CDM Update Process

OHDSI Community Call
July 26, 2022 • 11 am ET
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 2</td>
<td>Building A Community Within Your Organization</td>
</tr>
<tr>
<td>Aug. 9</td>
<td>Around The Asia-Pacific (APAC) Community</td>
</tr>
<tr>
<td>Aug. 16</td>
<td>OHDSI “Speed Dating”</td>
</tr>
<tr>
<td>Aug. 23</td>
<td>Workgroup Updates</td>
</tr>
<tr>
<td>Aug. 30</td>
<td>EHDEN Academy/EHDEN Portal</td>
</tr>
</tbody>
</table>
# Upcoming OHDSI Community Calls

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 2</td>
<td>Building A Community Within Your Organization</td>
</tr>
<tr>
<td>Aug. 9</td>
<td>Around The Asia-Pacific (APAC) Community</td>
</tr>
<tr>
<td>Aug. 16</td>
<td>OHDSI “Speed Dating”</td>
</tr>
<tr>
<td>Aug. 23</td>
<td>Workgroup Updates</td>
</tr>
<tr>
<td>Aug. 30</td>
<td>EHDEN Academy/EHDEN Portal</td>
</tr>
</tbody>
</table>
Aug. 2 Community Call: Building Organizational Support Within Your Community

Greg Klebanov
CTO/SVP • Odysseus Data Services, Inc.

Ajit Londhe
Senior Manager, Center for Observational Research • AMGEN

Keran Moll
Director, HEOR Real World Data & Analytics Research • Regeneron

Paul Nagy
Program Director for Graduate Training in Biomedical Informatics and Data Science • Johns Hopkins University
Three Stages of The Journey

Where Have We Been?
Where Are We Now?
Where Are We Going?

Advancing Interoperability of Patient-level Social Determinants of Health Data to Support COVID-19 Research

Including social determinants of health (SDoH) data in health outcomes research is essential for studying the sources of healthcare disparities and developing strategies to mitigate stressors. In this report, we describe a pragmatic design and approach to explore the encoding needs for transmitting SDoH screening tool responses from a large safety-net hospital into the National Covid Cohort Collaborative (3NC) OMOP dataset. We provide a stepwise account of designing data mapping and ingestion for patient-level SDoH and summarize the results of screening. Our approach demonstrates that sharing of these important data - typically stored as non-standard, EHR vendor specific codes - is feasible. As SDoH screening gains broader use nationally, the approach described in this paper could be used for other screening instruments and improve the interoperability of these important data.
OHDSI Shoutouts!

OHDSI Shoutouts!

Any shoutouts from the community? Please share and help promote and celebrate OHDSI work!

Have a study published? Please send to sachson@ohdsi.org so we can share during this call and on our social channels. Let’s work together to promote the collaborative work happening in OHDSI!
Three Stages of The Journey

Where Have We Been?
Where Are We Now?
Where Are We Going?
## Upcoming Workgroup Calls

<table>
<thead>
<tr>
<th>Date</th>
<th>Time (ET)</th>
<th>Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday</td>
<td>3 pm</td>
<td>OMOP CDM Oncology Outreach/Research Subgroup</td>
</tr>
<tr>
<td>Wednesday</td>
<td>11 am</td>
<td>Open-Source Community</td>
</tr>
<tr>
<td>Wednesday</td>
<td>12 pm</td>
<td>Latin America</td>
</tr>
<tr>
<td>Wednesday</td>
<td>12 pm</td>
<td>FHIR and OMOP Terminologies Subgroup (ZOOM)</td>
</tr>
<tr>
<td>Wednesday</td>
<td>7 pm</td>
<td>Medical Imaging</td>
</tr>
<tr>
<td>Thursday</td>
<td>10 am</td>
<td>Data Quality Dashboard</td>
</tr>
<tr>
<td>Thursday</td>
<td>12 pm</td>
<td>FHIR and OMOP Oncology Subgroup</td>
</tr>
<tr>
<td>Friday</td>
<td>9 am</td>
<td>GIS-Geographic Information System</td>
</tr>
<tr>
<td>Monday</td>
<td>10 am</td>
<td>Healthcare Special Interest Group</td>
</tr>
<tr>
<td>Tuesday</td>
<td>10 am</td>
<td>Common Data Model</td>
</tr>
</tbody>
</table>

