



# OHDSI 2024 Best Community Contribution Honorees

OHDSI Community Call  
Nov. 26, 2024 • 11 am ET



# Upcoming Community Calls

Date	Topic
Nov. 26	Collaborator Showcase Honorees
Dec. 3	Recent OHDSI Publications
Dec. 10	How Did We Do In 2024?
Dec. 17	Holiday-Themed Final Call of 2024
Dec. 24	No Call
Dec. 31	No Call
Jan. 7	What Can OHDSI Go In 2025?



# Three Stages of The Journey

**Where Have We Been?**

**Where Are We Now?**

**Where Are We Going?**





# OHDSI Shoutouts!



Congratulations to the team of **George Datseris and Jacob Zelko** on the publication of **Physiological signal analysis and open science using the Julia language and associated software** in *Frontiers in Network Physiology*.

 | Frontiers in Network Physiology

TYPE Mini Review  
PUBLISHED 06 November 2024  
DOI 10.3389/fnetp.2024.1478280



## OPEN ACCESS

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## Physiological signal analysis and open science using the Julia language and associated software

George Datseris<sup>1\*</sup> and Jacob S. Zelko<sup>2,3</sup>

<sup>1</sup>Department of Mathematics and Statistics, University of Exeter, Exeter, United Kingdom, <sup>2</sup>Department of Mathematics, Northeastern University, Boston, MA, United States, <sup>3</sup>OHDSI Center, Roux Institute, Northeastern University, Portland, ME, United States

In this mini review, we propose the use of the Julia programming language and its software as a strong candidate for reproducible, efficient, and sustainable physiological signal analysis. First, we highlight available software and Julia communities that provide top-of-the-class algorithms for all aspects of physiological signal processing despite the language's relatively young age. Julia can significantly accelerate both research and software development due to its high-level interactive language and high-performance code generation. It is also particularly suited for open and reproducible science. Openness is supported and welcomed because the overwhelming majority of Julia software programs are open source and developed openly on public platforms, primarily through individual contributions. Such an environment increases the likelihood that an individual not (originally) associated with a software program would still be willing to contribute their code, further promoting code sharing and reuse. On the other hand, Julia's exceptionally strong package manager and surrounding ecosystem make it easy to create self-contained, reproducible projects that can be instantly installed and run, irrespective of processor architecture or operating system.



# OHDSI Shoutouts!



Congratulations to the team of **Aurora Quaye, John DiPalazzo, Kristin Kostka, Janelle M Richard, Blaire Beers-Mulroy, Meredith Peck, Robert Krulee, and Yi Zhang** on the publication of **Identifying factors associated with persistent opioid use after total joint arthroplasty: A retrospective review** in *Pain Medicine*.

**Pain Medicine**

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**Article Contents**

- Abstract
- Supplementary data

**JOURNAL ARTICLE** ACCEPTED MANUSCRIPT

**Identifying factors associated with persistent opioid use after total joint arthroplasty: A retrospective review**

Aurora Quaye, MD ✉, John DiPalazzo, MS, MPH, Kristin Kostka, MPH, Janelle M Richard, BA, Blaire Beers-Mulroy, MB BCH, Meredith Peck, DO, Robert Krulee, BS, Yi Zhang, MD

*Pain Medicine*, pnae120, <https://doi.org/10.1093/pm/pnae120>  
**Published:** 20 November 2024 **Article history ▼**

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**Abstract**

**Objective**

To identify predictors of persistent opioid use in opioid-naïve individuals undergoing total joint arthroplasty.

**Design**

Retrospective cohort study.



# OHDSI Shoutouts!



Congratulations to the team of **Haeun Lee, Seok Kim, Hui-Woun Moon, Ho-Young Lee, Kwangsoo Kim, Se Young Jung, and Sooyoung Yoo** on the publication of **Hospital Length of Stay Prediction for Planned Admissions Using Observational Medical Outcomes Partnership Common Data Model: Retrospective Study** in the *Journal of Medical Internet Research*.

