

## Session 3: In-class exercises and homework

### Exercise 1:

Using Atlas, build a starting concept set for malnutrition.

1. Go to Atlas: <https://atlas-demo.ohdsi.org/>
2. In the Search window, look up Nutritional deficiency disorder (SNOMED CT 70241007)

The screenshot shows the ATLAS search results for the concept '70241007'. The left sidebar contains a navigation menu with options like Home, Data Sources, Search, Concept Sets, Cohort Definitions, Characterizations, Cohort Pathways, Incidence Rates, Profiles, Estimation, Prediction, Jobs, Configuration, and Feedback. The main search area displays the search term '70241007' and a table of results. The table has columns for Id, Code, Name, Class, RC, DRC, Domain, and Vocabulary. Two entries are shown: one with Id 435227 and Code 70241007, and another with Id 3347111 and Code 70241007. Both entries are for 'Nutritional deficiency disorder' and are classified as 'Clinical Finding'.

Id	Code	Name	Class	RC	DRC	Domain	Vocabulary
435227	70241007	Nutritional deficiency disorder	Clinical Finding	7	744	Condition	SNOMED
3347111	70241007	Nutritional deficiency disorder	Clinical Finding	0	0	Condition	Nebraska Lexicon

3. Include all descendant concepts and click “Add to Concept Set”

This screenshot shows the same search results as the previous one, but with additional annotations. A red arrow points to the 'Vocabulary' column header, and another red arrow points to the 'Add To Concept Set' button at the bottom right. The bottom of the interface shows a 'Select Concept Set' dropdown menu set to 'New Concept Set (Repository)', a checkbox for 'Exclude' which is checked, a checkbox for 'Descendants' which is checked, a checkbox for 'Mapped' which is unchecked, and the 'Add To Concept Set' button.

Id	Code	Name	Class	RC
435227	70241007	Nutritional deficiency disorder	Clinical Finding	7
3347111	70241007	Nutritional deficiency disorder	Clinical Finding	0

4. View concept set and extract it as a csv using the “Included Concepts” tab



Details Related Concepts **Hierarchy** Record Counts

VIEW: Full Hierarchy Parents **Orphan Concept** Children

Parents

Show columns Copy CSV Show 25 entries Filter: Search...

Showing 1 to 1 of 1 entries

	Id	Code	Name	Class	RC	DRC	Distance	Domain	Vocabulary
<input checked="" type="checkbox"/>	435227	70241007	Nutritional deficiency disorder	Clinical Finding	7	744	1	Condition	SNOMED

Previous 1 Next

Left sidebar:

- Vocabulary: SNOMED (1)
- Class: Clinical Finding (1)
- Has Records: true (1)
- Has Descendant Records: true (1)

Select Concept Set: New Concept Set (Repository) + ☐ Exclude ☐ Descendants ☐ Mapped Add To Concept Set

Current Concept

Showing 1 to 1 of 1 entries

	Id	Code	Name	Class	RC	DRC	Distance	Domain	Vocabulary
<input checked="" type="checkbox"/>	4276360	65404009	Undernutrition	Clinical Finding	0	737		Condition	SNOMED

Select Concept Set: New Concept Set (Repository) + ☐ Exclude ☐ Descendants ☐ Mapped Add To Concept Set

Children

Show columns Copy CSV Show 25 entries Filter: Search...

Showing 1 to 7 of 7 entries

	Id	Code	Name	Class	RC	DRC	Distance	Domain	Vocabulary
<input checked="" type="checkbox"/>	433163	238107002	Deficiency of macronutrients	Clinical Finding	117	117	1	Condition	SNOMED
<input checked="" type="checkbox"/>	4029269	238111008	Deficiency of micronutrients	Clinical Finding	0	620	1	Condition	SNOMED
<input checked="" type="checkbox"/>	42538721	762496003	Acute malnutrition in infancy	Clinical Finding	0	0	1	Condition	SNOMED
<input checked="" type="checkbox"/>	42538723	762498002	Acute malnutrition in adolescence	Clinical Finding	0	0	1	Condition	SNOMED
<input checked="" type="checkbox"/>	42538722	762497007	Acute malnutrition in childhood	Clinical Finding	0	0	1	Condition	SNOMED

Previous 1 Next

Left sidebar:

