Background

Characterisation in OHDSI: Defining Cohorts

- A cohort is a set of persons who satisfy one or more inclusion criteria for a duration of time

[COVID ID4 v1] Persons hospitalized with COVID-19, broad, no prior observation required

| Definition ⑦ | Concept Sets | Generation | Reporting | Export | Messages 12 |

Persons hospitalized with COVID-19, age>=18, no prior observation required, broad defined = (confirmed OR suspected associated hospitalization in prior 6 mo, and after 1Dec2019

Cohort Entry Events

Events having any of the following criteria:

a visit occurrence of [OHDSI Covid19 v1] Inpatient... ▾

✖ occurrence start is: After ⌄ 2019-12-01

Background

Characterisation in OHDSI: Cohort characterisation

- OHDSI approaches characterization through descriptive statistics of all conditions, drug and device exposures, procedures and other clinical observations that are present in the person's history.

Using FeatureExtraction

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2019-08-28

Contents

Characterisation in OHDSI: Incidence

Incidence rates and proportions are statistics that are used in public health to assess the occurrence of a new outcome in a population during a time-at-risk (TAR)
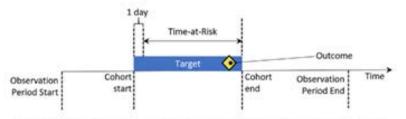

Figure 11.2: Person-level view of incidence calculation components. In this example, time-at-risk is defined to start one day after cohort start, and end at cohort end.

Our to do list

➢ Elucidating research questions

➢ Writing protocols

➢ Develop study packages

➢ Review results

➢ Disseminate results

Research questions

1. Characterizing adults hospitalized with influenza in 2009-2010 and 2014-2019, and COVID-19 in 2019-2020

2. Characterization of individuals tested for COVID-19

3. Characteristics and outcomes of COVID-19 in children

Research questions

1. Characterizing adults hospitalized with influenza in 2009-2010 and 2014-2019, and COVID-19 in 2019-2020

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Research questions

1. Characterizing adults hospitalized with influenza in 2009-2010 and 2014-2019, and COVID-19 in 2019-2020

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3. **Characteristics and outcomes of COVID-19 in children**

Protocols

Research questions →

D   Protocol template

1. Table of contents
2. List of abbreviations
3. Abstract
4. Amendments and Updates
5. Milestones
6. Rationale and Background
7. Study Objectives
   - Primary Hypotheses
   - Secondary Hypotheses
   - Primary Objectives
   - Secondary Objectives
8. Research methods
   - Study Design
   - Data Source(s)
   - Study population
   - Exposures
   - Outcomes
   - Covariates
9. Data Analysis Plan

Protocols

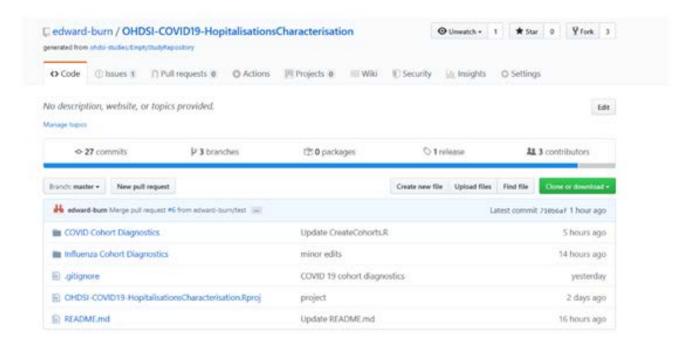Characterization and outcomes of individuals tested for COVID-19: evidence from the OHDSI network

Characterizing adults hospitalized with influenza in 2009-2010 and 2014-2019, and COVID-19 in 2019-2020: protocol for an OHDSI network study

Protocol

Characteristics and outcomes of COVID-19 in Children in 2019-2020: evidence from the OHDSI network

Preparing study packages

Characteristics of adults hospitalized with influenza

- 2009 vs 2014-2019

Characteristic	Proportion Target	Proportion Comparator	StdDiff
Age group			
15-19	1.8%	0.3%	-0.10
20-24	3.2%	0.9%	-0.11
25-29	5.0%	1.2%	-0.15
30-34	6.3%	1.6%	-0.17
35-39	6.4%	1.7%	-0.17
40-44	7.2%	1.8%	-0.18
45-49	8.5%	2.5%	-0.18
50-54	10.8%	3.7%	-0.19
55-59	9.4%	5.6%	-0.10
60-64	8.5%	7.2%	-0.03
65-69	7.3%	10.9%	0.08
70-74	6.1%	13.7%	0.17
75-79	6.3%	13.7%	0.17
80-84	10.4%	13.0%	0.05
85-89	2.7%	21.0%	0.38
90-94		1.2%	

Characteristics of adults hospitalized with influenza

- 2009 vs 2014-2019

Medical history: General				
Acute respiratory disease	89.8%		74.6%	-0.12
Attention deficit hyperactivity disorder	1.6%		0.8%	-0.05
Chronic liver disease	6.6%		3.8%	-0.09
Chronic obstructive lung disease	26.3%		42.4%	0.19
Crohn's disease	1.2%		0.8%	-0.03
Dementia	5.6%		16.5%	0.23
Depressive disorder	24.1%		28.6%	0.06
Diabetes mellitus	32.4%		42.9%	0.12
Gastroesophageal reflux disease	25.5%		36.5%	0.14
Gastrointestinal hemorrhage	9.2%		8.3%	-0.02
Human immunodeficiency virus infection	1.3%		0.6%	-0.05
Hyperlipidemia	47.0%		66.8%	0.19
Hypertensive disorder	61.5%		80.4%	0.16

Characteristics of adults hospitalized with COVID-19

Characteristic	Columbia University Irving Medical Center
N	1,076
Age (median [IQR])	67
Gender: female (%)	51.2
Charlson score (median [IQR])	6
Medical history: General	
Acute respiratory disease (%)	29.6
Chronic obstructive lung disease (%)	19.7
Gastroesophageal reflux disease (%)	24.2
Hyperlipidemia (%)	41.8
Hypertensive disorder (%)	60.4
Pneumonia (%)	32.2
Renal impairment (%)	39.7
Urinary tract infectious disease (%)	15.7
Atrial fibrillation (%)	20.4
Heart disease (%)	60.7
Heart failure (%)	30.1
Malignant neoplastic disease (%)	22.2

Characteristics of adults hospitalized with COVID-19

Characteristic	Columbia University Irving Medical Center
N	1,076
Medication use	
Anti-inflammatory and antirheumatic products (%)	33.2
Antithrombotic agents (%)	77.3
Beta blocking agents (%)	41.1
Calcium channel blockers (%)	36.3
Immunosuppressants (%)	16.1
Lipid modifying agents (%)	46.5

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