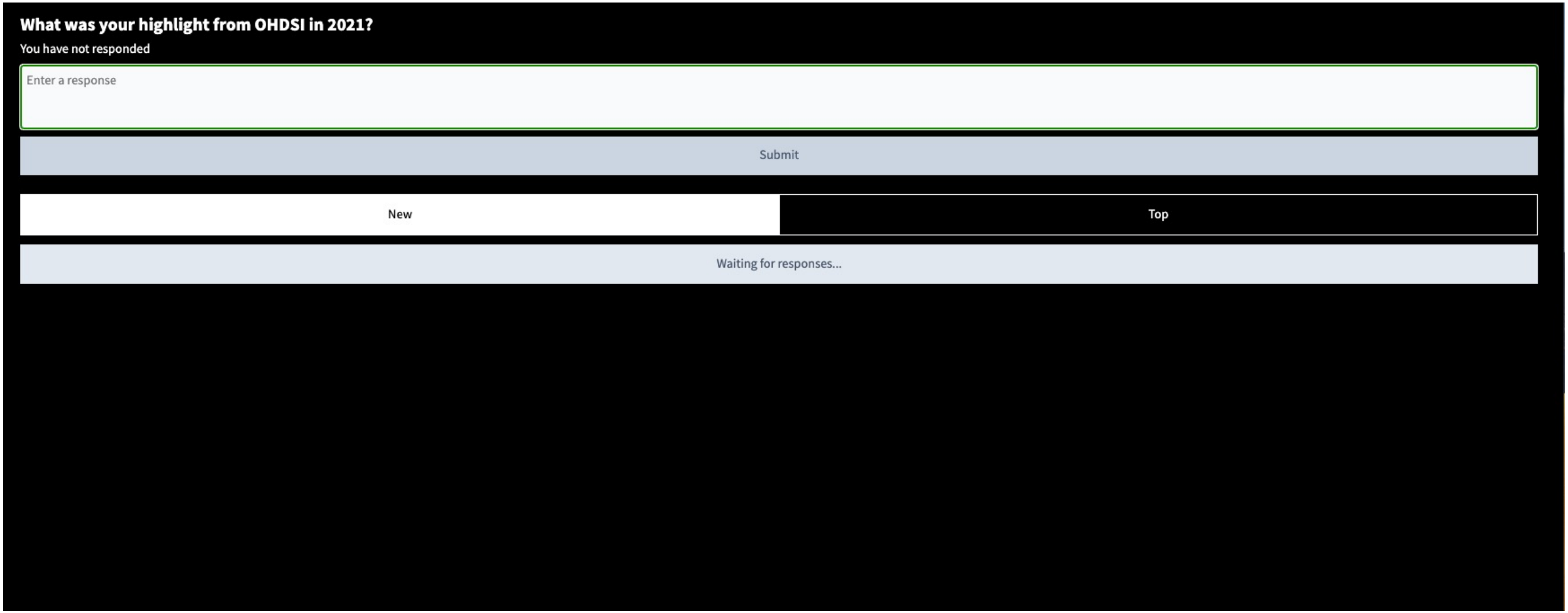
How Did OHDSI Do In 2021?

OHDSI Community Call
Dec. 7, 2021 • 11 am ET

What Was Your OHDSI Highlight Of 2021?



December OHDSI Community Calls

Date	Topic
Dec. 14	Holiday-Themed Final Meeting Of 2021
Dec. 21	Happy Holidays!
Dec. 28	Happy Holidays!
Jan. 5	Happy Holidays!
Jan. 12	Welcome Back To The OHDSI Community Call!

Three Stages of The Journey

Where Have We Been?

Where Are We Now?

Where Are We Going?

OHDSI Shoutouts!

Congratulations to **Ross Williams, Jenna Reps, the OHDSI/EHDEN Knee Arthroplasty Group, Peter Rijnbeek, Patrick Ryan & Daniel Prieto-Alhambra** for the publication of **"90-Day all-cause mortality can be predicted following a total knee replacement: an international, network study to develop and validate a prediction model"** in Knee Surgery, Sports Traumatology, Arthroscopy.

Knee Surgery, Sports Traumatology, Arthroscopy
https://doi.org/10.1007/s00167-021-06799-y

KNEE

Check for updates

90-Day all-cause mortality can be predicted following a total knee replacement: an international, network study to develop and validate a prediction model

Ross D. Williams[1] · Jenna M. Reps[2] · The OHDSI/EHDEN Knee Arthroplasty Group · Peter R. Rijnbeek[1] · Patrick B. Ryan[2] · Daniel Prieto-Alhambra[3]

Received: 28 June 2021 / Accepted: 4 November 2021

Abstract

Purpose The purpose of this study was to develop and validate a prediction model for 90-day mortality following a total knee replacement (TKR). TKR is a safe and cost-effective surgical procedure for treating severe knee osteoarthritis (OA). Although complications following surgery are rare, prediction tools could help identify high-risk patients who could be targeted with preventative interventions. The aim was to develop and validate a simple model to help inform treatment choices.

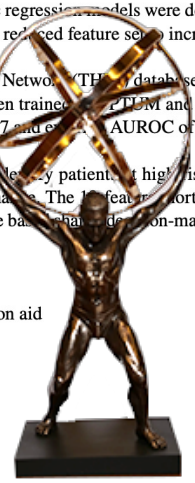
Methods A mortality prediction model for knee OA patients following TKR was developed and externally validated using a US claims database and a UK general practice database. The target population consisted of patients undergoing a primary TKR for knee OA, aged ≥ 40 years and registered for ≥ 1 year before surgery. LASSO logistic regression models were developed for post-operative (90-day) mortality. A second mortality model was developed with a reduced feature set to increase interpretability and usability.

