Patient-Level Prediction Updates & Ongoing Projects

OHDSI Community Call
July 30, 2024 • 11 am ET

Upcoming Community Calls

Date	Topic
July 30	Advances in Patient-Level Prediction
Aug. 6	Building The OHDSI Evidence Network Sprint
Aug. 13	Global Symposium Plenary and Tutorial Preview
Aug. 20	Building The OHDSI Evidence Network Sprint
Aug. 27	canceled due to ISPE 2024
Sept. 3	New Standardized Vocabularies Release
Sept. 10	Asia-Pacific Regional Updates

Three Stages of The Journey

Where Have We Been?

Where Are We Now?

Where Are We Going?

OHDSI Shoutouts!

Congratulations to the team of **Louisa Smith and Robert Cavanaugh** on the publication of **allofus: an R package to facilitate use of the All of Us Researcher Workbench** in *JAMIA*.

JAMIA
A SCHOLARLY JOURNAL OF INFORMATICS IN HEALTH AND BIOMEDICINE

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JOURNAL ARTICLE

allofus: an R package to facilitate use of the *All of Us* Researcher Workbench Get access >

Louisa H Smith, PhD ✉, Robert Cavanaugh, PhD

Journal of the American Medical Informatics Association, ocae198,
https://doi.org/10.1093/jamia/ocae198
Published: 24 July 2024 **Article history** ▾

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Abstract

Objectives

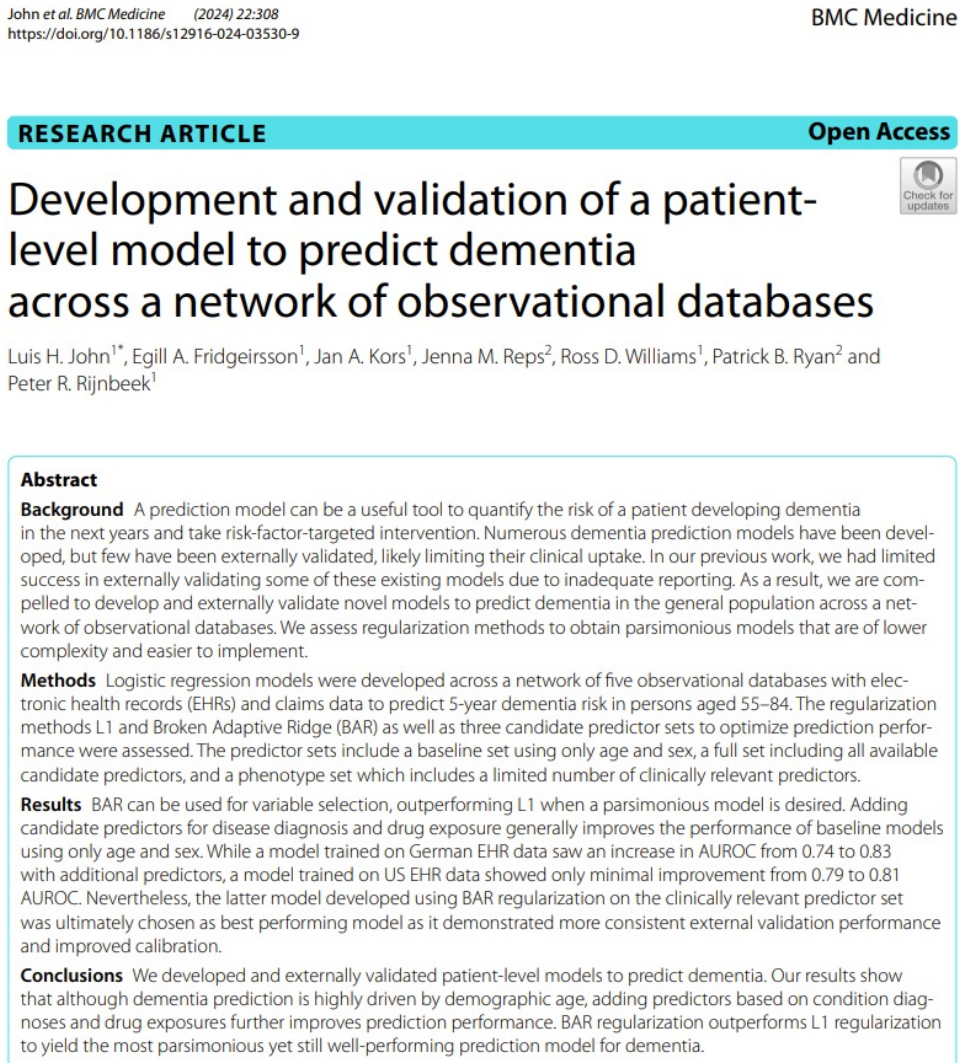
Despite easy-to-use tools like the Cohort Builder, using *All of Us* Research Program data for complex research questions requires a relatively high level of technical expertise. We aimed to increase research and training capacity and reduce barriers to entry for the *All of Us* community through an R package, `allofus`. In this article, we describe functions that address common challenges we encountered while working with *All of Us* Research Program data, and we demonstrate this functionality with an example of creating a cohort of *All of Us* participants by synthesizing electronic health record and survey data with time dependencies.

Target audience

All of Us Research Program data are widely available to health researchers. The `allofus` R package is aimed at a wide range of researchers who wish to conduct complex analyses using best practices for reproducibility and transparency, and who have a range of experience using R. Because the *All of Us* data are transformed into the Observational Medical Outcomes Partnership Common Data Model (OMOP CDM), researchers familiar with existing OMOP CDM tools

OHDSI Shoutouts!

Congratulations to the team of **Henrik John, Egill Fridgeirsson, Jan Kors, Jenna Reps, Ross Williams, Patrick Ryan and Peter Rijnbeek** on the publication of **Development and validation of a patient-level model to predict dementia across a network of observational databases** in *BMC Medicine*.



John *et al. BMC Medicine* (2024) 22:308
https://doi.org/10.1186/s12916-024-03530-9

BMC Medicine

RESEARCH ARTICLE Open Access

Development and validation of a patient-level model to predict dementia across a network of observational databases

Luis H. John[1*], Egill A. Fridgeirsson[1], Jan A. Kors[1], Jenna M. Reps[2], Ross D. Williams[1], Patrick B. Ryan[2] and Peter R. Rijnbeek[1]

Abstract

Background A prediction model can be a useful tool to quantify the risk of a patient developing dementia in the next years and take risk-factor-targeted intervention. Numerous dementia prediction models have been developed, but few have been externally validated, likely limiting their clinical uptake. In our previous work, we had limited success in externally validating some of these existing models due to inadequate reporting. As a result, we are compelled to develop and externally validate novel models to predict dementia in the general population across a network of observational databases. We assess regularization methods to obtain parsimonious models that are of lower complexity and easier to implement.

