observation	Observation	95643
Procedures	Procedure Occurrence	Procedure Occurrence	351343
Blood Chemistry Tests	Measurement	Measurement	9513730
Therapies administered during hospitalizations	Drug Exposure	Drug Exposure	11934698
Observation Time	Observation Period	Observation Period	61419

To design the ETL structure, the open source Rabbit in a Hat tool provided by OHDSI was used, which allows the logic to be defined to transform the source into a CDM OMOP, enabling the source data to be associated with the corresponding table and column in the CDM.

The macro-categories of data are related to the following sources within the Hospital Information System:

- Demographics: v_ana_dati_este, v_ana
- Hospitalisations: v_ana_dati_este, v_cartelle, v_siorep
- Demographic Information: v_ana_dati_este, v_ana, v_cartelle
- Diagnoses: v_ana_dati_este, v_cartelle, v_cardiagnosi, v_siodiagnosi
- Observations: v_ana_dati_este, v_cartelle, v_cardiagnosi, v_siodiagnosi, v_carprocedure
- Procedures: v_ana_dati_este, v_cartelle, v_carprocedure, v_sioprocedure_new
- Blood Chemistry Tests: v_ana_dati_este, v_cartelle, v_gen_valore, v_gen_dettaglio, v_gen_codifica, v_gen_valo_desc, noematica.galileo_lab_result_view, v_carprocedure, v_cardiagnosi, v_siodiagnosi
- Therapies administered during hospitalizations: v_ana_dati_este, v_cartelle, v_ter_somm, v_ter_dizionario

Source Data Mapping Approach to CDMV5.4 using Rabbit in a Hat

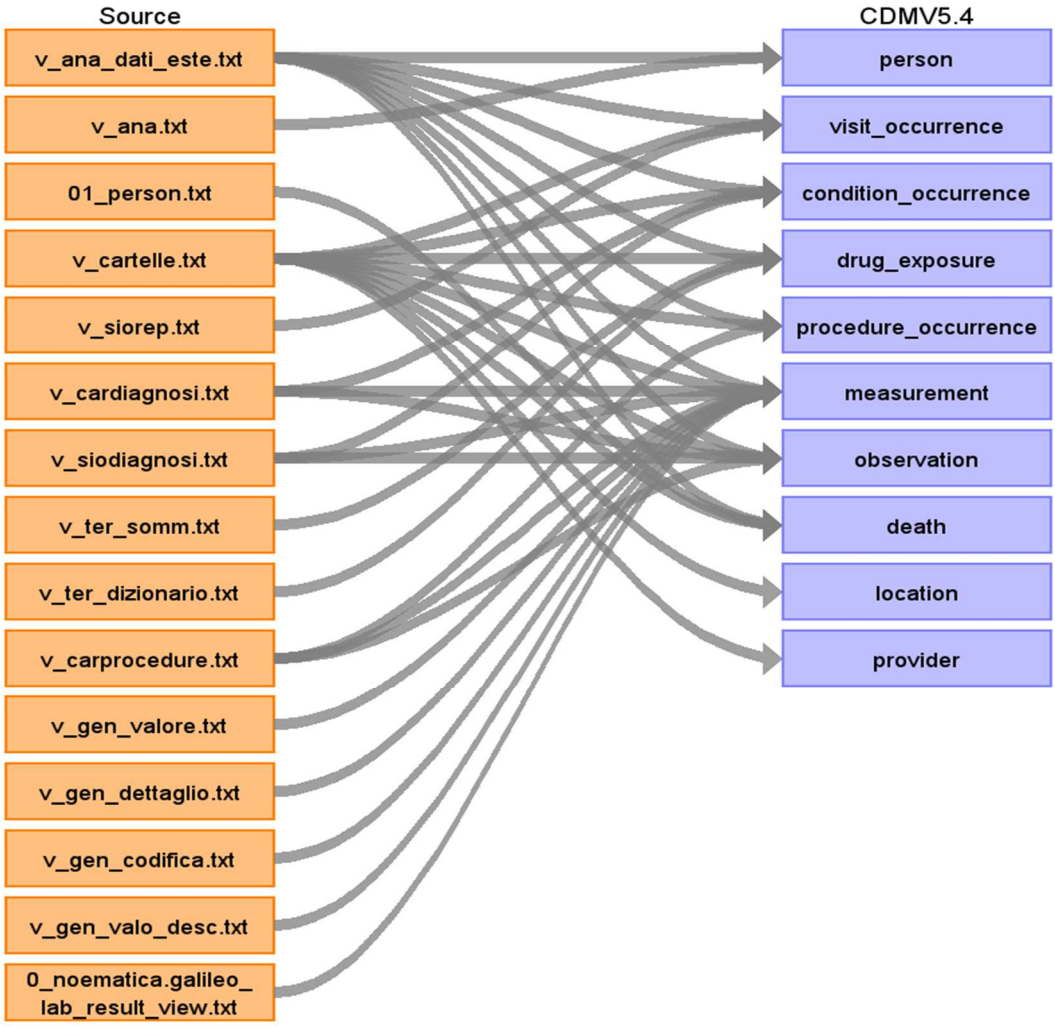


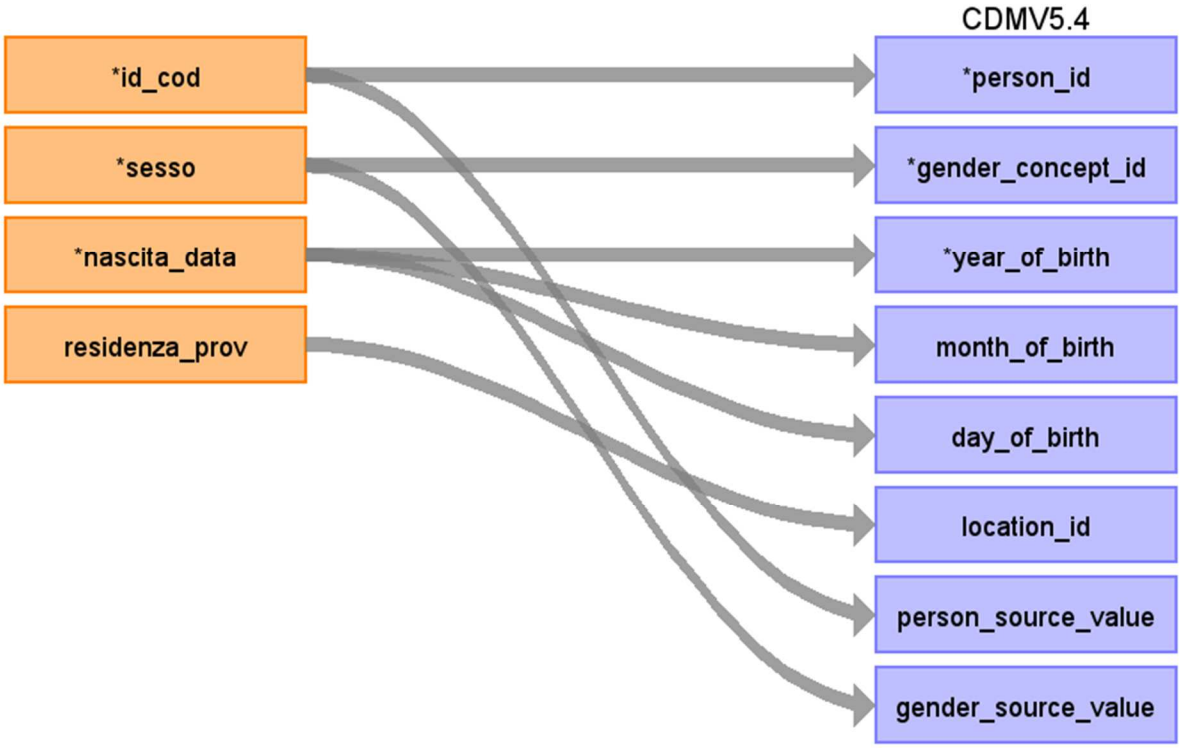
Table name: person

Reading from v_ana_dati_este.txt

Destination Field	Source Field	Logic	Comment
person_id	id_paz_people		
gender_concept_id			8532: female 8507: male 8551: unknown
year_of_birth			
month_of_birth			
day_of_birth			
birth_datetime			
race_concept_id			Field not present in source data: 0
ethnicity_concept_id			Field not present in source data: 0
location_id			
provider_id			Is entered in the visit_occurrence table because a patient may have had multiple providers
care_site_id			is entered in the visit_occurrence table because a patient may have been visited at several sites
person_source_value	id_paz_people		the field 'id_paz_people' is extracted from the table 'v_ana_data_este' through the join on id_cod with the table v_ana. the value of 'id_paz_people' is not inserted directly into 'person_source_value' but into an external mapping table containing the matches between id_paz_people and person_id, so that no data can be entered that can be traced back to the patient within OMOP.
gender_source_value			
gender_source_concept_id			
race_source_value			
race_source_concept_id			

ethnicity_source_value			
ethnicity_source_concept_id			

Reading from v_ana.txt



Destination Field	Source Field	Logic	Comment
person_id	id_cod		
gender_concept_id	sesso		8532: female 8507: male 8551: unknown
year_of_birth	nascita_data		
month_of_birth	nascita_data		
day_of_birth	nascita_data		
birth_datetime			
race_concept_id			Field not present in source data: 0
ethnicity_concept_id			Field not present in source data: 0
location_id	residenza_prov		
provider_id			Is entered in the visit_occurrence table because a patient may have had multiple providers
care_site_id			is entered in the visit_occurrence table because a patient may have been visited at several sites

person_source_value	id_cod		the field 'id_paz_people' is extracted from the table 'v_ana_data_este' through the join on id_cod with the table v_ana. the value of 'id_paz_people' is not inserted directly into 'person_source_value' but into an external mapping table containing the matches between id_paz_people and person_id, so that no data can be entered that can be traced back to the patient within OMOP.
gender_source_value	sesso		
gender_source_concept_id			
race_source_value			
race_source_concept_id			
ethnicity_source_value			
ethnicity_source_concept_id			

Table name: observation_period

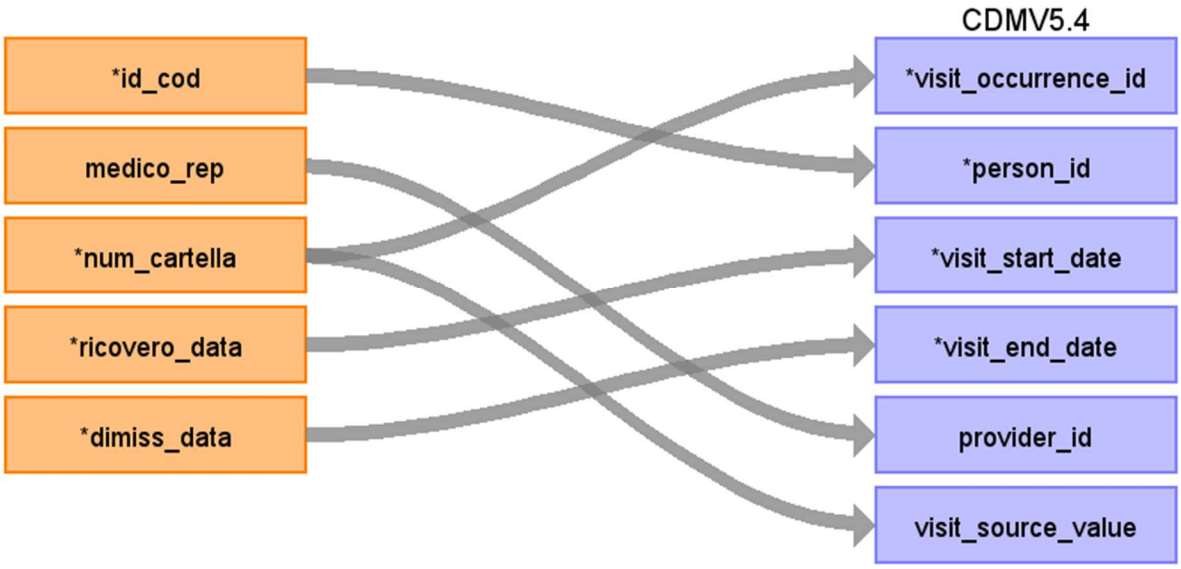
l’observation_period di ogni persona corrisponderà all’arco temporale compreso tra la data del primo evento registrato e la data dell’ultimo evento, da verificare e aggiornare periodicamente.

