Collaborator Showcase Honorees

OHDSI Community Call
Nov. 14, 2023 • 11 am ET

Upcoming Community Calls

Date	Topic
Nov. 14	Collaborator Showcase Honorees
Nov. 21	Showcase Software Demos
Nov. 28	TBA
Dec. 5	Recent Publications
Dec. 12	Happy Birthday OHDSI! Where Have We Come In 10 Years, and in 12 Months?
Dec. 19	Holiday-Themed Goodbye to 2023!

Three Stages of The Journey

Where Have We Been?

Where Are We Now?

Where Are We Going?

OHDSI Shoutouts!

Congratulations to the team of **Erica Voss, Clair Blacketer, Sebastiaan van Sandijk, Maxim Moinat, Michael Kallfelz, Michel van Speybroeck, Daniel Prieto-Alhambra, Martijn Schuemie, and Peter Rijnbeek** on the publication of **European Health Data & Evidence Network—learnings from building out a standardized international health data network** in *JAMIA*.

Journal of the American Medical Informatics Association, 2023, 1–11
https://doi.org/10.1093/jamia/ocad214
Research and Applications

AMIA OXFORD

Research and Applications

European Health Data & Evidence Network—learnings from building out a standardized international health data network

Erica A. Voss, MPH[*,1,2,3], Clair Blacketer, MPH[1,2,3], Sebastiaan van Sandijk, MSc[1,4], Maxim Moinat, MSc[1,2], Michael Kallfelz, MD[1,4], Michel van Speybroeck, MSc[3], Daniel Prieto-Alhambra, PhD[1,2,5], Martijn J. Schuemie, PhD[1,3,6], Peter R. Rijnbeek, PhD[1,2]

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Abstract

Objective: Health data standardized to a common data model (CDM) simplifies and facilitates research. This study examines the factors that make standardizing observational health data to the Observational Medical Outcomes Partnership (OMOP) CDM successful.

Materials and methods: Twenty-five data partners (DPs) from 11 countries received funding from the European Health Data Evidence Network (EHDEN) to standardize their data. Three surveys, DataQualityDashboard results, and statistics from the conversion process were analyzed qualitatively and quantitatively. Our measures of success were the total number of days to transform source data into the OMOP CDM and participation in network research.

Results: The health data converted to CDM represented more than 133 million patients. 100%, 88%, and 84% of DPs took Surveys 1, 2, and 3. The median duration of the 6 key extract, transform, and load (ETL) processes ranged from 4 to 115 days. Of the 25 DPs, 21 DPs were considered applicable for analysis of which 52% standardized their data on time, and 48% participated in an international collaborative study.

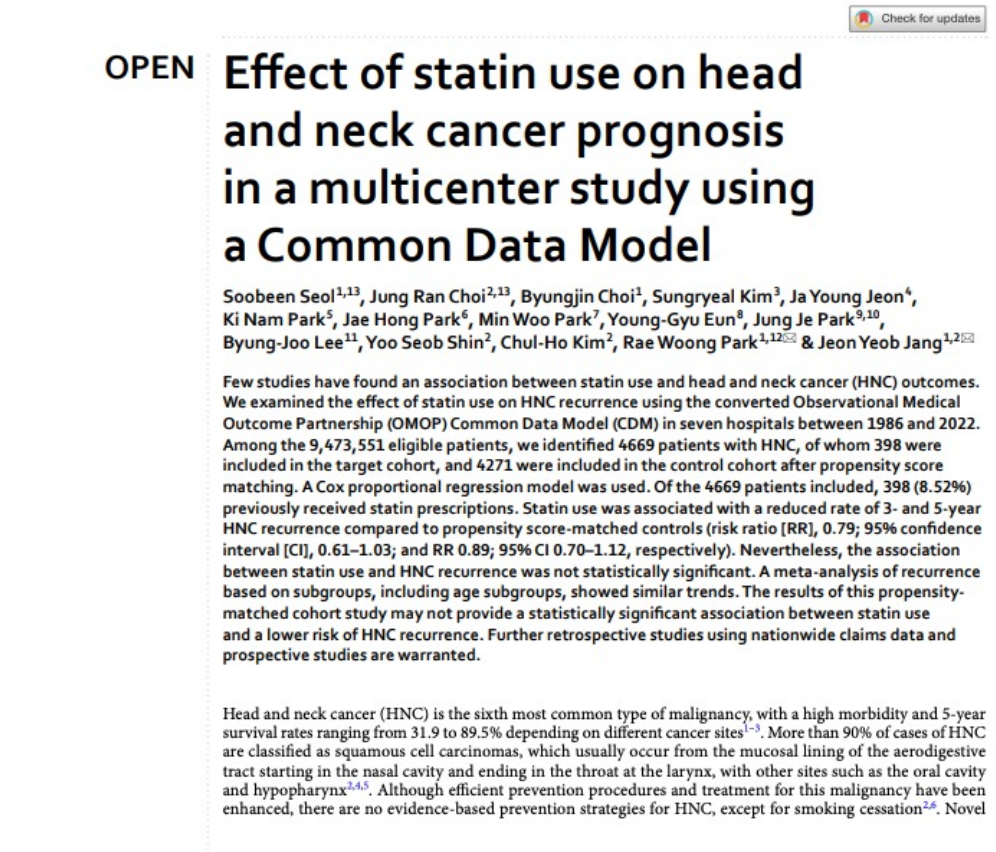
Discussion: This study shows that the consistent workflow used by EHDEN proves appropriate to support the successful standardization of observational data across Europe. Over the 25 successful transformations, we confirmed that getting the right people for the ETL is critical and vocabulary mapping requires specific expertise and support of tools. Additionally, we learned that teams that proactively prepared for data governance issues were able to avoid considerable delays improving their ability to finish on time.

Conclusion: This study provides guidance for future DPs to standardize to the OMOP CDM and participate in distributed networks. We demonstrate that the Observational Health Data Sciences and Informatics community must continue to evaluate and provide guidance and support for what ultimately develops the backbone of how community members generate evidence.