JOURNAL OF MEDICAL INTERNET RESEARCH

Lee et al

## Original Paper

### Hospital Length of Stay Prediction for Planned Admissions Using Observational Medical Outcomes Partnership Common Data Model: Retrospective Study

Haeun Lee<sup>1,2</sup>, MS; Seok Kim<sup>2</sup>, MPH; Hui-Woun Moon<sup>2</sup>, MSN; Ho-Young Lee<sup>2</sup>, MD, PhD; Kwangsoo Kim<sup>3</sup>, PhD; Se Young Jung<sup>4\*</sup>, MD, MPH, PhD; Sooyoung Yoo<sup>2\*</sup>, PhD

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#### **Abstract**

**Background:** Accurate hospital length of stay (LoS) prediction enables efficient resource management. Conventional LoS prediction models with limited covariates and nonstandardized data have limited reproducibility when applied to the general population.



# OHDSI Shoutouts!



Congratulations to the team of **Milla Kurtz, Alfred Winter, and Matthias Löbe** on the publication of **Suitability of the OMOP Common Data Model for Mapping Datasets of Medical Research Studies Using the Example of a Multicenter Registry** in *Volume 321 of Studies in Health Technology and Informatics*.

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*Collaboration across Disciplines for the Health of People, Animals and Ecosystems*  
L. Stoicu-Tivadar et al. (Eds.)

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doi:10.3233/SHTI241086

## Suitability of the OMOP Common Data Model for Mapping Datasets of Medical Research Studies Using the Example of a Multicenter Registry

Milla KURTZ<sup>a,1</sup>, Alfred WINTER<sup>a</sup> and Matthias LÖBE<sup>a</sup>

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Matthias Löbe [0000-0002-2344-0426](https://orcid.org/0000-0002-2344-0426)

**Abstract.** Common Data Models (CDM) are developed to solve integration problems that arise in the secondary use of health data. The OMOP CDM is such a model that is mainly used for healthcare data, so this paper examines whether it is also suitable for mapping research data. An exemplary research dataset is mapped to the model and the model is tested for suitability. For this purpose, an ETL process is first designed with the OHDSI tools and finally implemented with Talend Open Studio for Data Integration. The data quality is checked, and the mapping and the model, together with the tools, are evaluated. Overall, all but three data fields from the source dataset could be mapped to the OMOP model, so that the model's suitability for research data can be confirmed.

**Keywords.** Common Data Model, Data Accuracy, OMOP, Registry





# 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 Vocabulary Subgroup
Wednesday	9 am	Medical Imaging
Wednesday	10 am	Surgery & Perioperative Medicine
Wednesday	10 am	Women of OHDSI
Wednesday	12 pm	Latin America
Monday	9 am	Vaccine Vocabulary
Monday	10 am	Healthcare Systems Interest Group



# 2024 APAC Symposium

Dec. 4-8 • Marina Bay Sands & National University of Singapore (NUS)

**Dec. 4:** Tutorial at NUS

**Dec. 5-6:** Main Conference at Marina Bay Sands

**Dec. 7-8:** Datathon at NUS



[ohdsi.org/APAC2024](https://ohdsi.org/APAC2024)





# 2024 Global Symposium



## 2024 OHDSI Global Symposium

Oct. 22-24 • New Brunswick, N.J. • Hyatt Regency Hotel

The 10th annual OHDSI Global Symposium brought together more than 470 global collaborators for three days of sharing research, building new connections and pushing forward our mission of improving health by empowering a community to collaboratively generate the evidence that promotes better health decisions and better care.

This page will host all materials from OHDSI2024, including video presentations (when available) from the main conference and tutorials, slide decks, posters, demos and more.