Table name: visit_occurrence

Reading from v_ana_dati_este.txt

Destination Field	Source Field	Logic	Comment
visit_occurrence_id			
person_id	id_paz_people		
visit_concept_id			9201 (Inpatient visit)
visit_start_date			
visit_start_datetime			
visit_end_date			
visit_end_datetime			
visit_type_concept_id			32817 (EHR)
provider_id			
care_site_id			the description of the ward where the patient is admitted can be traced back to the structure of the admission
visit_source_value			the “num_folder” was not entered directly in the “visit_source_value” field in order not to enter data in OMOP that could lead back to the patient. a separate “visit_mapping” table was created that contains the matches between the “visit_occurrence_id” and the 'num_folder’
visit_source_concept_id			
admitted_from_concept_id			
admitted_from_source_value			
discharged_to_concept_id			
discharged_to_source_value			
preceding_visit_occurrence_id			

Reading from v_cartelle.txt



Destination Field	Source Field	Logic	Comment
visit_occurrence_id	num_cartella		
person_id	id_cod		
visit_concept_id			9201 (Inpatient visit)
visit_start_date	ricovero_data		
visit_start_datetime			
visit_end_date	dimiss_data		
visit_end_datetime			
visit_type_concept_id			32817 (EHR)
provider_id	medico_rep		
care_site_id			the description of the ward where the patient is admitted can be traced back to the structure of the admission
visit_source_value	num_cartella		the “num_folder” was not entered directly in the “visit_source_value” field in order not to enter data in OMOP that could lead back to the patient. a separate “visit_mapping” table was created that contains the matches between the “visit_occurrence_id” and the 'num_folder’
visit_source_concept_id			
admitted_from_concept_id			
admitted_from_source_value			
discharged_to_concept_id			
discharged_to_source_value			

preceding_visit_occurrence_id			

Reading from v_siorep.txt

Destination Field	Source Field	Logic	Comment
visit_occurrence_id			
person_id			
visit_concept_id			9201 (Inpatient visit)
visit_start_date			
visit_start_datetime			
visit_end_date			
visit_end_datetime			
visit_type_concept_id			32817 (EHR)
provider_id			
care_site_id	cod descr_estesa		the description of the ward where the patient is admitted can be traced back to the structure of the admission
visit_source_value			the “num_folder” was not entered directly in the “visit_source_value” field in order not to enter data in OMOP that could lead back to the patient. a separate “visit_mapping” table was created that contains the matches between the “visit_occurrence_id” and the 'num_folder
visit_source_concept_id			
admitted_from_concept_id			
admitted_from_source_value			
discharged_to_concept_id			
discharged_to_source_value			
preceding_visit_occurrence_id			

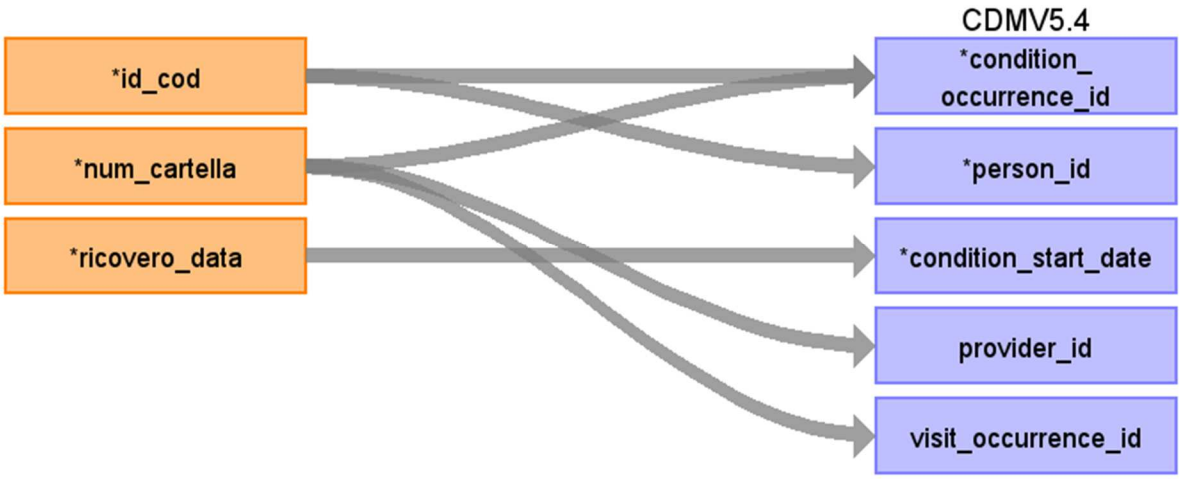
Table name: visit_detail

Table name: condition_occurrence

Reading from v_ana_dati_este.txt

Destination Field	Source Field	Logic	Comment
condition_occurrence_id	id_paz_people		
person_id	id_paz_people		
condition_concept_id			after reconstructing the icd9 code from diagnosis_cod, the relevant standard snomed concept_id was retrieved via the concept_relationship table
condition_start_date			
condition_start_datetime			
condition_end_date			
condition_end_datetime			
condition_type_concept_id			32817 (EHR)
condition_status_concept_id			
stop_reason			
provider_id			the provider_id is linked to the specific visit, identified in the source data by the folder_number
visit_occurrence_id			
visit_detail_id			
condition_source_value			
condition_source_concept_id			
condition_status_source_value			

Reading from v_cartelle.txt

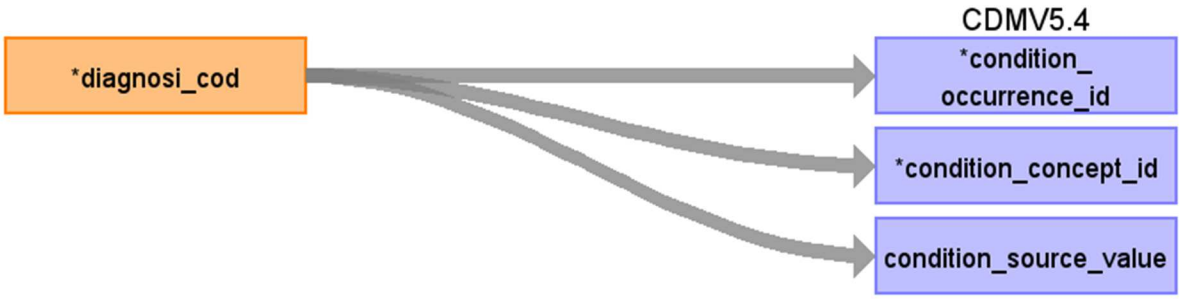


Destination Field	Source Field	Logic	Comment
condition_occurrence_id	id_cod num_cartella		
person_id	id_cod		
condition_concept_id			after reconstructing the icd9 code from diagnosis_cod, the relevant standard snomed concept_id was retrieved via the concept_relationship table
condition_start_date	ricovero_data		
condition_start_datetime			
condition_end_date			
condition_end_datetime			
condition_type_concept_id			32817 (EHR)
condition_status_concept_id			
stop_reason			
provider_id	num_cartella		the provider_id is linked to the specific visit, identified in the source data by the folder_number
visit_occurrence_id	num_cartella		
visit_detail_id			
condition_source_value			
condition_source_concept_id			
condition_status_source_value			

Reading from v_cardiagnosi.txt

Destination Field	Source Field	Logic	Comment
condition_occurrence_id			
person_id			
condition_concept_id	diagnosi_cod		after reconstructing the icd9 code from diagnosis_cod, the relevant standard snomed concept_id was retrieved via the concept_relationship table
condition_start_date			
condition_start_datetime			
condition_end_date			
condition_end_datetime			
condition_type_concept_id			32817 (EHR)
condition_status_concept_id			
stop_reason			
provider_id			the provider_id is linked to the specific visit, identified in the source data by the folder_number
visit_occurrence_id			
visit_detail_id			
condition_source_value			
condition_source_concept_id			
condition_status_source_value			

Reading from v_siodiagnosi.txt



Destination Field	Source Field	Logic	Comment
condition_occurrence_id	diagnosi_cod		
person_id			
condition_concept_id	diagnosi_cod		after reconstructing the icd9 code from diagnosis_cod, the relevant standard snomed concept_id was retrieved via the concept_relationship table

condition_start_date			
condition_start_datetime			
condition_end_date			
condition_end_datetime			
condition_type_concept_id			32817 (EHR)
condition_status_concept_id			
stop_reason			
provider_id			the provider_id is linked to the specific visit, identified in the source data by the folder_number
visit_occurrence_id			
visit_detail_id			
condition_source_value	diagnosi_cod		
condition_source_concept_id			
condition_status_source_value			

Table name: drug_exposure

Reading from v_ana_dati_este.txt

Destination Field	Source Field	Logic	Comment
drug_exposure_id	id_paz_people		
person_id	id_paz_people		
drug_concept_id			retrieved via atc in the concept_relationship table or via the atc - rxnorm mapping performed with Usagi
drug_exposure_start_date			
drug_exposure_start_datetime			
drug_exposure_end_date			
drug_exposure_end_datetime			
verbatim_end_date			
drug_type_concept_id			32817 (EHR)
stop_reason			
refills			
quantity			the quantity of drug administered is calculated by taking the dose value of the active ingredient, multiplied by the quantity administered (e.g. number of tablets) quantity = qta_somm * value The active ingredient dose value is taken from the 'drug_strength' table via the 'drug_concept_id' key
days_supply			
sig			
route_concept_id			retrieved via “via_somm” from the “mapping_via_somm” table containing the matches between the textual descriptions (via_somm) and the standard concept_id