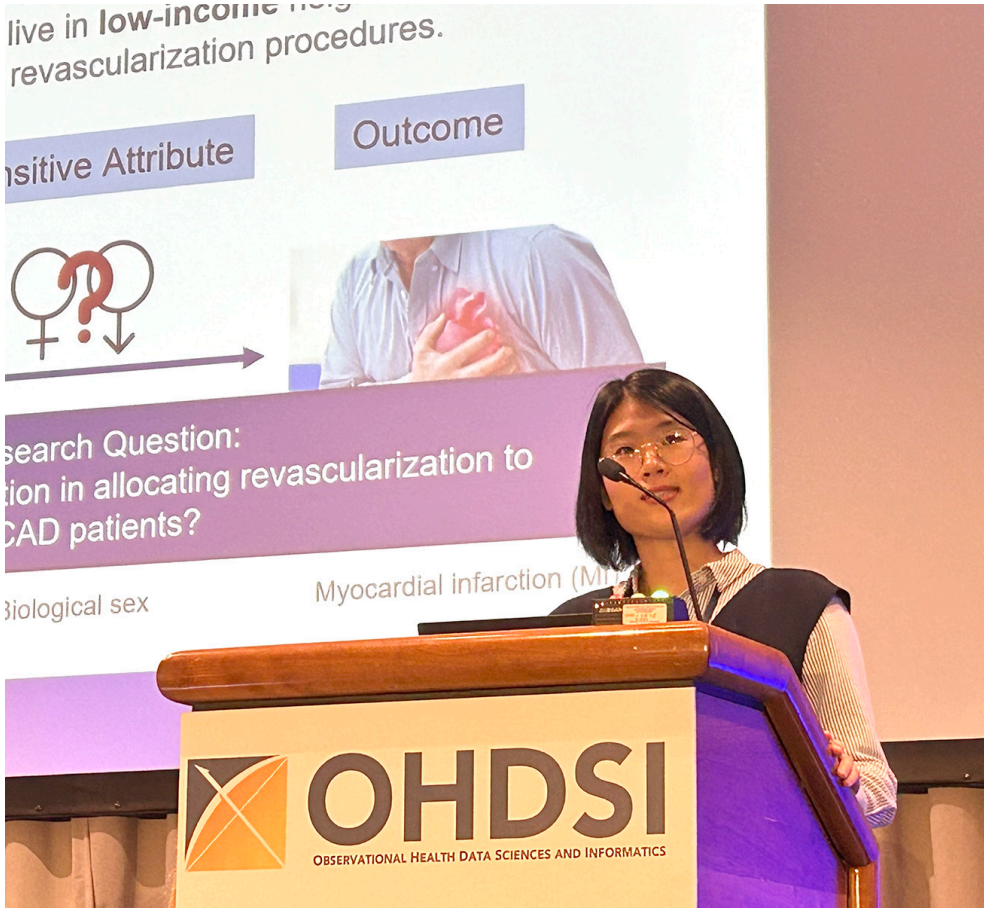
Methods Logistic regression models were developed across a network of five observational databases with electronic health records (EHRs) and claims data to predict 5-year dementia risk in persons aged 55–84. The regularization methods L1 and Broken Adaptive Ridge (BAR) as well as three candidate predictor sets to optimize prediction performance were assessed. The predictor sets include a baseline set using only age and sex, a full set including all available candidate predictors, and a phenotype set which includes a limited number of clinically relevant predictors.

Results BAR can be used for variable selection, outperforming L1 when a parsimonious model is desired. Adding candidate predictors for disease diagnosis and drug exposure generally improves the performance of baseline models using only age and sex. While a model trained on German EHR data saw an increase in AUROC from 0.74 to 0.83 with additional predictors, a model trained on US EHR data showed only minimal improvement from 0.79 to 0.81 AUROC. Nevertheless, the latter model developed using BAR regularization on the clinically relevant predictor set was ultimately chosen as best performing model as it demonstrated more consistent external validation performance and improved calibration.

Conclusions We developed and externally validated patient-level models to predict dementia. Our results show that although dementia prediction is highly driven by demographic age, adding predictors based on condition diagnoses and drug exposures further improves prediction performance. BAR regularization outperforms L1 regularization to yield the most parsimonious yet still well-performing prediction model for dementia.

OHDSI Shoutouts!

Congratulations to **Linying Zhang**, who won the AMIA 2024 Edward H. Shortliffe Doctoral Dissertation Award Honorable Mention. She will be giving a talk on her dissertation "Causal machine learning for reliable real-world evidence generation in healthcare" at the 2024 AMIA Annual Symposium, held Nov. 9-13 in San Francisco.



Three Stages of The Journey

Where Have We Been?

Where Are We Now?

