

Lab IX – Health Analytics II

Exercise 2.1 Incidence rates

Document a screenshot and the URL of your analysis

URL:

<http://gt-health-analytics-2.us-east-2.elasticbeanstalk.com/#/iranalysis/42>

Screenshots:

The screenshot shows the ATLAS web application interface for 'Incidence Rate Analysis #42'. The left sidebar contains navigation links: Home, Data Sources, Search, Concept Sets, Cohort Definitions, Characterizations, Cohort Pathways, Incidence Rates (highlighted), Profiles, Estimation, Prediction, Jobs, Configuration, and Feedback. The main panel has tabs for Definition, Concept Sets, Generation, and Utilities. Under 'Study Cohorts', there are two sections: 'Target Cohorts' with a list including '[Lab II] Statin Patients' and '[Lab II] Other Cholesterol Lowering Drug Patients', and 'Outcome Cohorts' with '[Lab II] Dementia Patients'. There are 'Add Target Cohort' and 'Add Outcome Cohort' buttons. The 'Time At Risk' section explains the time window relative to cohort start/end dates and includes input fields for start date, offset, and duration. A 'No study window defined' message with an 'Add Study Window' button is present. The 'Stratify Criteria' section states that optional stratification criteria can be provided to divide the population into unique groups.

This screenshot shows the results of the 'Incidence Rate Analysis #42'. The 'Generation' tab is active. It displays the target cohort as '[Lab II] Statin Patients' and the outcome cohort as '[Lab II] Dementia Patients'. A 'Generate' button and an 'Export Analysis to CSV' button are visible. Below this, a table summarizes the analysis for the source 'CMSDESynPUF100k':

Source Name	Persons	Cases	Proportion [+ -] per 1k persons	Time At Risk (years)	Rate [+ -] per 1k years	Started	Duration
CMSDESynPUF100k	26,986	4,588	170.01	38,296	119.80	02/18/2020 2:13 PM	00:00:11

Below the table, there is a section for 'CMSDESynPUF100k' with a 'Summary Statistics' table:

Persons	Cases	Proportion [+ -] per 1k persons	Time At Risk (years)	Rate [+ -] per 1k years
26,986	4,588	170.01	38,296	119.80

A 'Stratify Rule' table is also shown, but it is currently empty. A large blue rectangular area is visible on the right side of the results panel.

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Incidence Rate Analysis #42

[hxia40] Statins and Dementia

DefinitionConcept SetsGenerationUtilities

Showing target cohort: [Lab II] Other Cholesterol Lowering Drug P₁ and outcome cohort: [Lab II] Dementia Patients

GenerateExport Analysis to CSV

	Source Name	Persons	Cases	Proportion [+ -] per 1k persons	Time At Risk (years)	Rate [+ -] per 1k years	Started	Duration	
Rerun	CMSDESynPUF100k	1,278	152	118.94	1,318	115.33	02/18/2020 2:13 PM	00:00:11	Reports

CMSDESynPUF100k

	Persons	Cases	Proportion [+ -] per 1k persons	Time At Risk (years)	Rate [+ -] per 1k years
Summary Statistics:	1,278	152	118.94	1,318	115.33

Stratify Rule	N	Cases	Proportion [+ -] per 1k persons	Time At Risk (years)	Rate [+ -] per 1k years
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Close

Exercise 2.2 Characterizations

What is the age group with the greatest difference (Std Diff) between the Statin users and Other Cholesterol drug users?

40-44

What condition shows the greatest difference between Statin Users and Other Cholesterol drug users?

Pure hypercholesterolemia

Document a screenshot and the URL of your analysis

URL:

<http://gt-health-analytics-2.us-east-2.elasticbeanstalk.com/#/cc/characterizations/37/design>

Screenshots:

The screenshot displays the ATLAS Cohort Characterization interface. The left sidebar contains navigation links: Home, Data Sources, Search, Concept Sets, Cohort Definitions, Characterizations (selected), Cohort Pathways, Incidence Rates, Profiles, Estimation, Prediction, Jobs, Configuration, and Feedback. The main content area is titled 'Characterization #37' and shows a search bar with '[Inx40] Statin vs Other Cholesterol Drugs'. Below the search bar are tabs for Design, Executions, and Utilities. The 'Design' tab is active, showing a definition of cohort characterization and a table of cohort definitions. The table has columns for ID, Name, and Actions. It lists two cohorts: ID 2, '[Lab I] Statin Patients', and ID 3, '[Lab I] Other Cholesterol Lowering Drug Patients'. Below the cohort definitions is a section for 'Feature analyses' with an 'Import' button and a table of features. The feature table has columns for ID, Name, Description, and Actions. It lists three features: ID 10, 'Condition Era Any Time Prior', ID 71, 'Demographics Age Group', and ID 74, 'Demographics Gender'. The bottom of the interface shows the ATLAS logo and the OHDSI logo with the text 'join the journey'.