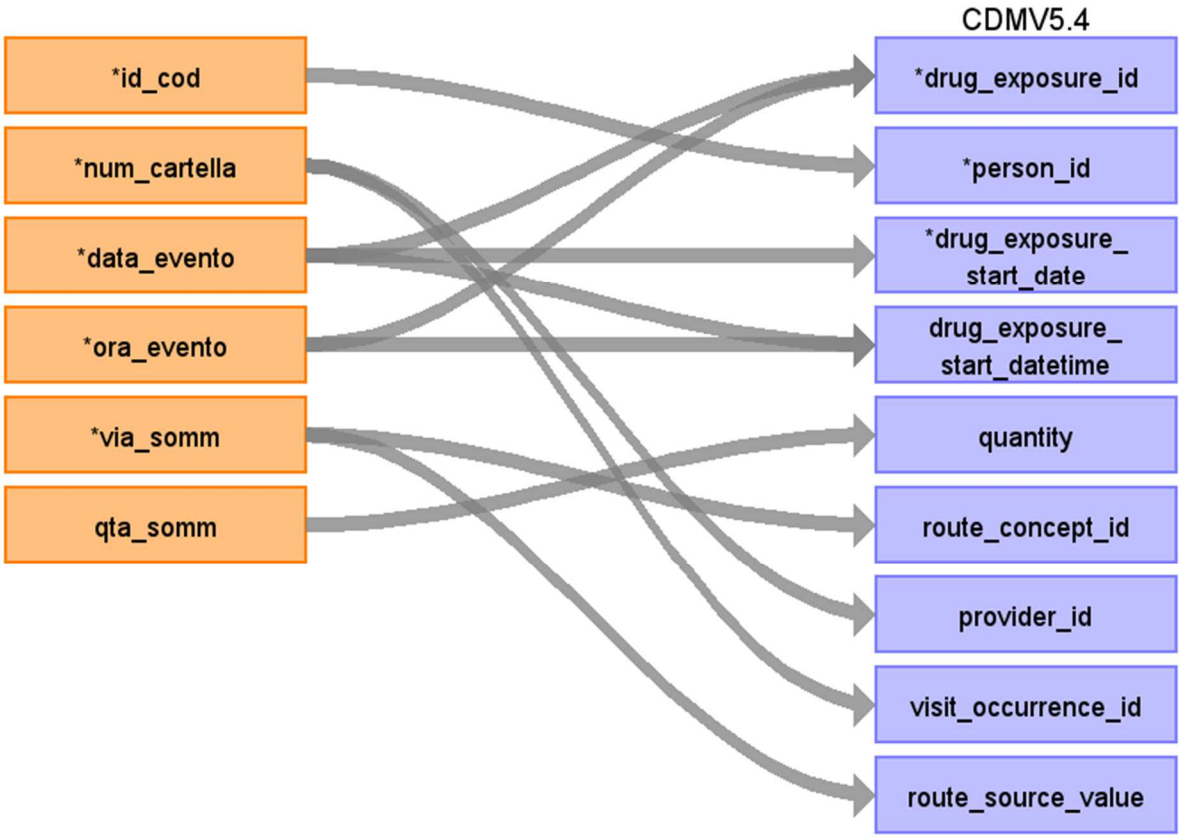
lot_number			
provider_id			
visit_occurrence_id			
visit_detail_id			
drug_source_value			
drug_source_concept_id			
route_source_value			
dose_unit_source_value			

Reading from v_cartelle.txt

Destination Field	Source Field	Logic	Comment
drug_exposure_id	num_cartella		
person_id			
drug_concept_id			retrieved via atc in the concept_relationship table or via the atc - rxnorm mapping performed with Usagi
drug_exposure_start_date			
drug_exposure_start_datetime			
drug_exposure_end_date			
drug_exposure_end_datetime			
verbatim_end_date			
drug_type_concept_id			32817 (EHR)
stop_reason			
refills			
quantity			the quantity of drug administered is calculated by taking the dose value of the active ingredient, multiplied by the quantity administered (e.g. number of tablets) quantity = qta_somm * value The active ingredient dose value is taken from the 'drug_strength' table via the 'drug_concept_id' key

days_supply			
sig			
route_concept_id			retrieved via “via_somm” from the “mapping_via_somm” table containing the matches between the textual descriptions (via_somm) and the standard concept_id
lot_number			
provider_id			
visit_occurrence_id			
visit_detail_id			
drug_source_value			
drug_source_concept_id			
route_source_value			
dose_unit_source_value			

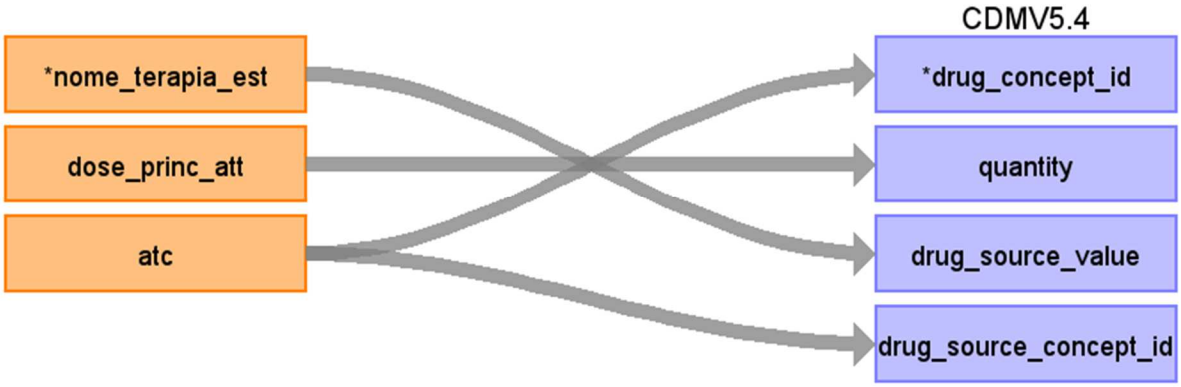
Reading from v_ter_somm.txt



Destination Field	Source Field	Logic	Comment
drug_exposure_id	data_evento ora_evento		

person_id	id_cod		
drug_concept_id			retrieved via atc in the concept_relationship table or via the atc - rxnorm mapping performed with Usagi
drug_exposure_start_date	data_evento		
drug_exposure_start_datetime	data_evento ora_evento		
drug_exposure_end_date			
drug_exposure_end_datetime			
verbatim_end_date			
drug_type_concept_id			32817 (EHR)
stop_reason			
refills			
quantity	qta_somm		the quantity of drug administered is calculated by taking the dose value of the active ingredient, multiplied by the quantity administered (e.g.: number of tablets) quantity = qta_somm * value The active ingredient dose value is taken from the 'drug_strength' table via the 'drug_concept_id' key
days_supply			
sig			
route_concept_id	via_somm		retrieved via “via_somm” from the “mapping_via_somm” table containing the matches between the textual descriptions (via_somm) and the standard concept_id
lot_number			
provider_id	num_cartella		
visit_occurrence_id	num_cartella		
visit_detail_id			
drug_source_value			
drug_source_concept_id			
route_source_value	via_somm		
dose_unit_source_value			

Reading from v_ter_dizionario.txt



Destination Field	Source Field	Logic	Comment
drug_exposure_id			
person_id			
drug_concept_id	atc		retrieved via atc in the concept_relationship table or via the atc - rxnorm mapping performed with Usagi
drug_exposure_start_date			
drug_exposure_start_datetime			
drug_exposure_end_date			
drug_exposure_end_datetime			
verbatim_end_date			
drug_type_concept_id			32817 (EHR)
stop_reason			
refills			
quantity	dose_princ_att		the quantity of drug administered is calculated by taking the dose value of the active ingredient, multiplied by the quantity administered (e.g. number of tablets) quantity = qta_somm * value The active ingredient dose value is taken from the 'drug_strength' table via the 'drug_concept_id' key
days_supply			
sig			

route_concept_id			retrieved via “via_somm” from the “mapping_via_somm” table containing the matches between the textual descriptions (via_somm) and the standard concept_id
lot_number			
provider_id			
visit_occurrence_id			
visit_detail_id			
drug_source_value	nome_terapia_est		
drug_source_concept_id	atc		
route_source_value			
dose_unit_source_value			

Table name: procedure_occurrence

Reading from v_ana_dati_este.txt

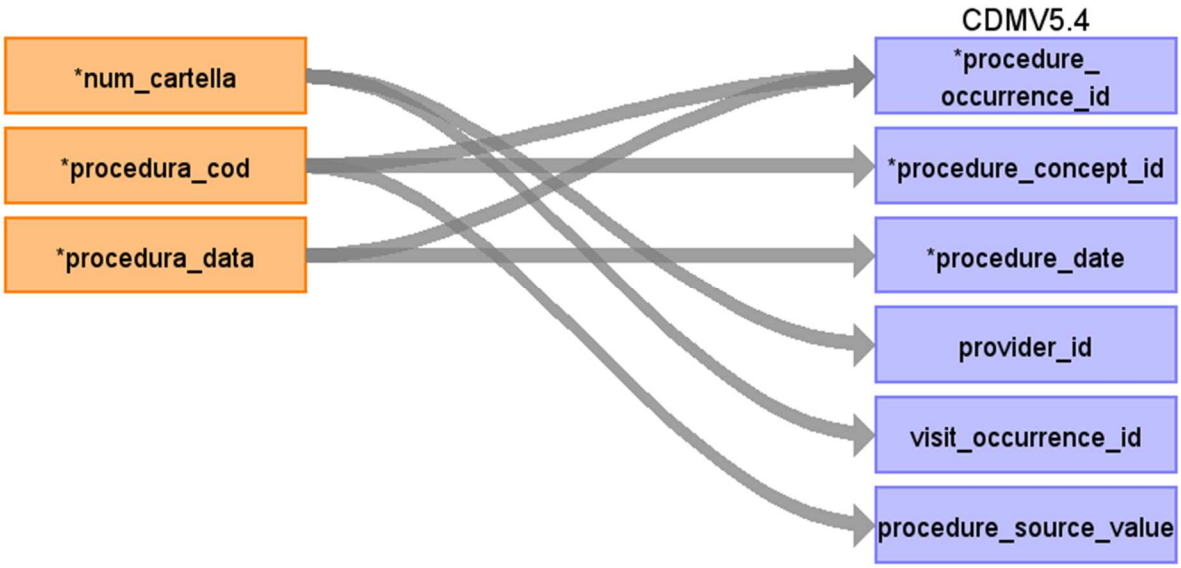
Destination Field	Source Field	Logic	Comment
procedure_occurrence_id	id_paz_people		
person_id	id_paz_people		
procedure_concept_id			after reconstructing the icd9 code from procedure_cod, the relevant standard snomed concept_id was retrieved via the concept_relationship table
procedure_date			
procedure_datetime			
procedure_end_date			
procedure_end_datetime			
procedure_type_concept_id			32817 (EHR)
modifier_concept_id			
quantity			
provider_id			
visit_occurrence_id			
visit_detail_id			
procedure_source_value			
procedure_source_concept_id			
modifier_source_value			

Reading from v_cartelle.txt

Destination Field	Source Field	Logic	Comment
procedure_occurrence_id	num_cartella		
person_id			

procedure_concept_id			after reconstructing the icd9 code from procedure_cod, the relevant standard snomed concept_id was retrieved via the concept_relationship table
procedure_date			
procedure_datetime			
procedure_end_date			
procedure_end_datetime			
procedure_type_concept_id			32817 (EHR)
modifier_concept_id			
quantity			
provider_id			
visit_occurrence_id			
visit_detail_id			
procedure_source_value			
procedure_source_concept_id			
modifier_source_value			

Reading from v_carprocedure.txt



Destination Field	Source Field	Logic	Comment
procedure_occurrence_id	procedura_cod procedura_data		
person_id			
procedure_concept_id	procedura_cod		after reconstructing the icd9 code from procedure_cod, the relevant standard snomed

			concept_id was retrieved via the concept_relationship table
procedure_date	procedura_data		
procedure_datetime			
procedure_end_date			
procedure_end_datetime			
procedure_type_concept_id			32817 (EHR)
modifier_concept_id			
quantity			
provider_id	num_cartella		
visit_occurrence_id	num_cartella		
visit_detail_id			
procedure_source_value	procedura_cod		
procedure_source_concept_id			
modifier_source_value			