Results A total of 193,615 patients were included, with 40,950 in The Health Improvement Network (THIN) database and 152,665 in Optum. The full model predicting 90-day mortality yielded AUROC of 0.78 when trained on Optum and 0.70 when externally validated on THIN. The 12 variable model achieved internal AUROC of 0.77 and external AUROC of 0.71 in THIN.

Conclusions A simple prediction model based on sex, age, and 10 comorbidities that can identify patients at high risk of short-term mortality following TKR was developed that demonstrated good, robust performance. The 12 feature mortality model is easily implemented and the performance suggests it could be used to inform evidence based shared decision-making prior to surgery and targeting prophylaxis for those at high risk.

Level of evidence III.

Keywords Knee arthroplasty · Prediction · Mortality · Surgery · Risk model · Clinical decision aid



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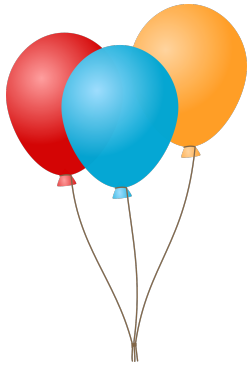
Level of evidence III.

Keywords Knee arthroplasty · Prediction · Mortality · Surgery · Risk model · Clinical decision aid

OHDSI Shoutouts!

Congratulations to **Peter Rijnbeek**, who was recently appointed Head of the Department of Medical Informatics at Erasmus MC.

OHDSI Shoutouts!



Any shoutouts from the community? Please share and help promote and celebrate OHDSI work!

Have a study published? Please send to sachson@ohdsi.org so we can share during this call and on our social channels.
Let's work together to promote the collaborative work happening in OHDSI!

Three Stages of The Journey

Where Have We Been?

Where Are We Now?

Where Are We Going?

Upcoming Workgroup Calls

www.ohdsi.org/upcoming-working-group-calls

Date	Time (ET)	Meeting
Tuesday	12:30 pm	Phenotype – Long Covid Subgroup Phenotyping Hackathon
Tuesday	1 pm	Common Data Model
Tuesday	3 pm	OMOP CDM Oncology – Outreach/Research Subgroup
Wednesday	10 am	FHIR-OMOP All-Hands Meeting
Wednesday	2 pm	Natural Language Processing
Thursday	8 am	Psychiatry
Thursday	1 pm	OMOP CDM Oncology – CDM/Vocabulary Subgroup
Friday	10 am	Phenotype Development and Evaluation
Friday	10:30 am	Clinical Trials
Friday	11 pm	China Chapter
Monday	8 am	Early-Stage Researchers (Europe, Western Hemisphere)
Monday	9 am	Registry
Monday	10 am	GIS-Geographic Information System
Monday	2 pm	FHIR and OMOP – Terminologies Subgroup (ZOOM)
Tuesday	9 am	OMOP CDM Oncology – Genomic Subgroup

Get Access To Different Teams/WGs/Chapters

5. Select the workgroups you want to join (you can refer to the WIKI for work group objectives www.ohdsi.org/web/wiki/doku.php?id=projects:overview)

- [ ] ATLAS
- [ ] Clinical Trials
- [ ] Common Data Model
- [ ] Data Quality Dashboard Development
- [ ] Early-stage Researchers
- [ ] Education Work Group
- [ ] Electronic Health Record (EHR) ETL
- [ ] Geographic Information System (GIS)
- [ ] HADES Health Analytics Data-to-Evidence Suite
- [ ] Health Equity
- [ ] Latin America
- [ ] Medical Devices
- [ ] Natural Language Processing
- [ ] OHDSI APAC
- [ ] OHDSI APAC Steering Committee
- [ ] OHDSI Steering Committee
- [ ] Oncology
- [ ] Patient-Generated Health Data
- [ ] Pharmacovigiliance Evidence Investigation
- [ ] Phenotype Development and Evaluation
- [ ] Population-Level Effect Estimation / Patient-Level Prediction
- [ ] Psychiatry
- [ ] Registry (formerly UK Biobank)
- [ ] Surgery and Perioperative Medicine
- [ ] Vaccine Safety
- [ ] Vaccine Vocabulary
- [ ] Women of OHDSI

6. Select the chapter(s) you want to join

- [ ] Africa
- [ ] Australia
- [ ] China
- [ ] Europe
- [ ] Japan
- [ ] Korea
- [ ] Singapore
- [ ] Taiwan

7. Select the studies you want to join

- [ ] HERA-Health Equity Research Assessment
- [ ] PIONEER for Prostate Cancer (study-a-thon ended)
- [ ] SCYLLA (SARS-Cov-2 Large-scale Longitudinal Analyses)

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Register For 2022 OHDSI Europe Symposium

www.ohdsi-europe.org/symposium-2022

Latest Edition Of “The Journey” Newsletter

OHDSI

The Journey Newsletter (December 2021)

OHDSI's work on methods research resulted in another timely publication from the EUMAEUS workgroup around vaccine surveillance. We highlight that piece, as well as the OMOP CDM v5.4 tutorial, the Open-Source Governance workshop, the APAC Symposium and more in the latest edition of The Journey Newsletter. #JoinTheJourney

Monthly Podcast

Patrick Ryan and Craig Sachson discuss the first published paper from the EUMAEUS workgroup, the open-source governance workshop, and the Asia-Pacific Symposium, during the latest edition of the On The Journey podcast. (*If video/images don't appear, please click 'View this email in your browser link' above.*)

Community Updates

Where Have We Been

• The release of OMOP CDM v5.4 was highlighted in a previous newsletter, but we were thrilled to have Clair Blacketer join a November community call to provide a quick tutorial about this new version.