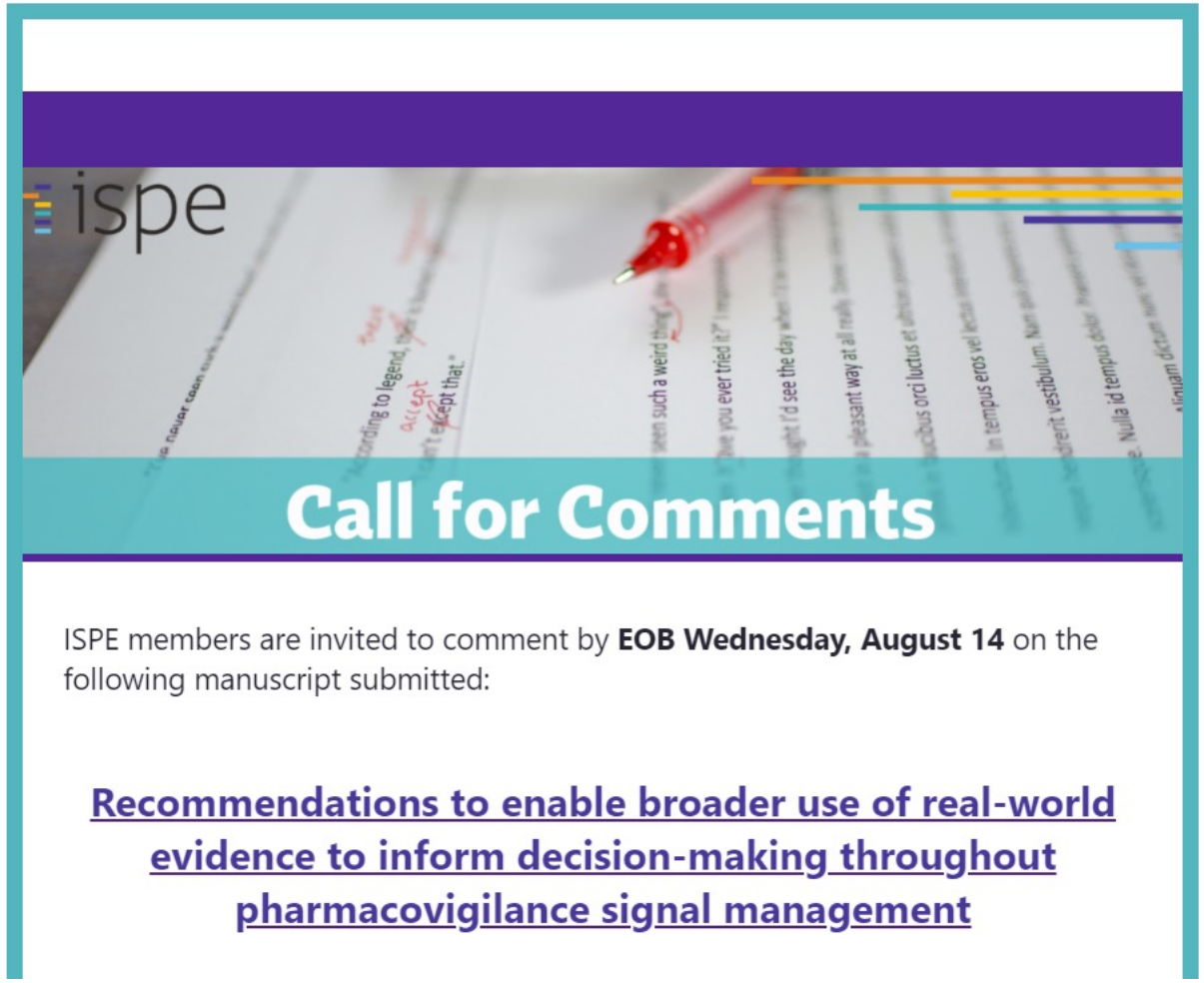
Where Are We Going?

Upcoming Workgroup Calls

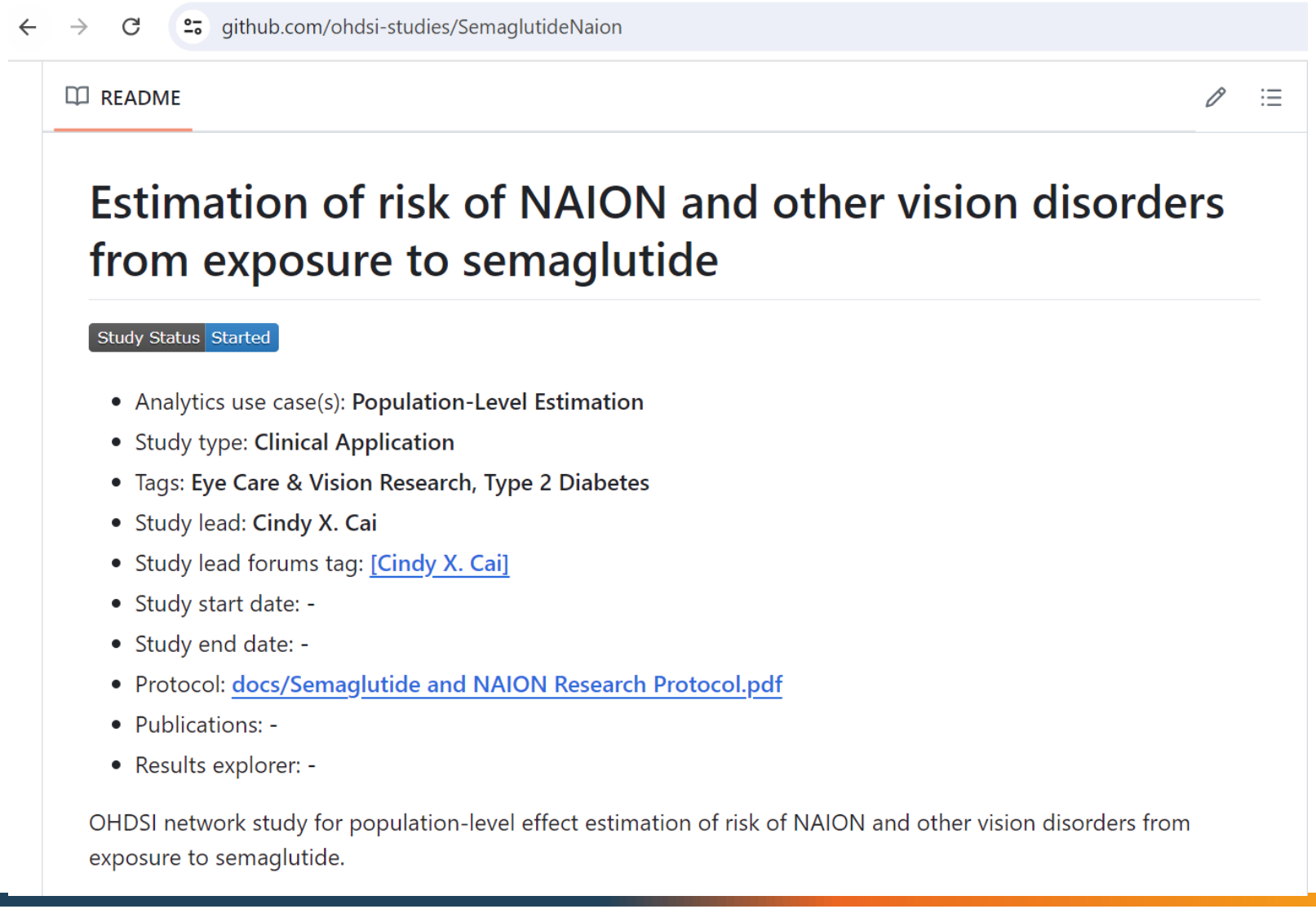
Date	Time (ET)	Meeting
Tuesday	12 pm	CDM Vocabulary Subgroup
Wednesday	10 am	Surgery & Perioperative Medicine
Wednesday	4 pm	Vulcan/OHDSI
Thursday	9:30 am	Themis
Thursday	11 am	Industry
Thursday	1 pm	OMOP CDM Oncology – Vocabulary/Development Subgroup
Thursday	7 pm	Dentistry
Friday	10 am	GIS-Geographic Information System
Friday	11:30 am	Steering Group
Friday	11:30 am	Clinical Trials
Tuesday	9 am	Atlas
Tuesday	10 am	Common Data Model

ISPE Manuscript open for comments

The team of **Niklas Norén, Katherine Donegan, Monica Muñoz, Thamir Alshammari, Nicole Pratt, Gianmario Candore, Daniel Morales, Peter Rijnbeek, Andrew Bate, Rodrigo Postigo, Sengwee Toh, Gianluca Trifiro, Montse Soriano Gabarro, Alison Cave and Patrick Ryan** have drafted a manuscript **Recommendations to enable broader use of real-world evidence to inform decision-making throughout pharmacovigilance signal management** that is now open for public comment from ISPE. Please provide feedback by August 14.