Key words: OMOP common data model; observational data; data standardization.

OHDSI Shoutouts!

Congratulations to the team of **Soobeen Seol, Jung Ran Choi, Byungjin Choi, Sungryeal Kim, Ja Young Jeon, Ki Nam Park, Jae Hong Park, Min Woo Park, Young-Gyu Eun, Jung Je Park, Byung-Joo Lee, Yoo Seob Shin, Chul-Ho Kim, Rae Woong Park and Jeon Yeob Jang** on the publication of **Effect of statin use on head and neck cancer prognosis in a multicenter study using a Common Data Model** in *Scientific Reports*.



scientific reports

Check for updates

OPEN

Effect of statin use on head and neck cancer prognosis in a multicenter study using a Common Data Model

Soobeen Seol[1,13], Jung Ran Choi[2,13], Byungjin Choi[1], Sungryeal Kim[3], Ja Young Jeon[4], Ki Nam Park[5], Jae Hong Park[6], Min Woo Park[7], Young-Gyu Eun[8], Jung Je Park[9,10], Byung-Joo Lee[11], Yoo Seob Shin[2], Chul-Ho Kim[2], Rae Woong Park[1,12]✉ & Jeon Yeob Jang[1,2]✉

Few studies have found an association between statin use and head and neck cancer (HNC) outcomes. We examined the effect of statin use on HNC recurrence using the converted Observational Medical Outcome Partnership (OMOP) Common Data Model (CDM) in seven hospitals between 1986 and 2022. Among the 9,473,551 eligible patients, we identified 4669 patients with HNC, of whom 398 were included in the target cohort, and 4271 were included in the control cohort after propensity score matching. A Cox proportional regression model was used. Of the 4669 patients included, 398 (8.52%) previously received statin prescriptions. Statin use was associated with a reduced rate of 3- and 5-year HNC recurrence compared to propensity score-matched controls (risk ratio [RR], 0.79; 95% confidence interval [CI], 0.61–1.03; and RR 0.89; 95% CI 0.70–1.12, respectively). Nevertheless, the association between statin use and HNC recurrence was not statistically significant. A meta-analysis of recurrence based on subgroups, including age subgroups, showed similar trends. The results of this propensity-matched cohort study may not provide a statistically significant association between statin use and a lower risk of HNC recurrence. Further retrospective studies using nationwide claims data and prospective studies are warranted.

Head and neck cancer (HNC) is the sixth most common type of malignancy, with a high morbidity and 5-year survival rates ranging from 31.9 to 89.5% depending on different cancer sites[1–3]. More than 90% of cases of HNC are classified as squamous cell carcinomas, which usually occur from the mucosal lining of the aerodigestive tract starting in the nasal cavity and ending in the throat at the larynx, with other sites such as the oral cavity and hypopharynx[2,4,5]. Although efficient prevention procedures and treatment for this malignancy have been enhanced, there are no evidence-based prevention strategies for HNC, except for smoking cessation[2,6]. Novel

OHDSI Shoutouts!

Congratulations to the team of **Jung-Yeon Choi, Sooyoung Yoo, Wongeun Song, Seok Kim, Hyunyoung Baek, Jun Suh Lee, Yoo-Seok Yoon, Seonghae Yoon, Hae-Young Lee, Kwang-Il Kim** on the publication of **Development and Validation of a Prognostic Classification Model Predicting Postoperative Adverse Outcomes in Older Surgical Patients Using a Machine Learning Algorithm: Retrospective Observational Network Study** in the *Journal of Medical Internet Research*.

JOURNAL OF MEDICAL INTERNET RESEARCH Choi et al

Original Paper

Development and Validation of a Prognostic Classification Model Predicting Postoperative Adverse Outcomes in Older Surgical Patients Using a Machine Learning Algorithm: Retrospective Observational Network Study

Jung-Yeon Choi[1*], MD; Sooyoung Yoo[2*], PhD; Wongeun Song[2,3*]; Seok Kim[2]; Hyunyoung Baek[2]; Jun Suh Lee[4], MD; Yoo-Seok Yoon[5,6], MD; Seonghae Yoon[7], MD; Hae-Young Lee[8,9], MD; Kwang-il Kim[1,9], MD

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Abstract

Background: Older adults are at an increased risk of postoperative morbidity. Numerous risk stratification tools exist, but effort and manpower are required.

Objective: This study aimed to develop a predictive model of postoperative adverse outcomes in older patients following general

OHDSI Shoutouts!

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OHDSI Shoutouts!

Three Stages of The Journey

Where Have We Been?

Where Are We Now?

Where Are We Going?

Upcoming Workgroup Calls

Date	Time (ET)	Meeting
Tuesday	12 pm	Common Data Model
Tuesday	3 pm	OMOP CDM Oncology Outreach/Research Subgroup
Tuesday	6 pm	Eyecare & Vision Research
Wednesday	11 am	Perinatal & Reproductive Health
Wednesday	12 pm	Health Equity Journal Club
Wednesday	4 pm	Vulcan/OHDSI Meeting
Wednesday	7 pm	OMOP CDM Oncology Vocabulary/Development Subgroup
Thursday	9 am	Phenotype Development & Evaluation
Thursday	12 pm	HADES
Thursday	7 pm	Dentistry
Friday	9 am	GIS – Geographic Information System General
Friday	10:30 am	Open-Source Community
Friday	11 am	Clinical Trials
Monday	10 am	Healthcare Systems Interest Group
Monday	11 am	Data Bricks User Group

Global Symposium Homepage

2023 OHDSI Symposium

Oct. 20-22 · East Brunswick, New Jersey

The 2023 OHDSI Global Symposium welcomed more than 440 of our global collaborators together for three days of sharing research, forging new connections and pushing forward together the OHDSI mission of improving health by empowering a community to collaboratively generate the evidence that promotes better health decisions and better care.