• The 2021 Asia-Pacific (APAC) Symposium was a great success. There were several collaborative activities that engaged both leaders and newcomers from around the world. We also had several insightful presentations during the morning session, which you can watch here.

• Led by Paul Nagy, the Johns Hopkins Open Source Program Office (OSPO) and Stephen Walli, an open-source community advocate and expert at Microsoft, the OHDSI community hosted an open-source governance workshop Nov. 30. More than 100 community members joined for a session that included both presentations and discussions. Part 1 | Part 2

Where Are We Now

• The EUMAEUS (Evaluating Use of Methods For Adverse Event Under Surveillance) team published its first peer-reviewed study this month, which found that a traditional method of vaccine surveillance may be generating a high number of false positives. More on this research is available in this newsletter.

• The OHDSI global community has numerous open network studies ongoing, including some in the very early stages. Our Nov. 16 community call was dedicated to communicating several of these studies, and to call for collaboration on them. Please scroll down in this newsletter to learn more about these studies and see if you might be interested in collaborating in these efforts.

Vaccine Surveillance Method in Observational Data May Generate High Number of False Positives

Worldwide efforts to promote vaccination require reliable evidence about the safety and effectiveness of vaccines to build trust in their use. Regulators and other public health agencies play a critical role in generating and synthesizing evidence across an array of data sources as part of a collective public health infrastructure.

One desired component of that system is the use of observational data, such as de-identified electronic health records and administrative claims, to conduct analyses that can identify true adverse events of vaccines as quickly as possible, while simultaneously reducing the chance that analyses generate false positive findings that may stimulate unnecessary worry.

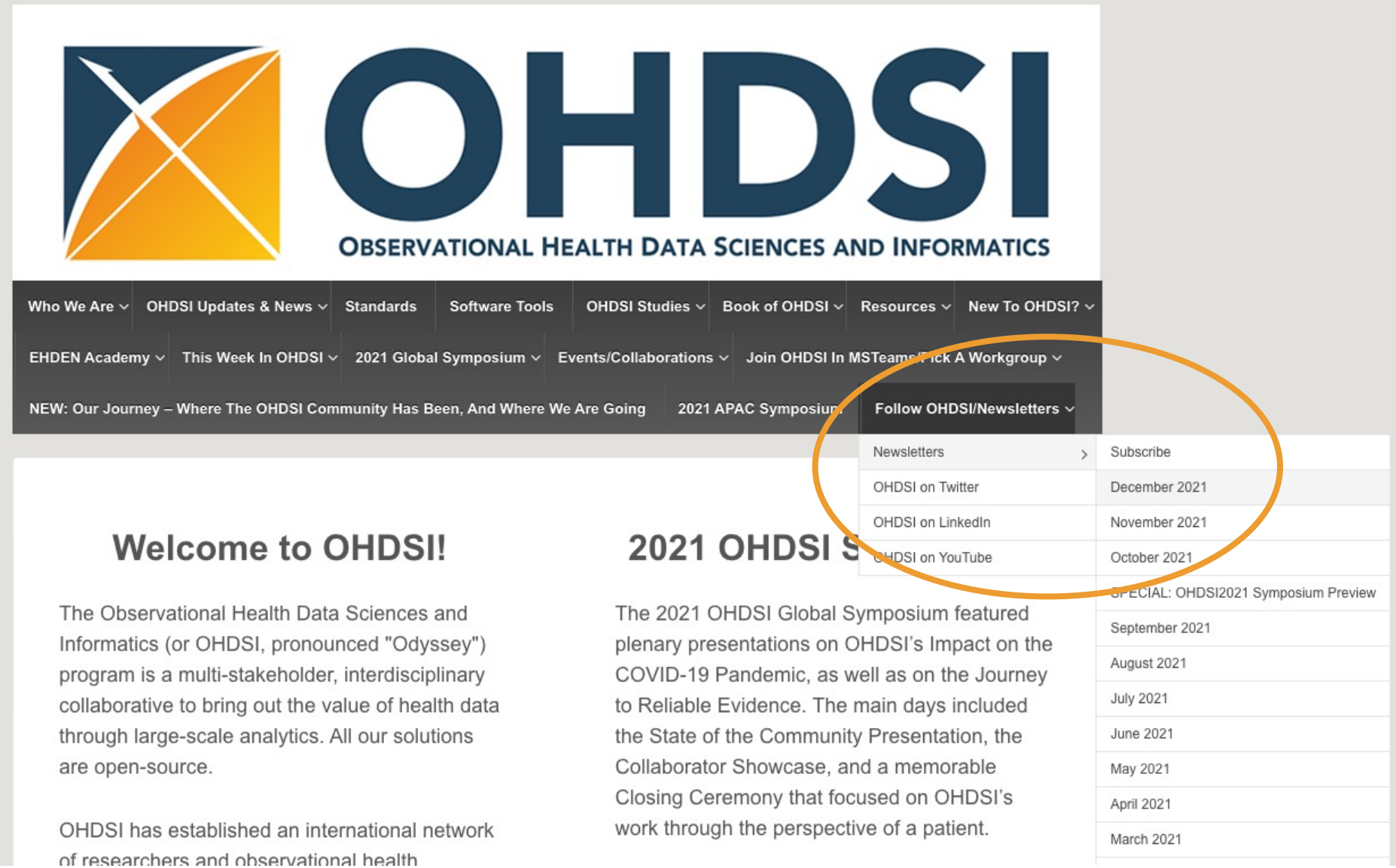
In this context, understanding the reliability of study designs in vaccine surveillance systems is important to ensure that evidence is appropriately used by all stakeholders.

