**D12:** Find indications for a drug

This query is designed to extract indications associated with a drug. The query accepts a standard drug concept ID (e.g. as identified from query [G03](http://vocabqueries.omop.org/general-queries/g3)) as the input and returns all available indications associated with the drug.   
The vocabulary includes indications available from more than one source vocabulary:

* First Data Bank (FDB), defined mostly for clinical drug concepts
* NDF-RT defined mostly for ingredients

FDB also distinguishes indications based on their presence in the drug label (or package insert) as FDA approved or off-label. NDF-RT distinguishes between treatment or prevention indication. The segmentation is preserved in the vocabulary through separate concept relationships.

**Sample query:**

SELECT

r.relationship\_name as type\_of\_indication,

c.concept\_id as indication\_concept\_id,

c.concept\_name as indication\_concept\_name,

c.vocabulary\_id as indication\_vocabulary\_id,

vn.vocabulary\_name as indication\_vocabulary\_name

FROM

concept c,

vocabulary vn,

relationship r,

( -- collect all indications from the drugs, ingredients and pharmaceutical preps and the type of relationship

SELECT DISTINCT

r.relationship\_id rid,

r.concept\_id\_2 cid

FROM concept c

INNER JOIN ( -- collect onesie clinical and branded drug if query is ingredient

SELECT onesie.cid concept\_id

FROM (

SELECT

a.descendant\_concept\_id cid,

count(\*) cnt

FROM concept\_ancestor a

INNER JOIN (

SELECT c.concept\_id

FROM

concept c,

concept\_ancestor a

WHERE

a.ancestor\_concept\_id=19005968 AND

a.descendant\_concept\_id=c.concept\_id AND

c.vocabulary\_id=8

) cd on cd.concept\_id=a.descendant\_concept\_id

INNER JOIN concept c on c.concept\_id=a.ancestor\_concept\_id

WHERE c.concept\_level=2

GROUP BY a.descendant\_concept\_id

) onesie

where onesie.cnt=1

UNION -- collect ingredient if query is clinical and branded drug

SELECT c.concept\_id

FROM

concept c,

concept\_ancestor a

WHERE

a.descendant\_concept\_id=19005968 AND

a.ancestor\_concept\_id=c.concept\_id AND

c.vocabulary\_id=8

UNION -- collect pharmaceutical preparation equivalent to which NDFRT has reltionship

SELECT c.concept\_id

FROM

concept c,

concept\_ancestor a

WHERE

a.descendant\_concept\_id=19005968 AND

a.ancestor\_concept\_id=c.concept\_id AND

lower(c.concept\_class)='pharmaceutical preparations'

UNION -- collect itself

SELECT 19005968

) drug ON drug.concept\_id=c.concept\_id

INNER JOIN concept\_relationship r on c.concept\_id=r.concept\_id\_1 -- allow only indication relationships

WHERE

r.relationship\_id IN (21,23,155,156,126,127,240,241)

) ind

WHERE

ind.cid=c.concept\_id AND

r.relationship\_id=ind.rid AND

vn.vocabulary\_id=c.vocabulary\_id AND

sysdate BETWEEN c.valid\_start\_date AND c.valid\_end\_date;

**Input:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Example** | **Mandatory** | **Notes** |
| Drug Concept ID | 19005968 | Yes | Drugs concepts from RxNorm with a concept class of ‘Clinical drug or pack |
| As of date | Sysdate | No | Valid record as of specific date. Current date – sysdate is a default |

**Output:**

|  |  |
| --- | --- |
| **Field** | **Description** |
| Type\_of\_Indication | Type of indication, indicating one of the following:   * FDA approved/off-label indication * Treatment/prevention indication |
| Indication\_Concept\_ID | Concept ID of the therapeutic class |
| Indication\_Concept\_Name | Name of the Indication concept |
| Indication\_Vocabulary\_ID | Vocabulary the indication is derived from, expressed as vocabulary ID |
| Indication\_Vocabulary\_Name | Name of the vocabulary the indication is derived from |

**Sample output record:**

|  |  |
| --- | --- |
| **Field** | **Value** |
| Type\_of\_Indication | Has FDA-approved drug indication (FDB) |
| Indication\_Concept\_ID | 21003511 |
| Indication\_Concept\_Name | Cancer Chemotherapy-Induced Nausea and Vomiting |
| Indication\_Vocabulary\_ID | 19 |
| Indication\_Vocabulary\_Name | FDB Indication |