Table name: device_exposure

Table name: measurement

Reading from v_ana_dati_este.txt

Destination Field	Source Field	Logic	Comment
measurement_id	id_paz_people		
person_id	id_paz_people		
measurement_concept_id			these codes and their measurement description were mapped onto the standard concept_ids manually and using Usagi
measurement_date			
measurement_datetime			
measurement_time			
measurement_type_concept_id			32817 (EHR)
operator_concept_id			the operator and the corresponding concept_id are extracted from the string “riga”, which represents the decoded result
value_as_number			If 'result' corresponds to a numeric value it is entered directly into this field, otherwise it is decoded through the encoding tables in the data source: v_gen_valo_desc and v_gen_coding. in the case of decoding, this field remains empty and the textual result is entered into 'value_source_value' and the concept_id of the categorical textual result is entered into 'value_as_concept_id'
value_as_concept_id			contains the concept_id of the categorical textual result
unit_concept_id			
range_low			
range_high			
provider_id			linked to the visit identified with patient_id and day
visit_occurrence_id			In the case where the data source is GALILEO:

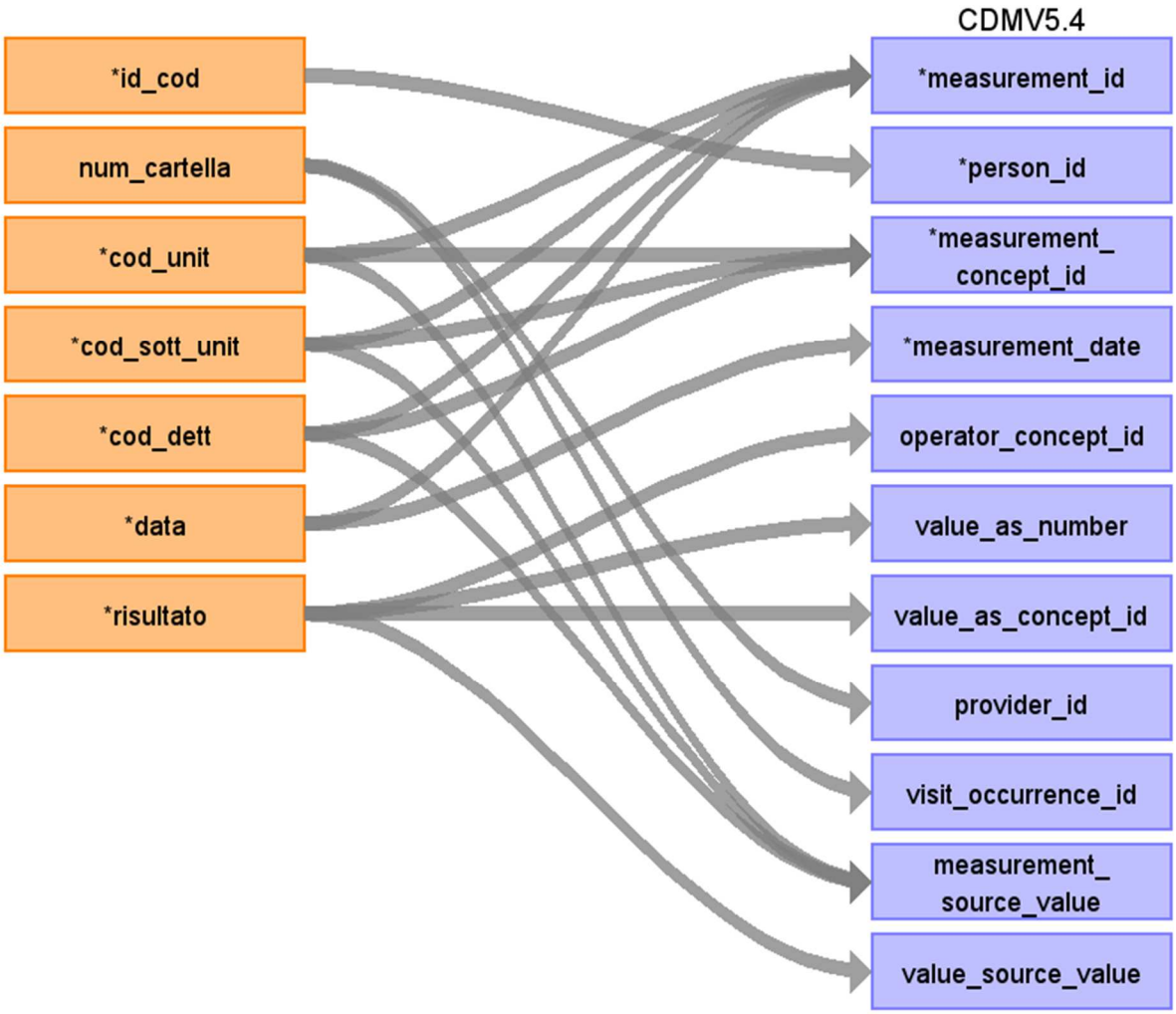
			as there is no cell_number in the data source, the patient id and day were taken into account to derive the hospitalisation within which the examination was performed: ip_pat_hosp = id_paz_people && hospitalisation_date <= day <= discharge_date
visit_detail_id			
measurement_source_value			
measurement_source_concept_id			
unit_source_value			
unit_source_concept_id			
value_source_value			
measurement_event_id			
meas_event_field_concept_id			

Reading from v_cartelle.txt

Destination Field	Source Field	Logic	Comment
measurement_id	num_cartella		
person_id			
measurement_concept_id			these codes and their measurement description were mapped onto the standard concept_ids manually and using Usagi
measurement_date			
measurement_datetime			
measurement_time			
measurement_type_concept_id			32817 (EHR)
operator_concept_id			the operator and the corresponding concept_id are extracted from the string “riga”, which represents the decoded result
value_as_number			If 'result' corresponds to a numeric value it is entered directly into this field, otherwise it is decoded through the encoding tables in the data source: v_gen_valo_desc and v_gen_coding. in the case of decoding, this field remains empty and

			the textual result is entered into 'value_source_value' and the concept_id of the categorical textual result is entered into 'value_as_concept_id'
value_as_concept_id			contains the concept_id of the categorical textual result
unit_concept_id			
range_low			
range_high			
provider_id			linked to the visit identified with patient_id and day
visit_occurrence_id			In the case where the data source is GALILEO: as there is no cell_number in the data source, the patient id and day were taken into account to derive the hospitalisation within which the examination was performed: ip_pat_hosp = id_paz_people && hospitalisation_date <= day <= discharge_date
visit_detail_id			
measurement_source_value			
measurement_source_concept_id			
unit_source_value			
unit_source_concept_id			
value_source_value			
measurement_event_id			
meas_event_field_concept_id			

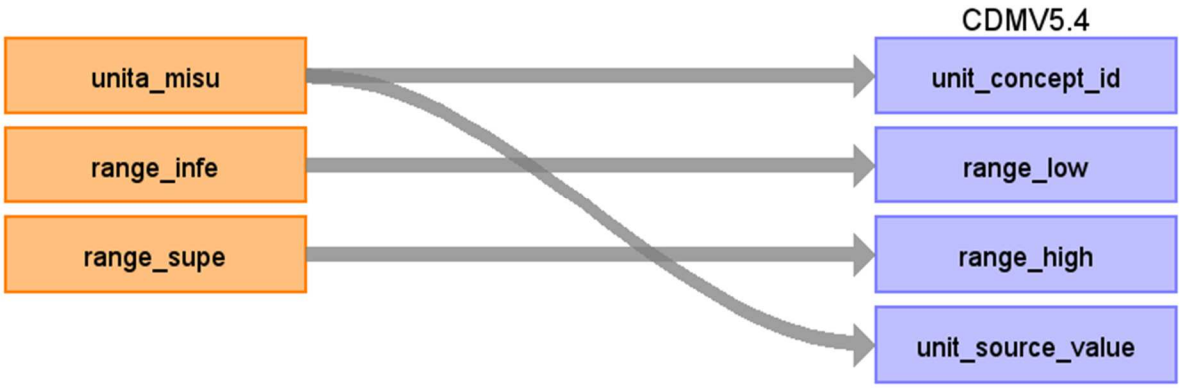
Reading from v_gen_valore.txt



Destination Field	Source Field	Logic	Comment
measurement_id	cod_unit cod_sott_unit cod_dett data		
person_id	id_cod		
measurement_concept_id	cod_unit cod_sott_unit cod_dett		these codes and their measurement description were mapped onto the standard concept_ids manually and using Usagi
measurement_date	data		
measurement_datetime			
measurement_time			
measurement_type_concept_id			32817 (EHR)
operator_concept_id	risultato		the operator and the corresponding concept_id are

			extracted from the string “riga”, which represents the decoded result
value_as_number	risultato		If 'result' corresponds to a numeric value it is entered directly into this field, otherwise it is decoded through the encoding tables in the data source: v_gen_valo_desc and v_gen_coding. in the case of decoding, this field remains empty and the textual result is entered into 'value_source_value' and the concept_id of the categorical textual result is entered into 'value_as_concept_id'
value_as_concept_id	risultato		contains the concept_id of the categorical textual result
unit_concept_id			
range_low			
range_high			
provider_id	num_cartella		linked to the visit identified with patient_id and day
visit_occurrence_id	num_cartella		In the case where the data source is GALILEO: as there is no cell_number in the data source, the patient id and day were taken into account to derive the hospitalisation within which the examination was performed: ip_pat_hosp = id_paz_people && hospitalisation_date <= day <= discharge_date
visit_detail_id			
measurement_source_value	cod_unit cod_sott_unit cod_dett		
measurement_source_concept_id			
unit_source_value			
unit_source_concept_id			
value_source_value	risultato		
measurement_event_id			
meas_event_field_concept_id			