This page will be home to all materials from the global symposium. Check back in the coming days for all video presentations from the event! #JoinTheJourney #OHDSI2023




State of the Community

Various leaders within OHDSI shared a presentation on the state of the community, with specific focuses on data standards, vocabulary enhancements and open-source development. **Speakers included**:

George Hripcsak, Columbia University
Clair Blacketer, Johnson & Johnson
Alexander Davydov, Odysseus Data Services
Katy Sadowski, Boehringer Ingelheim
Peter Rijnbeek, Erasmus MC
Mengling 'Mornin' Feng, National University of Singapore

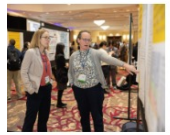
State of the Community Slides

Collaborator Showcase Posters & Software Demos

ceived a record number of submissions for the 2023 Collaborator case, following detailed review by community volunteers in the Scientific w Committee, there were 137 posters and 24 software demos that were nted during the collaborator showcase.

e visit the link below to visit the posters, brief reports and other ementary materials for each showcase submission. Each submission will filed in the #OHDSISocialShowcase, so please make sure you follow l on Twitter/X, LinkedIn and Instagram.

2023 Collaborator Showcase Posters & Demos




Tutorial: Introduction to OHDSI

urney from data to evidence can be challenging alone but is greatly nabled through community collaboration. In this half-day tutorial, we will introduce newcomers to OHDSI. Specifically, about the tools, practices, and open-science approach to evidence generation that the OHDSI community has developed and evolved over the past decade.

Faculty will highlight the ways community individuals can participate as well as receive value from the community's outputs. The course will include topics such as open community data standards – including the OMOP Common Data Model and OHDSI Standardized Vocabularies, opensource analytic tools

2023 Global Collaborator Showcase

Observational Data Standards & Management

2 – FinOMOP – a population-based data network (Javier Gracia-Tabuenca, Perttu Koskenvesa, Pia Tajanen, Sampo Kukkurainen, Gustav Klingstedt, Anna Hammais, Persephone Doupi, Oscar Brück, Leena Hakkarainen, Annu Kaila, Marco Hautalahti, Toni Mikkola, Marianna Niemi, Pasi Rikala, Simo Ryhänen, Anna Virtanen, Arto Mannermaa, Arto Vuori, Joanne Demmler, Eric Fey, Terhi Kilpi, Arho Virkki, Tarja Laitinen, Kimmo Porkka)
3 – From OMOP to CDISC SDTM: Successes, Challenges, and Future Opportunities of using EHR Data for Drug Repurposing in COVID-19 (Wesley Anderson, Ruth Kurtycz, Tahsin Farid, Shermarke Hassan, Kalynn Kennon, Pam Dasher, Danielle Boyce, Will Roddy, Smith F. Heavner)
4 – Augmenting the National COVID Cohort Collaborative (N3C) Dataset with Medicare and Medicaid (CMS) Data, Secure and Deidentified Clinical Dataset (Stephanie Hong, Thomas Richards, Benjamin Amor, Tim Schwab, Philip Sparks, Maya Choudhury, Saad Ljazouli, Peter Leese, Amin Manna, Christophe Roeder, Tanner Zhang, Lisa Eskenazi, Bryan Laraway, James Cavallon, Eric Kim, Shijia Zhang, Emir Amaro Syailendra, Shawn O'Neil, Davera Gabriel, Sigfried Gold, Tricia Francis, Andrew Girvin, Emily Pfaff, Anita Walden, Harold Lehmann, Melissa Haendel, Ken Gersing, Christopher G Chute)
5 – Integrating clinical and laboratory research data using the OMOP CDM (Edward A. Frankenberger, Chun Yang, Vamsidhar Reddy Meda Venkata, Alyssa Goodson)
6 – Development of Medical Imaging Data Standardization for Imaging-Based Observational Research: OMOP Common Data Model Extension (Woo Yeon Park, Kyulee Jeon, Teri Sippel Schmidt, Haridimos Kondylakis, Seng Chan You, Paul Nagy)
7 – Conversion of a Myositis Precision Medicine Center into a Common Data Model: A Case Study (Zachary Wang, Will Kelly, Paul Nagy, Christopher A Mecoli)
8 – Implementing a common data model in ophthalmology: Comparison of general eye examination mapping to standard OMOP concepts across two major EHR systems (Justin C. Quon, William Halfpenny, Cindy X. Cai, Sally L. Baxter, Brian C. Toy)
9 – Enhancing Data Quality Management: Introducing Capture and Cleanse Modes to the Data Quality Dashboard (Frank DeFalco, Clair Blacketer)
10 – "OMOP Anywhere": Daily Updates from EHR Data Leveraging Epic's Native Tools (Mujeeb A Basit, Mereeja Varghese, Aamirah Vadsariya, Bhavini Nayee, Margaret Langley, Ashley Huynh, Jennifer Cai, Donglu Xie, Cindy Kao, Eric Nguyen, Todd Boutte, Shiby Antony, Tammye Garrett, Christoph U Lehmann, Duwayne L Willett)
11 – A Toxin Vocabulary for the OMOP CDM (Maksym Trofymenko, Polina Talapova, Tetiana Nesmiian, Andrew Williams, Denys Kaduk, Max Ved, Inna Ageeva)
12 – Challenges and opportunities in adopting OMOP-CDM in Brazilian healthcare: a report from Hospital Israelita Albert Einstein (Maria Abrahao, Uri Adrian Prync Flato, Mateus de Lima Freitas, Diogo Patrão, Amanda Gomes Rabelo, Cesar Augusto Madid Truyts, Gabriela Chiuffa Tunes, Etienne Duin, Gabriel Mesquita de Souza, Soraya Yukari Aashiro, Adriano José Pereira, Edson Amaro)
13 – Transforming the Optum® Enriched Oncology module to OMOP CDM (Dmitry Dymshyts, Clair Blacketer)
14 – Mapping Multi-layered Oncology Data in OMOP (John Methot, Sherry Lee)
15 – Development of psychiatric common data model (P-CDM) leveraging psychiatric scales (Dong Yun Lee, Chungsoo Kim, Rae Woong Park)
16 – Brazilian administrative data for real-world research: a deterministic linkage procedure and OMOP CDM harmonization (Jessica Mayumi Maruyama, Julio Cesar Barbour Oliveira)
17 – Integration of Clinical and Genomic Data Mapped to the OMOP Common Data Model in a Federated Data Network in Belgium (Tatjana Jatsenko, Murat Akand, Joris Robert Vermeesch, Dries Rombaut, Michel Van Speybroeck, Martine Lewi , Valerie Vandeweerd)

