Upcoming Community Calls

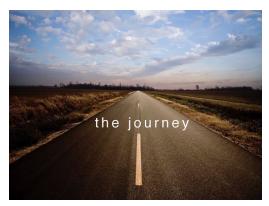| Date	Topic
May 28	Collaborator Showcase Brainstorm
June 4	NO CALL – EUROPEAN SYMPOSIUM
June 11	European Symposium Review
June 18	Application of LLMs In Evidence Generation Process
June 25	Recent OHDSI Publications

Three Stages of The Journey

Where Have We Been?

Where Are We Now?

Where Are We Going?

the journey

OHDSI Shoutouts!

👏

Congratulations to the team of **Theresa Burkard, Kim López-Güell, Artem Gorbachev, Lucía Bellas, Annika Jödicke, Edward Burn, Maria de Ridder, Mees Mosseveld, Jasmine Gratton, Sarah Seager, Dina Vojinovic, Miguel Angel Mayer, Juan Manuel Ramírez-Anguita, Angela Leis Machín, Marek Oja, Raivo Kolde, Klaus Bonadt, Daniel Prieto-Alhambra, Chistian Reich, and Martí Català** on the publication of **Calculating daily dose in the Observational Medical Outcomes Partnership Common Data Model** in *Pharmacoepidemiology & Drug Safety*.

Calculating daily dose in the Observational Medical Outcomes Partnership Common Data Model

Theresa Burkard[1] | Kim López-Güell[1] | Artem Gorbachev[2] | Lucía Bellas[3] | Annika M. Jödicke[1] | Edward Burn[1] | Maria de Ridder[4] | Mees Mosseveld[4] | Jasmine Gratton[5] | Sarah Seager[5] | Dina Vojinovic[6] | Miguel Angel Mayer[7,8] | Juan Manuel Ramírez-Anguita[8,9] | Angela Leis Machín[8] | Marek Oja[10] | Raivo Kolde[10] | Klaus Bonadt[11] | Daniel Prieto-Alhambra[1,4] | Chistian Reich[2] | Martí Català[1]

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Darwin EU, Grant/Award Number: EMA/2021/08/TDA; EHDEN

Abstract

Purpose: We aimed to develop a standardized method to calculate daily dose (i.e., the amount of drug a patient was exposed to per day) of any drug on a global scale using only drug information of typical observational data in the Observational Medical Outcomes Partnership Common Data Model (OMOP CDM) and a single reference table from Observational Health Data Sciences And Informatics (OHDSI).

Materials and Methods: The OMOP DRUG_STRENGTH reference table contains information on the strength or concentration of drugs, whereas the OMOP DRUG_EXPOSURE table contains information on patients' drug prescriptions or dispensations/claims. Based on DRUG_EXPOSURE data from the primary care databases

OHDSI Shoutouts! 👏

Congratulations to the team of **Kayla Schiffer-Kane, Cong Liu, Tiffany J. Callahan, Casey Ta, Jordan G. Nestor, and Chunhua Weng** on the publication of **Converting OMOP CDM to phenopackets: A model alignment and patient data representation evaluation** in the *Journal of Biomedical Informatics*.

Journal of Biomedical Informatics
Volume 155, July 2024, 104659

Special Communication

Converting OMOP CDM to phenopackets: A model alignment and patient data representation evaluation

Kayla Schiffer-Kane [a], Cong Liu [a], Tiffany J. Callahan [a], Casey Ta [a], Jordan G. Nestor [b], Chunhua Weng [a]

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Abstract

Objective

This study aims to promote interoperability in precision medicine and translational research by aligning the Observational Medical Outcomes Partnership (OMOP) and Phenopackets data models. Phenopackets is an expert knowledge-driven schema designed to facilitate the storage and exchange of multimodal patient data, and support downstream analysis. The first goal of this paper is to explore model alignment by characterizing the common data models using a newly developed data transformation process and evaluation method. Second, using OMOP normalized clinical data, we evaluate the mapping of real-world patient data to Phenopackets. We evaluate the suitability of Phenopackets as a patient data representation for real-world clinical cases.