Ongoing Network Studies, Calls For Collaboration, Highlighted During Recent Community Call

Six OHDSI network studies, ranging from those in development to those nearing completion, were presented during the Nov. 16 community call, the second open studies call of 2021. The calls highlighted the breadth of research happening in the community, but also served as calls for collaboration on these important efforts. The individual study presentations are available at the links below.

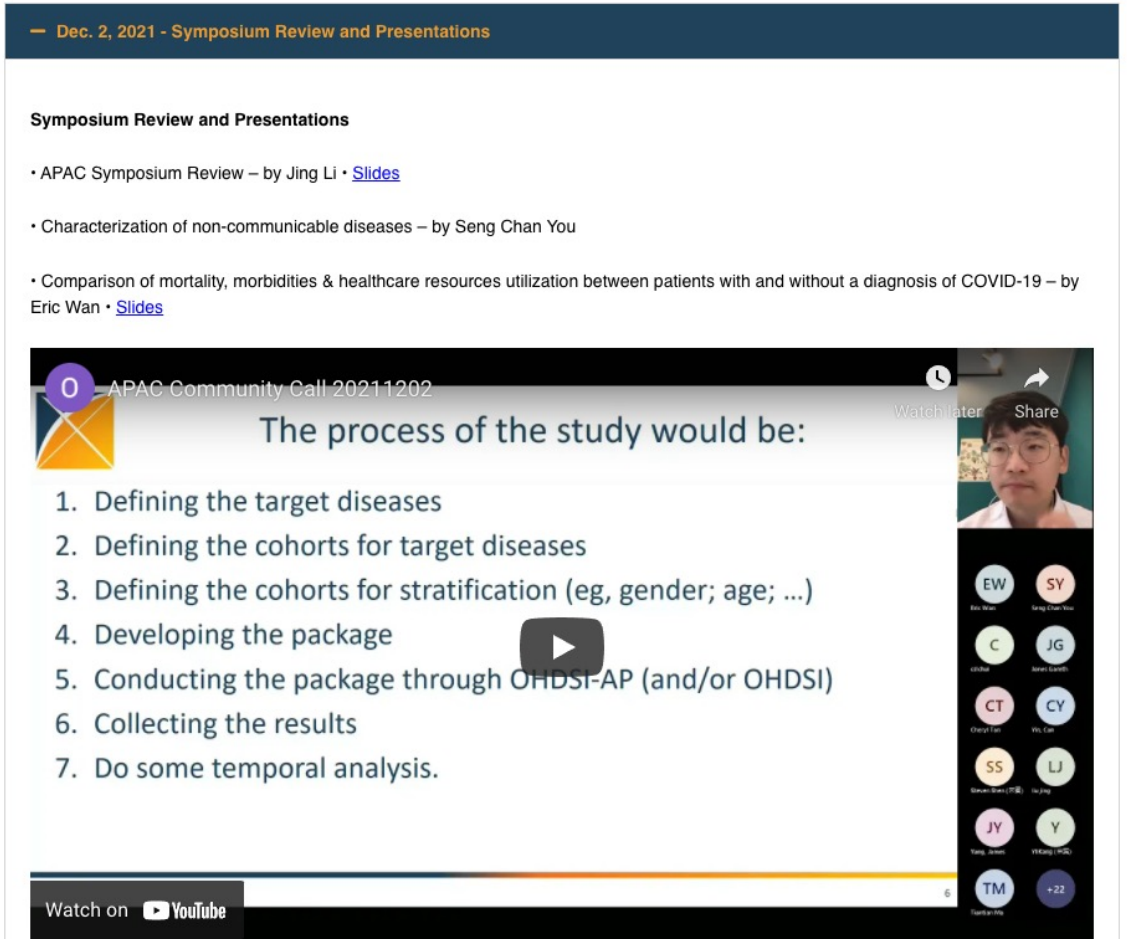
- **Asieh Golozar:** Prognostic Significance of Liver Metastasis in Non-Small Cell Lung Cancer
- **Leena Elhussein:** Redefining Polypharmacy: A Longitudinal Study in Routinely Collected Data
- **Noémie Elhadad:** Health Equity Research Assessment (HERA) Characterization
- **Jacob Zelko:** Assessing Health Equity in Mental Healthcare Delivery Using a Federated Network Research Model
- **Annika Jodicke and Kristin Kostka:** Long COVID Phenotyping and Vaccine Effectiveness Methods
- **Erica Voss:** Adverse Events of Special Interest within COVID-19 Subjects

Latest Edition Of “The Journey” Newsletter



Dec. 2 APAC Community Call

- APAC Symposium Review (Jing Li)
- Characterization of non-communicable diseases (Seng Chan You)
- Comparison of mortality, morbidities & healthcare resources utilization between patients with and without a diagnosis of COVID-19 (by Eric Wan)



www.ohdsi.org/apac

Education WG Call For Review • Dec. 15

OHDSI Education Strategy - we want the community to review by EOB December 15th!

General

nigehughes Nigel Hughes 7d

Dear OHDSI Community

The Education Working Group has drafted an education strategy document, and we want your input into it to ensure it represents the situation and needs in OHDSI today, and to support plans for the future of our community.

We would be very grateful if colleagues would review it and respond with your thoughts to these three questions:

Do you see this as (a) a fair reflection on the current educational needs within OHDSI
(b) support proposals and recommendations within the document, and
(c) would you have any further suggestions or recommendations of your own?

We would be most grateful for feedback by EOB Wednesday 15th December!

