Meet the 2026 Titans

OHDSI Community Call
Nov. 3, 2026 • 11 am ET

Upcoming Community Calls

Date	Topic
Nov. 3	Meet the Titans
Nov. 10	Collaborator Showcase Honoree Presentations
Nov. 17	Early-Stage Researcher Presentations
Nov. 24	Software Demos
Dec. 1	OHDSI/OMOP Research Spotlight
Dec. 8	How Did OHDSI Do This Year?
Dec. 15	Holiday-Themed Fairwell to 2026

Three Stages of The Journey

Where Have We Been?

Where Are We Now?

Where Are We Going?

OHDSI Shoutouts!

Congratulations to the team of **Jian Sun, Jerome Anyalebechi, Bijan Najafi, Raul Rosenthal, and Edward H. Livingston** on the recent publication of **Baseline Diabetes Severity Is the Dominant Predictor of Diabetes Medication Re-Initiation Following Bariatric Surgery** in *Diabetes, Obesity and Metabolism*.



DIABETES, OBESITY AND METABOLISM
A JOURNAL OF PHARMACOLOGY AND THERAPEUTICS

ORIGINAL ARTICLE

Baseline Diabetes Severity Is the Dominant Predictor of Diabetes Medication Re-Initiation Following Bariatric Surgery

Jian Sun, Jerome Anyalebechi, Bijan Najafi, Raul Rosenthal, Edward H. Livingston

First published: 27 October 2026 | https://doi.org/10.1111/dom.71472 | VIEW METRICS

Handling Editor: Richard Donnelly

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OHDSI Shoutouts!

Congratulations to the team of **Yujie Chen, Martin Yi, Catherine C. Aftandilian, Melissa P. Beauchemin, Christine Cunningham, Emily Larimer, Jennifer Oberg, Benjamin L. May, Keith Morse, Karthik Natarajan, David Noyd, Vicki Soucek, Rhea K. Khurana, Phil Sim, Lin Lawrence Guo, and Lillian Sung** on the recent publication of **Increased Healthcare Utilization and Differential Outcomes for Pediatric Cancer Versus Non-Cancer Patients** in *Cancer Medicine*.



Cancer Medicine

Open Access

RESEARCH ARTICLE | Open Access

Increased Healthcare Utilization and Differential Outcomes for Pediatric Cancer Versus Non-Cancer Patients

Yujie Chen, Martin Yi, Catherine C. Aftandilian, Melissa P. Beauchemin, Christine Cunningham, Emily Larimer, Jennifer Oberg, Benjamin L. May, Keith Morse, Karthik Natarajan, David Noyd, Vicki Soucek, Rhea K. Khurana, Phil Sim, Lin Lawrence Guo, Lillian Sung ... See fewer authors

First published: 29 October 2026 | https://doi.org/10.1002/cam4.72459

SECTIONS EPUB PDF CITE TOOLS SHARE

ABSTRACT

Background

The Observational Medical Outcomes Partnership Common Data Model (OMOP CDM) is a data standard that enables multicenter research. Primary objective was to describe the magnitude of healthcare utilization in pediatric cancer versus non-cancer patients. Secondary objective was to compare 6-month clinical outcomes related to abnormal lab tests and mortality.

Methods

In this multicenter retrospective study, we included pediatric patients 0–18 years at first medication administration. Cancer patients had a malignant neoplastic disease diagnosis and received chemotherapy. Index date was the first chemotherapy date. Non-cancer patients were assigned analogous index dates based on randomly sampled first medication to chemotherapy intervals. Outcomes were measured within 6 months of index date. Healthcare utilization included encounters, procedures, radiology, lab tests, and medications.

OHDSI Shoutouts!

Congratulations to the team of **Xuelin Sun, Dongfang Qian, Wenjing Zhao, Jingyi Zhang, Pengfei Jin and Yatong Zhang** on the recent publication of **Progress in pharmacovigilance research based on artificial intelligence and real-world data: a structured narrative review** in the *Journal of Translational Medicine*.

Sun *et al. Journal of Translational Medicine* (2026) 24:1367
https://doi.org/10.1186/s12967-026-08717-7

Journal of Translational Medicine

REVIEW Open Access

Progress in pharmacovigilance research based on artificial intelligence and real-world data: a structured narrative review

Xuelin Sun[1,2,3,4*†], Dongfang Qian[5†], Wenjing Zhao[5], Jingyi Zhang[6], Pengfei Jin[1,2,3,4] and Yatong Zhang[1,2,3,4]

Abstract

Background Traditional pharmacovigilance (PV) relies heavily on spontaneous reporting systems (SRS), which remain vulnerable to under-reporting and limited mechanistic insight. Artificial intelligence (AI) and real-world data (RWD) offer opportunities to strengthen signal detection, risk prediction, and translational safety assessment, but most applications remain at retrospective development or early implementation stages.

Methods We conducted a structured narrative scoping review with critical appraisal, reported using PRISMA-ScR. Literature from 2010 to 2026 was identified through expert review, reference chaining, and regulatory sources. English-language publications on AI or machine learning in clinical pharmacovigilance with real-world data were synthesized thematically across data sources, analytical methods, validation strategies, and implementation challenges.

Results RWD ecosystems-including electronic health records (EHRs), administrative claims, multi-omics, and global SRS-can be integrated with supervised ML, natural language processing (NLP), graph neural networks (GNNs), and federated learning (FL) for diverse PV tasks. Reported area under the receiver operating characteristic curve (AUROC) values often exceed 0.90 in internal validation, yet external validation, calibration, decision-curve analysis, and prospective implementation evidence remain inconsistently reported. Common data models such as the Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM) and FL architectures improve interoperability and privacy-preserving collaboration. Causal and explainable AI methods are emerging but require explicit assumptions and mechanistic confirmation before regulatory-grade causal claims.

Conclusions AI-enabled PV is transitioning from association-focused surveillance toward prediction, mechanistic interpretation, and implementation science, yet widespread clinical or regulatory adoption requires transparent reporting (e.g., TRIPOD + AI, PROBAST), rigorous external and prospective validation, clear separation of association from causation, clinically interpretable outputs, sustained human oversight, and governance within harmonizing regulatory frameworks.

Three Stages of The Journey

Where Have We Been?

Where Are We Now?

Where Are We Going?