OHDSI Shoutouts! 👏

Congratulations to the team of **Linying Zhang, Lauren Richter, Yixin Wang, Anna Ostropolets, Noémie Elhadad, David M. Blei, and George Hripcsak** on the publication of **Causal fairness assessment of treatment allocation with electronic health records** in the *Journal of Biomedical Informatics*.

Causal fairness assessment of treatment allocation with electronic health records

Linying Zhang [a], Lauren R. Richter [a], Yixin Wang [b], Anna Ostropolets [a], Noémie Elhadad [a,d], David M. Blei [c,d], George Hripcsak [a,*]

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ARTICLE INFO

Keywords:
Causal fairness
Health equity
Principal fairness
Electronic health record
Machine learning

ABSTRACT

Objective: Healthcare continues to grapple with the persistent issue of treatment disparities, sparking concerns regarding the equitable allocation of treatments in clinical practice. While various fairness metrics have emerged to assess fairness in decision-making processes, a growing focus has been on causality-based fairness concepts due to their capacity to mitigate confounding effects and reason about bias. However, the application of causal fairness notions in evaluating the fairness of clinical decision-making with electronic health record (EHR) data remains an understudied domain. This study aims to address the methodological gap in assessing causal fairness of treatment allocation with electronic health records data. In addition, we investigate the impact of social determinants of health on the assessment of causal fairness of treatment allocation.
Methods: We propose a causal fairness algorithm to assess fairness in clinical decision-making. Our algorithm accounts for the heterogeneity of patient populations and identifies potential unfairness in treatment allocation by conditioning on patients who have the same likelihood to benefit from the treatment. We apply this framework to a patient cohort with coronary artery disease derived from an EHR database to evaluate the fairness of treatment decisions.
Results: Our analysis reveals notable disparities in coronary artery bypass grafting (CABG) allocation among different patient groups. Women were found to be 4.4%–7.7% less likely to receive CABG than men in two out of four treatment response strata. Similarly, Black or African American patients were 5.4%–8.7% less likely to receive CABG than others in three out of four response strata. These results were similar when social determinants of health (insurance and area deprivation index) were dropped from the algorithm. These findings highlight the presence of disparities in treatment allocation among similar patients, suggesting potential unfairness in the clinical decision-making process.
Conclusion: This study introduces a novel approach for assessing the fairness of treatment allocation in healthcare. By incorporating responses to treatment into fairness framework, our method explores the potential of quantifying fairness from a causal perspective using EHR data. Our research advances the methodological development of fairness assessment in healthcare and highlight the importance of causality in determining treatment fairness.

OHDSI Shoutouts! 👏

Congratulations to the team of **Minjung Han, Taehee Chang, Hae-Ryoung Chun, Suyoung Jo, Yeongchang Jo, Dong Han Yu, Sooyoung Yoo, and Sung-Il Cho** on the publication of **Symptoms and Conditions in Children and Adults up to 90 Days after SARS-CoV-2 Infection: A Retrospective Observational Study Utilizing the Common Data Model** in the *Journal of Clinical Medicine*.

Article

Symptoms and Conditions in Children and Adults up to 90 Days after SARS-CoV-2 Infection: A Retrospective Observational Study Utilizing the Common Data Model

Minjung Han [1,2] , Taehee Chang [1] , Hae-ryoung Chun [1] , Suyoung Jo [3] , Yeongchang Jo [4] , Dong Han Yu [5] , Sooyoung Yoo [6] and Sung-il Cho [1,3,*]