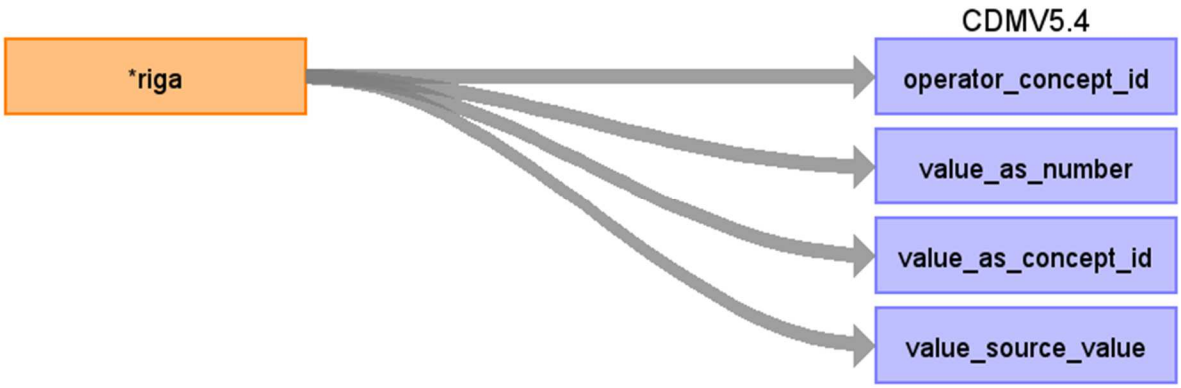
Reading from v_gen_dettaglio.txt



Destination Field	Source Field	Logic	Comment
measurement_id			
person_id			
measurement_concept_id			these codes and their measurement description were mapped onto the standard concept_ids manually and using Usagi
measurement_date			
measurement_datetime			
measurement_time			
measurement_type_concept_id			32817 (EHR)
operator_concept_id			the operator and the corresponding concept_id are extracted from the string “riga”, which represents the decoded result
value_as_number			If 'result' corresponds to a numeric value it is entered directly into this field, otherwise it is decoded through the encoding tables in the data source: v_gen_valo_desc and v_gen_coding. in the case of decoding, this field remains empty and the textual result is entered into 'value_source_value' and the concept_id of the categorical textual result is entered into 'value_as_concept_id'
value_as_concept_id			contains the concept_id of the categorical textual result
unit_concept_id	unita_misu		
range_low	range_infe		
range_high	range_supe		
provider_id			linked to the visit identified with patient_id and day
visit_occurrence_id			In the case where the data source is GALILEO: as there is no cell_number in the data source, the

			patient id and day were taken into account to derive the hospitalisation within which the examination was performed: ip_pat_hosp = id_paz_people && hospitalisation_date <= day <= discharge_date
visit_detail_id			
measurement_source_value			
measurement_source_concept_id			
unit_source_value	unita_misu		
unit_source_concept_id			
value_source_value			
measurement_event_id			
meas_event_field_concept_id			

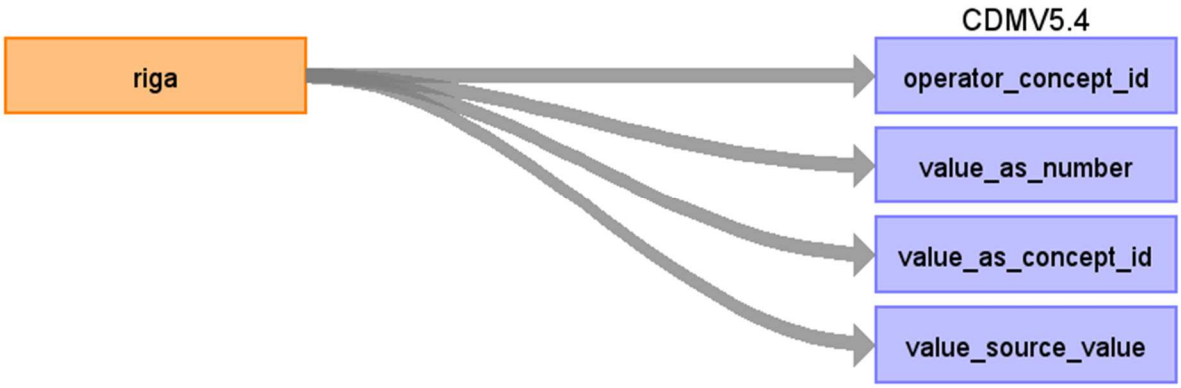
Reading from v_gen_codifica.txt



Destination Field	Source Field	Logic	Comment
measurement_id			
person_id			
measurement_concept_id			these codes and their measurement description were mapped onto the standard concept_ids manually and using Usagi
measurement_date			
measurement_datetime			
measurement_time			
measurement_type_concept_id			32817 (EHR)
operator_concept_id	riga		the operator and the corresponding concept_id are extracted from the string “riga”, which represents the

			decoded result
value_as_number	riga		If 'result' corresponds to a numeric value it is entered directly into this field, otherwise it is decoded through the encoding tables in the data source: v_gen_valo_desc and v_gen_coding. in the case of decoding, this field remains empty and the textual result is entered into 'value_source_value' and the concept_id of the categorical textual result is entered into 'value_as_concept_id'
value_as_concept_id	riga		contains the concept_id of the categorical textual result
unit_concept_id			
range_low			
range_high			
provider_id			linked to the visit identified with patient_id and day
visit_occurrence_id			In the case where the data source is GALILEO: as there is no cell_number in the data source, the patient id and day were taken into account to derive the hospitalisation within which the examination was performed: ip_pat_hosp = id_paz_people && hospitalisation_date <= day <= discharge_date
visit_detail_id			
measurement_source_value			
measurement_source_concept_id			
unit_source_value			
unit_source_concept_id			
value_source_value	riga		
measurement_event_id			
meas_event_field_concept_id			

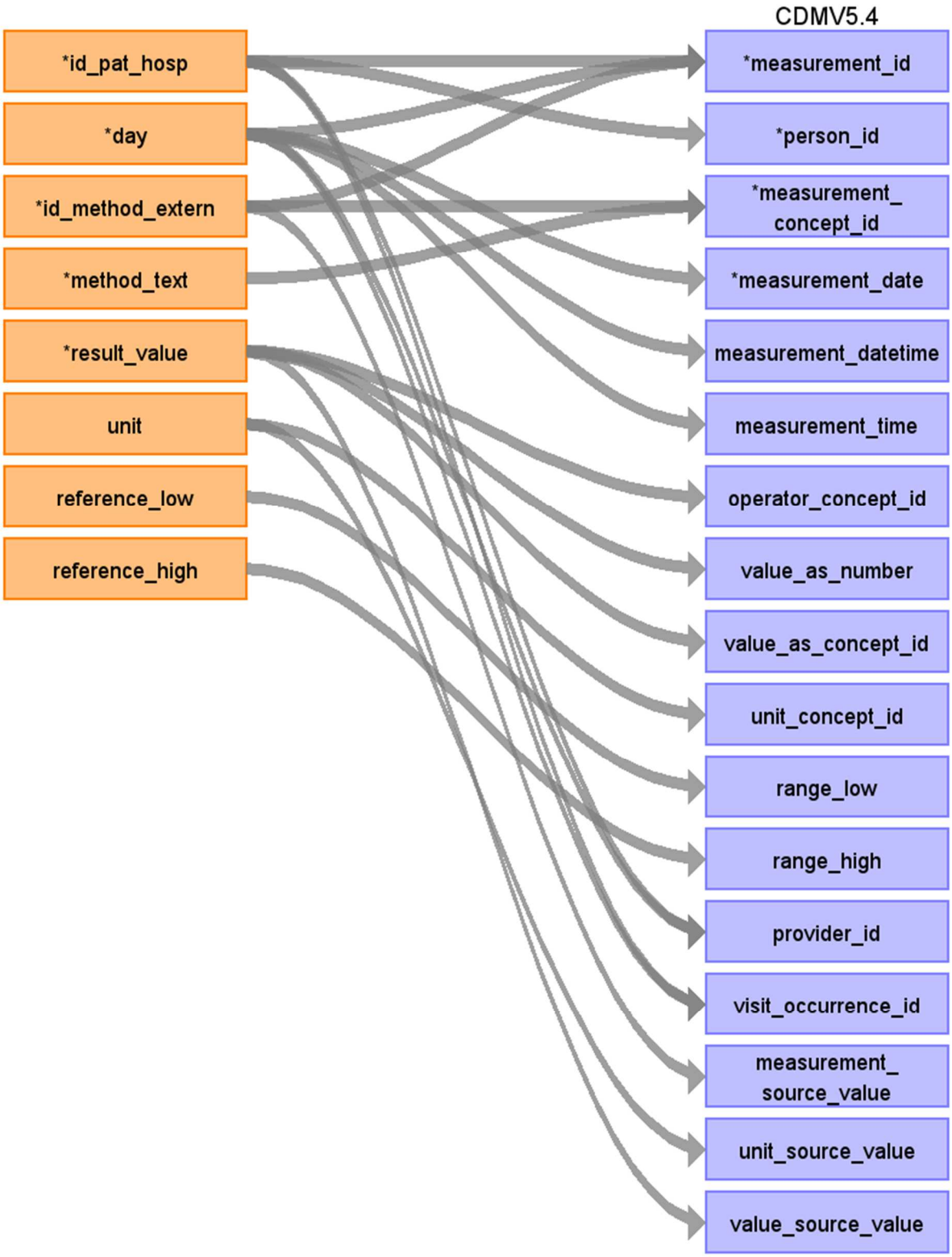
Reading from v_gen_valo_desc.txt



Destination Field	Source Field	Logic	Comment
measurement_id			
person_id			
measurement_concept_id			these codes and their measurement description were mapped onto the standard concept_ids manually and using Usagi
measurement_date			
measurement_datetime			
measurement_time			
measurement_type_concept_id			32817 (EHR)
operator_concept_id	riga		the operator and the corresponding concept_id are extracted from the string “riga”, which represents the decoded result
value_as_number	riga		If 'result' corresponds to a numeric value it is entered directly into this field, otherwise it is decoded through the encoding tables in the data source: v_gen_valo_desc and v_gen_coding. in the case of decoding, this field remains empty and the textual result is entered into 'value_source_value' and the concept_id of the categorical textual result is entered into 'value_as_concept_id'
value_as_concept_id	riga		contains the concept_id of the categorical textual result
unit_concept_id			
range_low			
range_high			
provider_id			linked to the visit identified with patient_id and day
visit_occurrence_id			In the case where the data source is GALILEO: as there is no cell_number in the data source, the patient

			id and day were taken into account to derive the hospitalisation within which the examination was performed: ip_pat_hosp = id_paz_people && hospitalisation_date <= day <= discharge_date
visit_detail_id			
measurement_source_value			
measurement_source_concept_id			
unit_source_value			
unit_source_concept_id			
value_source_value	riga		
measurement_event_id			
meas_event_field_concept_id			

Reading from 0_noematica.galileo_lab_result_view.txt

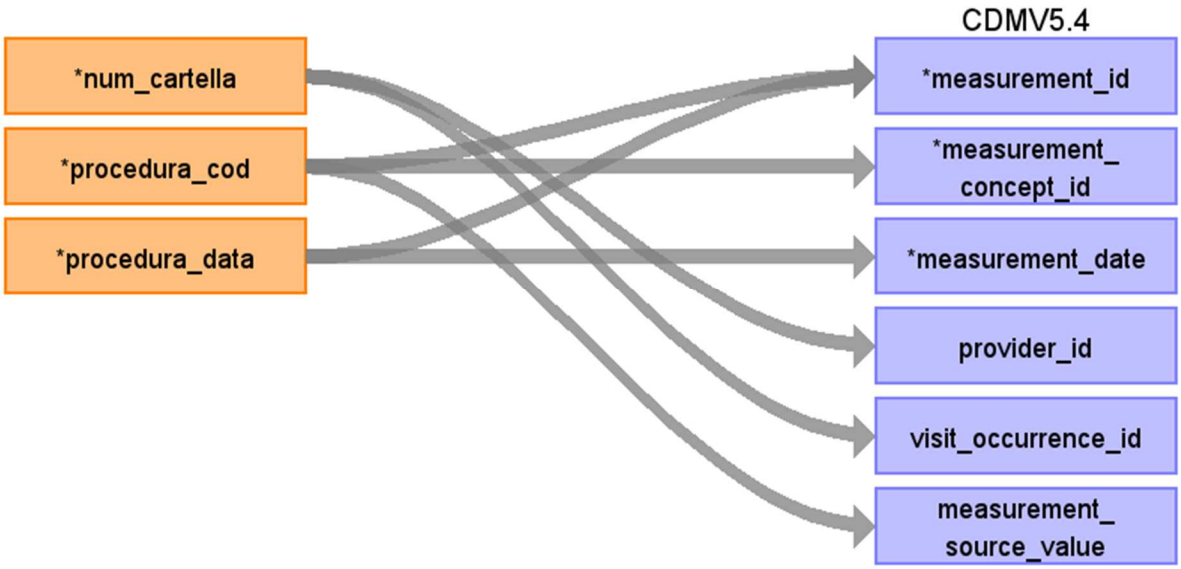


Destination Field	Source Field	Logic	Comment
measurement_id	id_pat_hosp day id_method_extern		
person_id	id_pat_hosp		