Document here 9.

1 Reply Reply

created 7d | last reply 2d | 4 replies | 49 views | 3 users | 1 link

Nov 30

1 / 5

Dec 1

2d ago

Openings!

The Roux Institute
Northeastern University

Assistant Professor

Job no: **508405**

Work type: **Faculty Full-time (Tenure/Tenure Track)**

Location: **Boston Main Campus, Portland, ME Campus**

Categories: **Bouve College of Health Sciences**

About the Opportunity:

The Bouvé College of Health Sciences and The Roux Institute at Northeastern University seek candidates for **two tenure-track Assistant Professor positions** in the emerging area of health/healthcare data science. The successful candidate will have primary responsibility for working with the OHDSI Center at the Roux Institute (https://roux.northeastern.edu/ohdsi/), focusing on education, research and community support of the global Open Source OHDSI initiative (http://ohdsi.org).

Research areas of interest should encompass approaches for maximizing the value of health data for evidence generation through large-scale analytics and may include artificial intelligence (AI), machine learning (ML), computer and data sciences, digital health, life sciences, and medicine. Example: Methods that strengthen the ability to confidently draw causal inferences from comparative effectiveness research on observational healthcare data.

Other examples include real-world evidence data standardization, clinical/medical surveillance, comparative effectiveness research, personalized risk prediction and prevention, learning healthcare systems, big data, and applications of health or bio-informatics.

Aspiring candidates may be developing methods or applications that use computational modeling and large datasets to enhance our understanding of health from diagnosis, therapeutics, prevention, and health outcomes. We are also interested in efforts to understand and reduce health disparities among marginalized populations.

Our tenure and promotion process values collaborative research and teamwork. Hires will be mentored for success, with mentoring teams and group guidance. In addition, a strong and effective faculty development strategy is part of the Northeastern institutional mission. The ADVANCE Office of Faculty Development office works in conjunction with the Office of Research Development (ORD), the Office of Institutional Diversity and Inclusion (OIDI), the Center for Advancing Teaching and Learning Through Research (CATLR), and University Decision Support (UDS) to provide programs and trainings to further develop and support a thriving faculty.

At Northeastern University, we embrace a culture of respect, where each person is valued for their contribution and is treated fairly. We oppose all forms of racism. We support a culture that does not tolerate any form of discrimination and where each person may belong. We strive to have a diverse membership, one where each person is trained and mentored to promote their success.

For more information, please contact Brianne Olivieri-Mui, Assistant Professor, Department of Health Sciences: B.mui@northeastern.edu

Openings!

UNIVERSITY OF OXFORD

UK date and time: 07-December-2021 15:01

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corehr

Job Details

Postdoctoral Data Scientist (2 posts)

Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, Botnar Research Centre, Windmill Road, Oxford

Grade 7: £33,309 - £40,927 p.a.

We have an exciting opportunity for two Postdoctoral Data Scientists to join a Pharmaco- and Device epidemiology research group led by Professor Daniel Prieto-Alhambra at the Botnar Research Centre, NDORMS, University of Oxford. The NDORMS Pharmaco- and Device epidemiology research group is involved in national and international studies to generate insights from routine health (aka 'real world') data.

As a Postdoctoral Data Scientist you will support research projects from inception to reporting and dissemination/publication under the supervision of Professor Alhambra (pharmaco-device epidemiology) and Dr Sara Khalid (planetary health informatics). You will develop analysis plans, protocols, ethical (and similar panel) submissions, standard operating procedures, as required for ongoing and future studies. You will analyse OMOP-mapped real world health data assets and contribute to the programming of R packages and programmes for these analyses. You will also contribute ideas for new research projects, present papers at conferences or public meetings, and you will be involved in teaching and supervision of students.

You will hold a Doctoral (or be near completion) or MSc degree in applied/medical statistics, biostatistics, or health data sciences with BA degree in statistics, mathematics, or a related field. Demonstrable advanced skills and expertise in R programming, advanced skills in programming in Python, SQL, or similar languages and ability to work within multi-disciplinary teams and independently are essential. Experience in pharmacoepidemiology or real world evidence methods (e.g. propensity scores) and experience designing and conducting cohort, case-control, and similar studies are desirable.

This is a full-time fixed-term appointment for 2 years.

The closing date for this position is 12 noon on 17 December 2021. You will be required to upload a CV and supporting statement as part of your online application.

Interviews will take place in January 2022.

Contact Person : Dr Sara Khalid
Contact Phone :
Contact Email : hr@ndorms.ox.ac.uk

Vacancy ID : 154335
Closing Date & Time : 17-Dec-2021 12:00

#OHDSISocialShowcase This Week

Pragmatic OMOP CDM

PRESENTER: Gregory Klebanov, Melanie Philofsky

INTRODUCTION

One of the richest data sources for creation of OMOP databases is Hospital data. However, not only the data is complex but are often spread across many systems. Converting all data presents a challenge due to the sheer amount of effort required.

WHY IS IT IMPORTANT?

By initially implementing a pragmatic OMOP CDM based on use cases and continuously enhancing the data elements as research needs arise – cost, time and resource consumption will be more efficient while research needs will be met with better precision.