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Abstract: Background/Objectives: There have been widespread reports of persistent symptoms in both children and adults after SARS-CoV-2 infection, giving rise to debates on whether it should be regarded as a separate clinical entity from other postviral syndromes. This study aimed to characterize the clinical presentation of post-acute symptoms and conditions in the Korean pediatric and adult populations. **Methods**: A retrospective analysis was performed using a national, population-based database, which was encoded using the Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM). We compared individuals diagnosed with SARS-CoV-2 to those diagnosed with influenza, focusing on the risk of developing prespecified symptoms and conditions commonly associated with the post-acute sequelae of COVID-19. **Results**: Propensity score matching yielded 1,656 adult and 343 pediatric SARS-CoV-2 and influenza pairs. Ninety days after diagnosis, no symptoms were found to have elevated risk in either adults or children when compared with influenza controls. Conversely, at 1 day after diagnosis, adults with SARS-CoV-2 exhibited a significantly higher risk of developing abnormal liver function tests, cardiorespiratory symptoms, constipation, cough, thrombophlebitis/thromboembolism, and pneumonia. In contrast, children diagnosed with SARS-CoV-2 did not show an increased risk for any symptoms during either acute or post-acute phases. **Conclusions**: In the acute phase after infection, SARS-CoV-2 is associated with an elevated risk of certain symptoms in adults. The risk of developing post-acute COVID-19 sequelae is not significantly different from that of having postviral symptoms in children in both the acute and post-acute phases, and in adults in the post-acute phase. These observations warrant further validation through studies, including the severity of initial illness, vaccination status, and variant types.

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Upcoming Workgroup Calls

Date	Time (ET)	Meeting
Wednesday	10 am	Surgery and Perioperative Medicine
Wednesday	1 pm	Perinatal & Reproductive Health
Wednesday	7 pm	Medical Imaging
Thursday	7 pm	Dentistry
Friday	10 am	GIS-Geographic Information System
Friday	11:30 am	Steering Group
Monday	9 am	Vaccine Vocabulary
Tuesday	9 am	ATLAS
Tuesday	10 am	Common Data Model

Next CBER Best Seminar: June 26

Topic: Applying Machine Learning in Distributed Networks to Support Activities for Post-Market Surveillance of Medical Products: Opportunities, Challenges, and Considerations

Presenter: Jenna Wong, Assistant Professor in the Department of Population Medicine at Harvard Medical School and Harvard Pilgrim Health Care Institute

Logistics: 11 am – 12 pm EST, Zoom webinar

ohdsi.org/cber-best-seminar-series

Previous CBER Best Seminar Video Posted

Topic: Reliability in Observational Research: Assessing Covariate Imbalance in Small Studies

Presenter: George Hripcsak, Vivian Beaumont Allen Professor of Biomedical Informatics, Columbia University

Posted: Video & Slides

ohdsi.org/cber-best-seminar-series

CBER Best Seminar Homepage

CBER BEST Seminar Series

The CBER BEST Initiative Seminar Series is designed to share and discuss recent research of relevance to ongoing and future surveillance activities of CBER regulated products, namely biologics. The series focuses on safety and effectiveness of biologics including vaccines, blood components, blood-derived products, tissues and advanced therapies. The seminars will provide information on characteristics of biologics, required infrastructure, study designs, and analytic methods utilized for pharmacovigilance and pharmacoepidemiologic studies of biologics. They will also cover information regarding potential data sources, informatics challenges and requirements, utilization of real-world data and evidence, and risk-benefit analysis for biologic products. The length of each session may vary, and the presenters will be invited from outside FDA.

Below you will find details of upcoming CBER BEST seminars, including virtual links that will be open to anybody who wishes to attend. Speakers who give their consent to be recorded will also have their presentations included on this page; you can find those sessions below the list of upcoming speakers.