Upcoming Workgroup Calls



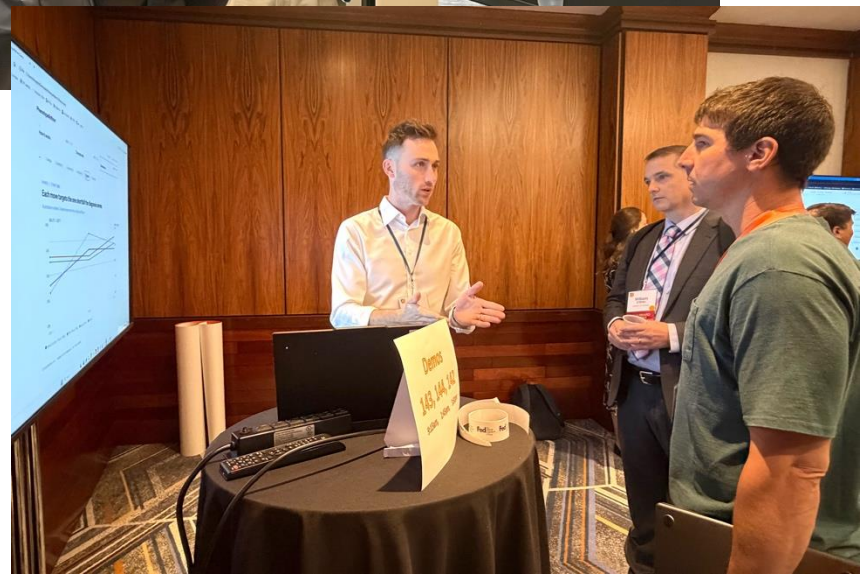
Date	Time (ET)	Meeting
Wednesday	9 am	Tidy R Programming
Thursday	4 am	Waveform
Thursday	9 am	Africa Chapter
Thursday	10 am	ATLAS/WebAPI
Thursday	10 am	GIS-Geographic Information System
Thursday	11 am	Themis
Thursday	11 am	Industry
Thursday	12 pm	Medical Devices
Thursday	12 pm	Methods Research
Thursday	1 pm	Oncology Vocabulary/Development Subgroup
Thursday	2 pm	Early-Stage Researchers
Thursday	2 pm	REVEAL
Friday	10 am	Respiratory Research
Friday	11:30 am	Steering
Tuesday	9 am	Oncology Genomic. Subgroup
Tuesday	9 am	CDM Survey

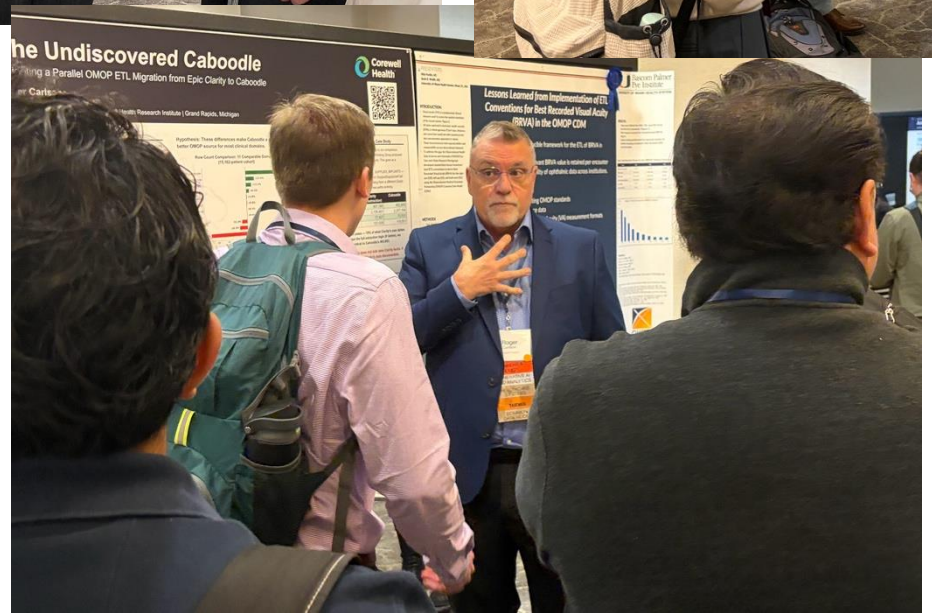
Best Community Contribution Honors







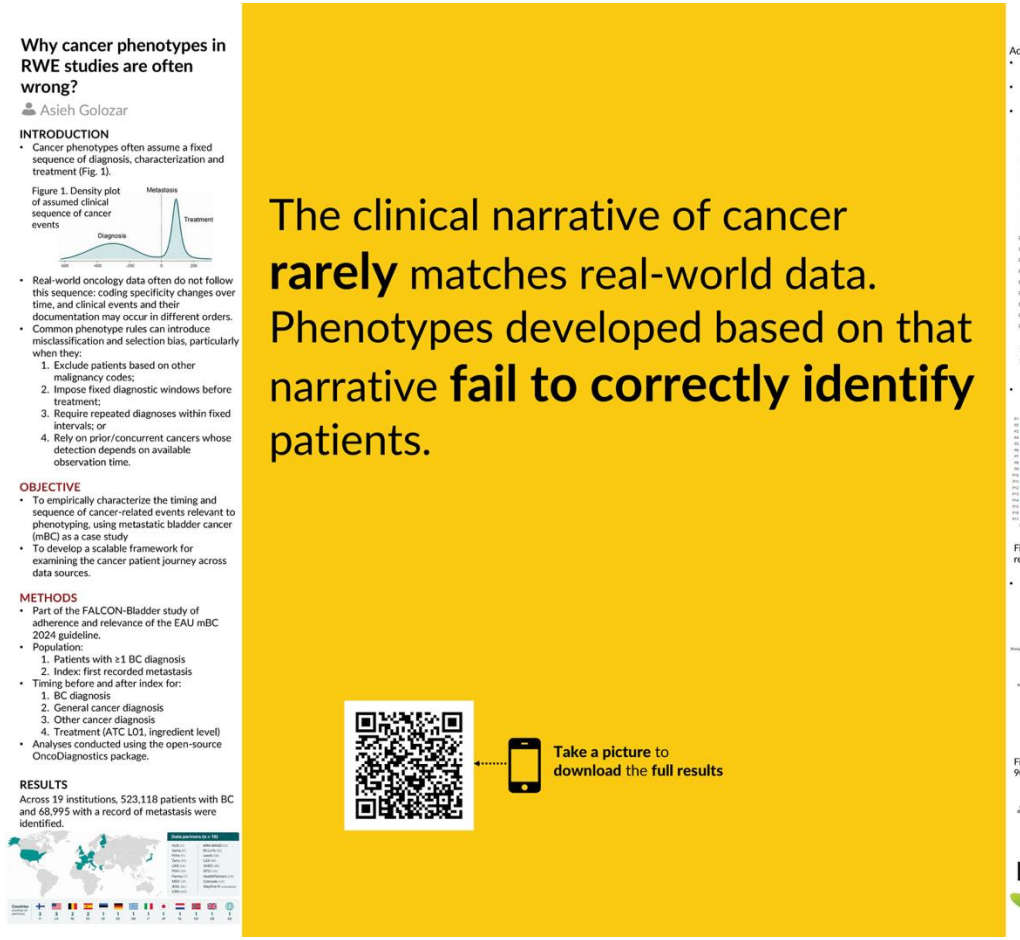




Best Community Contribution Honors

#22: Why cancer phenotypes in RWE studies are often wrong?