### State of the Community

**Where Have We Gone and Where Are We Going?**  
(George Hripacsak, Columbia University)

**Expand OHDSI Initiative for Eye Care and Ocular Imaging Challenge**  
(Amberlynn Reed, National Eye Institute)

**Titan Awards**  
(George Hripacsak, Columbia University & Marc Suchard, UCLA)



State of the Community Slides

### Plenary: Value Proposition for Participating in OHDSI Network Studies like LEGEND-T2DM

**Introduction to OHDSI Evidence Network / Marketplace**  
(Moderator: Clair Blacketer, Johnson & Johnson)

**Reflections from US Department of Veterans Affairs**  
(Scott Duvall, VA)

**Reflections from SIDIAP (Spain)**  
(Talita Duarte-Salles, IDIAP)

**Reflections from a Global Commercial Data Provider**  
(Atif Adam, IQVIA)



Plenary: Value Proposition for Participating in OHDSI Network Studies like LEGEND-T2DM Slides

### Plenary Q&A: Lessons Learned on LEGEND-T2DM Journey

**Moderator:** Fan Bu, University of Michigan

**Panelists:** LEGEND-T2DM co-authors



Plenary Q&A: Lessons Learned on LEGEND-T2DM Journey Slides

### Plenary Panel: JACC-OHDSI Partnership

**Moderators:**  
Nicole Pratt, University of South Australia  
Marc Suchard, UCLA

**Panelists:**  
Harlan Krumholz, Yale University  
Seng Chan You, Yonsei University  
Yuan Lu, Yale University



Plenary Panel: JACC-OHDSI Partnership Slides

### 2024 Global Collaborator Showcase

#### Observational Data Standards & Management

- 1 – [Application of OMOP Common Data Model to Disease Registry Data](#) (Vojtech Huser, Maria Rogozhnikina, Vlad Korsik, Teresa A. Simon, Peter Moorthamer, Dan Kiselev, Teresa A. Simon, Anastasia Vakhmistrova, Eugene Paulenkovich, Alexander Davydov, Michel Van Speybroeck)
- 2 – [Best Practices for Developing Disease-Specific Federated Networks: Insights from a Systemic Lupus Erythematosus Study](#) (Clair Blacketer, Frank DeFalco, Gowtham A Rao, Anna Sheahan, Michel Van Speybroeck, Martine Lewi, Federico Zazzetti)
- 3 – [Standardizing Rare Disease Patient Registry data to the OMOP-CDM](#) (Parag Shiralkar, Radhika Lakireddy, Sushma Ghanta, Sanket Kalyankar, Monika Brand)
- 4 – [Phederization – the federated network of Pulmonary Hypertension registries](#) (Eva-Maria Didden, Valerie van Baalen, Michel van Speybroeck, Monika Brand)
- 5 – [Lessons from mapping cancer information from European hospitals to ICD-O-3 conditions in OMOP](#) (Lars Halvorsen, Olivier Bouissou, Elisabeth Ross, Stelios Theophanous, Joëlle Thonnard, Piers Mahon)
- 6 – [SMEs optimization with high precision data ingestion of CAPRICORN CDM onto OMOP at AllianceChicago](#) (Andrew Hamilton, Amro Hassan, Davera Gabriel, Guy Tsafnat)
- 7 – [Process of Conversion of Ukrainian Medical Data to OMOP CDM Format](#) (Bohdan Khilchevskiy, Denys Kaduk, Maksym Trofymenko, Polina Talapova, Tetiana Nesmilan, Max Ved, Inna Ageeva, Pavlova Olga, Holovko Tetiana, Shevchenko Natalia)
- 8 – [An evaluation of the transformation of large German EHR database to OMOP CDM](#) (Andreas Ochs, Milou Brand, Jack Brewster, Methosdios Typou, Meda Sandu, Joe Maskell, Meghan Pettine, Atif Adam, George Kafatos)
- 9 – [Adopting the OMOP Oncology CDM at the Helsinki University Hospital](#) (Valtteri Nieminen, Alexey Ryzhenkov, Johanna Sanoja, Salma Rachidi, Juho Laitinenmaa, Joonas Laitinen, Samu Eränen, Tomi Mäkelä, Eric Fey, Kimmo Porkka)