[www.ohdsi.org/upcoming-working-group-calls](http://www.ohdsi.org/upcoming-working-group-calls)
The next Asia-Pacific (APAC) community call takes place Thursday, July 28 (July 27 in the Western Hemisphere) and will focus on two of the ongoing APAC network studies: **Comparison of mortality, morbidities & healthcare resources utilization between patients with and without a diagnosis of COVID-19**, and **Real world safety of treatments for multiple sclerosis**.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 14</td>
<td>APAC Study Quarterly Updates, Part 1</td>
</tr>
<tr>
<td>July 28</td>
<td>APAC Study Quarterly Updates, Part 2</td>
</tr>
<tr>
<td>Aug. 11</td>
<td>Working Group Updates #3</td>
</tr>
<tr>
<td>Aug. 25</td>
<td>Working Group Updates #4</td>
</tr>
<tr>
<td>Sept. 8</td>
<td>EU Chapter Sharing Session, Part 1</td>
</tr>
<tr>
<td>Sept. 22</td>
<td>EU Chapter Sharing Session, Part 2</td>
</tr>
</tbody>
</table>
OHDSI APAC Symposium

2022 OHDSI APAC Symposium Overview

November 12-13, 2022
Hosted in Taiwan by Taipei Medical University

ohdsi.org/APAC
Titan Awards Nominations Are Open

Nominations for the 2022 Titan Awards are now OPEN! Please use the form below to nominate an individual or institution for a top contribution to the OHDSI community this past year!

2022 Nomination Form

To recognize OHDSI collaborators (or collaborating institutions) for their contributions towards OHDSI’s mission, the OHDSI Titan Awards were introduced at the 2018 Symposium and have been handed out at the U.S./Global Symposium each year since. Annually, community members are invited to nominate individuals or institutions they feel have made significant contributions towards advancing OHDSI’s mission, vision and values. Once nominations are submitted, the OHDSI Titan Award Committee will select the award winners. Award winners will be announced before the networking reception at the annual symposium. The award categories, as well as all previous recipients, can be found below.

Titan Award for Data Standards – to recognize extraordinary contributions by an individual, organization, or team in development or evaluation in community data standards, including OMOP common data model and standardized vocabularies

- 2021 – Maxim Moinat, The Hyve-Inamur University Medical Center
- 2020 – Clive Blackeley, Janisins Research and Development
- 2019 – Oncology Workgroup (Michael Gurley, Northwestern Univ.; Rimma Belenkyaya, Memorial Sloan Kettering Cancer Center; Robert Miller, Tufa, CTI)
- 2018 – Vocabularies Team (Christian Reich, IQVIA; Anna Ostropoulos, Columbia Univ.; Dmitry Dymshyts, Odysseyus Data Services)

ohdsi.org/titan-awards
Peter Rijnbeek and his team at Erasmus University is hiring a Secretary for the Darwin EU Coordination Center and Department of Medical Informatics.

This position will be responsible for the day-to-day administrative tasks as the personal assistant for Peter Rijnbeek, and will also work as senior secretary for the Department of Medical Informatics.

The application deadline is Aug. 14.
Assistant professor Brianne Oliveri-Mui announced an opening for a Postdoctoral Fellow to work at the Roux Institute at Northeastern University.

If you are interested, please reach out to Dr. Mui at b.mui@northeastern.edu.

The link and more information will be available on the community calls page.
Job Openings

Professor Dani Prieto-Alhambra and his team at the University of Oxford will be hiring two Research Assistants in Health Data Sciences.

The application deadline is August 8, 2022.

The link and more information will be available on the community calls page.
Registration is OPEN for #OHDSI2022!

The 2022 OHDSI Symposium will be held Oct. 14-16 at the Bethesda North Marriott Hotel & Conference Center.

www.ohdsi.org/ohdsi2022symposium
The OHDSI Journey: Where Are We Going?
Patrick Ryan

OMOP Common Data Model and Vocabulary
Clair Blacketer

ETL – A Source Database Into OMOP CDM
Melanie Philofsky

Creating Cohort Definitions
Asieh Golozar

Phenotype Evaluations
Gowtham Rao

Characterization
Kristin Kostka

Estimation
Martijn Schuemie

Prediction
Jenna Reps

The OHDSI Journey: Where Do We Go From Here?
George Hripcsak
# Workgroup Activities