Asieh Golozar, Henry Morgan Stewart, Jasmin Carus, Sam T Patnoe, Tommi Kauko, Otto Ettala, Zarah Van Schoor, Annelies Verbiest, Kimmo Porkka, Patricia L Mabry, Christian Reich

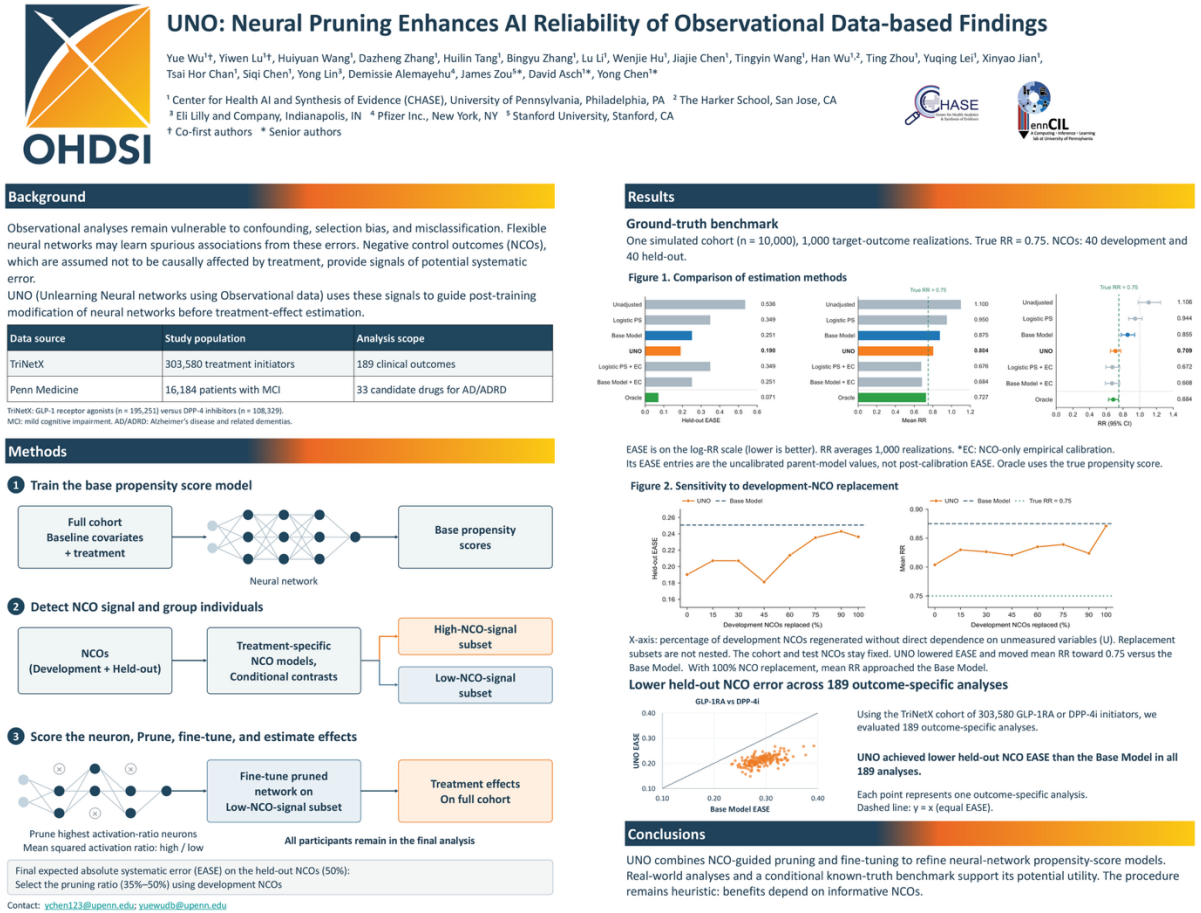


Clinical Applications

Best Community Contribution Honors

#162: UNO: Neural Pruning Enhances AI Reliability of Observational Data-based Findings

Yue Wu, Yiwen Lu, Huiyuan Wang, Dazheng Zhang, Huilin Tang, Bingyu Zhang, Lu Li, Wenjie Hu, Jiajie Chen, Tingyin Wang, Han Wu, Ting Zhou, Yuqing Lei, Xinyao Jian, Tsai Hor Chan, Siqi Chen, Yong Lin, Demissie Alemayehu,James Zou,David Asch,Yong Chen



Methodological Research

Best Community Contribution Honors

#95: OMOP ETL Design for Transparency, Quality, and Maintainability

Natasha Flowers, Jose Posada, Hannah Morgan-Cooper, Farnoosh Sheikhi, Shikha Kothari, Alvaro Alvarez, Priya Desai

OMOP ETL Design for Transparency, Quality, and Maintainability

PRESENTER: Natasha Flowers

INTRO

- Transformation of source data into OMOP data model is complex
- Testing only the final tables means that issues that occur in early stages of the process may be hard to identify
- Identifying the main steps in the transformation can help simplify development and maintenance
- Splitting the ETL into these key intermediate stages also enables testing throughout the process

METHODS

1. Prepare the source data, including cleaning, aggregation, stacking, etc.
2. Map to OMOP vocabulary source and then standard concept IDs
3. Route clinical event records to the appropriate OMOP table based on domain
4. Define a primary key and link to other tables to add foreign keys
5. Filter out extraneous records (if needed - ex. removing care_site_ids with no visits)
6. Select the final OMOP fields & deduplicate to distinct rows

Scan to access the **full report**

An organized ETL can help improve both data quality and pipeline maintainability over time.