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OHDSI HADES releases: Database Connector 6.3.0

DatabaseConnector 6.3.0 | Reference | Articles | Changelog | HADES

DatabaseConnector

R-CMD-check failing | codecov 61% | CRAN 6.3.0 | downloads 3454/month

DatabaseConnector is part of HADES.

Introduction

This R package provides function for connecting to various DBMSs. Together with the `SqlRender` package, the main goal of `DatabaseConnector` is to provide a uniform interface across database platforms: the same code should run and produce equivalent results, regardless of the database back end.

Features

- Create connections to the various database platforms:
  - MicrosoftSQL Server
  - Oracle
  - PostgresSql
  - Microsoft Parallel Data Warehouse (a.k.a. Analytics Platform System)
  - Amazon Redshift
  - Apache Impala
  - Google BigQuery
  - IBM Netezza

Links

View on CRAN

Browse source code

Report a bug

Ask a question

License

Apache License

Citation

Citing DatabaseConnecto

Developers

Martijn Schuemie
Author, maintainer

Marc Suchard
Author

More about authors...

OHDSI HADES releases: DeepPatientLevelPrediction 2.0.1

ResultModelManager 0.5.3 Reference Articles Changelog HADES

ResultModelManager

R-CMD-check passing codecov 94%

ResultModelManager (RMM) HADES.

Introduction

RMM is an R package designed to handle common ohdsi results data management functions by providing a common API for data model migrations and definitions

System Requirements

Requires R. Some of the packages used by ResultModelManager require Java.

Installation

1. See the instructions here for configuring your R environment, including Java.
2. In R, use the following commands to download and install ResultModelManager:

Links

Ask a question

License

Apache License

Citation

Citing ResultModelManager

Developers

Jamie Gilbert
Author, maintainer

#OHDSISocialShowcase This Week

MONDAY

Integration of Clinical and Genomic Data Mapped to the OMOP Common Data Model in a Federated Data Network in Belgium

(Tatjana Jatsenko, Murat Akand, Joris Robert Vermeesch, Dries Rombaut, Michel Van Speybroeck, Martine Lewi , Valerie Vandeweerd)

Integration of Clinical and Genomic Data Mapped to the OMOP Common Data Model in a Federated Data Network in Belgium

AGENTSCHAP INNOVEREN & ONDERNEMEN Vlaanderen is ondernemen
Project number ATHENA: HBC.2019.2528

Tatjana Jatsenko[1], Murat Akand[2], Joris Robert Vermeesch[1], Dries Rombaut[3], Michel Van Speybroek[4], Martine Lewi[5], Valerie Vandeweerd[6]

[1] Center for Human Genetics, University Hospitals Leuven, Belgium
[2] Department of Urology, University Hospitals Leuven, Belgium
[3] Illumina
[4] EMEA IT Data Science, Janssen Pharmaceutica, Beerse, Belgium
[5] Global Commercial Data Science, J&J innovative Medicine, Raritan, USA
[6] Clinical Innovation Research & Development Janssen Pharmaceutica, Beerse, Belgium

Background

- Enriching clinical patient data with omics data can help understand and predict disease and treatment outcomes in bladder cancer.[1, 2, 3]
- Omics and non-omics data is often siloed and inaccessible due to healthcare system fragmentation and privacy concerns.[4, 5]
- Federated data platforms enable data accessibility, usability, and security while complying with regulations.
- The OMOP Common Data Model allows privacy-preserving, large-scale genotype-phenotype research.
- ATHENA is a federated data network for multiple myeloma and bladder cancer in Belgium.
- This case focuses on non-muscle invasive bladder cancer (NMIBC) and the integration of clinical and genomics data.

Methods

- Extraction of de-identified clinical and genomic data from different databases of multiple healthcare institutions across Belgium
- Collection of clinical data from EHR system for bladder cancer patients and mapping to OMOP V5.3.
- By date analyzed DNA and RNA from 102 FFPE tumor samples from UZ Leuven using TSO500 assay for genomic profiling[6, 7]

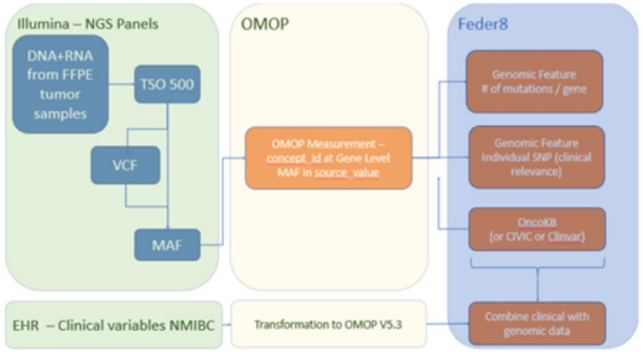

Figure 1: high level process genomics and clinical data integration

- TSO500 data outputs are converted to measurements using OMOP Genomic vocabulary and OncoKB precision oncology knowledge base vocabulary:
  - Microsatellite Instability (MSI) and Tumor Mutational Burden (TMB) as numerical measurements.
  - Variants are recorded with the respective gene from the OMOP Genomic vocabulary as measurement_concept_id.
  - Variants with known clinical significance are filtered using OncoKB vocabulary and mapped back to the standard concept ID.
  - Fusion products mapped as standard OMOP genomic concepts.
  - Genomic variants that were impossible to map to a standard concept are mapped to a custom concept (>2 B code).
- Full mutation annotation (MAF) from Illumina assay is stored in measurement_source_value.
- The Feder8 platform profiles the clinical and genomic data from participating partners and accommodates centrally defined queries to query any available concept in any of the participating sources.