OHDSI network study on semaglutide-NAION seeking data partners



OHDSI2024 Conference Agenda

Agenda • Wednesday, Oct. 23

Time (ET)	Topic (Presenters)
7:30 - 8:30 am	**Registration and Lite Breakfast**
8:30 - 9:15 am	**State of the OHDSI Community** (George Hripcsak, Columbia Univ.)
9:15 - 10:15 am	**Plenary: Clinical Insights from LEGEND-T2DM** Introduction to LEGEND-T2DM (Moderator: Aline Pedroso, Brazil) Comparative Effectiveness of Second-line Antihyperglycemic Agents (Arya Aminorroaya, Yale Univ.) Effectiveness of First-line Antihyperglycemia Agents (Phyllis Thangaraj, Yale Univ.) Comparative Safety of SGLT2 for Risk of Diabetic Ketoacidosis (Hannah Yang/Evan Minty, Univ. of Calgary) Comparative Safety of GLP1-RA and the Risk of Thyroid Tumors (Daniel Morales, Univ. of Dundee)
10:15 - 10:35 am	**Networking Break**
10:35 - 11:20 am	**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 Taipei Medical University (Thanh-Phuc Phan, Taipei Medical Univ.) Reflections from a Global Commercial Data Provider (Sarah Seager, IQVIA)
11:20 am - 12 pm	**Plenary Q&A: Lessons Learned on LEGEND-T2DM Journey** (Moderator: Fan Bu, Univ. of Michigan; Panelists: LEGEND-T2DM co-authors)
12 - 12:45 pm	**Lunch**
12:45 - 1:30 pm	**Plenary Panel: JACC-OHDSI Partnership** (Moderators: Nicole Pratt, Univ. of South Australia/Marc Suchard, UCLA; Panelists: Harlan Krumholz, Yale Univ./Seng Chan You, Yonsei Univ./ Yuan Lu, Yale Univ.)
1:30 pm - 2 pm	**Plenary Activity: OHDSI Scavenger Hunt - Form Your Network Study Dream Team**
2 pm - 3 pm	**Collaborator Showcase: Posters and Software Demos**
3 pm - 4 pm	**Collaborator Showcase: Lightning Talks**
4 pm - 5 pm	**Collaborator Showcase: Posters and Software Demos**
5 pm - 6 pm	**Closing Talk & Titan Awards** (Patrick Ryan, Johnson & Johnson/Columbia Univ.)
6 pm - 7 pm	**Network Reception**

*agenda is subject to change

ohdsi.org/ohdsi2024

#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

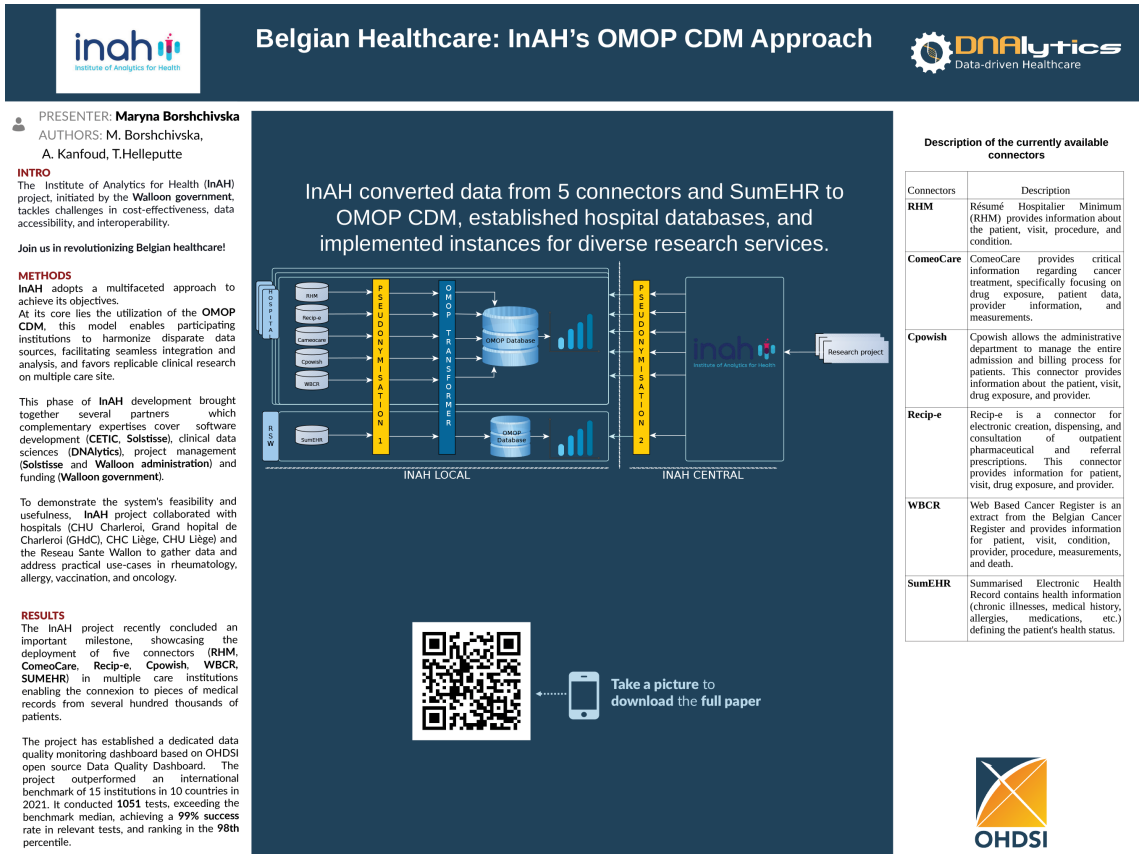
ohdsi.org/OHDSI2024

#OHDSISocialShowcase

MONDAY

Belgian Healthcare: InAH's OMOP CDM Approach

(Maryna Borshchivska, A. Kanfoud, T.Helleputte)



Belgian Healthcare: InAH's OMOP CDM Approach

PRESENTER: **Maryna Borshchivska**
AUTHORS: M. Borshchivska, A. Kanfoud, T.Helleputte

INTRO
The Institute of Analytics for Health (**InAH**) project, initiated by the **Walloon government**, tackles challenges in cost-effectiveness, data accessibility, and interoperability.