- 10 – [Going global, redeeming the local: an innovative approach to implement the OMOP CDM in two countries of the Global South](#) (Valentina Martufi, Emma Kalk, Enny S. Cruz, Juliana Araújo Prata de Faria, Adalton do Anjos Fonseca, Mauricio L. Barreto, Maria Yury Travassos Ichihara, Jessica Gammon, Nicki Tiffin, Chris Fourie, Danilo Luis Cerqueira Dias, Denise Moraes Pimenta, Tsaone Tamuhla, Andrew Boule, Themba Mutemaringa, Juan-Paul Hynek, Muzzammil Ismail, Julio Barbour Oliveira, Ricardo Felix Monteiro Neto, Júlia Pescarini, Fernanda Revoredo de Sousa, Marianne Costa e Silva Lage, Adam Loff, Melvin Moodley, Elzo Pereira Pinto Junior)
- 11 – [Transforming Clinical Trial Data to the OMOP CDM](#) (Cynthia Sung, Mike Hamdi, Zhen Lin, Tom Walpole, Rebecca Baker, Melissa Cook, Shital Desai, Priya Gopal, Dan Hartley, Vojtech Huser, Priya Meghrajani, Tra Nguyen, Paul Orna12, Katy Sadowski, Sebastiaan van Sandijk, Philip Solovoyev, Ramona Walls, Kenneth J. Wilkins, Qi Yang)
- 12 – [Streamlining Research Data Standardization: AI-READI Survey Instrument Data Elements and MoCA Measurement Data Elements are curated and mapped utilizing a Standardized Value Set Mapping Table for transformation into the OMOP Common Data Model](#) (Stephanie S. Hong, James Cavallon, Yvette Chen, Monique Bangudi, Jessica Mitchell, Dawn Matthies, Steven Chamberlin, Aaron Cohen, Julie Owens, Abigail Lucero, Sally Baxter, Christopher G Chute, Cecilia S. Lee, Aaron Lee, AI-READI consortium)
- 13 – [Institutionalizing data interoperability and the application of common data models in a health data and research center: CIDACS' experience in Brazil](#) (Valentina Martufi, Juliana Araújo Prata de Faria, Danilo Luis Cerqueira Dias, Elzo Pereira Pinto Junior, Roberto Carreiro, Pablo Ivan Ramos, Mauricio L. Barreto)
- 14 – [OMOP GIS Vocabulary Package for Observational Studies in Health Care and Public Health](#) (Maksym Trofymenko, Polina Talapova, Andrew Williams)
- 15 – [Enhancing Infectious Disease Data Integration and management through OMOP-CDM in South Korea](#) (Min Ho An, Seok Kim, ByungJin Choi, Sooyoung Yoo, Rae Woong Park, Ji Seon Oh)
- 16 – [FHIR to OMOP Cookbook – Mapping mCODE FHIR Resources for Observational Research](#) (Qi Yang, Guy Livne, Sebastian van Sandijk, May Terry)
- 17 – [Towards Reproducible Imaging Research: Implementation of DICOM to OMOP CDM](#) (Woo Yeon Park, Ben Martin, Gabriel Salvador, Blake Dewey, Teri Sippel Schmidt, Paul Nagy)
- 18 – [Leveraging UDI for Advanced Medical Device Tracking in OMOP-CDM](#) (Seojeong Shin, Yiju Park, Sejoeng Eom, Kyulee Jeon, Seng Chan You)
- 19 – [Inclusion of Intraocular pressure data into the University of California Health Data Warehouse](#) (William Halliwell, Shahin Hallaj, Ayan Patel, Catherine Q. Sun, Kerry Goetz, Michelle Hribar, Sally L. Baxter, on behalf of the OMOP Eye Care & Vision Research Workgroup)
- 20 – [A Collaborative Analytic Enclave for the Metabolic Dysregulation and Obesity Cancer Risk Program \(MedOC\) Consortium: Extensions of the OMOP Common Data Model for Translational Research](#) (Madhan Subramanian, Nisha Grover, Maddie Wheeler, Marinella Temprosa)
- 21 – [Expanding the OMOP Common Data Model to support Extracorporeal Life Support research](#) (Clemens Rieder, Oleg Zhuk, Ahmed Said, Peta M.A. Alexander, Dominik J. Hoechter)
- 22 – [ETing from your OMOP CDM to your OMOP CDM? An efficient solution to vocabulary migration](#) (Clair Blacketer, Anton Ivanov, Evanette Burrows, Dmitry Dymshyts, Frank DeFalco)
- 23 – [Evaluating the impact of different vocabulary versions on cohort definitions and CDM](#) (Dmitry Dymshyts, Frank DeFalco, Anna Ostropolets, Gowtham Rao, Azza Shoabi, Clair Blacketer)