Results

- Proof of concept for combining clinical data and comprehensive genomic data using OMOP.
- A lightweight method to map all genomics data to the measurement entity in OMOP.
- Limitations:
  - Loss of granularity, specifically for the alterations of unknown clinical significance, due to limited (standardized) set of genomic concepts.
  - Remaining challenge of integrating the data into one single OMOP instance and matching it to the correct person_id.

Conclusions

- A federated data network that combines clinical and genomic data and maps it to the OMOP Common Data Model.
- The federated approach keeps the data secure at each institution.
- The common data model enables researchers and clinicians to do research on a larger scale.
- Future efforts will aim to grow the network with more institutions and more diverse datasets to improve the representativeness and generalizability of research findings.

References

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#OHDSISocialShowcase This Week

TUESDAY

Estimating Observable Time in the Absence of Defined Enrollment

(Clair Blacketer, Patrick Ryan, Frank DeFalco, Martijn Schuemie, Peter Rijnbeek)

When will I see you again? *Estimating observable time in databases without defined enrollment*

PRESENTER: **Clair Blacketer**

INTRO

- Retrospective studies that make use of existing observational data must define observable time for each patient.
- This is relatively simple in databases that have the notion defined enrollment, like US claims, much more difficult in databases that are primarily encounter-based.
- This pilot study explores multiple approaches for the creation of the observation period and the implications of these definitions.

METHODS

1. Used Merative Commercial Claims and Encounters (CCAE) database mapped to OMOP CDM v5.4, which utilizes defined health plan enrollment as the observation period (gold standard).
2. We then used observed health care events to create alternative definitions of the observation period.
3. We created observation eras by applying varying persistence and surveillance windows to the events **(figure 1)**.

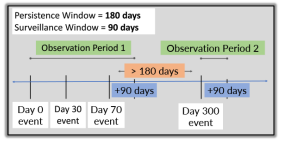


Figure 1: How persistence and surveillance windows combine to create periods of observable time

4. Two event definitions: all events and events excluding drug dispensings.
5. Utilized 8 persistence windows (180 to 2190 days) and 3 surveillance windows (0, 90, 180 days).
6. Replicated Li et al's study characterizing the background rates of adverse events of special interest of COVID-19 vaccines.
7. We compared the results using the gold standard observation period to the generated observation eras.

To **reduce bias**, methods to estimate **observable time** should choose a **balance of persistence and surveillance** windows based on the **types of data available**

Take a picture to **download** the **full paper**

RESULTS

- Figure 2 shows the incidence rates per 100,000 person-years for three of the fifteen outcomes: acute myocardial infarction (AMI), encephalomyelitis, and transverse myelitis.

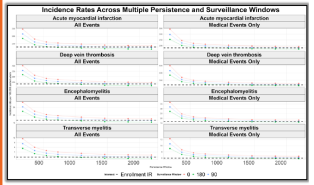


Figure 2: Incidence rates per 100K person-years by outcome, event type, persistence, and surveillance windows

- When **only medical events were used**, the **incidence rates were consistently higher** than when all events were used
- The surveillance window of 0 never reached the enrollment line while the surveillance window of 180 reached it for all outcomes between persistence windows of 600 – 900 days when **all events were used** and between 900 – 1250 days **when only medical events were used.**
- At the higher persistence windows of >=2000 days, the surveillance window of 180 regularly underestimated the incidence rate using enrollment time.

LIMITATIONS

- Analyses were conducted in only one database covering one country and one type of data (US claims)
- Future work includes creating eras of observational time based on age and sex and running the present analysis and conducting the analyses across multiple databases.

Clair Blacketer, Patrick Ryan, Frank DeFalco, Martijn Schuemie, Peter Rijnbeek

#OHDSISocialShowcase This Week

WEDNESDAY

Modeling Decisions and Heterogeneity in Defining Aortic Diseases: Implications for Observational Studies and Phenotype Characterization

(Evan Minty, Jack Janetzki, James P. Gilbert, Jung Ho Kim, Jung Ah Lee, Elsie Ross, Nicole Pratt, Gowtham Rao, Seng Chan You)

Title: Demonstrating Utility of the Edge Tool Suite through Clinical Trial Emulation

PRESENTER: **Ruth Kurtycz**

INTRO:

- Real-world data (RWD) can support repurposing approved medications for new uses. OMOP standardizes RWD, aiding research and sharing, but implementing OMOP can be resource-intensive. The Edge Tool suite streamlines data conversion. Here we assesses the utility of data converted with the Edge Tool suite's potential for research using an emulation of the RECOVERY COVID-19 clinical trial.

METHODS

1. The Edge Tool Suite enables EHR ETL into the OMOP CDM. Propensity score matching at a 2:1 ratio was used to match patients with and without dexamethasone administration on 11 key variables (e.g., patient age)
2. A pilot healthcare site provided over 10,000 acute COVID-19 patient records from March 2020 to March 2022, with exclusion criteria applied to align with the RECOVERY trial.
3. Logistic regression and survival analyses were preformed on the matched data to assess the impact of Dexamethasone on 28-day mortality.

RESULTS

Results	Overall	Oxygen Support	
RECOVERY	Lower 28-day mortality in treatment group	**Invasive Mechanical Ventilation:** Lower	
		Oxygen Alone: Lower	
		No Oxygen: Not significantly different	
Edge Tool Replication	Higher 28-day mortality in treatment group	Invasive Mechanical Ventilation vs No Oxygen: Lower	Oxygen Alone vs No Oxygen: Lower

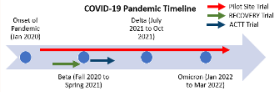
- The analysis found that dexamethasone reduced 28-day mortality in COVID-19 patients receiving oxygen alone or mechanical ventilation, aligning with the RECOVERY trial. However, without oxygen support stratification, this result was not confirmed.