Join us in revolutionizing Belgian healthcare!

METHODS
InAH adopts a multifaceted approach to achieve its objectives.
At its core lies the utilization of the **OMOP CDM**, this model enables participating institutions to harmonize disparate data sources, facilitating seamless integration and analysis, and favors replicable clinical research on multiple care site.

This phase of **InAH** development brought together several partners which complementary expertises cover software development (**CETIC**, **Solstisse**), clinical data sciences (**DNAlytics**), project management (**Solstisse** and **Walloon administration**) and funding (**Walloon government**).

To demonstrate the system's feasibility and usefulness, **InAH** project collaborated with hospitals (CHU Charleroi, Grand hopital de Charleroi (GHdC), CHC Liège, CHU Liége) and the Reseau Sante Wallon to gather data and address practical use-cases in rheumatology, allergy, vaccination, and oncology.

RESULTS
The InAH project recently concluded an important milestone, showcasing the deployment of five connectors (**RHM**, **ComeoCare**, **Recip-e**, **Cpowish**, **WBCR**, **SUMEHR**) in multiple care institutions enabling the connexion to pieces of medical records from several hundred thousands of patients.

The project has established a dedicated data quality monitoring dashboard based on OHDSI open source Data Quality Dashboard. The project outperformed an international benchmark of 15 institutions in 10 countries in 2021. It conducted **1051** tests, exceeding the benchmark median, achieving a **99% success** rate in relevant tests, and ranking in the **98th** percentile.

InAH converted data from 5 connectors and SumEHR to OMOP CDM, established hospital databases, and implemented instances for diverse research services.

Take a picture to download the full paper

Description of the currently available connectors

Connectors	Description
RHM	Résumé Hospitalier Minimum (RHM) provides information about the patient, visit, procedure, and condition.
ComeoCare	ComeoCare provides critical information regarding cancer treatment, specifically focusing on drug exposure, patient data, provider information, and measurements.
Cpowish	Cpowish allows the administrative department to manage the entire admission and billing process for patients. This connector provides information about the patient, visit, drug exposure, and provider.
Recip-e	Recip-e is a connector for electronic creation, dispensing, and consultation of outpatient pharmaceutical and referral prescriptions. This connector provides information for patient, visit, drug exposure, and provider.
WBCR	Web Based Cancer Register is an extract from the Belgian Cancer Register and provides information for patient, visit, condition, provider, procedure, measurements, and death.
SumEHR	Summarised Electronic Health Record contains health information (chronic illnesses, medical history, allergies, medications, etc.) defining the patient's health status.

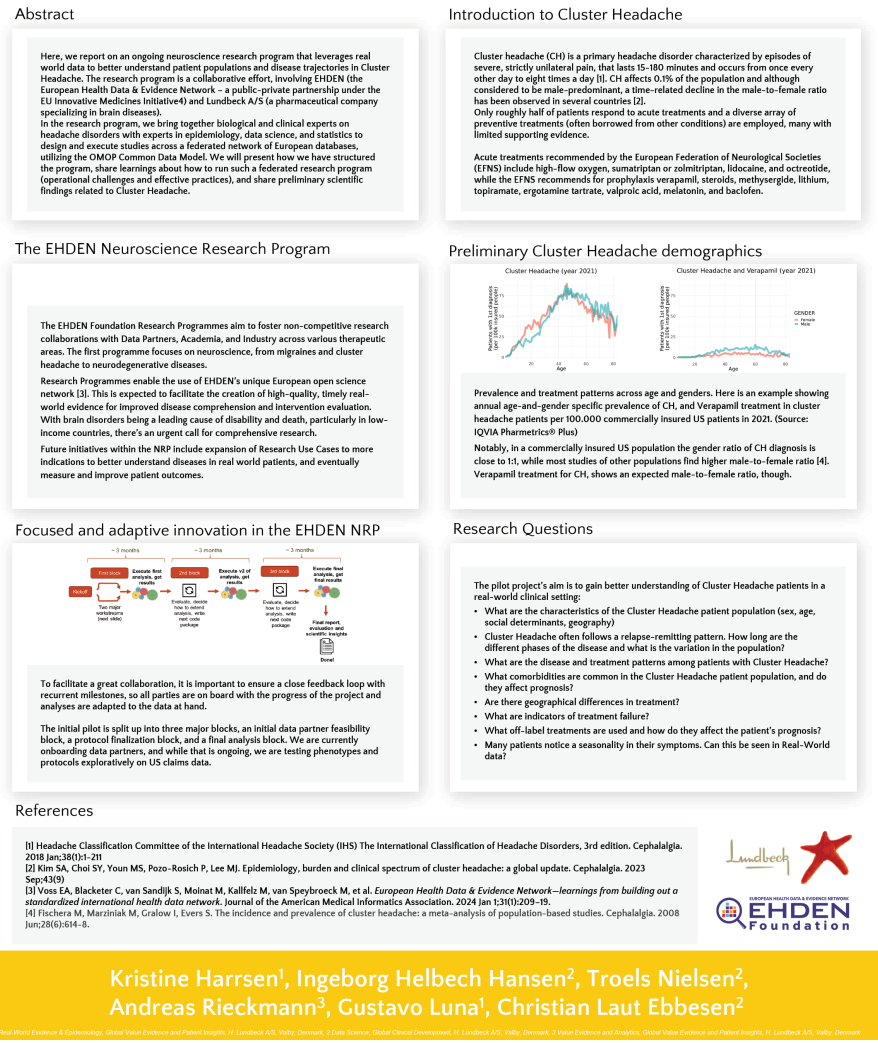
#OHDSISocialShowcase

TUESDAY

A collaborative EHDEN Neuroscience Research Program on Cluster Headache across a standardized health data network

(Kristine Harrsen, Ingeborg Helbech Hansen , Troels Nielsen, Andreas Rieckmann, Gustavo Luna, Christian Laut Ebbesen)

A collaborative EHDEN Neuroscience Research Program on Cluster Headache across a standardized health data network



Abstract

Here, we report on an ongoing neuroscience research program that leverages real world data to better understand patient populations and disease trajectories in Cluster Headache. The research program is a collaborative effort, involving EHDEN (the European Health Data & Evidence Network – a public-private partnership under the EU Innovative Medicines Initiative4) and Lundbeck A/S (a pharmaceutical company specializing in brain diseases).
In the research program, we bring together biological and clinical experts on headache disorders with experts in epidemiology, data science, and statistics to design and execute studies across a federated network of European databases, utilizing the OMOP Common Data Model. We will present how we have structured the program, share learnings about how to run such a federated research program (operational challenges and effective practices), and share preliminary scientific findings related to Cluster Headache.

