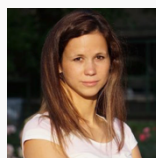




EMPOWERING EVIDENCE-BASED MEDICINE WITH SEMANTIC DATA ANALYSIS



Orsolya Bali
Vice President

obali@b2international.com

INTRODUCTION



B2i HEALTHCARE

B2i Healthcare is a boutique software engineering firm bootstrapped in 2005. We specialize in healthcare information standards, information exchange and analytics. Our Snow Owl® technology family is deployed in over 3,000 locations in 84+ countries worldwide.

SNOW OWL MQ

Snow Owl MQ is a scalable Big Data platform for query and analytics of structured electronic health records.



PROBLEM



DEMOGRAPHICS

Aging population with rising demand on health services especially for chronic diseases and complex treatments.

INTEROPERABILITY

Need for better Integration across wellness, health care, public health, occupational health, and social care.

INTERPRETATION

Data with interpretation will be key to tame rising healthcare cost as the availability of semantically rich electronic health records is growing.

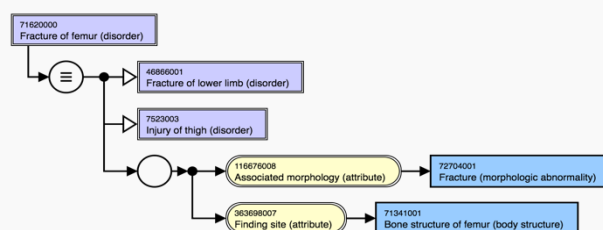


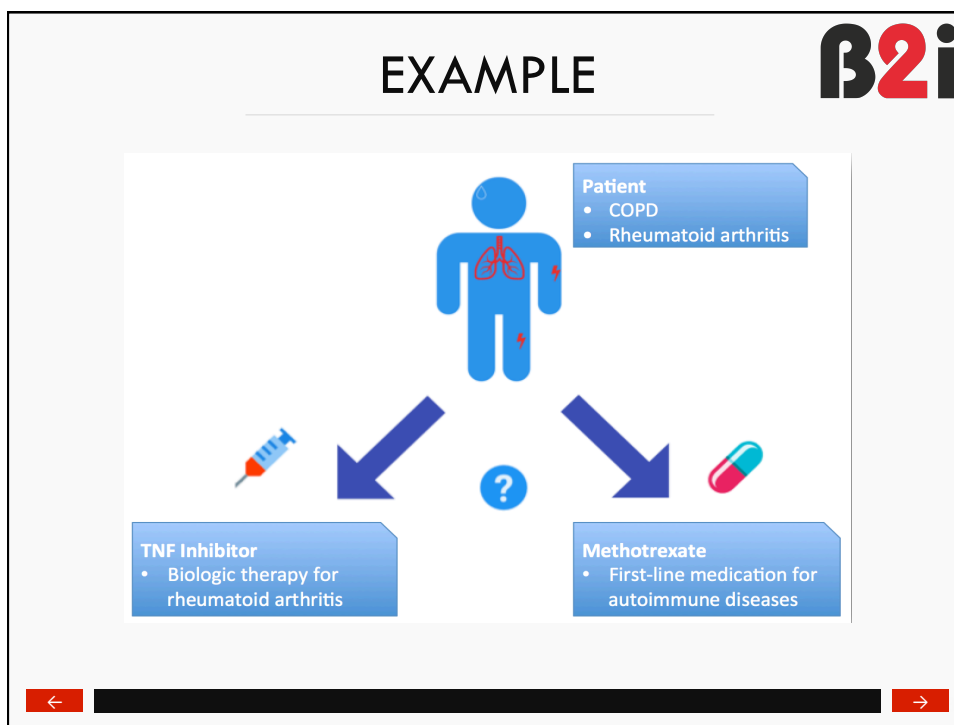
STANDARDS



To support interoperability between stakeholders various standards emerged.

For Health Information exchange, ontologies like SNOMED CT have proven to be able to encapsulate the semantics the best.