STUDY CENTRIC APPROACH AND MATURITY

- Build a portfolio of studies
- Add new data elements, vocabularies and mappings as required for a specific study based on study protocol and research needs
- Build a mature and complete database over time through pragmatic study focused approach

Minimize the total effort and costs, while maximizing the research value of the OMOP CDM

OMOP DATA LIFECYCLE MATURITY METHODOLOGY

1. MVP

- Initial OMOP CDM ETL
- Scope is driven by current research needs

2. Evolving

- First 1-2 years of on-going refreshes
- Create a roadmap for future research participation based on study protocols
- Update patient records as needed
- Incorporate ETL code changes during refresh cycles

3. Mature

- After approx. 1 - 2 years
- As the CDM is continuously enhanced, fewer data elements will need to be harmonized

EXAMPLES

- Custom mapping data elements when needed
  - Flowsheet elements of interest, vital signs, drugs, lab results
- ETLing a new domain
  - Devices for oxygenation r/t COVID studies

Authors: Gregory Klebanov, [1]; Melanie Philofsky, RN, MS [2]
[1,2] Odysseus Data Services

ODYSSEUS DATA SERVICES INC

OHDSI

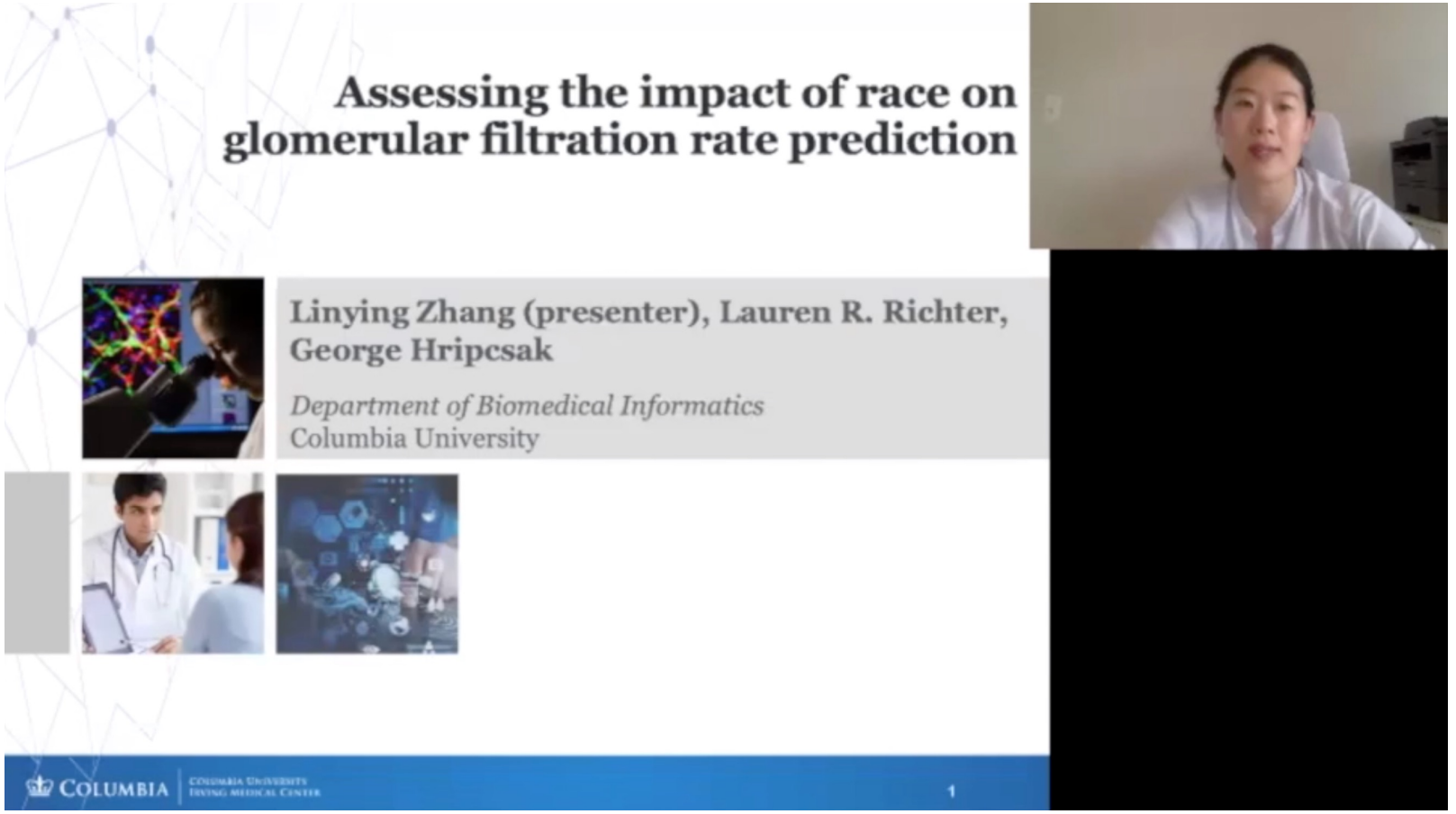
MONDAY

Pragmatic OMOP CDM

Authors: Melanie Philofsky, Gregory Klebanov

#OHDSISocialShowcase This Week

Lightning Talk!