We demonstrate the utility of RWD from the Edge Tool Suite to replicate findings of a clinical trial for COVID-19. Results indicate approach has potential to be used to assess the efficacy of treatments for emerging diseases

Take a picture to download the full paper

AMMO BAR

- Resource-intensive OMOP implementation can exclude smaller healthcare sites, especially in disadvantaged areas. The Edge Tool suite reduces implementation time and costs, making data conversion to OMOP more accessible.
- Below visualization to show overlap of RECOVERY trial and pilot site data



- Exclusion criteria applied to the pilot site records included patients under 18, and pregnant or breastfeeding women. Data quality assessment was also conducted, evaluating missingness, plausibility, and outliers in laboratory values.
- Eleven categorical variables were used in the matching process, followed by evaluation using Chi-Square tests to ensure appropriate balance between treatment and control groups.
- Analyses were performed using binomial logistic regression and survival analysis with a Cox proportional hazards model, repeated after stratifying cases and controls based on the level of oxygen support.
- Challenges in the data extraction process, particularly regarding medication dosage and timing information, may have affected the analysis results.
- Despite limitations, this analysis supports emphasizing the ongoing effort to standardize data using OMOP
- Ongoing updates to the analysis are expected with contributions from more healthcare sites.

Ruth Kurtycz, Wesley Anderson, Allan J. Walkey, Kerry A. Howard, Smith F. Heavner

OHDSI

#OHDSISocialShowcase This Week

THURSDAY

Postnatal growth deficiency and neurodevelopmental delay phenotypes to study drug safety during pregnancy

(Amir Sarayani, Jill Hardin, Melanie Jacobson, Rupa Makadia, Joel Swerdel, Kevin Haynes, David Kern)

Postnatal growth deficiency and neurodevelopmental delay phenotypes to study drug safety during pregnancy

PRESENTER: **Amir Sarayani**

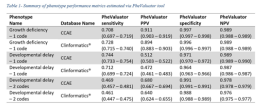
INTRODUCTION

Post-marketing studies using real-world data (RWD) to assess drug safety during pregnancy are necessary because clinical trials rarely include this patient population.

Postnatal growth deficiency and neurodevelopmental delay in infants are two clinical outcomes health authorities request in post-marketing drug safety studies during pregnancy.

This study aimed to develop RWD phenotypes for postnatal growth deficiency and neurodevelopmental delay in infants.

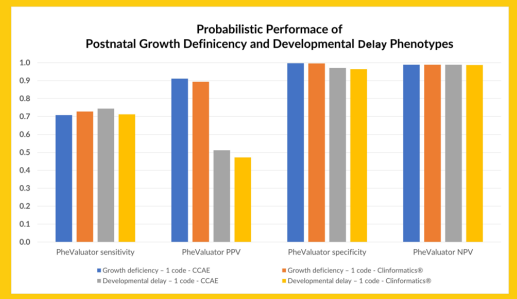
RESULTS



METHODS

1. Comprehensive literature review to define the clinical concept and identify previously developed phenotypes
2. OHDSI software tools, i.e., PHOEBE, ATLAS, Cohort Diagnostics, and PheValuator, facilitated this phenotype development project
3. Data sources: Optum's de-identified Clinformatics® Data Mart Database and Merative MarketScan Commercial Claims and Encounters Database (CCAE)
4. We also created a secondary definition for developmental delay by requiring a second code 31-365 days after cohort entry to improve performance metrics.

A data-driven approach to developing **computable phenotypes** for **postnatal growth deficiency** and **neuro-developmental delay** showed acceptable performance metrics for the postnatal growth deficiency phenotype while modest performance for the neuro-developmental delay phenotype.



Take a picture to **download** the **poster**

ADDITIONAL RESULTS

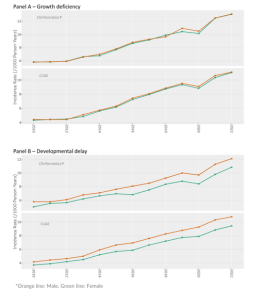
The ATLAS concept set expression had 29 standard concepts for postnatal growth deficiency (20 exclusions) and 23 standard concepts for developmental delay (14 exclusions) from observation and condition domains, resulting in a total of 306 and 2236 included codes in the concept sets, respectively.

~186,000 cases in Clinformatics® and 294,000 in CCAE with postnatal growth deficiency and 167,000 and 267,000 cases with developmental delay, respectively.

Postnatal growth deficiency cohort: ~70% of subjects had "failure to thrive" (standard concept code: 437986), and 25% had "failure to thrive in neonate" (36717004) as index event in both databases.

Developmental delay phenotype: about 16-18% of subjects had "delayed milestone" (436233), and 13-15% had "disorder of speech and language development" (435232) at index.

The annual incidence rate estimates in Cohort Diagnostics did not show abrupt changes for both phenotypes across the databases over time.