Introduction to Cluster Headache

Cluster headache (CH) is a primary headache disorder characterized by episodes of severe, strictly unilateral pain, that lasts 15-180 minutes and occurs from once every other day to eight times a day [1]. CH affects 0.1% of the population and although considered to be male-predominant, a time-related decline in the male-to-female ratio has been observed in several countries [2].
Only roughly half of patients respond to acute treatments and a diverse array of preventive treatments (often borrowed from other conditions) are employed, many with limited supporting evidence.

Acute treatments recommended by the European Federation of Neurological Societies (EFNS) include high-flow oxygen, sumatriptan or zolmitriptan, lidocaine, and octreotide, while the EFNS recommends for prophylaxis verapamil, steroids, methysergide, lithium, topiramate, ergotamine tartrate, valproic acid, melatonin, and baclofen.

The EHDEN Neuroscience Research Program

The EHDEN Foundation Research Programmes aim to foster non-competitive research collaborations with Data Partners, Academia, and Industry across various therapeutic areas. The first programme focuses on neuroscience, from migraines and cluster headache to neurodegenerative diseases.

Research Programmes enable the use of EHDEN's unique European open science network [3]. This is expected to facilitate the creation of high-quality, timely real-world evidence for improved disease comprehension and intervention evaluation. With brain disorders being a leading cause of disability and death, particularly in low-income countries, there's an urgent call for comprehensive research.

Future initiatives within the NRP include expansion of Research Use Cases to more indications to better understand diseases in real world patients, and eventually measure and improve patient outcomes.

Preliminary Cluster Headache demographics

Cluster Headache (year 2021)

Cluster Headache and Verapamil (year 2021)

Prevalence and treatment patterns across age and genders. Here is an example showing annual age-and-gender specific prevalence of CH, and Verapamil treatment in cluster headache patients per 100.000 commercially insured US patients in 2021. (Source: IQVIA Pharmetrics® Plus)

Notably, in a commercially insured US population the gender ratio of CH diagnosis is close to 1:1, while most studies of other populations find higher male-to-female ratio [4]. Verapamil treatment for CH, shows an expected male-to-female ratio, though.

Focused and adaptive innovation in the EHDEN NRP

To facilitate a great collaboration, it is important to ensure a close feedback loop with recurrent milestones, so all parties are on board with the progress of the project and analyses are adapted to the data at hand.

The initial pilot is split up into three major blocks, an initial data partner feasibility block, a protocol finalization block, and a final analysis block. We are currently onboarding data partners, and while that is ongoing, we are testing phenotypes and protocols exploratively on US claims data.

Research Questions

The pilot project's aim is to gain better understanding of Cluster Headache patients in a real-world clinical setting:

- What are the characteristics of the Cluster Headache patient population (sex, age, social determinants, geography)
- Cluster Headache often follows a relapse-remitting pattern. How long are the different phases of the disease and what is the variation in the population?
- What are the disease and treatment patterns among patients with Cluster Headache?
- What comorbidities are common in the Cluster Headache patient population, and do they affect prognosis?
- Are there geographical differences in treatment?
- What are indicators of treatment failure?
- What off-label treatments are used and how do they affect the patient's prognosis?
- Many patients notice a seasonality in their symptoms. Can this be seen in Real-World data?

References

[1] Headache Classification Committee of the International Headache Society (IHS) The International Classification of Headache Disorders, 3rd edition. Cephalalgia. 2018 Jan;38(1):1-211
[2] Kim SA, Choi SY, Youn MS, Pozo-Rosich P, Lee MJ. Epidemiology, burden and clinical spectrum of cluster headache: a global update. Cephalalgia. 2023 Sep;43(9)
[3] Voss EA, Blacketer C, van Sandijk S, Moinat M, Kallfelz M, van Speybroeck M, et al. *European Health Data & Evidence Network—learnings from building out a standardized international health data network*. Journal of the American Medical Informatics Association. 2024 Jan 1;31(1):209–19.
[4] Fischera M, Marziniak M, Gralow I, Evers S. The incidence and prevalence of cluster headache: a meta-analysis of population-based studies. Cephalalgia. 2008 Jun;28(6):614-8.

Kristine Harrsen[1], Ingeborg Helbech Hansen[2], Troels Nielsen[2], Andreas Rieckmann[3], Gustavo Luna[1], Christian Laut Ebbesen[2]

1 Real-World Evidence & Epidemiology, Global Value Evidence and Patient Insights, H. Lundbeck A/S, Valby, Denmark, 2 Data Science, Global Clinical Development, H. Lundbeck A/S, Valby, Denmark, 3 Value Evidence and Analytics, Global Value Evidence and Patient Insights, H. Lundbeck A/S, Valby, Denmark

#OHDSISocialShowcase

WEDNESDAY

Implementing value-based oncology care at European cancer hospitals

(Mads Andersen, Juho Lähteenmaa, Johanna Mattson, Ulrik Lassen, Andreas Bjerrum)

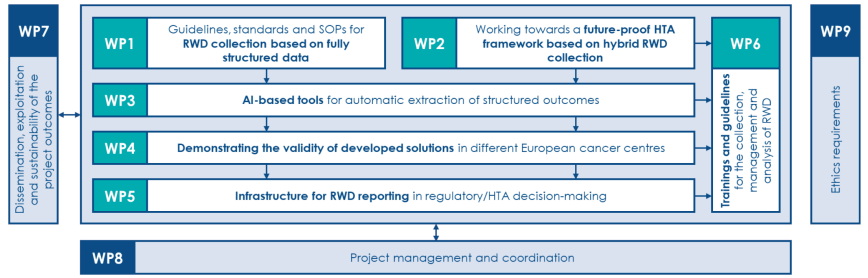
Implementing value-based oncology care at European cancer hospitals

oncovalue

Background: Patients in clinical trials never perfectly represent the patients met in the clinic due to strict in- and exclusion criteria. Consequently, this may lead to a disconnection between clinical efficacy in a controlled environment and the real effectiveness that is seen in clinical practice. Furthermore, new treatments targeting individual genetic alterations create opportunities for many patients with cancer, but they also represent a challenge for regulators, who are faced with the challenge of balancing access for patients and budgetary constraints. These new treatments are of high cost and may be challenged by uncertainties in clinical evidence due to low patient volumes and difficulties in conducting large phase III studies.

An opportunity for establishing real-world effects lies in the use of real-world data (RWD) that is collected in standard clinical practice. Advances in technology have led to hospitals creating centralized repositories or "data lakes", containing large amounts of structured, semi-structured, and unstructured data. However, unlocking this data comes with obstacles, as different hospitals use different electronic medical record (EMR) systems, in which data structure does not conform to a common standard.