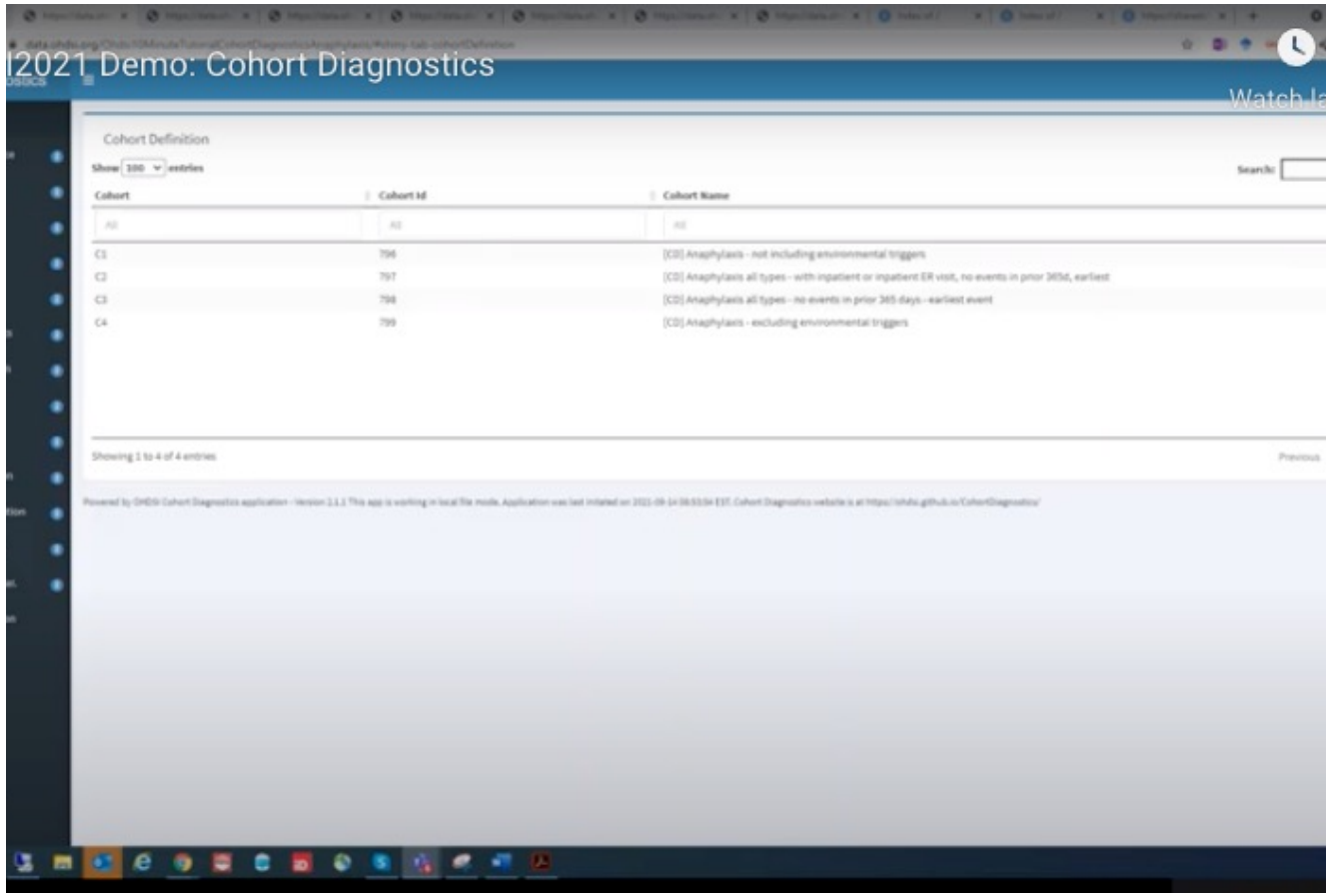


TUESDAY

Assessing the impact of race on glomerular filtration rate prediction

Authors: Linying Zhang (presenter), Lauren R. Richter, George Hripcsak

#OHDSISocialShowcase This Week

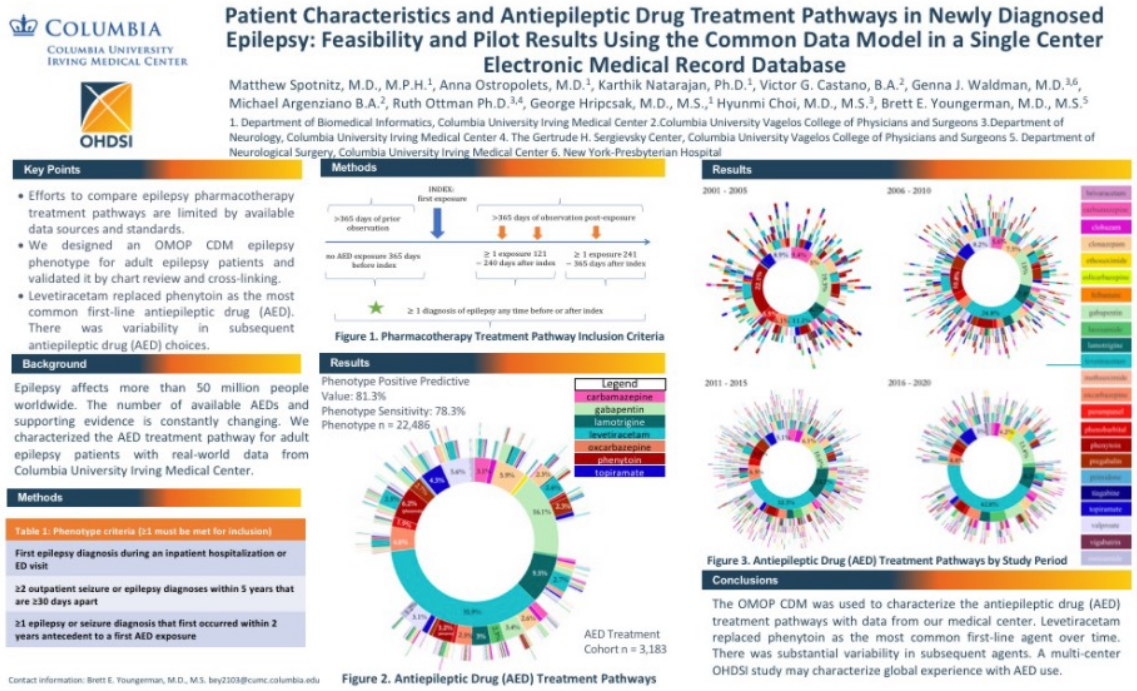


WEDNESDAY

Cohort Diagnostics

Authors: Gowtham Rao, Azza Shoaibi, Jamie Gilbert, Martijn Schuemie

#OHDSISocialShowcase This Week



Patient Characteristics and Antiepileptic Drug Treatment Pathways in Newly Diagnosed Epilepsy: Feasibility and Pilot Results Using the Common Data Model in a Single Center Electronic Medical Record Database