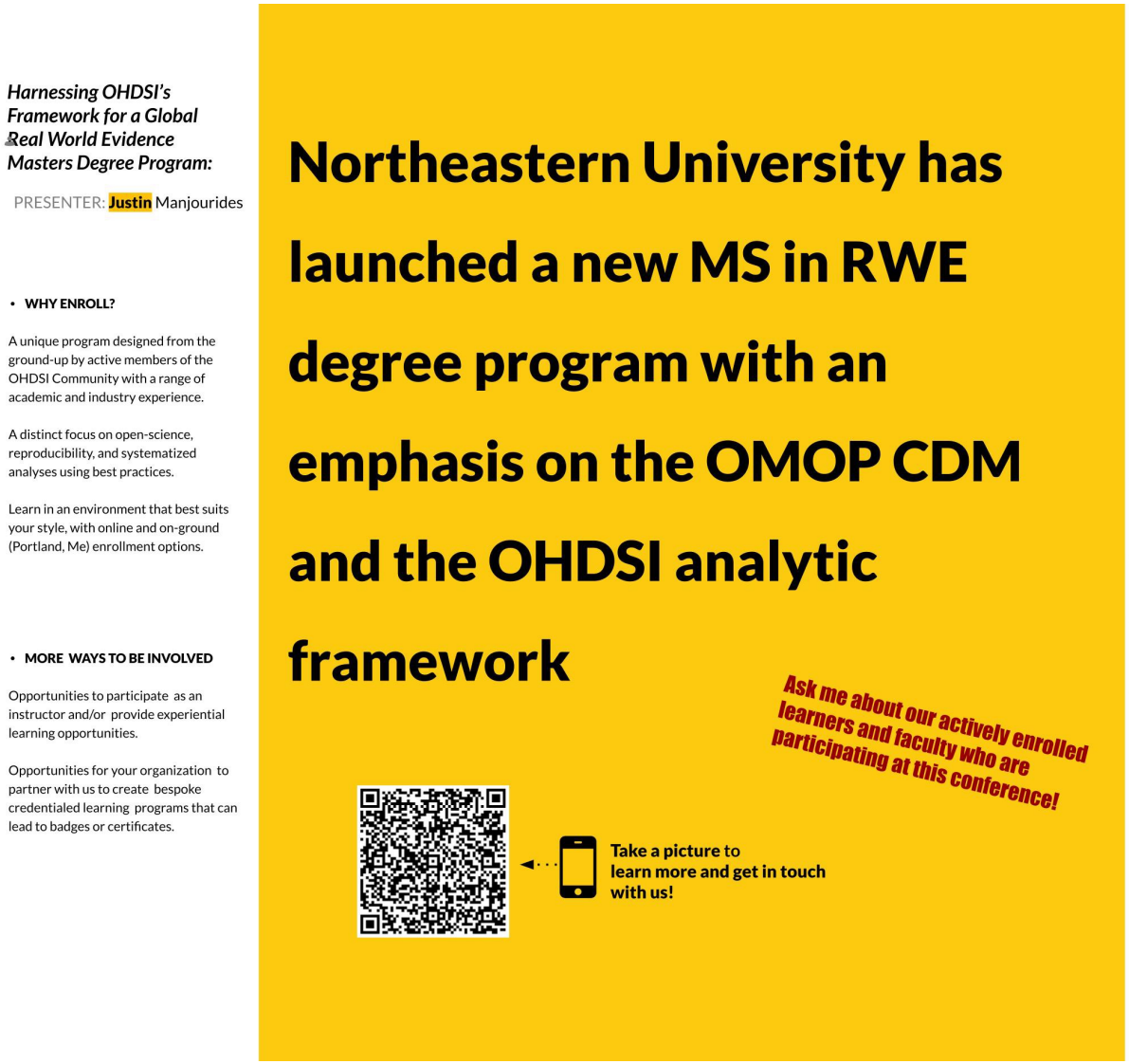
Amir Sarayani, Jill Hardin, Melanie Jacobson, Rupa Makadia, Joel Swerdel, Kevin Haynes, David Kern

#OHDSISocialShowcase This Week

FRIDAY

Harnessing OHDSI's Framework for a Global Real-World Evidence Master's Degree Program

(Justin Manjourides, Kristin Kostka, Christian Reich, Asieh Golozar)



Job Opening: Stanford University

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Prospective Postdocs

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Open Postdoctoral position, faculty mentor Brian Bateman

Our research team is looking for a postdoctoral scholar in perinatal pharmacoepidemiology. The scholar will work closely with Drs. Brian Bateman and Stephanie Leonard on NIH-funded research projects on the comparative safety and effectiveness of medications in pregnancy and related research topics. Our projects employ advanced analytical methods in large databases, which include claims data and electronic health record data in conventional structures and in common data models. Current topical focus areas include mental health, behavioral health and cardiovascular health of people who are pregnant or postpartum.

Our research group prioritizes a collaborative and inclusive team environment. The principal investigators are experienced mentors who are highly committed to supporting the postdoctoral scholar in advancing their career as a future independent investigator. The

Important Info

Faculty Sponsor (Last, First Name):
Bateman, Brian

Other Mentor(s) if Applicable:
Stephanie Leonard

Stanford Departments and Centers:
Anesthes, Periop & Pain Med

Postdoc Appointment Term:
Initial appointment is 1 year with renewal after the first year for an additional 1-2 years by mutual agreement

Appointment Start Date: Flexible start date

Group or Departmental Website:

Where Are We Going?

Any other announcements of upcoming work, events, deadlines, etc?