- Vocabulary: SNOMED (7)
- Class: Clinical Finding (7)
- Has Records: false (6), true (1)

#### 4. Extract concept set as a csv

### Exercise 3

#### Single-Table Query

1. Create a new folder in your workspace and call it Session 3. Within this, create a new code workbook called "Malnutrition Conditions."
2. Import the concept table from the data catalog:
  1. Click "Import dataset"
  2. Navigate to the data catalog and find the folder "OMOP Concepts"
  3. Select concept and import into your code workbook
3. Select the concept table and select "new transform" then select "SQL code." Name the transform exercise\_3
4. Write a query to return the concept\_id for Nutritional deficiency using the vocabulary\_id "SNOMED." Save the results to a dataset by toggling "Save as dataset" and run the transform.

SQL code below (in white font, so highlight it):

#### Exercise 4:

##### Single-Table Query

1. Import the concept\_ancestor table from the data catalog:
  1. Click "Import dataset"
  2. Navigate to the data catalog and find the folder "OMOP Concepts"
  3. Select concept\_ancestor and import into your code workbook
2. Select the concept\_ancestor table and select "new transform" then select "SQL code." Name the transform exercise\_4
3. Write a query to return every descendant\_concept\_id for Nutritional deficiency using concept\_id returned in exercise 3. Save the results to a dataset by toggling "Save as dataset" and run the transform.

SQL code below (in white font, so highlight it):

#### Exercise 5:

##### Multiple-Table Query

1. Select the resulting transformation from exercise 4 (should be called exercise\_4) and select "new transform" then select "SQL code." Name the transform exercise\_5.
2. On the new exercise\_5 transformation, add an additional input for the dataset from for the concept table used in exercise 3.
3. Write a query to return the resulting set from exercise 4 using a JOIN with the concept table and only include those concepts that are standard concepts using the standard\_concept column (standard\_concept = 'S'). Save the results to a dataset by toggling "Save as dataset" and run the transform. (Note: don't be surprised when this is the same result as exercise 4 since we are sticking within one vocabulary)

#### Exercise 6:

##### Multiple-Table Query

1. Import the condition\_occurrence table from the data catalog:
  1. Click "Import dataset"
  2. Navigate to the data catalog and find the folder "De-Identified Data"
  3. Select condition\_occurrence and import into your code workbook
2. Select the condition\_occurrence table and select "new transform" then select "SQL code." Name the transform exercise\_6.

3. Add a second input on the new transformation using the resulting transform from exercise 5 (should be called exercise\_5). This can be done by clicking the “+” icon in the SQL transform or going to the “Inputs” tab at the bottom of the transform.
4. Select a data partner to be discussed in class and write a query to return every row in the condition\_occurrence table from that data partner with a matching condition\_occurrence\_concept\_id from the resulting set of exercise 4. You will need to filter on data\_partner\_id (either in the WHERE clause or in the JOIN). Only include malnutrition records prior to the start of the COVID-19 pandemic in the US (hint: condition\_occurrence\_start\_date prior to ‘2020-01-01’). Save the results to a dataset by Go through the entire process (exercise 1 through 6) with the parent code for rheumatoid arthritis (69896004):  
<https://snomedbrowser.com/Codes/Details/69896004>. Save the results in a new workbook and name it “Rheumatoid Arthritis.”
5. toggling “Save as dataset” and run the transform.

SQL code below (in white font, so highlight it):

## Homework!

1. Follow the steps above, but this time for the micronutrient deficiency SNOMED CT code you identified in exercise 2. SNOMED CT: 70241007. Save the results in a new workbook and name it “Micronutrient Deficiency.”
2. Go through the entire process (exercise 1 through 6) with the parent code for rheumatoid arthritis (69896004):  
<https://snomedbrowser.com/Codes/Details/69896004>. Save the results in a new workbook and name it “Rheumatoid Arthritis.”
3. Deploy the Logic Liaison All Patients template
  - a. Create a new code workbook and name it Logic Liaison All Patients
  - b. Skip the step to import a dataset
  - c. Import the template: [LOGIC LIAISON TEMPLATE] L2 and L3 Fact Tables: All Patients
  - d. Keep the template as is, but toggle all datasets to save
  - e. Run all transforms