Upcoming Seminars

+ June 26, 2024 (11 am) - Jenna Wong, Harvard University

+ July 17, 2024 (11 am) - Yonas Ghebremichael-Weldeselassie, Warwick Medical School

Previous Seminars

+ May 22, 2024 - George Hripcsak, Columbia University

+ April 17, 2024 - Yong Chen, University of Pennsylvania

+ Jan. 17, 2024 · Anna Ostropolets, Odysseus Data Services

+ Dec. 6, 2023 · Jenny Sun, Pfizer

ohdsi.org/cber-best-seminar-series

The Center for Advanced Healthcare Research Informatics (CAHRI) at Tufts Medicine welcomes:

Peter Robinson, MD

Alexander von Humboldt Professor for AI

Berlin Institute of Health @ Charité

'The GA4GH Phenopacket Schema: A Standard for Computable Case Reports to Support Translational Genomic Research and Clinical Decision Support Software'

May 30, 2024, 11am-12pm EST

Virtually via Zoom

TuftsMedicine
Tufts Medical Center

RWE Workshop at AIME24: Call for Submissions!

Workshop: **AI for Reliable and Equitable Real-World Evidence Generation in Medicine**

https://medicine.utah.edu/dbmi/aime/ai-reliable

Organizing Committee
Linying Zhang
Adam Wilcox
Yves Lussier

Scientific Program Committee
Peter Rijnbeek   Mattia Prosperi
Larry Han   Xia Ning
Xiaoqian Jiang   Yifan Peng

Opening Keynote
George Hripcsak

IMPORTANT DATES

May 31, 2024 | Submission Deadline   June 14, 2024 | Notice of Acceptance   July 12, 2024 | Workshop

AIME 2024
22nd International Conference on Artificial Intelligence in Medicine
Salt Lake City, Utah, USA, July 9-12
Hosted by the University of Utah

Kheiron Cohort Application Is Open

The Kheiron Cohort, now in its third year, is a program designed to onboard new contributors into OHDSI and empower them to become active contributors and maintainers.

Career Development
• training opportunities within the cohort from OHDSI technical leaders
• interaction and mentoring from OHDSI leadership

Applications are due June 1

OHDSI Europe Symposium - CLOSED

Registration is CLOSED for the **2024 OHDSI Europe Symposium**, which will be held June 1-3 in Rotterdam, Netherlands.

June 1 – tutorial/workshop
June 2 – tutorial/workshop
June 3 – main conference

Openings: Postdoctoral Fellow, Johns Hopkins Univ.

PHARMACOEPIDEMIOLOGY POST-DOCTORAL TRAINING PROGRAM

Co-Directors: Caleb Alexander, MD, MS and Jodi Segal, MD, MPH

The **Pharmacoepidemiology Training Program** at the Johns Hopkins Bloomberg School of Public Health (BSPH) is currently **seeking to support** <u>postdoctoral fellows</u>**.** All supported trainees work with core faculty on existing or newly developed research projects on pharmacoepidemiology, so as to optimize the safe and effective use of medicines to treat heart, lung and blood diseases in the United States.

<u>**Deadline for applications: rolling**</u>

Opening: Junior Research Software Engineer, Tufts

Where Are We Going?

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

the journey

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#OHDSI2024 Registration Is Open!

Registration is now OPEN for the 2024 OHDSI Global Symposium, which will be held Oct. 22-24 at the Hyatt Regency Hotel in New Brunswick, N.J., USA.

Tuesday: Tutorials
Wednesday: Plenary/Showcase
Thursday: Workgroup Activities

ohdsi.org/OHDSI2024

#OHDSI2024 Collaborator Showcase

Submissions are now being accepted for the 2024 Global Symposium Collaborator Showcase.

All submissions are due by 8 pm ET on Friday, June 21.

Notification of acceptance will be made by Tuesday, Aug. 20.

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#OHDSI2024 Collaborator Showcase

ohdsi.org/OHDSI2024

The weekly OHDSI community call is held every Tuesday at 11 am ET.

Everybody is invited!

Links are sent out weekly and available at:
ohdsi.org/community-calls