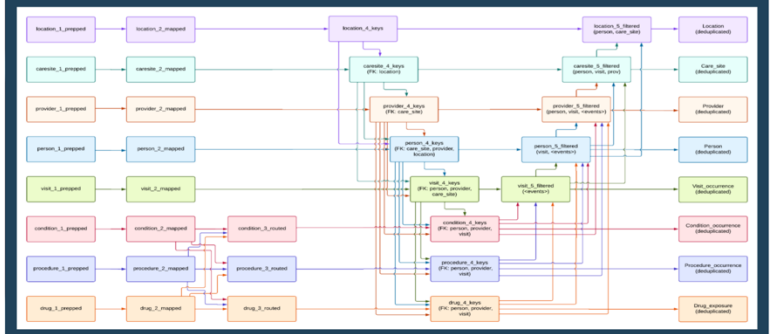


Fig.1 Suggested workflow diagram for an OMOP ETL. Each block represents a table in the ETL; blocks that are in the same vertical column can all be executed in parallel. A selection of core tables are included to demonstrate the concept, and the workflow would be extended to the remaining tables in practice. Not all steps are required for each individual table. Filtering steps shown are based on Stanford's internal inclusion criteria and may not be applicable for all instances.

PLATFORM

- Stanford EHR data is extracted from Epic Clarity and hosted on Google Cloud Platform
- OMOP ETL is written using DBT and Google BigQuery SQL
- Data tests and unit tests are implemented via DBT's testing framework

RESULTS

- Testing allows developers to catch issues early and reduce the frequency of regressions (which used to happen regularly due to changes in the underlying source data or vocabulary)
- Developers can quickly identify where changes or additions should be implemented in the pipeline because of the clear structure
- Debugging issues is much more efficient since each key step is already separated, allowing for easy isolation of where the problem is introduced

KEY LEARNINGS

- The effort and time it took to rewrite the pipeline has paid off in terms of increased quality and maintainability, benefitting both users and developers

Natasha Flowers, Jose Posada, Hannah Morgan-Cooper, Farnoosh Sheikhi, Shikha Kothari, Alvaro Alvarez, Priya Desai

Research Technology, TDS, Stanford Health Care
& Stanford University School of Medicine

Stanford MEDICINE OHDSI

Data Standards

Best Community Contribution Honors

#138: OCL Mapper and the CIEL Bridge: Open-Source, AI-Assisted Mapping of Clinical Concepts to Standard Vocabularies and OMOP

Jonathan Payne, Joseph Amlung, Filipe Lopes, Andrew S. Kanter

Open-Source Development

OHDSI 2026 Materials



OHDSI 2026 Materials

State of the Community

George Hripcsak welcomed the community to the 12th OHDSI Symposium, reflecting on where the network has been and where it is headed. Along with acknowledging the sponsors, committee members, and Titan Award nominees who power the community, he celebrated major 2026 milestones across every order of magnitude—spanning more than a decade of collaboration, 100 countries, over 1,100 publications, releases including OMOP CDM v5.5 and ATLAS 3.0, and surpassing one billion standardized patient records globally.

George then addressed the rapid rise of artificial intelligence, highlighting both its promise and why a human-centered, careful approach remains vital. He pointed out that while AI continues to get smarter, true evaluation is difficult because things aren't always what they seem on the surface. Ultimately, he emphasized that AI needs a firm foundation to be safe and effective—and OHDSI provides that essential bedrock of transparent, trustworthy health evidence against which new AI recommendations can be checked and verified.



State of the Community Slides

Early-Stage Researcher Year In Review

In an engaging debut session that was warmly received across the community, representatives from the Early-Stage Researchers (ESR) Working Group—Peter Musenge, Shounak Chattopadhyay, Benjamin Martin, and Jody-Ann McLeggon—took the main stage to deliver OHDSI's first-ever formal "Year in Review" presentation.

The presentation celebrated a standout year of scientific output, tracking more than 170 publications across 88 journals and highlighting the growing leadership of emerging scholars within the network. Walking attendees through OHDSI's core pillars (clinical applications, methods research, data standards, and open-source analytics) the speakers highlighted key studies ranging from large-scale cardiovascular and cancer outcomes to novel federated algorithms and multimodal imaging extensions. With early-stage researchers contributing to more than 40% of this year's Collaborator Showcase posters and authoring high-impact papers worldwide, the session not only captured the breadth of community scholarship over the past twelve months but also showcased the vibrant future of OHDSI leadership.



OHDSI Year In Review Slides

Plenary #1: Federated Learning Meets Negative Control Calibration: Toward Reliable Multi-Site Evidence Generation

The first plenary explored methodological frameworks designed to generate trustworthy clinical evidence across distributed networks without compromising patient privacy. The speakers demonstrated how data heterogeneity across institutions can be addressed using privacy-preserving, one-shot, and lossless algorithms like MOSAIC and DLMM. They shared real-world applications across COVID-19 hospital outcomes, pan-cancer proteomics, and Alzheimer's disease target trial emulations, while explaining why federated learning improves individual prediction model stability. In parallel, the session tackled residual confounding through Bayesian joint evidence synthesis with profile likelihoods and Systematic Error Reference Outcomes (SEROs) to detect and calibrate unmeasured bias. Finally, the panel highlighted AI-driven tools, including the ECHO agent for natural-language cohort generation and TrialMap for optimizing clinical trial eligibility.

Presenters: Yong Chen (University of Pennsylvania), Bingyu Zhang (University of Pennsylvania), Fan Bu (University of Michigan), Yumou Qiu (Peking University) Chongliang Lou (Washington University in Saint Louis), Fleur Vereijken (Erasmus MC)



Plenary 1 Slides

Lightning Talks, Session 1

1) Evaluating Semantic Loss in EHR Terminology Mapping in Common and Rare Diseases
Presenter: Melanie Philofsky (EPAM Systems)

2) Using OWL Reasoning to Surface Hidden Tensions in the OHDSI Standardized Vocabularies
Presenter: William Baumgartner (University of Colorado Anschutz Medical Campus)

3) Ontology-Governed LLM Search for Safe Drug Concept Mapping in Air-Gapped Healthcare Environments
Presenter: Seung Ju Yun (Chonnam National University Hwasun Hospital)

4) EPISODE/EPISODE_EVENT-Based Representation of Microbiology Results and Antimicrobial Susceptibility Testing in OMOP CDM v5.4
Presenter: Polina Talapova (SciForce/Tufts CTSI)

5) Making the most of What We Have: Regional Characterization of OHDSI Network Database
Presenter: Evelyn Goh (National University of Singapore)



Lightning Talks Session 1 Slides

Lightning Talks, Session 2

1) ORBIT: One-shot Reconstruction-Based Inference via Tensorization
Presenter: Qiaoshi Yang (University of Pennsylvania)

2) Comparative performance of the concurrent comparator design with existing vaccine safety surveillance approaches on real-world observational health data
Presenter: Shounak Chattopadhyay (University of Virginia)

3) Implementing Population Health Risk Analytics on a StandardizedEHR Data Layer: Evaluation and Framework Development
Presenter: Haeun Lee (Johns Hopkins University)

4) UNO: Neural Pruning Enhances AI Reliability of Observational Data-based Findings
Presenter: Yue Wu (University of Pennsylvania)

5) A Multi-Database, Retrospective, Long-term, Observational Safety Study of Pediatric Patients with Inflammatory Bowel Disease
Presenter: Kevin Haynes (Johnson & Johnson Innovative Medicine)



Lightning Talks Session 2 Slides

Closing Talk, Including Titan Awards

The symposium concluded with the presentation of the 2026 Titan Awards, celebrating extraordinary contributions across the community over the past year. Honors were presented across seve important categories and they highlighted the relentless dedication and collaborative spirit powering OHDSI's global mission.

