HowOften: Findings, Current Projects & Next Steps

OHDSI Community Call
July 16, 2024 • 11 am ET
## Upcoming Community Calls

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July 23: Building The Evidence Network, Session II

Clair Blacketer
Director, Epidemiology Analytics, Janssen Research & Development, Inc.

Paul Nagy
Deputy Director, Johns Hopkins Medicine Technology Innovation Center
Director of Education, Biomedical Informatics and Data Science Graduate Training Programs
Three Stages of The Journey

Where Have We Been?
Where Are We Now?
Where Are We Going?
OHDSI Shoutouts!

Congratulations to the team of Kyulee Jeon, Woo Yeon Park, Charles E Kahn Jr, Paul Nagy, Seng Chan You, and Soon Ho Yoon on the publication of Advancing Medical Imaging Research Through Standardization: The Path to Rapid Development, Rigorous Validation, and Robust Reproducibility in Investigative Radiology.

S
ince 2000, there has been a remarkable increase in the number of published papers utilizing artificial intelligence (AI) in medical research. Notably, one fifth of these publications dealt with medical imaging, which emerged as the most significant area in the paradigm shift of medical research towards AI. This trend reflects the fact that the field of radiology has been at the forefront of AI research within the medical domain. The predominance of radiology in AI research stems from multiple factors. The advancements in deep learning for computer vision, especially since the development of AlexNet in 2012, have significantly enhanced the field of medical imaging. These technological breakthroughs have achieved unprecedented precision in tasks essential to radiological analysis, such as image classification, object detection, and segmentation. Meanwhile, the progress in computer vision has been facilitated by the assembly of extensive datasets such as ImageNet, which is currently accessible and comprises over 14 million annotated images. However, constructing comparable datasets in the medical field remains largely impractical. Medical data are not primarily gathered for research purposes but are recorded during the delivery of patient care, which vary widely according to the practices of each healthcare institution. Consequently, the data exhibit significant variations in format and content both across and within institutions, making it exceptionally challenging to standardize, manage, or harmonize effectively.

Unlike in other healthcare fields, the widespread adoption of the Digital Imaging and Communications in Medicine (DICOM) standard has been pivotal in advancing radiological studies. As DICOM has been implemented across almost every device, it allows for the integration of medical images from various sources within Picture Archiving and Communication Systems (PACS). This integration has been further...
OHDSI Shoutouts!

Congratulations to the team of Hyerim Ji, Seok Kim, Leonard Sunwoo, Sowon Jang, Ho-Young Lee, and Sooyoung Yoo on the publication of Integrating Clinical Data and Medical Imaging in Lung Cancer: Feasibility Study Using the Observational Medical Outcomes Partnership Common Data Model Extension in JMIR Medical Informatics.
Three Stages of The Journey

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

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<td>Medical Devices</td>
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<td>GIS-Geographic Information System</td>
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<tr>
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<td>OMOP CDM Oncology Vocabulary/Development Subgroup</td>
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Is Semaglutide Associated with Blinding Eye Diseases??

Risk of Nonarteritic Anterior Ischemic Optic Neuropathy in Patients Prescribed Semaglutide

Jimena Tatiana Hathaway, MD, MPH; Madhura P. Shah, BS; David B. Hathaway, MD; Seyyedeh Maryam Zekavat, MD, PhD; Drenushe Krasniqi, BA; John W. Gittinger Jr, MD; Dean Cestari, MD; Robert Mallery, MD; Bardia Abbasi, MD; Marc Bouffard, MD; Bart K. Chwalisz, MD; Tais Estrela, MD; Joseph F. Rizzo III, MD

Hazard Ratio of NAION 4.28 (95% CI: 1.62 – 11.29, P < .001)

“The best approaches to confirm, refute, or refine our findings would be to conduct a much larger, retrospective, multicenter population-based cohort study; a prospective, randomized clinical study; or a postmarket analysis of all GLP-1 RA drugs.”