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Characterization #37

[Inx40] Statin vs Other Cholesterol Drugs

Design Executions Utilities

Cohort characterization is defined as the process of generating cohort level descriptive summary statistics from person level covariate data. Summary statistics of these person level covariates may be count, mean, sd, var, min, max, median, range, and quantiles. In addition, covariates during a period may be stratified into temporal units of time for time-series analysis such as fixed intervals of time relative to cohort_start_date (e.g. every 7 days, every 30 days etc.), or in absolute calendar intervals such as calendar-week, calendar-month, calendar-quarter, calendar-year.

Cohort definitions

Import

Show 10 entries

ID	Name	Actions
2	[Lab I] Statin Patients	Edit cohort Remove
3	[Lab I] Other Cholesterol Lowering Drug Patients	Edit cohort Remove

Showing 1 to 2 of 2 entries

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Feature analyses

Import

Show 10 entries

ID	Name	Description	Actions
10	Condition Era Any Time Prior	One covariate per condition in the condition_era table overlapping with any time prior to index.	Remove
71	Demographics Age Group	Age of the subject on the index date (in 5 year age groups)	Remove
74	Demographics Gender	Gender of the subject.	Remove

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Cohorts

[Lab II] Other Cholesterol Lowering Drug Patients, [Lab II] Statin

Analyses

3 items selected

Domains

Demographics, Condition

All prevalence covariates

ExportExport comparisonShow 10 entriesSearch:

Covariate	Explore	Concept ID	[Lab II] Other Cholesterol Lowering Drug Patients		[Lab II] Statin Patients		Std diff
			Count	Pct	Count	Pct	
Pure hypercholesterolemia	Explore	437827	672	46.12%	8,758	30.02%	-0.1845
Malaise and fatigue	Explore	439926	545	37.41%	6,927	23.74%	-0.1747
Type 2 diabetes mellitus	Explore	201826	874	59.99%	12,463	42.72%	-0.1703
Coronary arteriosclerosis in native artery	Explore	42872402	506	34.73%	6,427	22.03%	-0.1685
Hypothyroidism	Explore	140673	581	39.88%	7,678	26.32%	-0.1666
Degeneration of lumbosacral intervertebral disc	Explore	74132	324	22.24%	3,634	12.46%	-0.1660
Actinic keratosis	Explore	138825	297	20.38%	3,316	11.37%	-0.1600
Nuclear senile cataract	Explore	439297	331	22.72%	3,861	13.23%	-0.1581
Anemia	Explore	439777	526	36.10%	6,964	23.87%	-0.1579
Atrial fibrillation	Explore	313217	582	39.95%	7,921	27.15%	-0.1561

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DEMOGRAPHICS / Demographics Gender

ExportExport comparisonShow 10 entriesSearch:

Covariate	Explore	Concept ID	[Lab II] Other Cholesterol Lowering Drug Patients		[Lab II] Statin Patients		Std diff
			Count	Pct	Count	Pct	
MALE	N/A	8507	669	45.92%	12,162	41.69%	-0.0452
FEMALE	N/A	8532	788	54.08%	17,011	58.31%	0.0399

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Atrial fibrillation

Explore

313217

582

39.95%

7,921

27.15%

-0.1561

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DEMOGRAPHICS / Demographics Age Group

Export

Export comparison

Show10entries

Search:

Covariate	Explore	Concept ID	[Lab II] Other Cholesterol Lowering Drug Patients		[Lab II] Statin Patients		Std diff
			Count	Pct	Count	Pct	
40-44	N/A	0	9	0.62%	401	1.37%	0.0536
55-59	N/A	0	35	2.40%	1,071	3.67%	0.0515
80-84	N/A	0	225	15.44%	3,791	12.99%	-0.0459
45-49	N/A	0	26	1.78%	774	2.65%	0.0412
65-69	N/A	0	297	20.38%	5,613	19.24%	-0.0182
75-79	N/A	0	229	15.72%	4,853	16.64%	0.0161
35-39	N/A	0	16	1.10%	392	1.34%	0.0157
70-74	N/A	0	295	20.25%	5,664	19.42%	-0.0132
60-64	N/A	0	51	3.50%	1,085	3.72%	0.0081
90-94	N/A	0	46	3.16%	967	3.31%	0.0062

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CONDITION / Condition Era Any Time Prior

Export

Export comparison

Show10entries

Search:

Covariate	Explore	Concept ID	[Lab II] Other Cholesterol Lowering Drug Patients		[Lab II] Statin Patients		Std diff
			Count	Pct	Count	Pct	
Pure hypercholesterolemia	Explore	437827	672	46.12%	8,758	30.02%	-0.1845
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