SELECT DIAGNOSIS CODES

Look up the group of relevant diseases by criteria.

Snow Owl MQ SNOMED CT v2016-01-30 orsolyaball

Dashboard **Workspace** **TERMINOLOGY** **ANALYTICS**

Search **Subsets** **Cohorts** **Notebooks**

SNOMED CT **OHDSI**

COPD

Match: **All** of the following rules:

Property name/value:

Status: ☐ Concepts ☒ Properties ☐ Descriptions

Property group contains:


Property name/value:

Status: ☐ Concepts ☒ Properties ☐ Descriptions

Type here to filter: 52 results << < Page: 1 / 1 > >>

Fully Specified Name	Status	Module
Chronic obstructive lung disease (disorder)	active	SNOMED CT core
Acute exacerbation of chronic obstructive airways disease (disorder)	active	SNOMED CT core
Pulmonary emphysema (disorder)	active	SNOMED CT core

BUILD PATIENT COHORTS



Find patients who share the same clinical characteristics as yours, but already tried the medications you are considering to prescribe.

Snow Owl MQ

Dashboard

Workspace

TERMINOLOGY

Browse

Search

Subsets

ANALYTICS

Cohorts

Notebooks

Type here to find concepts

COPD patients on methotrexate - after

SNOMED CT v2016-01-30 orsolyabali

COPD patients on methotrexate - after

10 results

New Save Run

> Demographics

is

-

+

> Primary exposure (T0)

Match All of the following criteria:

include

Q Methotrexate

-

+

> Inclusion - exclusion criteria

Match All of the following criteria:

include

Q Chronic bronchitis or COPD

lookback period: add number days before T0 and add number days after T0

-

+

include

Q Infective pneumonia

lookback period: 0 days before T0 and 10000 days after T0

-

+

> Outcome variables

Q Select subset

followup period: add number days after last exposure


-

+

←

→

VIEW RESULTS



Inspect results for further clues...

COPD patients on TNF inhibitor

Results - COPD patients on TNF inhibitor

614753 Profile

All Filtered

Reset

Sex: FEMALE

Year of birth: 1942

Observation period: 2003-08-02 - 2005-02-23

Condition

Drug

Procedure

Chronic obstructive lung disease

Start date: 2004-04-06

End date: 2004-04-06

October

2004

April

July

October

2005

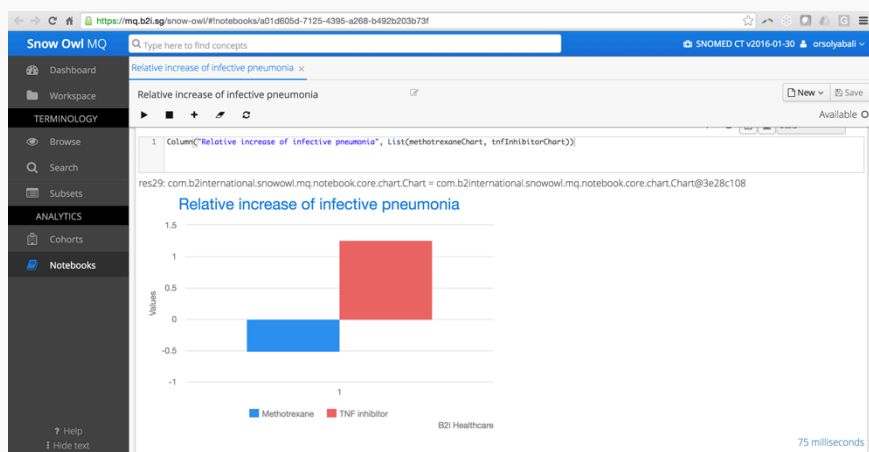
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ANALYZE RESULTS



Calculate the relative increase of infectious pneumonia occurrences for each considered medication, compare r



CONCLUSIONS



With our Snow Owl MQ product we can retrieve the semantic knowledge that is encapsulated in the medical records.

Our queries are executed in real-time and the result can be further analyzed on our Big Data cluster.



THANK YOU

for your attention!