NAION = stroke of the optic nerve
Next CBER Best Seminar: July 17

Speaker: Yonas Ghebremichael-Weldeselassie, Lecturer of Statistics at School of Mathematics and Statistics, The Open University, UK

Topic: A modified self-controlled case series method for event-dependent exposures and high event-related mortality, with application to COVID-19 vaccine safety

Date/Time: Wednesday, July 17, 11 am ET

ohdsi.org/cber-best-seminar-series

Upcoming Seminars

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

Topic: A modified self-controlled case series method for event-dependent exposures and high event-related mortality, with application to COVID-19 vaccine safety

Presenter: Yonas Ghebremichael-Weldeselassie, Lecturer of Statistics at School of Mathematics and Statistics, The Open University, UK

Abstract:

We propose a modified self-controlled case series (SCCS) method to handle both event-dependent exposures and high event-related mortality. This development is motivated by an epidemiological study undertaken in France to quantify potential risks of cardiovascular events associated with COVID-19 vaccines. Event-dependence of vaccinations, and high event-related mortality, are likely to arise in other SCCS studies of COVID-19 vaccine safety. Using this case study and simulations to broaden its scope, we explore these features and the biases they may generate, implement the modified SCCS model, illustrate some of the properties of this model, and develop a new test for presence of a dose effect. The model we propose has wider application, notably when the event of interest is death.

Bio: Yonas Weldeselassie is a Lecturer of Statistics at School of Mathematics and Statistics, The Open University, UK. He graduated in statistics and demography from University of Asmara, Eritrea and went on to become an assistant lecturer in Mekelle University, Ethiopia, and then a Senior Research Fellow in Medical Statistics at Warwick Medical School, division of Population Evidence and Technologies. He earned a MSc in Biostatistics from Hasselt University, Belgium and PhD in statistics from the Open University, UK. After working as a research associate, on MRC project 'Software tools and online resources for the self-controlled case series method and its extensions', at the department of mathematics and statistics, the Open University since 2014, he joined Warwick Medical School in June 2017. His main research interest is in medical statistics specially in the methodological development and application of the self-controlled case series (SCCS) method. He published a book on SCCS with Paddy Farrington and Heather Whitaker, and he is currently working on early prediction of gestational diabetes melitus.
#OHDSI2024 Registration Is Open!

Registration is 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](http://ohdsi.org/OHDSI2024)
The Center for Advanced Healthcare Research Informatics (CAHRI) at Tufts Medicine welcomes:

Melissa Haendel, PhD
*Director of Precision Health & Translational Informatics and the Sarah Graham Kenan Distinguished Professor in the Department of Genetics at The University of North Carolina at Chapel Hill and co-founder of the Monarch Initiative and the National Covid Cohort Collaborative*

‘Journeys across the translational divide: making healthcare and basic research data interoperable’

July 25, 2024, 11am-12pm EST
Virtually via [Zoom](https://zoom.com)

Please contact Marty Alvarez at [malvarez2@tuftsmedicalcenter.org](mailto:malvarez2@tuftsmedicalcenter.org) for calendar invite or questions.
Advancing Certification and Evaluation of Medical Device Software in the EU using OMOP

(Frédéric Jung, Chang Sun, Mahmoud Ibrahim, Gökhan Ertaylan)
SNOMED overhaul and its impact on ETL and phenotyping

(Masha Khitrun, Alexander Davydov, Oleg Zhuk)

Background: Over the years, the vocabulary community has been working to improve SNOMED CT for the establishment of EHR standards and regulations. However, due to the complex nature of SNOMED CT, improvements can lead to a variety of challenges for data integration, mapping and consistency, among other things. To address these challenges, the SNOMED board has approved a comprehensive overhaul of SNOMED CT in 2018.

Methods: The overhaul development follows the guiding principles outlined in the draft of SNOMED CT0, ensuring adherence to established standards and regulations within the EHR domain. The overhaul is designed to improve consistency and interoperability, and to enable better data integration and analysis. The changes aim to reduce the complexity of SNOMED CT, making it easier for developers to implement and maintain.

Results: The overhaul includes changes to the SNOMED CT vocabulary, including the removal of obsolete concepts and the rationalization of concept relationships. The changes aim to improve the quality and consistency of the vocabulary, making it more suitable for clinical and research applications.

Conclusion: The SNOMED CT overhaul is designed to improve the reliability and consistency of the vocabulary, making it more suitable for clinical and research applications. The changes aim to reduce the complexity of SNOMED CT, making it easier for developers to implement and maintain.
OMOPification of real world cancer data to enable privacy-preserving analytics for cancer research

(Prabash Galgane Banduge, Anne-Lore Bynens, Cedric Gillissen, Andre Dekker, Petros Kalendralis, Pascal Suppers, Alberto Traverso, Lizza Hendriks, Aiara Lobo Gomes)
The association between comorbid depression and insulin initiation in type 2 diabetes: A cohort OHDSI study

(Christianus Heru Setiawan, Daniel C.A. Nugroho, Phan Thanh Phuc, Septi Melisa, Muhammad Solihuddin Muhtar, Nguyen Phung Anh, Jason C. Hsu)

The study found a significant correlation between depression and a higher probability of initiating insulin treatment, with an initial hazard ratio of 1.38.