Patrick Ryan then delivered the closing talk, shifting focus to the heart of real-world evidence: the individual human journey. Focusing on the concept of data sonification—translating clinical timestamps, diagnoses, and medication exposures into audio and musical notes—he urged the community to move beyond abstract data points and truly "listen" to the patient story. In a fun and interactive twist, three collaborators joined Patrick on stage to play instruments while the entire audience was invited to join in using handheld percussion to play along with the patient timeline. Making music together from actual clinical data offered an unforgettable reminder that behind every standardized record is a real person whose story gives OHDSI its purpose.



Closing Keynote Slides

OHDSI 2026 Materials

OHDSI 2026 Global Symposium Collaborator Showcase

Posters, software demonstrations and lightning talks from the 2026 OHDSI Global Symposium are available below. Research presentations are separated by categories:

- Clinical Applications: 1-31
- Methods Research: 32-62
- Observational Data Standards & Management: 63-109
- Observational Data Standards & Management: 110-129
- Open-Source Analytics Development: 110-129
- Software Demonstrations: 130-153
- Lightning Talks: 154-163

50 entries per page Search:

#	Title	Authors	Link
1	Real world treatment patterns of moderate to severe atopic dermatitis	Sarah Gasman, Rupa Makadia, Cheng Chen, Robert Suruki	View Poster/Brief Report
2	Scaling Specialist Hepatology Expertise for Population-Scale MASLD Care: An AI-Enabled OMOP CDM Knowledge Transport Layer for India	Ribhu Lahiri, Ganeev Singh, Kartik Mishra, Siddhant Janbandhu, Amit Goel, Vibhu Agarwal	View Poster/Brief Report
3	Complex Classification Criteria Inhibit Phenotyping Periodontal Health Using OMOP Vocabularies and Tools	John O'Malley	View Poster/Brief Report
4	Target Trial Emulation of Intravenous versus Oral Acetaminophen in Febrile Pediatric Inpatients: An OMOP-CDM Feasibility Study	Hong Kang Lee, Suhyun Kim, Kwangsoo Kim, Hee-Soo Kim	View Poster/Brief Report
5	Predicting Opioid Use Following Lumbar Fusion Using the NIH All of Us Research Program	Bradford Patton, Judith Dike, Aize Cao	View Poster/Brief Report
6	Machine learning prediction of postoperative adverse outcomes after infrainguinal bypass surgery, with benchmark comparison against the VQI cardiac risk index	Sahar Hanifi, Vasant Honavar, Faisal Aziz, Lawrence Sinowa	View Poster/Brief Report
7	The APAC-VALUE study: A global characterisation study of VALproate Utilisation and Exposure among women and men of childbearing age	Jack Janetzki, Bianca Varney, Thanh Phuc Phan, Jason Hsu, Nicole Pratt, OHDSI APAC Value team	View Poster/Brief Report
8	SerialSentence: A Date-Centric OMOP-CDM Reorganization for LLM Reasoning	Yoon Seob Kim, Don Gueu Park, Jung Han Yoon, Chungsoo Kim, Rae Woong Park	View Poster/Brief Report
9	Real-World Comparison of Worsening Heart Failure and Acute Kidney Injury After Sacubitril/Valsartan Versus ARB Therapy in Older Patients: Incidence and Treatment Pathway Analysis	Muhammad Hanif Amiruddin, Christianus Heru Setiawan, Phung-Ahn Nguyen, Min-Huei Hsu, Jason C. Hsu	View Poster/Brief Report
10	UroEvidenceHub: Harnessing the OMOP CDM and OHDSI analytic tools to advance urological evidence generation	Bertrand De Meulder, Kishore Papineni, Miguel Taraud, Nadia Knauer, Maxence Renaud, Ketharnathsiva Venkatesan, Andrei Kiselev, Robert Shepherd, Ellen Moise, Monique Roobol, Susan Evans-Axelsson	View Poster/Brief Report
11	A Universal Prioritized Set of Pharmacovigilance Outcomes Derived From Nine Complementary Sources Using Large Language Models	Frank J. DeFalco, Mitchell M. Conover	View Poster/Brief Report
12	Temporal Patterns of Immune-Related Adverse Events Enables Phenotype-Guided Risk and Timing Prediction	Liyuan Gong, Harry Reyes Nieva, Jeong Yun, Yang, Peter Shahinnian, Nitish Aswani, Alexander Wei, Chin Hur	View Poster/Brief Report

Real world treatment patterns of moderate to severe atopic dermatitis

Authors: Sarah Gasman, Rupa Makadia, Cheng Chen, Robert Suruki

Brief Report

Real-world treatment patterns of moderate to severe atopic dermatitis

PRESENTER: **Sarah Gasman**

BACKGROUND

- Atopic dermatitis (AD) is a chronic, relapsing inflammatory skin disease affecting 10–30% of children and 2–10% of adults in the US. It carries the highest disease burden among skin disorders in terms of disability-adjusted life-years. [1]
- An estimated 30–40% of AD patients have moderate to severe symptoms[2], requiring treatment beyond topical management (use of phototherapy, immunosuppressants, biologics, or JAK inhibitors).
- Real-world treatment pathways of patients with moderate to severe AD are not well-characterized.