Work Packages (WP)



Aims and methods: ONCOVALUE is a Horizon Europe-funded project that aims to improve cancer care by enabling cancer clinics to collect, harmonize, and analyze high-quality RWD. To address the challenge of varying data models used across clinics, we aim to implement the OMOP common data model (CDM). This will enable us to perform multicenter phase IV studies and create improved HTA models capable of assessing real-life effectiveness of novel anti-cancer treatments across several cancer centers in Europe.

The real-world oncology data will need to be structured, collected, and processed from various EMR systems in multiple cancer hospitals. ONCOVALUE will ensure the implementation of the developed methods by creating guidelines and trainings for the collection and management of high-quality RWD.

Besides the structured data, unstructured data originating from medical notes and medical images will be transformed into structured data with the use of artificial intelligence technologies that are developed for this project by Siemens Healthineers and IQVIA.

Conclusion: Innovative solutions based on RWD are needed to address the increasing demand and cost of new anti-cancer medications. To scale such solutions to national and international scopes, the OMOP CDM will be an essential component, allowing streamlined analyses and aggregated results based on data originating from multiple European cancer centers.

OHDSI

Mads Andersen[1], Juho Lähteenmaa[2], Johanna Mattson[2], Ulrik Lassen[1], Andreas Bjerrum[1]
[1]Department of Oncology, Rigshospitalet, Denmark, [2]IT Management and Comprehensive Cancer Center, Helsinki University Hospital, Finland

#OHDSISocialShowcase

THURSDAY

Preparatory work for efficient mapping of Hungarian drug codes

(Ágota Mészáros, Tibor Héja, Zsolt Bagyura)

Preparatory work for efficient mapping of Hungarian drug codes

Ágota Mészáros[1] (meszaros.agota@semmelweis.hu), Tibor Héja[1,2] (heja.tibor@ext.semmelweis.hu), Zsolt Bagyura[1] (bagyura.zsolt@semmelweis.hu)

[1]Semmelweis University, Institute for Clinical Data Management, Budapest, Hungary
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INTRODUCTION

The secondary use of routinely collected drug and health data is becoming more widespread, especially since there is a growing interest from pharma companies and medicine agencies as well - for example, the Data Analysis and Real World Interrogation Network (DARWIN EU) project[1]. Our University previously manually mapped a part of the Hungarian medical procedures vocabulary[2]. National drug code vocabularies seem to be more analogous to each other than procedure vocabularies; therefore, an automated or semi-automated mapping method is more feasible[3].

AIMS

In this work, we aimed to explore the most efficient way to map Semmelweis University's drug data to RxNorm and RxNorm Extension.

METHODS

Our database contains the patient-level inpatient medication and prescription drug data from Semmelweis University's Hospital Information System, e-MedSolution covering the last 14 years. We performed data cleaning to determine which drugs are to be mapped and which are not: our target is to map those drugs used at our university that were authorized in Hungary or the European Union (EU) (See Figure 1.)

Relevant stakeholders were contacted in the process to gather information about drug data and develop the mapping methods and standards of operations. Besides e-MedSolution, other databases and code systems were also explored.

Figure 1. Source data

RESULTS

INITIAL DATASET

Initially, data on 22540 drugs and drug-related items were downloaded from e-MedSolution. After deduplication, 13505 distinct drugs and drug-related items were found, which were prescribed or administered at Semmelweis University from 1 January 2010 to 1 December 2023.

DATA CLEANING

We cleaned out the rows not containing TTT code (Social Insurance Supported Product Identifier), the Formulae Normales and magistral drugs, the Pharmacopoeia Hungarica drugs, the feeding formulas or medicinal food products, and the medical aids or devices, thus 10678 distinct drugs remained. The flowchart showing the data cleaning can be found in Figure 2.

CONNECTION WITH ATC5 CODES

Based on the ATC5 code, these 10678 drugs match 1361 distinct chemical ingredients.

RESULTS

Figure 2. Flowchart of data cleaning

From our 10678 drugs 1676 (15.7%) have EU authorization number. According to our knowledge, there is no central mapping for these drugs with EU authorization number, but it seems like several countries have already mapped their national drug database. We presume that technically the mapping can be reused for these drugs; and others are in the process of mapping, in this case, enabling potential collaboration. The Public Drug Database of France and Athena (OHDSI vocabularies repository) were searched to obtain data about the EU authorization number mapping.

Although the French drug codes are already mapped to RxNorm and RxNorm Extension and the connected EU authorization number can be downloaded from the Public Drug Database website, this mapping is not usable for us because their EU authorization number is not as granular as the one used by our database, and does not contain the box level data.

CONCLUSION

For the mapping of medicines authorized only at the national level, the data from multiple databases can help to map them efficiently. However, for those medicines that have an EU authorization number, the use of a common EU medicines database mapping would be a possible solution to make the mapping automated and more standardized.

For this purpose, an official freely available mapping between the EU authorization number and RxNorm or RxNorm Extension is needed, and this could lessen the mapping burden for national data partners who are joining their database to OMOP CDM.

After we mapped our drug codes, we plan to find a way to make this mapping available for everyone, thus with 1676 codes starting the freely usable mapping between the EU authorization number and RxNorm or RxNorm Extension.

REFERENCES

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3. Drug Mapping Tool: EHDEN. https://github.com/EHDEN/DrugMapping. Accessed: 2024 Mar 13.

#OHDSISocialShowcase

FRIDAY

Analysis of Lung Cancer Patient Treatment with Immune Checkpoint Inhibitors Using Natural Language Processing for Data Extraction from Electronic Health Records

(Iege Bassez, Laura Deckx, Vincent Geldhof, Annelies Verbiest, Danielle Delombaerde, Shahbaz Pervaiz, Dries Hens, Philip Debruyne, Christof Vulsteke, Clara L. Oeste)

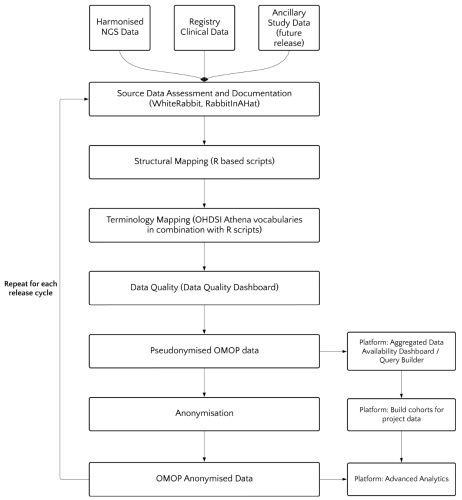
WAYFIND-R

Empowering research requires **seamless** delivery of **high quality data.** The WAYFIND-R® platform enables automation and **accelerates insights generation** from primary data collection to research-ready data.