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# #OHDSISocialShowcase This Week

## Monday

### Expanding the OMOP Common Data Model to support Extracorporeal Life Support research

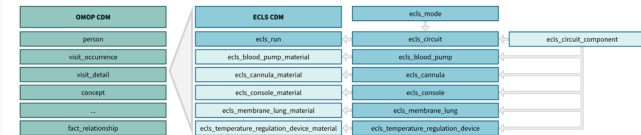
(Clemens Rieder, Oleg Zhuk, Ahmed Said, Peta M.A. Alexander, Dominik J. Hoechter)

The ECLS CDM expansion enables the OMOP CDM to store extracorporeal life support data

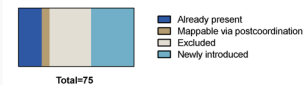
*Expanding the OMOP Common Data Model to support Extracorporeal Life Support research*

**Background:** Extracorporeal life support (ECLS) is a keystone in today's critical care. Constant evolution of the procedure over the last 50 years has resulted in a manifold terminology, often used inconsistently. Intending to provide an unambiguous nomenclature the Extracorporeal Life Support Organization (ELSO) published terminology guidelines. Until now the OMOP CDM lacked the capability to store ECLS-related data sufficiently due to a lack of fitting concepts as well as poor user operability in complex cases of ECLS.

Result 1: New data tables introduced as part of the new expansion. Core tables are shown in dark blue, support tables in light blue, respectively.



Result 2: Concept landscape analysis of the Maastricht Treaty.



**Results:** The ELSO Maastricht Treaty and ELSO Registry Data Definitions Document were analyzed. In total, 142 new concepts were designed. Custom database tables specific to extracorporeal therapy were introduced and logically divided into core tables and support tables. The expansion is available on GitHub (QR Code) and was placed in the public domain.

Methods [in silico](#)

**Acknowledgements:** This work is the result of the ECLS CDM research group's interdisciplinary and interprofessional collaboration efforts.



<sup>1</sup>Clemens Rieder, <sup>2</sup>Oleg Zhuk, <sup>3</sup>Ahmed Said, <sup>4</sup>Peta M.A. Alexander, <sup>1</sup>Dominik J. Hoechter

<sup>1</sup>Department of Anaesthesiology, LMU University Hospital, LMU Munich, <sup>2</sup>Odyssey, an EPAM Company, Cambridge, MA, USA, <sup>3</sup>Pediatric Critical Care, Washington University in St. Louis, St. Louis, MO, USA, <sup>4</sup>Department of Cardiology, Boston Children's Hospital and Department of Pediatrics, Harvard Medical School, Boston, MA, USA





# #OHDSISocialShowcase This Week

## Tuesday

## Causal Learning with Large-Scale Propensity Scores to Predict Treatment Outcomes: A Study of Arrhythmia in Adolescents with Attention-deficit/hyperactivity disorder

(Junhyuk Chang, Dong Yun Lee, Rae Woong Park)



### Causal Learning with Large-Scale Propensity Scores to Predict Treatment Outcomes : A Study of Arrhythmia in Adolescents with Attention-deficit/hyperactivity disorder

Junhyuk Chang, PharmD<sup>1</sup>, Dong Yun Lee, MD<sup>2</sup>, Rae Woong Park, MD, Ph.D.<sup>1,2</sup>

<sup>1</sup>Department of Biomedical Sciences, Ajou University Graduate School of Medicine, Suwon, South Korea