METHODS

- **Data source:** HealthVerity Comprehensive Claims (US administrative closed-claims)
- **Cohort:** Moderate-to-severe AD patients, constructed using treatment data as a proxy for disease severity. Cohort entry events (index on later event when multiple are required):
  - ≥2 phototherapy claims (365 days)
  - ≥2 claims for medium/high-potency topical or systemic corticosteroids, immunosuppressants, or topical JAK inhibitors (365 days)
  - ≥1 phototherapy claim + ≥1 claim from corticosteroid/ immunosuppressant/JAK class (365 days)
  - ≥1 advanced therapy claim (biologic or oral JAK inhibitor)
- **Diagnosis requirement**: ≥2 AD codes on ≥2 distinct dates (365 days pre- to 90 days post-index)
- **Study period:** Jan 2016–Dec 2025; no exclusions or minimum observation period
- **Pathway analysis:** ATLAS Cohort Pathways (Figure 1)
- **Overlap vs. switch:** Treatments ≤30 days apart = overlap
- **Platform:** ATLAS v2.15

Heterogeneous treatment patterns in moderate to severe **atopic dermatitis** suggest **unmet need for long-term symptom control.**

Figure 1:



Table 1

Cohort demographics	N	Percent	Mean	SD
Age, years	1,811,235		35.9	24.7
Female	1,069,443	59.0		
Comorbidities				
Essential hypertension	472,669	26.1		
Allergic rhinitis	375,976	20.8		
Cough	371,365	20.5		
Hyperlipidemia	335,452	18.5		
Low back pain	223,878	12.4		
Obesity	208,751	11.5		
Type 2 diabetes	207,652	11.5		
Uncomplicated asthma	206,770	11.4		

Table 2

Treatment	Line of Therapy	Persons	Percent of Pathway
medium-high potency topical steroid	1	928,350	54.6%
oral and parenteral steroids	1	801,369	47.1%
advanced therapies (biologics)	1	105,607	6.2%
phototherapy	1	26,452	1.6%
immunosuppressants	1	24,939	1.5%
oral and parenteral steroids	2	451,511	26.6%
medium-high potency topical steroid	2	418,963	24.6%
advanced therapies (biologics)	2	102,616	6.0%
immunosuppressants	2	38,743	2.3%
phototherapy	2	20,678	1.2%
oral and parenteral steroids	3	214,293	12.6%
medium-high potency topical steroid	3	191,633	11.3%
advanced therapies (biologics)	3	78,209	4.6%
immunosuppressants	3	33,598	2.0%
phototherapy	3	11,233	0.7%
oral and parenteral steroids	4	79,134	4.7%
medium-high potency topical steroid	4	76,193	4.5%
advanced therapies (biologics)	4	54,043	3.2%
immunosuppressants	4	23,260	1.4%
phototherapy	4	6,646	0.4%
oral and parenteral steroids	5	38,843	2.3%
medium-high potency topical steroid	5	38,429	2.3%
advanced therapies (biologics)	5	32,578	1.9%
immunosuppressants	5	13,501	0.8%
phototherapy	5	3,682	0.2%

1. Liu H, Dong H, Chen W, Li X, Xiao Z, Li H. Global, Regional, and National Burden of Atopic Dermatitis: Insights From the Global Burden of Disease Study 2021. Dermatitis. 2025 Aug 6:17103568251365559. doi: 10.1177/17103568251365559. PMID: 40765527.
2. Silverberg, J. I., Gelfand, J. M., Margolis, D. J., Fonacier, L., Boguniewicz, M., Schwartz, L. B., Simpson, E. L., Grayson, M. H., Ong, P. Y., & Chiesa Fuxench, Z. C. (2018). Severity strata for POEM, PO-SCORAD, and DLQI in US adults with atopic dermatitis. Annals of Allergy, Asthma & Immunology, 121(4), 464–468.e3.

RESULTS

- **Cohort size:** 1,811,235 patients with moderate-to-severe atopic dermatitis were identified (Table 1)
- **Total treatment lines:** Nearly half (42%) received one line of treatment post-index. 27% received two lines and 25% received 3 or more lines. 6% of the cohort received no additional therapies post-index (thus were controlled on index therapy).
- **Progression:** 64% of first-line patients progressed to second-line therapy. 52% of second-line patients progressed to third-line therapy.
- **Treatments** (table 2):
  - Corticosteroids were the most common first line treatment:
    - Medium-to-high potency topical: 55%
    - Oral/parenteral: 45%
  - Advanced therapies (biologics, JAK inhibitors) were used by 12% of the overall cohort.
  - Biologics were used as a first-line therapy in 6% of patients.

KEY TAKEAWAYS

- Treatment pathways in moderate to severe AD are highly heterogeneous.
- Frequent progression and use of combination and multiple lines of therapy; limited use of advanced therapies.
- Results suggest **potential underutilization of targeted therapies and unmet need for long-term symptom control.**

LIMITATIONS

- Treatments were used as a proxy to define disease severity; misclassification based on proxy could occur.
- Low potency topical steroid group does not include over the counter treatments.

Sarah Gasman[1], Rupa Makadia[2], Cheng Chen[3], Robert Suruki[3]
[1] Johnson & Johnson, La Jolla, CA, USA; [2] Johnson & Johnson, Raritan, NJ, USA
[3] Johnson & Johnson, Horsham, PA, USA

Johnson&Johnson OHDSI

November Newsletter is Available

OHDSI

The Journey Newsletter (November 2026)

The 2026 OHDSI Global Symposium brought our international community together to share groundbreaking scientific innovations, build new collaborations, and continue driving the OHDSI mission forward. From thought-provoking plenary sessions and a record-setting Collaborator Showcase to an unforgettable interactive closing session, the 12th Global Symposium captured the momentum and shared spirit of our community. In this issue, we recap the key moments from the main conference, spotlight community leaders in the Asia-Pacific region, and share the latest updates and publications from across the OHDSI ecosystem. #JoinTheJourney

Podcast: Symposium Reflections & a Challenge



In the November 2026 On The Journey podcast, Patrick Ryan and Craig Sachson reflect on the main conference from the Global Symposium. They reflect on the scientific innovations presented during the trio of community-led plenaries, and they discussed the themes from both the opening talk — OHDSI's role in the AI era — and closing talk — listening to the patient. They also reflect on the Early-Stage Researchers Year in Review, as Patrick discusses his impressions from the Collaborator Showcase and a challenge for the 2027 edition. (if video does not appear, please click View this email in your browser)

Community Updates

Where Have We Been?

- The 2026 OHDSI Global Symposium was held Oct. 20-22 and welcomed more than 420 global collaborators for three days of learning, sharing and networking. All presentations from the main conference, as well as collaborator showcase posters/demos, are available on the event homepage.
- The 2026 Titan Award winners were announced during the closing session at the Global Symposium. The winners are listed below, and each will provide a presentation on their OHDSI journey and their recent work during the Nov. 3 community call.
- The FALCON Symposium and Bladder Cancer Studyathon was held recently in Antwerp, Belgium. Led by Oncology workgroup lead Asieh Golozar, the ever explored how real-world evidence can inform and evaluate oncology clinical guidelines, highlighting the use of OncoDiagnostics to systematically assess data readiness, phenotyping challenges, and guideline adherence across global partner sites.