**Saturday, Oct. 15, and Sunday, Oct. 16**

<table>
<thead>
<tr>
<th>Saturday, Oct 15</th>
<th>End Time (ET)</th>
<th>HADES Hack-a-thon: Part 1</th>
<th>Oncology WG</th>
<th>FHIR-OMOP: Terminologies Subgroup, Part 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Time (ET)</td>
<td></td>
<td></td>
<td></td>
<td>FHIR-OMOP: Increasing the Value of Data Through a Rich Set of Attributes</td>
</tr>
<tr>
<td>800</td>
<td>900</td>
<td>Tutorial</td>
<td>Lunch</td>
<td>FHIR-OMOP: Data Model Harmonization Subgroup</td>
</tr>
<tr>
<td>900</td>
<td>1000</td>
<td></td>
<td>Lunch</td>
<td>FHIR-OMOP: Oncology Subgroup</td>
</tr>
<tr>
<td>1000</td>
<td>1100</td>
<td></td>
<td>Lunch</td>
<td>FHIR-OMOP: Terminologies Subgroup, Part 2</td>
</tr>
<tr>
<td>1100</td>
<td>1200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td>1300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1300</td>
<td>1400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1400</td>
<td>1500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1500</td>
<td>1600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td>1700</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1700</td>
<td>1800</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1800</td>
<td>1900</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sunday, Oct 16</th>
<th>End Time (ET)</th>
<th>All-Hands Workgroup Meeting</th>
<th>Lunch</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>800</td>
<td>900</td>
<td></td>
<td>Lunch</td>
<td>CDM and Data Quality</td>
</tr>
<tr>
<td>900</td>
<td>1000</td>
<td></td>
<td>Lunch</td>
<td>Health Equity</td>
</tr>
<tr>
<td>1000</td>
<td>1100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1100</td>
<td>1200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td>1300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1300</td>
<td>1400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1400</td>
<td>1500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1500</td>
<td>1600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td>1700</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hotel Block Rooms Available

Rooms Available for Oct. 13 and Oct. 14

Welcome to 2022 OHDSI Symposium

Book your hotel room for the event at special rates, available here on an exclusive basis.

Make Reservation

Manage Existing Reservation
2022 OHDSI Symposium
Oct. 14-16 • Bethesda North Marriott Hotel & Conference Center

We are thrilled to announce that registration for the 2022 OHDSI Symposium, which will be held Oct. 14-16 at the Bethesda North Marriott Hotel & Conference Center, is now open!

It is so exciting to bring our community back together this fall. Our collaborative showcase will return; please click the link to see how you can take part in our poster presentations, software demos and lightning talks. The full agenda for our conference is still being developed, so please continue to check the OHDSI website (www.ohdsi.org) and our social platforms for updates as we plan for the 2022 Symposium.

The main conference will be held Friday, Oct. 14. A full-day tutorial will be held Saturday, Oct. 15, while other community activities will be held both Oct. 15 and Oct. 16.

Symposium Registration Details
Friday, Oct. 14 – Main Conference

Registration Fee: $900

* The fee is an open and inclusive amount; if the registration fee represents a burden to you, please contact symposium@ohdsi.org.

Should you need to make changes or cancel your registration ticket, please follow the instructions you will receive on your Eventbrite confirmation upon registration completion. Please note that tickets can be refunded up until 7 days prior to the event. Eventbrite fees are not refundable.

Register For The Main Conference • Friday, Oct. 14

ohdsi.org/ohdsi2022symposium
Mapping of complex constructs in OMOP CDM

LEAD: Alexander Davydov

BACKGROUND
There is a growing need in the OMOP community for the creation of new types of data. Unlike the tabular electronic health record data in administrative claims data, this type of data is no longer organized in arbitrary columns. It involves a large number of variables that are not always exactly the same in the OMOP, such data can be handled in the MEASUREMENT and OBSERVATION tables. The variable selection becomes the main concern in this case and the challenge lies in the value of attributes.

METHODS AND RESULTS
To address this challenge, we developed a new type of data organization, which changes the structure of the database to store complex constructs in the OMOP CDM. This approach allows for the easy identification and manipulation of complex constructs.

This week, we will focus on the mapping of complex constructs in OMOP CDM. The presentation will cover the mapping of variables, data types, and relationships.

This time we really need your input.

MONDAY

Mapping of complex constructs in OMOP CDM

LEAD: Alexander Davydov
Implementing the OHDSI Community Approach to Phenotype a Complex Medical Condition in European Primary Care Data

Authors: Kristin Kostka1, Even Minty1, Antonella Delmastro1, Barrack Omolo1, Marijke Catala1, Edward Bum1,2, Daniel Photo-Atahemera1,2, Anna M. Jockel1
Affiliations: 1Pharmacy of Science Epidemiology, Center for Medicine in Animals, Faculty of Veterinary Medicine, University of Leipzig, Germany; 2Department of Medical Informatics, German Research Centre for Environmental Health, Munich, Germany.

Introduction

Background: "Post-acute COVID-19 syndrome" in "long COVID" are persistent symptoms that continue for weeks to months following the acute COVID-19 disease. As the COVID-19 pandemic continues, long COVID poses a significant public health issue with potential to inflict mass disability. Clinicians have reported variability in the characteristics of symptoms associated with long COVID, varying from fatigue, or the more characteristic symptoms associated with long COVID. defining and measuring this issue at scale.