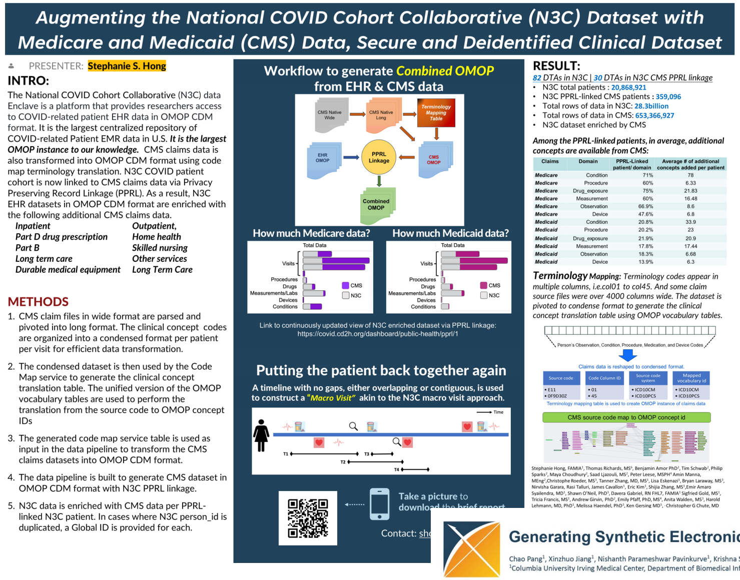
Three Stages of The Journey

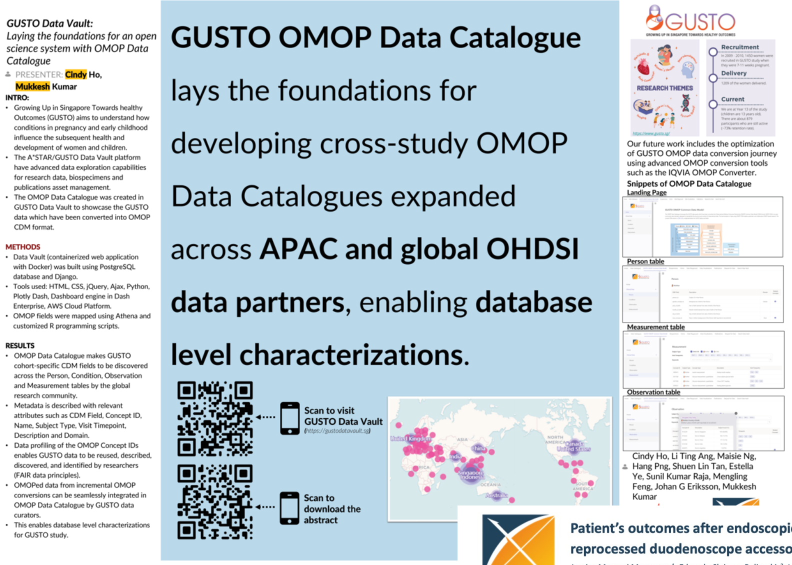
Where Have We Been?

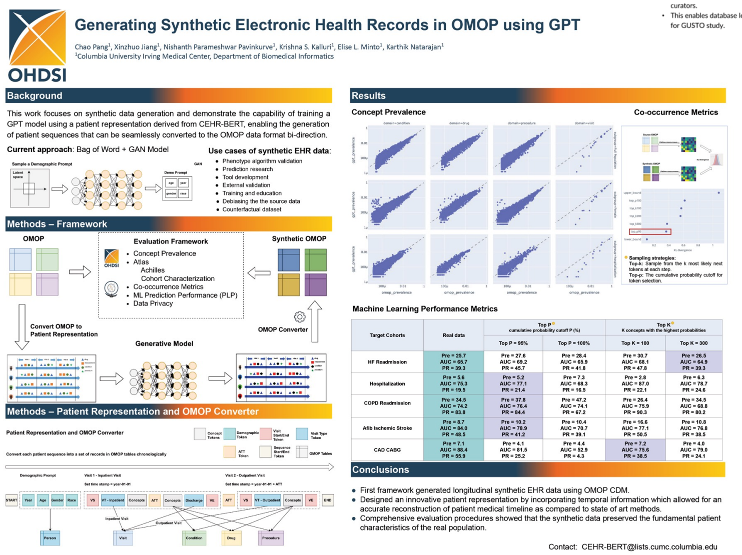
Where Are We Now?

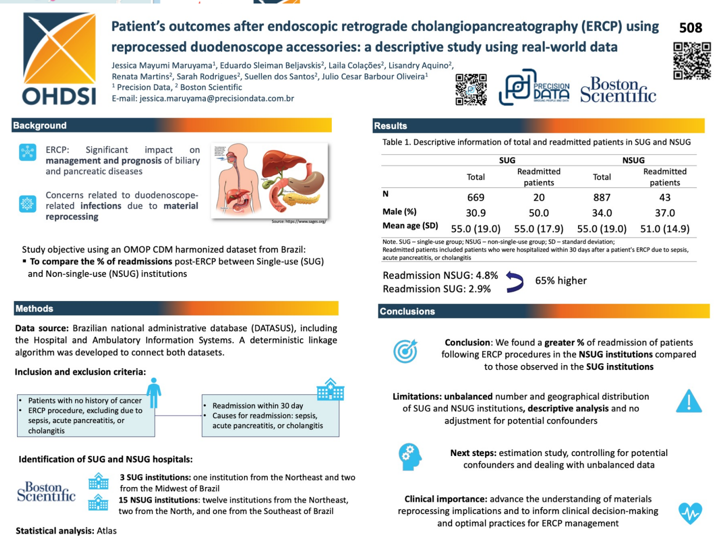
Where Are We Going?

Nov. 13: Collaborator Showcase Honorees









AMIA Workshop

Time	Title	Type	Speaker(s)
8:30 – 8:50 am	Why use OHDSI? How can we catch attention?	Presentation	Christian Reich
8:50 – 9:10 am	Standardization: data structure/model, data content, semantics, cohorts, analysis, reporting	Presentation	Ben Martin
9:10 – 9:30 am	Value of reusable definitions of disease for research, reusable components for research	Hands-on	Asieh Golozar, Atim Adam
9:30 – 9:50 am	Collaborative open-science community - Transforming RWE Research	Presentation	Paul Nagy, Ben Martin
9:50 – 10:10 am	BREAK		
10:10 – 11:10 am	Stump the Experts (Mui Van Zandt, Paul Nagy, Christian Reich)	Panel	Moderator: Atif Adam
11:10 – 11:30 am	Build concept sets and cohort building	Demo	Ben Martin
11:30 – 11:50 am	Power of HADES and Strategus	Presentation	Gowtham Rao
11:50 – 12:10 pm	ATLAS: Characterization and visualization	Demo	Mui Van Zandt, Asieh Golozar
12:10 – 1:10 pm	LUNCH		
1:10 – 1:30 pm	Reproducibility and trust	Presentation	Ross Williams, Atif Adam
1:30 – 2:30 pm	ATLAS Group Exercise	Hands-On	Ben Martin, Paul Nagy
2:30 – 2:50 pm	BREAK		
2:50 – 3:10 pm	Evidence at Scale	Presentation	Asieh Golozar
3:10 – 3:30 pm	Closing	Presentation	Christian Reich