Background: Individuals diagnosed with type 2 diabetes have a higher risk of experiencing depression compared to those without the condition. Hyperglycemia-induced neurochemical dysregulation promotes the progression of type 2 diabetes. Furthermore, depression can lead to poor outcomes and may cause insulin resistance. This comorbidity may fail diabetes oral medications, and insulin therapy may be required.

Methods: We analyzed data from 35,580 patients, and after PS matching (1:4), we obtained 1903 patients for the target group and 5807 patients for the comparator group. We examined the association between depression comorbid with the outcome of insulin initiation.

Depression was found to be significantly associated with insulin initiation, with a hazard ratio of 1.38 (95% CI: 1.11, 1.71).

Conclusion: The association between depression and insulin initiation is significant. This finding supports the need for further research to understand the mechanisms underlying the relationship between depression and insulin resistance.
Empowering research with seamless data flow and research-ready, anonymised data in OMOP CDM: Learnings from the design of WAYFIND-R, a global precision oncology registry and research platform

(Tom Stone, Yuri Pyatkin, Ana Ferro, Dimitar Toshev)
Opening: Health Data Scientist, Erasmus MC

Health Data Scientist

Would you like to be responsible for the creation and execution of study software to support our researchers? Join our team!

Closing date: 18-07-2024

Job description

The Health Data Science group at the department of Medical Informatics is looking for an experienced R programmer to develop open-source analytics.

You will be responsible for the creation and execution of study software to support the work of epidemiologists. This will include designing, developing, documenting, and maintaining R code that will be executed against health data that is standardized to the OMOP Common Data Model (OMOP-CDM). This data model is maintained by the Observational Health Data Sciences and Informatics (OHDSI, www.ohdsi.org) initiative. The Department is leading the Data Analysis and Real World Interrogation Network coordination centre (DARWIN EU®) in which a large data network is created with data sources that are mapped to the OMOP-CDM. The aim of this network is to provide fast and reliable evidence to the European Medicines Agency. Your work will enable the use of health data at an unprecedented scale in Europe and will facilitate the execution of impactful studies to improve patient care. We recommend applicants to review the DARWIN EU® software packages to get an understanding of the growing set of R packages.
Opening: Sr AD, Real World Evidence & Analytics
Boehringer Ingelheim

SR AD, Real World Evidence & Analytics

> Apply Now

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JOB ID - 13278

Description

The purpose of this job is to:

- Generate real world evidence (RWE) to support in-line and pipeline products.
- Provide statistical advice on the analysis of real world data (RWD) to various internal and external stakeholders.
- Contribute to the RWD acquisition strategy and tool evaluation.
Opening: Lead Director, RWE Distributed Research
CVS Health

Lead Director, RWE Distributed Research

Apply

Hybrid
PA - Blue Bell
IL - Northbrook
CT - Hartford
RI - Woonsocket
AZ - Scottsdale

View All 7 Locations

Full time
Posted 6 Days Ago
R0288183

Bring your heart to CVS Health. Every one of us at CVS Health shares a single, clear purpose: Bringing our heart to every moment of your health. This purpose guides our commitment to deliver enhanced human-centric health care for a rapidly changing world. Anchored in our brand — with heart at its center — our purpose sends a personal message that how we deliver our services is just as important as what we deliver.

Our Heart At Work Behaviors™ support this purpose. We want everyone who works at CVS Health to feel empowered by the role they play in transforming our culture and accelerating our ability to innovate and deliver solutions to make health care more personal, convenient and affordable.

About us

Our Work Experience is the combination of everything that's unique about us: our culture, our core values, our company meetings, our commitment to sustainability, our recognition programs, but most importantly, it's our people. Our
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 postdoctoral fellows. 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.

Deadline for applications: rolling
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?
July 16: HowOften Initiative & Early Results

Hsin Yi “Cindy” Chen
MD-PhD Student
Columbia University Department of Biomedical Informatics

Azza Shoaibi
Director, Observational Health Data Analytics
Janssen Research and Development

Elise Ruan
Clinical Informatics Fellow
NewYork-Presbyterian Hospital/Columbia University

George Hripcsak
Professor of Biomedical Informatics
Columbia University
The weekly OHDSI community call is held every Tuesday at 11 am ET.

Everybody is invited!

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