<sup>2</sup>Department of Biomedical Informatics, Ajou University School of Medicine, Suwon, South Korea



#### Background

- Adolescents with ADHD and comorbid depression often receive methylphenidate (MPH) and selective serotonin reuptake inhibitors (SSRIs)
- Concurrent use of MPH and SSRIs may increase cardiovascular risks, including arrhythmia
- The causal machine learning method is able to estimate treatment effects on individual patients by calculating average treatment effects.
- This study aims to analyze the treatment effect of concomitant administering SSRIs and MPH on arrhythmia occurrence with a causal forest model

#### Methods



Figure 1. Overall study framework

#### 1. Data collection

- Database: Health Insurance Review and Assessment Service – Attention Deficit/Hyperactivity Disorder (HIRA-ADHD) database which contained ADHD patient data from nationwide claims data
- HIRA-ADHD database was converted to OMOP-CDM
- Data was collected from Jan 1, 2016 to Dec 31, 2020

#### 2. Cohort definition

##### Target Cohort

- MPH-used patients with an ADHD diagnosis aged between 10 and 19
- Patients with a depression record
- Patients without other anti-ADHD agents and previous antidepressants

Outcome Cohort: Occurrence of arrhythmia

#### 3. Data preprocessing

- Split: 70% for training / 30% for testing, ensuring the same outcome prevalence in both sets
- Extracted patient baseline covariates to employ a large-scale propensity score utilizing the FeatureExtraction
- Initial screening was conducted to exclude rare covariates by 10-fold cross-validation

#### 4. Estimate average treatment effect

- Estimated the average treatment effect (ATE) using constructed causal forest model
- Using rank-ATE (RATE), we estimated treatment heterogeneity based on the quintiles of the test set divided according to CATEs
- We compared the top 5 variables based on variable importance from the causal forest model to identify characteristics of high and low CATE groups

#### Results

- Among the total of 11,163 MPH-used patients, 7,873 patients were prescribed SSRIs and 58 patients had occurrences of arrhythmia

- Figure 2 shows the ATEs of the quantile groups in increasing order, with values of -0.5, -0.1, 0.1, 0.1, and 0.4
- Among ATE of quantile groups, the ATE of the Q5 group is statistically significant (95% CI: 0.1-0.8).

- The estimated RATE was 0.008 (95% CI: 0.002-0.015), which confirmed the heterogeneity between quantile groups

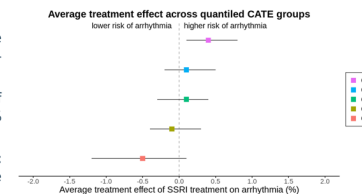


Figure 2. Average treatment effect of quantile groups

- Figure 3 represents the density of top 5 baseline covariates between high and low CATE groups

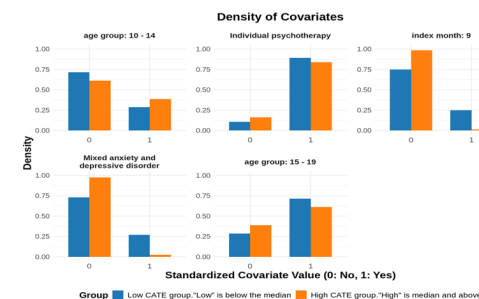


Figure 3. Density of top 5 covariates

#### Conclusions

- This study suggests that while SSRI treatment did not significantly affect arrhythmia
- Individualized treatment rule accounting for this heterogeneity could modify guidelines for concurrent use of MPH and SSRIs

#### Acknowledgements

This research was funded a grant from the Korea Health Technology R&D Project through the Korea Health Industry Development Institute (KHIDI), funded by the Ministry of Health & Welfare, Republic of Korea (grant number: HR16C0001) and this research was supported by a Government-wide R&D Fund project for infectious disease research (GFID), Republic of Korea (grant number: HG22C0024, KH124685).