measurement_concept_id	id_method_extern method_text		these codes and their measurement description were mapped onto the standard concept_ids manually and using Usagi
measurement_date	day		
measurement_datetime	day		
measurement_time	day		
measurement_type_concept_id			32817 (EHR)
operator_concept_id	result_value		the operator and the corresponding concept_id are extracted from the string “riga”, which represents the decoded result
value_as_number	result_value		If 'result' corresponds to a numeric value it is entered directly into this field, otherwise it is decoded through the encoding tables in the data source: v_gen_valo_desc and v_gen_coding. in the case of decoding, this field remains empty and the textual result is entered into 'value_source_value' and the concept_id of the categorical textual result is entered into 'value_as_concept_id'
value_as_concept_id	result_value		contains the concept_id of the categorical textual result
unit_concept_id	unit		
range_low	reference_low		
range_high	reference_high		
provider_id	id_pat_hosp day		linked to the visit identified with patient_id and day
visit_occurrence_id	id_pat_hosp day		In the case where the data source is GALILEO: as there is no cell_number in the data source, the patient id and day were taken into account to derive the admission within which the examination was performed: ip_pat_hosp = id_paz_people && admission_date <= day <= discharge_date
visit_detail_id			
measurement_source_value	id_method_extern		
measurement_source_concept_id			
unit_source_value	unit		

unit_source_concept_id			
value_source_value	result_value		
measurement_event_id			
meas_event_field_concept_id			

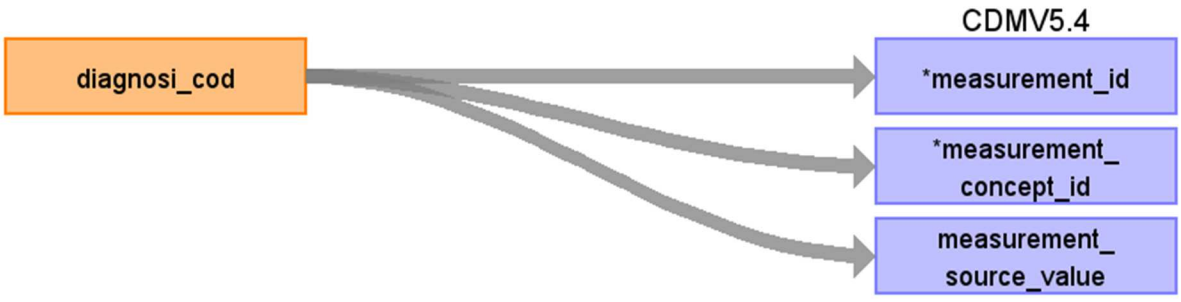
Reading from v_carprocedure.txt



Destination Field	Source Field	Logic	Comment
measurement_id	procedura_cod procedura_data		
person_id			
measurement_concept_id	procedura_cod		
measurement_date	procedura_data		
measurement_datetime			
measurement_time			
measurement_type_concept_id			32817 (EHR)
operator_concept_id			the operator and the corresponding concept_id are extracted from the string “riga”, which represents the decoded result
value_as_number			If 'result' corresponds to a numeric value it is entered directly into this field, otherwise it is decoded through the encoding tables in the data source: v_gen_valo_desc and v_gen_coding. in the case of decoding, this field remains empty and the textual result is entered into

			'value_source_value' and the concept_id of the categorical textual result is entered into 'value_as_concept_id'
value_as_concept_id			contains the concept_id of the categorical textual result
unit_concept_id			
range_low			
range_high			
provider_id	num_cartella		linked to the visit identified with patient_id and day
visit_occurrence_id	num_cartella		In the case where the data source is GALILEO: as there is no cell_number in the data source, the patient id and day were taken into account to derive the admission within which the examination was performed: ip_pat_hosp = id_paz_people && admission_date <= day <= discharge_date
visit_detail_id			
measurement_source_value	procedura_cod		
measurement_source_concept_id			
unit_source_value			
unit_source_concept_id			
value_source_value			
measurement_event_id			
meas_event_field_concept_id			

Reading from v_cardiagnosi.txt

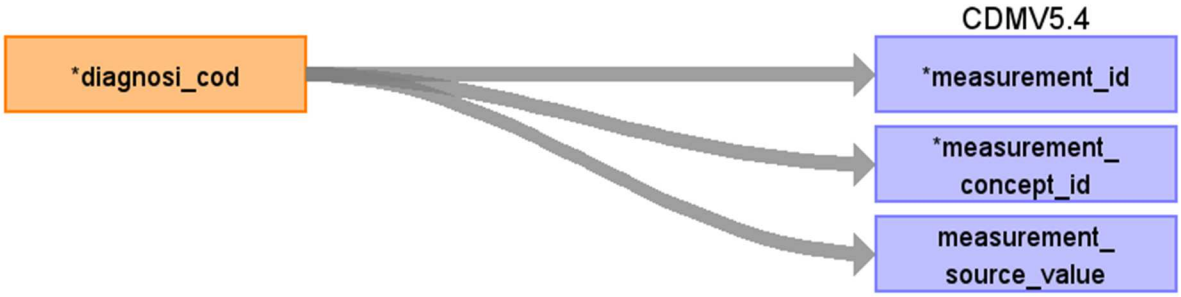


Destination Field	Source Field	Logic	Comment
measurement_id	diagnosi_cod		

person_id			
measurement_concept_id	diagnosi_cod		these codes and their measurement description were mapped onto the standard concept_ids manually and using Usagi
measurement_date			
measurement_datetime			
measurement_time			
measurement_type_concept_id			32817 (EHR)
operator_concept_id			the operator and the corresponding concept_id are extracted from the string “riga”, which represents the decoded result
value_as_number			If 'result' corresponds to a numeric value it is entered directly into this field, otherwise it is decoded through the encoding tables in the data source: v_gen_valo_desc and v_gen_coding. in the case of decoding, this field remains empty and the textual result is entered into 'value_source_value' and the concept_id of the categorical textual result is entered into 'value_as_concept_id'
value_as_concept_id			contains the concept_id of the categorical textual result
unit_concept_id			
range_low			
range_high			
provider_id			linked to the visit identified with patient_id and day
visit_occurrence_id			In the case where the data source is GALILEO: as there is no cell_number in the data source, the patient id and day were taken into account to derive the admission within which the examination was performed: ip_pat_hosp = id_paz_people && admission_date <= day <= discharge_date
visit_detail_id			
measurement_source_value	diagnosi_cod		
measurement_source_concept_id			
unit_source_value			
unit_source_concept_id			

value_source_value			
measurement_event_id			
meas_event_field_concept_id			

Reading from v_siodiagnosi.txt



Destination Field	Source Field	Logic	Comment
measurement_id	diagnosi_cod		
person_id			
measurement_concept_id	diagnosi_cod		
measurement_date			
measurement_datetime			
measurement_time			
measurement_type_concept_id			32817 (EHR)
operator_concept_id			the operator and the corresponding concept_id are extracted from the string “riga”, which represents the decoded result
value_as_number			If 'result' corresponds to a numeric value it is entered directly into this field, otherwise it is decoded through the encoding tables in the data source: v_gen_valo_desc and v_gen_coding. in the case of decoding, this field remains empty and the textual result is entered into 'value_source_value' and the concept_id of the categorical textual result is entered into 'value_as_concept_id'
value_as_concept_id			contains the concept_id of the categorical textual result
unit_concept_id			
range_low			
range_high			
provider_id			linked to the visit identified with patient_id and day

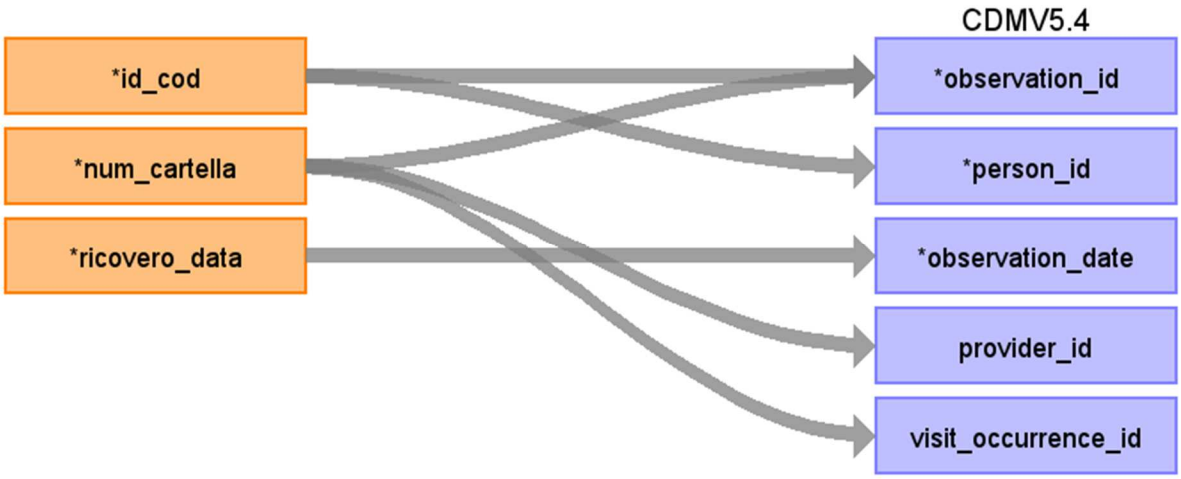
visit_occurrence_id			In the case where the data source is GALILEO: as there is no cell_number in the data source, the patient id and day were taken into account to derive the admission within which the examination was performed: ip_pat_hosp = id_paz_people && admission_date <= day <= discharge_date
visit_detail_id			
measurement_source_value	diagnosi_cod		
measurement_source_concept_id			
unit_source_value			
unit_source_concept_id			
value_source_value			
measurement_event_id			
meas_event_field_concept_id			

Table name: observation

Reading from v_ana_dati_este.txt

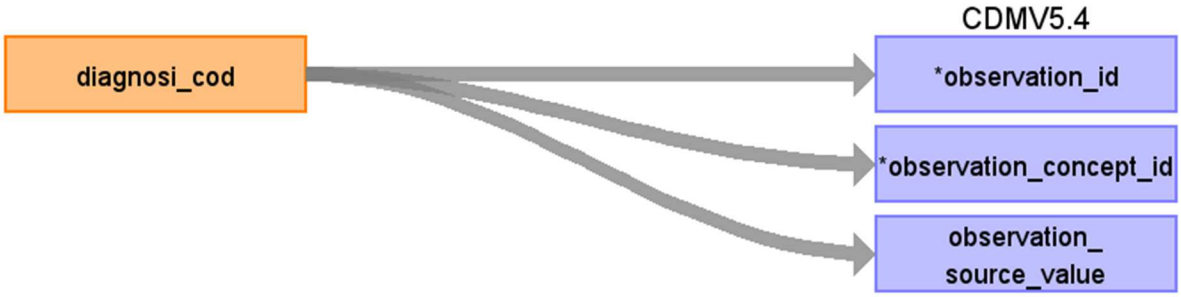
Destination Field	Source Field	Logic	Comment
observation_id	id_paz_people		
person_id	id_paz_people		
observation_concept_id			
observation_date			
observation_datetime			
observation_type_concept_id			32817 (EHR)
value_as_number			
value_as_string			
value_as_concept_id			
qualifier_concept_id			
unit_concept_id			
provider_id			
visit_occurrence_id			
visit_detail_id			
observation_source_value			
observation_source_concept_id			
unit_source_value			
qualifier_source_value			
value_source_value			
observation_event_id			
obs_event_field_concept_id			

