Inclusion Exclusion Query Generator for Truven Database

**Description:** A function to generate specified queries for various inclusion exclusion criteria. Based on time period that is searched in relative to index date or time period. Prior to use, two sandbox tables need to be generated and additional tables of claims can also be generated for faster querying:

1. Table with all ids, index dates (date of meeting primary condition) and dobyr. Colnames()=c(id, dobyr, index\_date)
2. Table of ICD or CPT codes that will allow patient to meet criteria along with the criteria they satisfy. Colnames()=c(criteria, code)
3. Tables of ALL claims of patients that meet primary condition (need to follow data model ‘Oh, MAWPS’, which is expanded on in Data Model section) \*working on adding facility header claims because a small percentage may be missed in outpatient\_services table.

**Time Period Option 1:**

Trial Start

Trial End

Pre-trial period

\*Inclusion Exclusion criteria can be searched for in here.

Index Date A

Index Date B

Index Date C

**Time Period Option 2:**

Trial Start

Trial End / M /

Trial period

\*Inclusion Exclusion criteria can be searched for in here and trial end will be last date in database.

**Usage:**

*inclusion\_exclusion\_dm(data\_source='sandbox\_claims', schema="sandbox\_truven", claims\_table='ac\_gc\_all\_claims', criteria\_type='normal', code\_type='icd10', code\_table="ac\_gc\_codes", code\_criteria='primary\_alt', patient\_id\_index\_table='ac\_gc\_cohort4', trial\_start='2017-03-01', criteria\_ref\_date="trial start", period\_type\_start="months", period\_length\_start=-12, period\_type\_end="months", period\_length\_end=0)*)

*inclusion\_exclusion(data\_source='truven', schema='commercial', schema2=NULL, criteria\_type='normal', code\_type='icd', code\_table='sandbox\_truven.ac\_gc\_codes', code\_criteria='primary\_alt',*

*patient\_id\_index\_table='sandbox\_truven.ac\_gc\_cohort4',*

*trial\_start='2017-03-01', criteria\_ref\_date="trial start", period\_type\_start="months", period\_length\_start=-12, period\_type\_end="months", period\_length\_end=0)*

**Arguments:**

|  |  |
| --- | --- |
| data\_source | String name of data source. “truven” or “sandbox\_claims”. In EU environment you can also use CPRD and IMS\_Germany data via claims method. IMS\_Germany can also do icd\_4, icd\_3, icd\_2, icd\_1 levels. |
| schema | String name of schema. For Truven: “commercial”, “medicare” or “medicaid”. For created claims tables use the name of the outpatient\_services table in sandbox. |
| schema2 | For created claims tables use the name of the inpatient\_services table in sandbox. |
| criteria\_type | String name of “normal” or “reverse”. Reverse for cases of ability to swallow and dysphagia codes are used. |
| code\_type | String name of type of code used to define criteria. “icd” or “cpt” |
| code\_table | String name of sandbox\_grwi table in which codes (ICD or CPT) of the criteria are listed. The codes are often given by medical coder. |
| code\_criteria | Criteria column in code\_table, used to narrow down which codes to include for exc/inc criteria. |
| patient\_id\_index\_table | String name of sandbox table in which primary condition is met, and index date is found. Index date in this case is date in which primary condition is met. |
| trial\_start | Date of trial start. Ex: ‘2017-03-01’. Currently date needs to be in this format. |
| criteria\_ref\_date | String name of reference period in which inclusion exclusion criteria will be searched for. “trial start” or “index date”. |
| period\_type\_start | String name of type of period that will be added/subtracted from *criteria\_ref\_date.* |
| period\_length\_start | Integer of number of *period\_type\_start* periods that will be added/subtracted from *criteria\_ref\_date.* Will also take sting value “ever” if no start date of period specified. |
| period\_type\_end | String name of type of period that will be added/subtracted from *criteria\_ref\_date.* |
| period\_length\_end | Integer of number of *period\_type\_end* periods that will be added/subtracted from *criteria\_ref\_date.*  Will also take sting value “ever” if no end date of period specified. |
| output\_type | String value of *‘count’*, or *‘redshift table’*. If no value is selected then it defaults to return a dataframe with ids, criteria and index\_date, if selected. |
| output\_tb\_nm | String value only applicable if *output\_type = ‘redshift table’.* Takes full name schema and table name. Ex: ‘sandbox\_truven.ac\_meno\_burden’ |

**Value:**

Final result will be query that will result in dataframe of enrolid/patient\_id depending on data source and a 0 or 1 for the criteria.

The interpretation of the table will be recognized as 1 will represent meeting the criteria, whether it be an exclusion or inclusion criteria. 0 will represent not meeting criteria.

Examples:

Inclusion Criteria: Patients with have metastasized cancer.

Query will find all patients from your primary condition table that have metastasized cancer in your specified time period. They will be marked with a ‘1’ in criteria column, as in meeting criteria.

Exclusion Criteria: Patients with diagnosed diabetes

Query will find all patients from your primary condition table that have diagnosed diabetes in your specified time period. They will be marked with a ‘1’ in criteria column, as in meeting criteria.

**Use:**

RWD Clinical trials.

**Run Time:** Depends on a lot of factors.

**Data Model:**

The purpose of the data model is to reduce querying of full datasetsto ensure efficient use of resources. To begin you find your initial cohort of patients based on a primary condition. Then pull all claims for those patients and make a long table.

Ex: Truven stores diagnoses codes in 4 columns (dx1, dx2, dx3, dx4).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Enrolid** | **Svcdate** | **Dx1** | **Dx2** | **Dx3** | **Dx4** |
| *1234* | *01/01/2017* | *Q234* | *R5678* | *G6543* | *M898* |

|  |  |  |
| --- | --- | --- |
| **id** | **date** | **code** |
| *1234* | *2017-01-01* | *Q234* |
| *1234* | *2017-01-01* | *R5678* |
| *1234* | *2017-01-01* | *G6543* |
| *1234* | *2017-01-01* | *M898* |

**Becomes…**

Notice:

1. Change in column headings
2. Updated date format