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# #OHDSISocialShowcase This Week

## Wednesday

# Predicting outcome in emergency room patients with suspected gastrointestinal infection using OMOP-CDM

(So Hee Lee, Byungjin Choe, Min Ho An, Junhyuk Chang, Harrin Kim, Rae Woong Park)



## Predicting outcome in emergency room patients with Suspected Gastrointestinal Infection using OMOP-CDM

So Hee Lee<sup>1</sup>, Byungjin Choi, MD<sup>2</sup>, Min Ho An, MD<sup>2</sup>, Junhyuk Chang<sup>1</sup>, Harrin Kim<sup>1</sup>, Sujin Gan, RN<sup>1</sup>, Rae Woong Park, MD, Ph.D<sup>1,2</sup>

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<sup>2</sup>Department of Biomedical Informatics, Ajou University School of Medicine, Suwon, Republic of Korea



### Background & Objectives

- Gastroenteritis is among the most frequently diagnosed conditions in emergency departments across the country
- Symptoms of gastroenteritis often begin mildly, with fever, diarrhea, abdominal pain, and vomiting. However, without prompt treatment, these symptoms can worsen, leading to more severe conditions that affect individuals of all ages
- In this study, we aim to predict 7-day 1) ER revisits, 2) ICU admissions, and 3) mortality, to assess the severity of gastroenteritis
- By identifying patients in high risk for disease prognosis, it enables quick triage and timely treatment, ultimately improving outcomes and reducing transmission

### Methods

#### Data sources

- Ajou University School of Medicine (AUSOM) database
  - Electronic health records (1994.01 ~ 2024.02)
  - OMOP-CDM v5.3.4

#### Study population

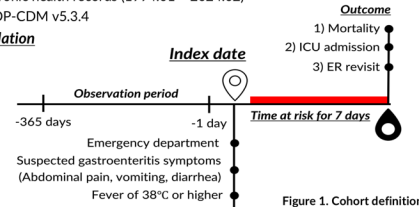


Figure 1. Cohort definition

#### Model development and evaluation

- Machine learning Algorithms:
  - Gradient boosting model (GBM) & Least absolute shrinkage and selection operator (LASSO)
- Covariates
  - Demographics, condition, drug, measurement and visit
  - Time frames : Long-term (-365 days) and Short term (-1 day) prior to the index date
  - The short-term period was chosen to capture recent conditions crucial for predicting the severity and treatment response of the patient
- Data split: Split into the train (75%) and test set (25%) in 3-fold cross validation
- Model performance
  - The area under the receiver operating curve (AUROC)
  - Youden index to determine threshold for high and low risk groups

#### Survival Analysis for ICU admission

- To assess the association between the risk of ICU admission and the incidence of 7-day mortality through the survival analyses
- Cox proportional model: for calculating the hazard ratio
- Kaplan-Meier method: for plotting the survival curve

### Results

- GBM outperformed LASSO in AUROC for predicting ER revisits, ICU admissions, and mortality (0.758 vs. 0.679, 0.964 vs. 0.947, and 0.990 vs. 0.980, respectively)

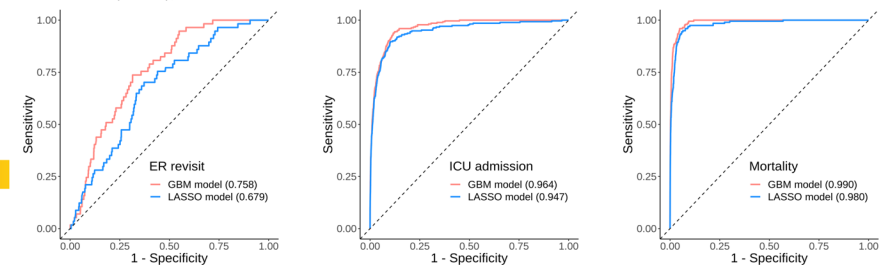


Figure 2. Model Performance for severity of gastroenteritis: (a) Prediction for ER revisit, (b) Prediction for ICU admission, (c) Prediction for mortality