Reading from v_cartelle.txt



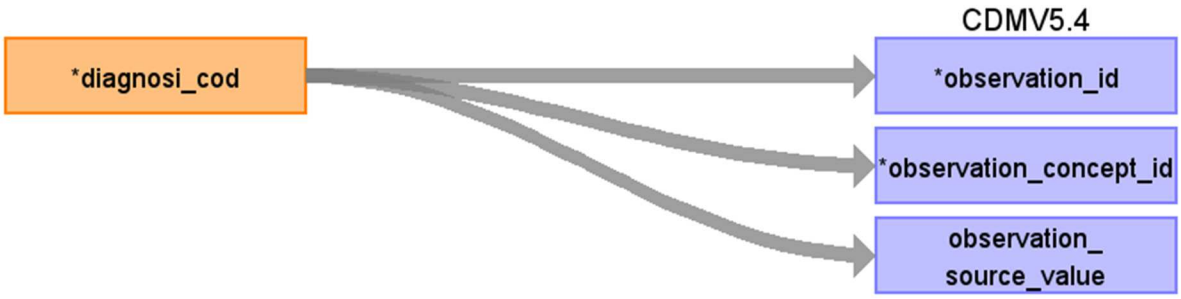
Destination Field	Source Field	Logic	Comment
observation_id	num_cartella id_cod		
person_id	id_cod		
observation_concept_id			
observation_date	ricovero_data		
observation_datetime			
observation_type_concept_id			32817 (EHR)
value_as_number			
value_as_string			
value_as_concept_id			
qualifier_concept_id			
unit_concept_id			
provider_id	num_cartella		
visit_occurrence_id	num_cartella		
visit_detail_id			
observation_source_value			
observation_source_concept_id			
unit_source_value			
qualifier_source_value			
value_source_value			
observation_event_id			
obs_event_field_concept_id			

Reading from v_cardiagnosi.txt



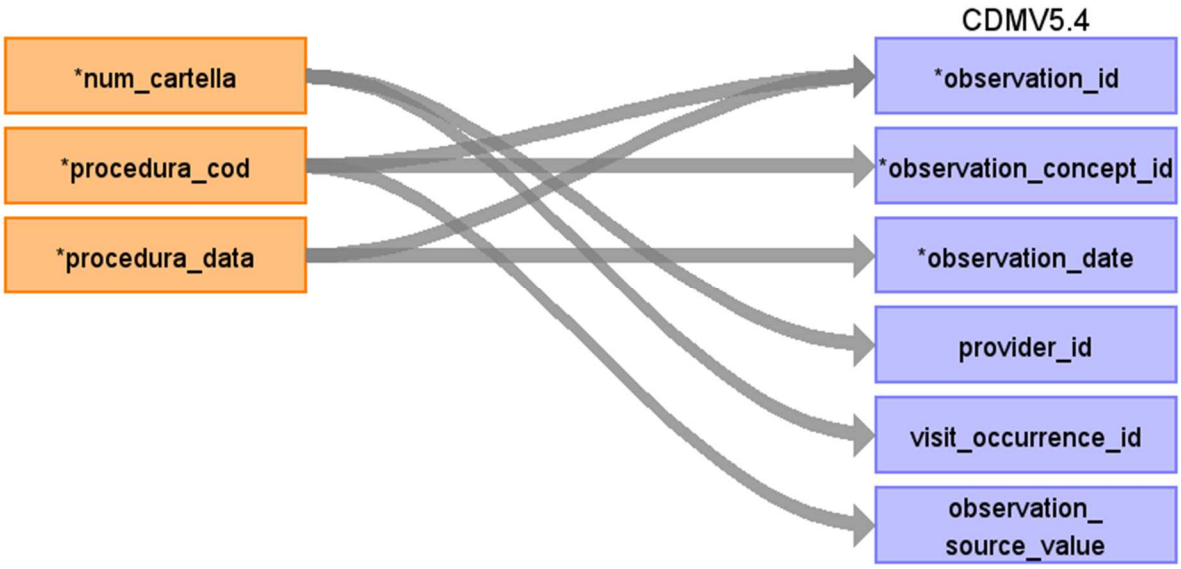
Destination Field	Source Field	Logic	Comment
observation_id	diagnosi_cod		
person_id			
observation_concept_id	diagnosi_cod		
observation_date			
observation_datetime			
observation_type_concept_id			32817 (EHR)
value_as_number			
value_as_string			
value_as_concept_id			
qualifier_concept_id			
unit_concept_id			
provider_id			
visit_occurrence_id			
visit_detail_id			
observation_source_value	diagnosi_cod		
observation_source_concept_id			
unit_source_value			
qualifier_source_value			
value_source_value			
observation_event_id			
obs_event_field_concept_id			

Reading from v_siodiagnosi.txt



Destination Field	Source Field	Logic	Comment
observation_id	diagnosi_cod		
person_id			
observation_concept_id	diagnosi_cod		
observation_date			
observation_datetime			
observation_type_concept_id			32817 (EHR)
value_as_number			
value_as_string			
value_as_concept_id			
qualifier_concept_id			
unit_concept_id			
provider_id			
visit_occurrence_id			
visit_detail_id			
observation_source_value	diagnosi_cod		
observation_source_concept_id			
unit_source_value			
qualifier_source_value			
value_source_value			
observation_event_id			
obs_event_field_concept_id			

Reading from v_carprocedure.txt



Destination Field	Source Field	Logic	Comment
observation_id	procedura_cod procedura_data		
person_id			
observation_concept_id	procedura_cod		
observation_date	procedura_data		
observation_datetime			
observation_type_concept_id			32817 (EHR)
value_as_number			
value_as_string			
value_as_concept_id			
qualifier_concept_id			
unit_concept_id			
provider_id	num_cartella		
visit_occurrence_id	num_cartella		
visit_detail_id			
observation_source_value	procedura_cod		
observation_source_concept_id			
unit_source_value			
qualifier_source_value			
value_source_value			

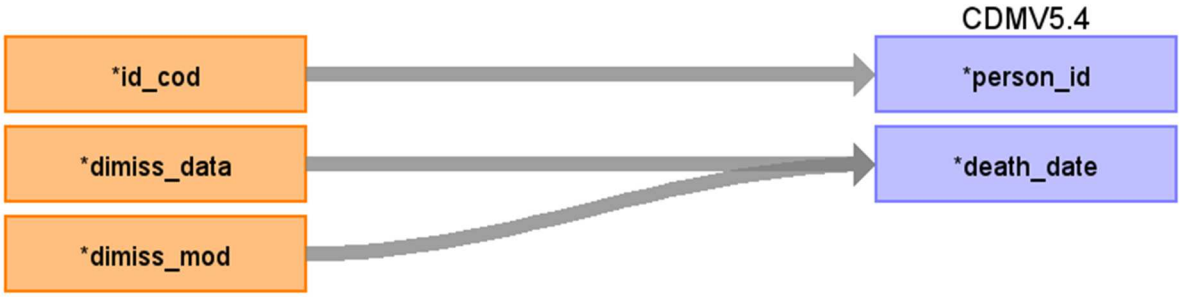
observation_event_id			
obs_event_field_concept_id			

Table name: death

Reading from v_ana_dati_este.txt

Destination Field	Source Field	Logic	Comment
person_id	id_paz_people		
death_date			Date corresponding to the date of discharge from hospitalisation with dimiss_mod = 4 (deceased)
death_datetime			
death_type_concept_id			
cause_concept_id			
cause_source_value			
cause_source_concept_id			

Reading from v_cartelle.txt



Destination Field	Source Field	Logic	Comment
person_id	id_cod		
death_date	dimiss_data dimiss_mod		Date corresponding to the date of discharge from hospitalisation with dimiss_mod = 4 (deceased)
death_datetime			
death_type_concept_id			
cause_concept_id			
cause_source_value			
cause_source_concept_id			

Reading from v_ana.txt

Destination Field	Source Field	Logic	Comment
person_id			
death_date	decesso_data		Date corresponding to the patient's death sent to us by the region. This field is not always full in the case of death. In case it is not full but dimiss_mod = 4, the date of hospital discharge is considered.
death_datetime			
death_type_concept_id			
cause_concept_id			
cause_source_value			
cause_source_concept_id			

Table name: note

Table name: note_nlp

Table name: specimen

Table name: fact_relationship

Table name: location

Reading from v_cartelle.txt

Destination Field	Source Field	Logic	Comment
location_id			
address_1			
address_2			
city			
state			
zip			
county	residenza_prov		
location_source_value			
country_concept_id			
country_source_value			
latitude			
longitude			

Table name: care_site

Table name: provider

Reading from v_cartelle.txt

Destination Field	Source Field	Logic	Comment
provider_id	medico_rep		
provider_name	medico_rep		
npi			
dea			
specialty_concept_id			
care_site_id			
year_of_birth			
gender_concept_id			
provider_source_value			
specialty_source_value			
specialty_source_concept_id			
gender_source_value			
gender_source_concept_id			

Table name: payer_plan_period

Table name: cost

Table name: drug_era

Table name: dose_era

Table name: condition_era

Table name: episode

Table name: episode_event

Table name: metadata

Table name: cdm_source

Table name: cohort

Table name: cohort_definition

Appendix: source tables

Table: v_ana_dati_este.txt

Field	Type	Most freq. value	Comment
id_paz_people	VARCHAR	PK-481416569	

Table: v_ana.txt

Field	Type	Most freq. value	Comment
id_cod	INT	481416569	
sesso	VARCHAR	F	
nascita_data	VARCHAR	1948/01/01 00:00:00.000	
domicilio_via	VARCHAR		
residenza_citta	VARCHAR	PAVIA	
residenza_cap	VARCHAR	27100	
residenza_via	VARCHAR		
residenza_prov	VARCHAR	PV	