Matthew Spotnitz, M.D., M.P.H.[1], Anna Ostropolets, M.D.[1], Karthik Natarajan, Ph.D.[1], Victor G. Castano, B.A.[2], Genna J. Waldman, M.D.[3,6], Michael Argenziano B.A.[2], Ruth Ottman Ph.D.[3,4], George Hripcsak, M.D., M.S.,[1] Hyunmi Choi, M.D., M.S.[3], Brett E. Youngerman, M.D., M.S.[5]

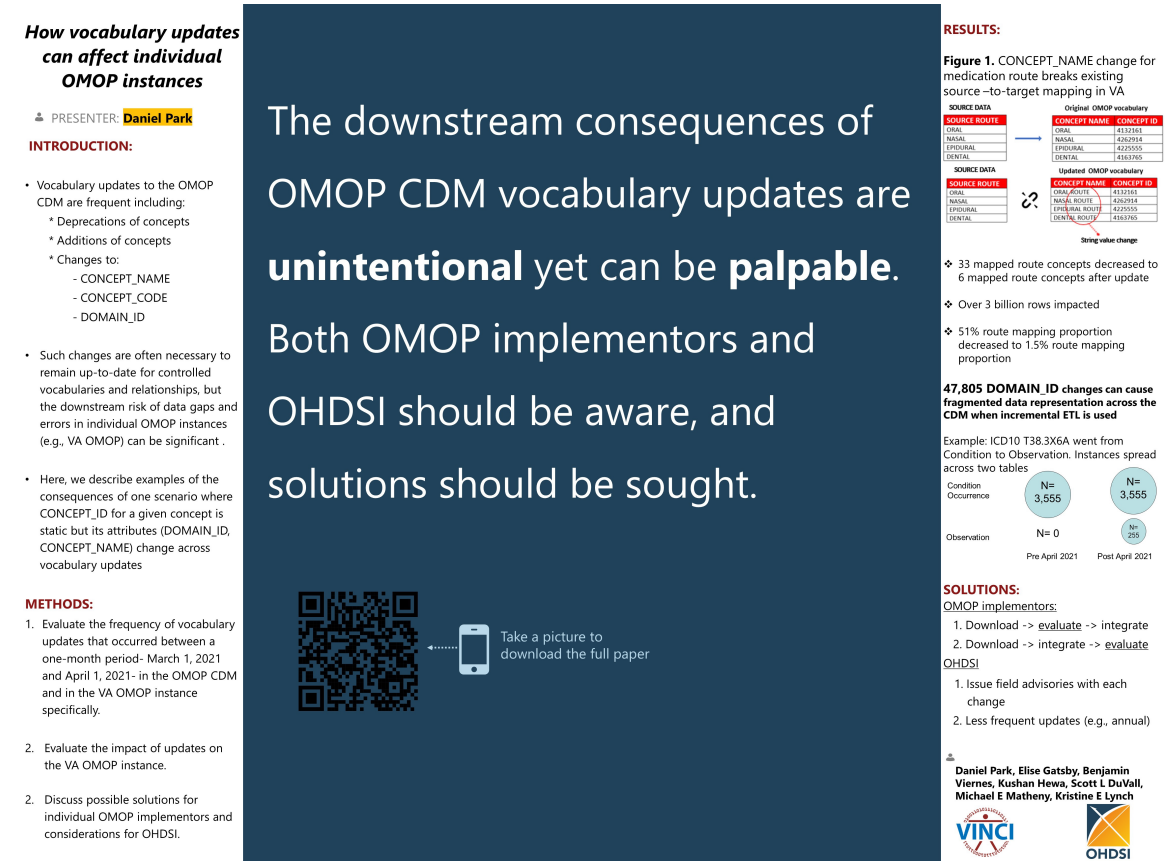
1. Department of Biomedical Informatics, Columbia University Irving Medical Center 2.Columbia University Vagelos College of Physicians and Surgeons 3.Department of Neurology, Columbia University Irving Medical Center 4. The Gertrude H. Sergievsky Center, Columbia University Vagelos College of Physicians and Surgeons 5. Department of Neurological Surgery, Columbia University Irving Medical Center 6. New York-Presbyterian Hospital

THURSDAY

Characterization of Antiepileptic Drug Treatment Pathways with the Common Data Model: Pilot Results from Columbia University Irving Medical Center

Authors: Matthew Spotnitz, Anna Ostropolets, Karthik Natarajan, Victor G. Castano, Genna J. Waldman, Michael Argenziano, Ruth Ottman, George Hripcsak, Hyunmi Choi, Brett E. Youngerman

#OHDSISocialShowcase This Week



FRIDAY

How vocabulary updates can affect individual OMOP instances

Authors: Daniel Park, Elise Gatsby, Benjamin Viernes, Kushan Hewa, Scott L. DuVall, Kristine E. Lynch

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?

What Gifts Did The Community Give In 2021?

As part of our final call of the year, we want to challenge the community to spread the love for our efforts in 2021.

We would like at least (but hopefully more) 21 people to join next week and thank 21 other people for contributions to OHDSI in 2021.