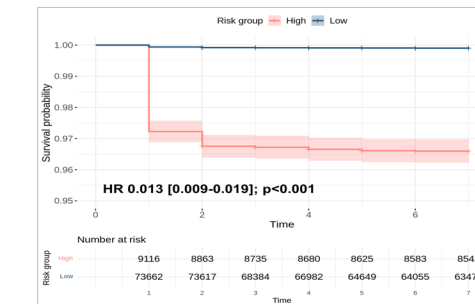


Figure 3. Kaplan-Meier survival analysis of Gradient boosting machine for ICU admission


- Based on the predicted results (Youden index: 0.005) by GBM prediction model in ICU admission, the low-risk group had a significantly lower hazard ratio for 7-day mortality (HR 0.013, 95% CI [0.009-0.019],  $p < 0.001$ )

### Conclusions

- We developed CDM-based prediction models to assess the severity of gastroenteritis outcomes, including ER revisits, ICU admissions, and mortality
- These models demonstrated moderate accuracy in predicting severity and distinguishing high-risk patients, aiding in timely treatment and improving patient outcomes

### Acknowledgements

This research was funded by a grant from the Korea Health Technology R&D Project through the Korea Health Industry Development Institute (KHIDI), funded by the Ministry of Health & Welfare, Republic of Korea (grant number: HR16CO001) and this research was supported by a Government-wide R&D Fund project for infectious disease research (GFID), Republic of Korea (grant number: HG22C0024, KH124685)



# **CDM SURVEY SUB-WORK GROUP**



# LANDSCAPE ASSESSMENT

- **Activities**

- Invite representatives from cohorts with experience using the CDM for survey data to share their knowledge and challenges.
- Conduct a community survey to gather information on experiences and needs related to survey data in the CDM.
- Review the most used Common Data Elements (CDMs) as a foundation for developing standards, tools, and best practices.

- **Key Result**

- A comprehensive report summarizing survey CDM mapping resources, challenges, and identified development priorities (vocabulary, standards, tools, best practices) to be shared with the OHDSI community.

# SURVEY DATA AND THE OMOP CDM: LANDSCAPE ASSESSMENT

- <https://forms.gle/gGG4Pj4QZTppyaACA>
- Open through Dec. 31, 2024

# WHO SHOULD PARTICIPATE

- You have survey data and you've mapped it to the OMOP CDM
- You have survey data and you would like to map it to the OMOP CDM
- You are in the process of developing a survey(s) and plan to map to the OMOP CDM
- Multiple perspectives from the same team
- Multiple surveys from the same person



## **Nicole Gerlanc, PhD**

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National Cancer Institute

Email: [nicole.gerlanc@nih.gov](mailto:nicole.gerlanc@nih.gov)

Wiki: <https://github.com/OHDSI/CdmSurveySubWg/wiki>



# 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. 26: OHDSI2024 Showcase Honorees



**Shahin Hallaj**

Informatics and Data Science Postdoctoral Fellow  
UC San Diego

Gap Analysis of Static Automated Perimetry  
Concept Representation in OMOP CDM



**Ramya Tekumalla**

Assistant Professor of Data Science  
Mercer University

Towards automated phenotype definition  
extraction using large language models



**Alvaro Alvarez**

Biomedical Informatics Data Scientist  
Stanford Health Care

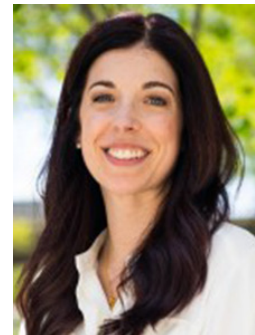
Bridging the Language Gap: Generative Models  
for Efficient Medical Concept Discovery



**Samuel Patnoe**

Research Informatics Programmer Analyst  
HealthPartners Institute

Health Trends Across Communities in Minnesota: a  
Statewide Dashboard Leveraging the OMOP CDM  
to Monitor the Prevalence of Health Conditions



**Clair Blacketer**

Director, Epidemiology Analytics  
Janssen Research and Development

Improving Team Science Through “Thons”  
Reflections on the April Olympians Community Event





**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](https://ohdsi.org/community-calls)**