Table: 01_person.txt

Field	Type	Most freq. value	Comment
id_cod	INT	481416569	
decesso_data	VARCHAR		
paziente	VARCHAR	SACCHI GIOVANNI	
nascita_data	VARCHAR	1948/01/01 00:00:00.000	
domicilio_via	VARCHAR		
domicilio_citta	VARCHAR	PAVIA	
seqn	INT	1	
numr	INT	1	
stato	VARCHAR	U	
sesso	VARCHAR	F	
nascita_citta	VARCHAR	PAVIA	
nascita_prov	VARCHAR	PV	
nascita_cod	INT	018110	
inps_cod	VARCHAR		

fiscale_cod	VARCHAR		
citt_cod	INT	100	
stato_civile	INT	2	
titolo_studio	INT	2	
prof_cod	INT	09	
prof_descr	VARCHAR	$DEL	
domicilio_prov	VARCHAR	PV	
domicilio_cap	VARCHAR	27100	
domicilio_tel	VARCHAR		
residenza_citta	VARCHAR	PAVIA	
residenza_prov	VARCHAR	PV	
residenza_cap	VARCHAR	27100	
residenza_cod	INT	018110	
residenza_via	VARCHAR		
residenza_tel	VARCHAR		
rifer_nome	VARCHAR		
rifer_citta	VARCHAR		
rifer_via	VARCHAR		
rifer_tel	VARCHAR		
medico_cur	VARCHAR		
medico_cur_tel	VARCHAR		
decesso_motivo	VARCHAR		
emogruppo	VARCHAR		
rh	VARCHAR		
note_rilevanti	EMPTY		
id_cod_1	INT	481416569	
paziente_1	VARCHAR	SACCHI GIOVANNI	
sesso_1	VARCHAR	F	
num_cartella	INT		
impegnativa_num	EMPTY		
impegnativa_data	VARCHAR		

ricovero_ora	VARCHAR	07:33	
ricovero_data	VARCHAR	2012/10/15 00:00:00.000	
ricovero_regime	INT	1	
ricovero_camera	VARCHAR		
ricovero_rep_cod	VARCHAR	091	
ricovero_tipo	INT	1	
ricovero_motivo	EMPTY		
ricovero_motivo2	EMPTY		
ricovero_motivo3	EMPTY		
ricovero_finalita	EMPTY		
fiscale_cod_1	VARCHAR		
nascita_data_1	VARCHAR	1948/01/01 00:00:00.000	
nascita_citta_1	VARCHAR	PAVIA	
nascita_prov_1	VARCHAR	PV	
nascita_cod_1	INT	018110	
residenza_via_1	EMPTY		
residenza_citta_1	VARCHAR		
residenza_prov_1	VARCHAR		
residenza_cap_1	INT		
residenza_tel_1	EMPTY		
residenza_cod_1	INT	018110	
citt_cod_1	INT	100	
stato_civile_1	INT	2	
prof_cod_1	INT	09	
prof_descr_1	EMPTY		
prof_sit	EMPTY		
prof_set	EMPTY		
prof_cond	EMPTY		
att_eco_prin_cod	EMPTY		
att_eco_prin_descr	EMPTY		
regione_cod	INT	030	

ussl_cod	VARCHAR	312	
provenienza	VARCHAR	2	
degenza_onere	VARCHAR	1	
degenza_giorni	INT	2	
prov_inail	EMPTY		
medico_prop	EMPTY		
medico_prop_cod	EMPTY		
medico_cur_1	EMPTY		
medico_acc	EMPTY		
medico_rep	EMPTY		
diagnosi1	EMPTY		
diagnosi2	EMPTY		
trauma	INT		
res_d10	EMPTY		
rifer_nome_1	EMPTY		
rifer_via_1	EMPTY		
rifer_citta_1	EMPTY		
rifer_tel_1	EMPTY		
carico_rep_cod	VARCHAR	091	
trasferito	VARCHAR	N	
dimiss_data	VARCHAR	2016/12/23 00:00:00.000	
dimiss_mod	VARCHAR	1	
area_funz_rep_dim	EMPTY		
riscontro_aut	EMPTY		
terapia_cod	EMPTY		
terapia_descr	EMPTY		
foglio_regione	VARCHAR	S	
fat_regione	EMPTY		
fat_regione_data	EMPTY		
fat_alberg_data	EMPTY		
fat_inail_data	EMPTY		

fat_sol_data	EMPTY		
seqn_1	INT	1	
numr_1	INT	1	
drg	INT	87	
mdc	INT	1	
inviato_regione	EMPTY		
importo	INT	0	
privacy_car_dati	VARCHAR	S	
privacy_car_anon	VARCHAR	N	
ricovero_motivo_dh	EMPTY		
data_evento_riab	VARCHAR		
data_iniz_preric	EMPTY		
data_fine_preric	EMPTY		
data_pren_inte	EMPTY		
gg_non_a_carico	INT	0	

Table: v_cartelle.txt

Field	Type	Most freq. value	Comment
id_cod	INT	481416569	
sesso	VARCHAR	F	
medico_rep	EMPTY		
num_cartella	INT		
ricovero_ora	VARCHAR	07:33	
ricovero_data	VARCHAR	2012/10/15 00:00:00.000	
ricovero_regime	INT	1	
ricovero_rep_cod	VARCHAR	091	
ricovero_tipo	INT	1	
nascita_data	VARCHAR	1948/01/01 00:00:00.000	
nascita_citta	VARCHAR	PAVIA	
nascita_prov	VARCHAR	PV	
nascita_cod	INT	018110	
residenza_via	EMPTY		

residenza_citta	VARCHAR		
residenza_prov	VARCHAR		
residenza_cap	INT		
residenza_tel	EMPTY		
residenza_cod	INT	018110	
carico_rep_cod	VARCHAR	091	
dimiss_data	VARCHAR	2016/12/23 00:00:00.000	
dimiss_mod	VARCHAR	1	

Table: v_siorep.txt

Field	Type	Most freq. value	Comment
cod	VARCHAR		
cod_per_ap	INT		
cod_livello1	VARCHAR	250	
cod_livello2	VARCHAR		
cod_livello3	EMPTY		
cod_livello4	EMPTY		
cod_livello5	EMPTY		
livello	INT	1	
descr_livello	VARCHAR	REPARTO	
ind_ult_livello	VARCHAR	S	
cod_istat	VARCHAR		
descr_estesa	VARCHAR		
descr_ridotta	VARCHAR		
descr_per_riep	VARCHAR	UO TERDOL	
commessa	VARCHAR		
num_posti	INT	0	
num_postidh	INT	0	
primario	VARCHAR		
cod_centro	INT	1	

Table: v_cardiagnosi.txt

Field	Type	Most freq. value	Comment

num_cartella	INT	48332	
prog	INT	1	
diagnosi_cod	VARCHAR	V581	
diagnosi_descr	VARCHAR		

Table: v_siodiagnosi.txt

Field	Type	Most freq. value	Comment
diagnosi_cod	VARCHAR		
tipo	INT	7	
diagnosi_descr	TEXT	di	

Table: v_ter_somm.txt

Field	Type	Most freq. value	Comment
prog_somm	INT		
prog_somm_padre	INT		
prog_elen	INT	0	
progressivo_via	INT	4027	
id_cod	INT	289325	
num_cartella	INT	2012002286	
carico_rep_cod	INT	561	
camera	VARCHAR	341	
autonomia	INT	1	
evento	INT	0	
stato_evento	INT	1	
data_evento	VARCHAR	2012/03/29 00:00:00.000	
ora_evento	VARCHAR	1700/05/01 08:00:00.000	
cod_terapia	INT	6163	
via_somm	VARCHAR	OS	
numero_sacca	INT		
posologia_qta	VARCHAR	1	
posologia_qtaa	VARCHAR		
posologia_qtan	VARCHAR		
posologia_um	VARCHAR	CPR	

misurin_applic_qta	VARCHAR		
misurin_applic_um	VARCHAR		
qta_somm	VARCHAR	1,0	
qta_somm_um	VARCHAR	CPR	
annotazioni	VARCHAR		
prog_ter_ab	INT		
prog_ann_inf	EMPTY		
riga_valida	VARCHAR	S	
host_append	VARCHAR	CAS-ESECAR04	
data_append	VARCHAR	2012/04/17 00:00:00.000	
ora_append	VARCHAR	1700/05/01 20:52:00.000	
user_append	VARCHAR	Marina IAMUNDI	
host_update	VARCHAR		
data_update	VARCHAR		
ora_update	VARCHAR		
user_update	VARCHAR		

Table: v_ter_dizionario.txt

Field	Type	Most freq. value	Comment
cod_terapia	INT		
nome_terapia	VARCHAR	SLOWMET	
nome_terapia_est	VARCHAR	MINOCIN CPR 100 MG	
dose_princ_att	VARCHAR		
unita_misura	VARCHAR	MG	
confez_qta_pezzo	VARCHAR		
confez_um	VARCHAR		
confez_num_pezzi	INT		
forma_farmaceutica	VARCHAR	CPR	
via_somm	VARCHAR	OS	
principio_attivo	VARCHAR		
durata_cons_tratt	INT		
classe_cod	INT		

diluizione_tipo	VARCHAR		
diluizione_qta	INT		
diluizione_um	VARCHAR		
orari_somm_std	VARCHAR		
tipo	INT	1	
cod_tipo	VARCHAR	F	
cod_min_san	VARCHAR		
cod_magia	VARCHAR		
atc	VARCHAR		

Table: v_carprocedure.txt

Field	Type	Most freq. value	Comment
num_cartella	INT	64835	
prog	INT	2	
procedura_cod	INT	9925	
procedura_descr	VARCHAR		
procedura_data	VARCHAR	1997/11/24 00:00:00.000	

Table: v_gen_valore.txt

Field	Type	Most freq. value	Comment
id_cod	INT	207126	
num_cartella	INT		
cod_rich	VARCHAR	08	
cod_unit	INT	03	
cod_sott_unit	INT	01	
cod_dett	VARCHAR	11	
data	VARCHAR	2003/07/02 00:00:00.000	
prog	INT	2	
cod_spec	EMPTY		
cod_cond	VARCHAR		
tipo	VARCHAR	N	
risultato	VARCHAR	88,0	
patologia	VARCHAR	N	

cod_valo_rife	INT	0	
prg_risultato	INT		
flag_stampa	VARCHAR	N	

Table: v_gen_dettaglio.txt

Field	Type	Most freq. value	Comment
cod_unit	VARCHAR	T6	
cod_sott_unit	VARCHAR	01	
cod_dett	VARCHAR	01	
descr	VARCHAR		
unita_misu	VARCHAR		
range_infe	REAL		
range_supe	REAL		
graficabile	VARCHAR	N	
cod_prov	VARCHAR		
cod_esec	VARCHAR	A9	
ordine_pres	INT	70	
tipo	VARCHAR	R	
cod_este	VARCHAR		
cod_este_old	INT		
cod_evento	INT	20000	
descr_rice	VARCHAR		
flag_visu	VARCHAR	S	
informatizzato	VARCHAR	S	
valo_rife	VARCHAR		
cod_interno	INT		
cod_grup	INT	70	
giorni_atte_rito	INT	30	
valo_rife_masc	VARCHAR		
valo_rife_femm	VARCHAR		

Table: v_gen_codifica.txt

Field	Type	Most freq. value	Comment

cod_codi	VARCHAR	NN	
prog	INT	01	
riga	VARCHAR		
riga_rid	VARCHAR	Negativa	
cod_codi_inte	VARCHAR		
flag	VARCHAR	zz	

Table: v_gen_valo_desc.txt

Field	Type	Most freq. value	Comment
prog	INT		
riga	VARCHAR	Assente	
prg_risultato	INT	3831742	

Table: 0_noematica.galileo_lab_result_view.txt

Field	Type	Most freq. value	Comment
id_pat_hosp	VARCHAR	PK-735609059	
day	VARCHAR	2019/04/15 00:00:00.000	
id_method_extern	VARCHAR	L161@L161/03@LL1_S1	
method_text	VARCHAR	ESAME EMOCROMOCITOMETRICO-Emoglobina-LL1	
result_value	VARCHAR	Campione non pervenuto	
unit	VARCHAR	%	
reference_low	REAL	77.0	
reference_high	REAL	91.0	