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Cohort Definitions using Atlas

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Abstract

A demonstration of the Atlas application, focusing on cohort definition. Topics include data source characterization review, vocabulary exploration, cohort criteria, inclusion criteria and inclusion rule impact analysis.

Introduction

Atlas is a recently developed tool in the OHDSI technology stack that incorporates features for vocabulary exploration, cohort definition, inclusion rule impact assessment, cohort characterization and datasource characterization. The purpose of this demonstration is to demonstrate the cohort definition process, starting with vocabulary exploration to identify concepts, concept set construction for use in cohort criteria, and review of inclusion rule impact analysis.

Presentation Syllabus

1. Using data source characterization to guide decision making about cohort definitions
2. Create concept sets to define code lists used in cohort criteria.
3. Create a simple cohort definition
4. Exclude people from cohort using Inclusion Rules
5. Demonstrate inclusion rule impact analysis

Example Screens

The screenshot shows the 'Concept Set Editor' interface. At the top, there are tabs for 'Concept Set Expression', 'Included Concepts' (42), 'Included Source Codes', and 'Export'. Below the tabs, the 'Name' field contains 'Rheumatoid Arthritis'. There is a 'Show 25 entries' dropdown and a 'Search:' field. Below that, it says 'Showing 1 to 2 of 2 entries' and 'Previous 1 Next'. A table lists two concepts:

Concept Id	Concept Code	Concept Name	Domain	Standard Concept Caption	Exclude	Descendants	Mapped
80809	69896004	Rheumatoid arthritis	Condition	Standard	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
81097	57160007	Felty's syndrome	Condition	Standard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Below the table, there is a legend for 'Classification' with three categories: Non-Standard (red square), Standard (blue square), and Standard (green square). At the bottom right, there are two buttons: 'Delete Concept Set' (red) and 'Close Concept Set' (blue).

Figure 1: Concept Set Editor

Primary Additional Inclusion All

Primary Criteria

People having any of the following: Add Primary Event Filters...

a condition occurrence of Rheumatoid Arthritis Add Add Filter... Delete Filter

✘ occurrence start is: Between 2003-01-01 and 2013-12-31

✘ with age Greater or Equal To 18

with observation at least 180 days prior and 180 days after index

Limit primary events to: all events per person.

Additional Criteria

For people matching the Primary Events, include:

People having all of the following criteria: Add New Criteria...

with at least 1 using all occurrences of: Delete Filter

a condition occurrence of Rheumatoid Arthritis Add Add Filter...

occurring between 1 days After and 180 days After index

and with at most 0 using all occurrences of: Delete Filter

a condition occurrence of Rheumatoid Arthritis Add Add Filter...

✘ occurrence start is: Before 2003-01-01

occurring between All days Before and All days After index

Remove Additional Filters

Figure 2: Cohort Definition Editor

Conclusion

Atlas is a very complex application bringing many different capabilities into a single application. The purpose of demonstrating the features is to inform the general OHDSI community about these tools, and help them begin producing their own study populations in their own environments.

References

1. Atlas: <http://www.ohdsi.org/web/atlas/#/home>