Title: 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

Background: WAYFIND-R is a global precision oncology registry (NCT04529122) and has the aim to advance science and provide the scientific community worldwide with access to real-world data, enabling epidemiological and clinical research, and collaborations across research groups. The WAYFIND-R® Data Sharing and Collaboration Platform enables researchers to access anonymised clinico-genomic data from the registry transformed to the OMOP CDM within a secure research environment.

Methods



Outcomes

- Researchers able to access quality OMOP anonymised aggregate and individual-level data from registry
- Automation of concept mapping simplifies review process on an ongoing basis
- Defined data quality processes allow for routine checking of data and actions for each data release cycle. For example queries raised within clinical database
- ETL automation ensures consistency and reproducible output
- Changes to the structure registry clinical database require ongoing assessments to determine impact to data and platform
- Implementation of cohort definition within platform

Opportunities for Collaboration

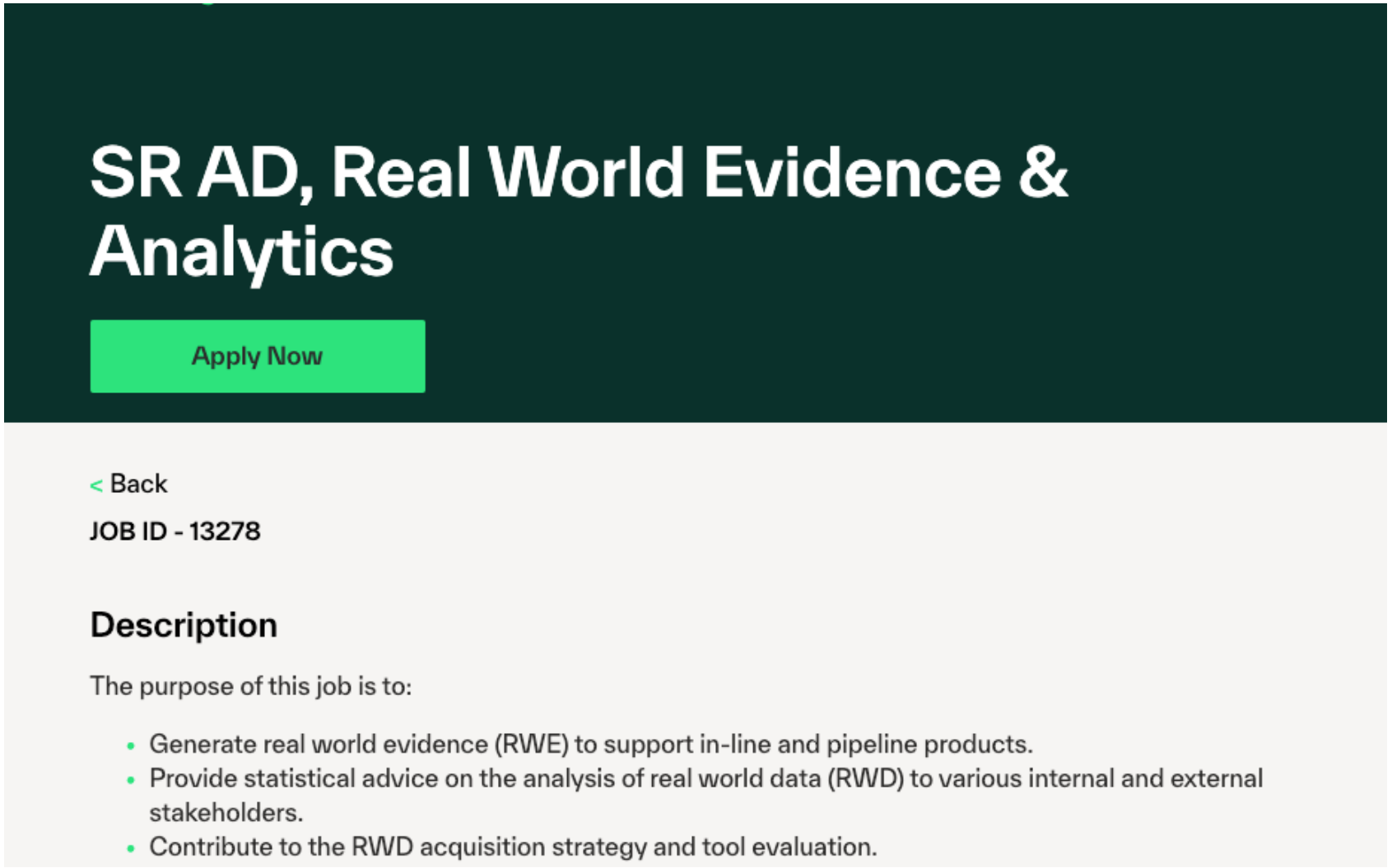
- Gene and biomarker ontologies
- Oncology extension
- Registry studies - our learnings

Acknowledgements:
We thank the patients and their families who take part in WAYFIND-R, as well as the staff, research coordinators, and investigators at each participating institution.

Tom Stone[1], Yuri Pyatkin[2], Ana Ferro[1], Dimitar Toshev[2]
[1] Roche Products Limited, Welwyn Garden City, UK; [2] F. Hoffmann-La Roche Ltd, Basel, Switzerland

Roche

Opening: Sr AD, Real World Evidence & Analytics Boehringer Ingelheim



Openings: Postdoctoral Fellow, Johns Hopkins Univ.

JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

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?

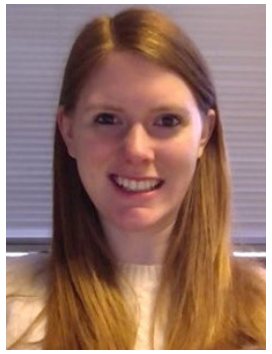
Three Stages of The Journey

Where Have We Been?

Where Are We Now?

Where Are We Going?

July 30: Patient-Level Prediction

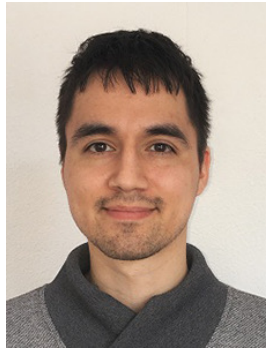


Jenna Reps

Johnson & Johnson

Chen Yanover

KI Research Institute



Henrik John

Erasmus MC

Alexander Saelmans

Erasmus MC

Egill Friðgeirsson

Erasmus MC

Ross Williams

Erasmus MC

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