Where Are We Now?

- The 2026 Asia-Pacific (APAC) Symposium will be held Nov. 13-15 at Yonsei University in Seoul, Korea. Registration remains open for the event, which will begin with a main conference and then include two days of tutorials and a datathon.
- The 2026 Canada Symposium will be held Nov. 17-18 in Toronto and will include a day of tutorials (From Source Data to OMOP and From OMOP to Evidence), as well as a main conference day. Registration is available on the event homepage.
- A call for papers is open for a *Journal of Biomedical Informatics* special issue focusing on agentic AI for generating trustworthy Real-World Evidence (RWE). The issue seeks contributions on multi-agent collaboration and coordinated autonomy across the RWE lifecycle—such as data harmonization and causal analysis—while excluding single-task AI agents. The deadline is Nov. 15.

Where Are We Going?

- Registration has opened for the 2026 India Symposium, which will be held Dec. 11 in Chennai, India. This is the second India Symposium, and this event will be limited to 60 participants.
- Save the Date! The 2027 Europe Symposium is coming to Helsinki, Finland, and the main conference is set to be held at Finlandia Hall on April 26. Further details will be posted when available.
- The #OHDSISocialShowcase will be sharing research from the 2026 Global Symposium via our social channels this month. Please follow us on LinkedIn, X/Twitter, Bluesky and Instagram, to learn more about the research happening in our community.

Global Collaboration & Innovation Take Center Stage At OHDSI 2026



The 2026 OHDSI Global Symposium brought together more than 420 collaborators from around the world to share scientific innovation, explore new research paths, and strengthen the bonds across our global community. The main conference featured inspiring plenaries, a record-setting Collaborator Showcase, and thought-provoking discussions exploring the evolving role of real-world evidence. Attendees also had the opportunity to take part in hands-on tutorials and collaborative workgroup sessions, providing dedicated spaces to learn together and lay the groundwork for future network initiatives.

The collective energy and spirit on display served as a reminder of what makes OHDSI special: a shared commitment to open science and global partnership. Whether reconnecting with longtime colleagues or welcoming investigators attending their very first OHDSI event, the 12th annual Global Symposium reinforced how much we can achieve when we unite diverse perspectives across medicine, statistics, and computer science to advance patient care.

Recordings and slide presentations from the main conference day, as well as posters and demos from the Collaborator Showcase, are now available online to watch and review. Materials from the tutorials will be posted when available.

2026 Global Symposium Homepage

2026 Global Symposium Collaborator Showcase

Spotlight: Jiwon Um



Looking ahead, I don't want to be a scientist who only produces results. I want to help change the care that patients and their families actually experience, and that means contributing to the systems and policies behind care, not only to the papers about it. I intend to pursue that on larger and larger stages, and OHDSI is where I'm learning how.

OHDSI

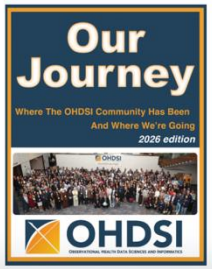
Jiwon Um began her career in clinical psychology, working with children and their families. Today she studies how mothers' cardiovascular-kidney-metabolic health takes shape across populations, as a data scientist at Yonsei University Health System and a PhD candidate in Biomedical Systems Informatics at Yonsei University College of Medicine, advised by Dr. Seng Chan You. She is a Fellow in the Johns Hopkins Maternal Health Fellowship (2026–2028).

Within OHDSI, she serves as the APAC Community Coordinator, leading the monthly APAC Community Calls. She also contributes to network studies including CHRONICLE-DM and is part of the organizing team for the 2026 APAC Symposium.

Jiwon discusses how OHDSI has impacted her educational journey, child and adolescent development research, OHDSI and its relationship with medical AI, and more in the latest Collaborator Spotlight.

Collaborator Spotlight: Jiwon Um

2026 Our Journey Updates Global Growth; OHDSI Website Receives Full Refresh



October Publications

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November Newsletter is Available

OHDSI
OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

Search

Home | About OHDSI | What We Do | Engage With OHDSI | OMOP CDM | Events | Community Forums | News & Updates

- Our Journey Annual Report
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- Newsletter Archive



APAC Symposium: Nov. 13-15

The 2026 APAC Symposium will be held Nov. 13-15 at Yonsei University in Seoul, South Korea.

Nov. 13: Main Conference
Nov. 14: Tutorials, Datathon
Nov. 15: Datathon Team Activities

Registration is open! All details can be found on the event homepage.



ohdsi.org/APAC2026

Canada Symposium: Nov. 17-18

Registration is now open for the 2026 OHDSI Canada Symposium, held Nov. 17-18 in Toronto, Ont.

Nov. 17: Workshops

Track A: From Source Data to OMOP

Track B: From OMOP to Evidence

Nov. 18: Symposium

The main symposium day will bring the Canadian OHDSI community together to share experiences, showcase emerging work, and explore opportunities for collaboration.



India Symposium: Dec. 11



OHDSI INDIA

WHY TO ATTEND?

- **UNDERSTAND INDIA'S HEALTHCARE DATA LANDSCAPE**
  Learn about the current state of healthcare data in India, emerging national priorities, and how global standards are shaping the future of healthcare and research.
- **EXPLORE OMOP AND HEALTHCARE DATA INITIATIVES**
  Discover the latest developments in OMOP, Real-World Evidence (RWE), FHIR, AI, and other data standardization initiatives being implemented across India.
- **LEARN HOW YOUR ORGANIZATION CAN PARTICIPATE**
  Understand how hospitals, medical colleges, and healthcare organizations can contribute to national data initiatives, multicenter research, training programs, and collaborative projects through OHDSI India.
- **LEARN FROM EXPERTS**
  Gain insights from national and international experts on healthcare data standards, OMOP, FHIR, Real-World Evidence, AI, and observational research.
- **NETWORK WITH THE HEALTHCARE COMMUNITY**
  Connect with clinicians, researchers, hospitals, academia, industry partners, and global OHDSI leaders to build meaningful collaborations
- **SHOWCASE YOURWORK**
  SHOWCASE YOURWORK Present your research through posters, lightning talks, or case studies and receive valuable feedback from the community
- **BUILD FUTURE COLLABORATIONS**
  Identify opportunities to participate in multicenter research, training programs, industry collaborations, and Real-World Evidence projects.

Upcoming Events Page

What We Do | Engage With OHDSI | OMOP CDM | Events | Community Forums

OHDSI Events

From events held in U.S., Canada, Latin America, Europe, Africa, Asia, or Australia, our annual symposia are among the most anticipated events of the year. Plenary talks, tutorials, workshops and the collaborator showcase create opportunities to share research, learn from each other, and collaborate on future opportunities.