Methods

Engaging the Community: We partnered with the OHDSI Phenotype Development & Evaluation Working Group to test a longitudinal COVID-phenotyping habilitation on December 1, 2021. In the habilitation, we utilized the "PhenomeBank" system to find the PhenomeBank cohort (n = 320,691) with a COVID-19 condition & blood draw. We assembled concept sets for the 23 individual symptoms using a consistent process (Figure 1). Each concept set expression was mapped through use of PROGRESS, Phenoscape, and available literature.

Conclusion

The OHDSI community approach to phenotyping provides a robust framework to evaluating a complex medical condition, such as long COVID. We observed differences in cohorts based on logic changes in prior follow-up time, time for symptom persistence, gender, and age. Our findings can help researchers understand the impact of re-rosetting clinical logic; on describing and measuring long COVID at scale.

Contact: kristin.kostka@edrime.de

TUESDAY

Implementing the OHDSI Community Approach to Phenotype a Complex Medical Condition in European Primary Care Data
Lead: Kristin Kostka
The use of data-driven vs. clinical based propensity score in COVID-19 vaccine safety research: Association between thrombosis with thrombocytopenia syndrome (TTS) or thrombotic events (TE), and COVID-19 vaccines

**Lead:** Xintong Li

**WEDNESDAY**

---

**INTRO**

- Propensity score (PS) have been widely used in observational studies to reduce confounding by indication.
- Clinical knowledge-based vs. data-driven PS

**METHODS**

- Data source: OHDSI Adverse Event (AE) data from 5 European countries: France, Germany, Netherlands, Spain, and the United Kingdom and two from the United States.
- Target: thrombotic events
- Comparator: mRNA vs. viral vectored COVID-19 vaccines
- Analysis:
  - mPS: clinically driven
  - Large-scale PS: data-driven, L1 logistic regression
  - 1 to 4 matching

**RESULTS**

- Before and after matching DMD
- Systematic error using negative control outcomes

**CONCLUSIONS**

- Index month and age have high impact for both clinical-based and data-driven propensity scores.
- Clinical-based PS balanced on selected variables, but not other covariates.
- Large-scale PS: all covariates were well-balanced after matching.
- Performance on controlling systematic errors were similar.
- Core of large-scale computing time (3 minutes vs. 6 hours on a 230,000 down sampling cohort).

---

**Figure 1:** Propensity score distribution correlates with top 5 absolute values of Beta, 2nd dose Vaccine and Controls

**Figure 2:** Before and after matching DMD, 2nd dose Vaccine and Controls, gender: UK CPRD data

**Figure 3:** Propensity score distribution correlates with top 5 absolute values of Beta, 2nd dose Vaccine and Controls

**Figure 4:** Balance of L1 variables before and after matching, 2nd dose Vaccine and Controls, UK CPRD data
Norwegian registries onto OMOP Common Data Model: mapping challenges and opportunities for pregnancy studies

Lead: Elmir Hurley

We enrich pregnancy data in OMOP format

OHDSI tools were effectively utilized

No standard concepts for important pregnancy related variables

Pregnancy extension table for future version of the OMOP CDM?

Figure 1: Five Norwegian registries mapped onto OMOP at the University of Oslo, Norway.

Figure 2: Overview of mapping procedure

Figure 3: Data quality assessment on MBRN

List of OMOP tables:
- Person
- Fact_relationship
- Death
- Provider
- Visit_occurrence
- Condition_occurrence
- Procedure_occurrence
- Drug_exposure
- Measurement
- Observation
- Observation_period

RESULTS
- 5,908,030 individuals (2018-2020)
  - 720,765 pregnancies
  - 452,811 mothers
  - 448,711 fathers
  - 695,569 children
- 237 non-standard codes were mapped to standard concepts:
  - 67 pregnancy related codes
  - 48 specialty related codes
  - 48 communicable disease related codes
  - 46 vaccine related codes
  - 27 drug related codes
  - 5 procedure related codes
- 40 custom concepts were introduced to accommodate terminologies that were not supported by OMOP vocabularies. 36/40 codes provide vital information about pregnancies:
  - Previous miscarriages before 12 weeks of gestation
  - Early pre-eclampsia
  - Sometimes smoking before pregnancy
  - Daily smoking at the start of pregnancy
  - Hemorrhage more than 1500ml during delivery

Study team:
- Nhung Trinh, Jared Houghalting, Fabian LM Bernal, Elmir Hurley, Emma Gasqieru, Lars Halvorsen, Heidi ME Nordeng
Infectious disease can be screened and detected through natural language processing after de-identifying patient health information.
Where Are We Going?

Any other announcements of upcoming work, events, deadlines, etc?
Three Stages of The Journey

Where Have We Been?
Where Are We Now?
Where Are We Going?