These events also allow our global community an opportunity to connect face-to-face. Whether it is to share scientific breakthroughs, build massive Lego sets or dance on stage together, each symposium brings our community together and sets new paths for collaboration.

Upcoming Events

APAC Symposium

The 2026 APAC Symposium takes place Nov. 13-15 in Yonsei, Korea. Registration is open.

Event Homepage

Canada Symposium

The 2026 Canada Symposium takes place Nov. 17-18 in Toronto, Ont. Registration is open.

Event Homepage

India Symposium

The 2026 India Symposium takes place Dec. 11 in Chennai. Registration is open and limited to 60 seats.

Register Here

Europe Symposium

The 2027 Europe Symposium is scheduled for April 26 in Helsinki, Finland. More information to come.

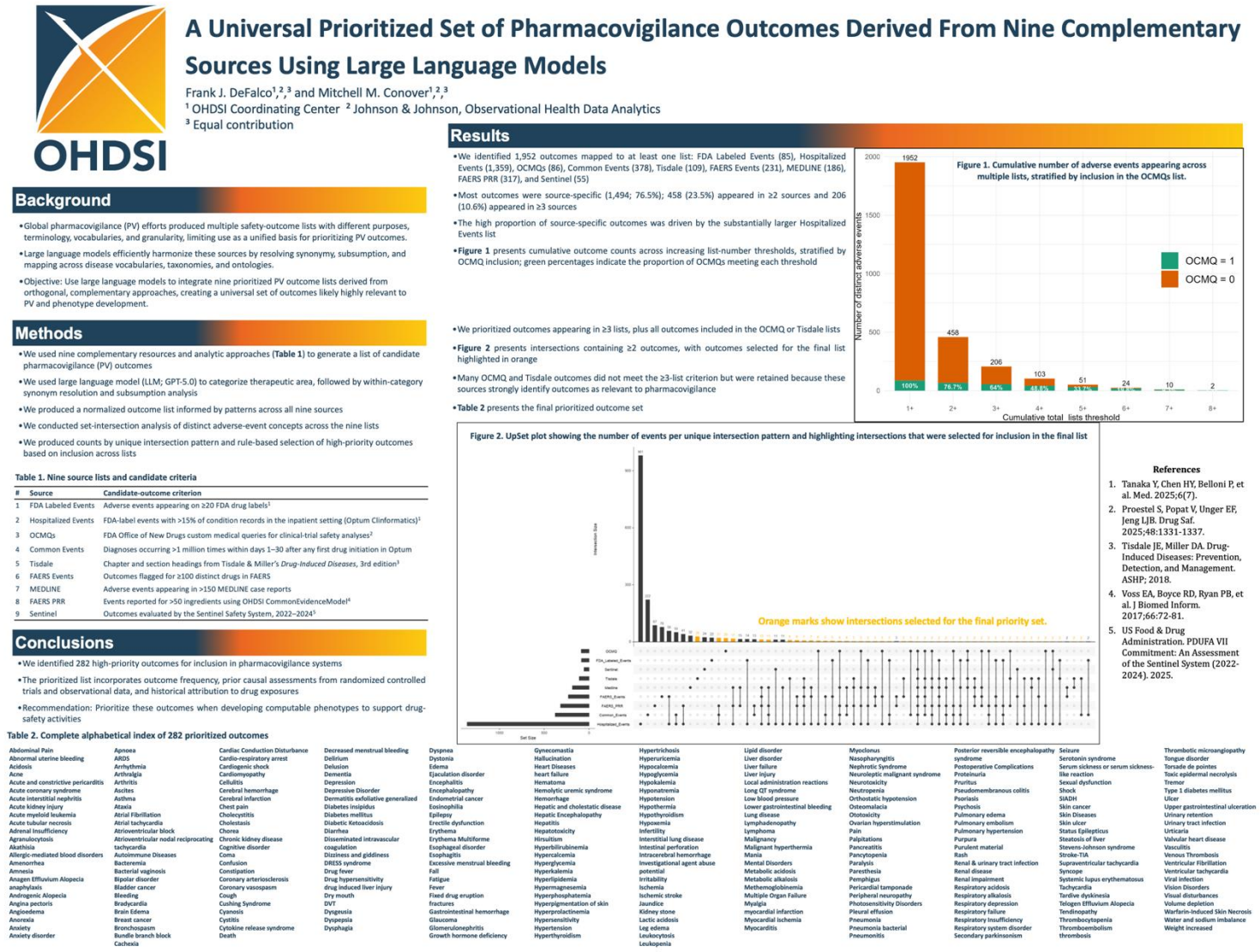
OHDSI Europe

#OHDSISocialShowcase This Week

Monday

A Universal Prioritized Set of Pharmacovigilance Outcomes Derived From Nine Complementary Sources Using Large Language Models

(Frank J. DeFalco, Mitchell M. Conover)



A Universal Prioritized Set of Pharmacovigilance Outcomes Derived From Nine Complementary Sources Using Large Language Models

Frank J. DeFalco[1,2,3] and Mitchell M. Conover[1,2,3]
[1] OHDSI Coordinating Center [2] Johnson & Johnson, Observational Health Data Analytics
[3] Equal contribution

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Background

- Global pharmacovigilance (PV) efforts produced multiple safety-outcome lists with different purposes, terminology, vocabularies, and granularity, limiting use as a unified basis for prioritizing PV outcomes.
- Large language models efficiently harmonize these sources by resolving synonymy, subsumption, and mapping across disease vocabularies, taxonomies, and ontologies.
- Objective: Use large language models to integrate nine prioritized PV outcome lists derived from orthogonal, complementary approaches, creating a universal set of outcomes likely highly relevant to PV and phenotype development.

Methods

- We used nine complementary resources and analytic approaches (**Table 1**) to generate a list of candidate pharmacovigilance (PV) outcomes
- We used large language model (LLM; GPT-5.0) to categorize therapeutic area, followed by within-category synonym resolution and subsumption analysis
- We produced a normalized outcome list informed by patterns across all nine sources
- We conducted set-intersection analysis of distinct adverse-event concepts across the nine lists
- We produced counts by unique intersection pattern and rule-based selection of high-priority outcomes based on inclusion across lists

Table 1. Nine source lists and candidate criteria

#	Source	Candidate-outcome criterion
1	FDA Labeled Events	Adverse events appearing on ≥20 FDA drug labels[1]
2	Hospitalized Events	FDA-label events with >15% of condition records in the inpatient setting (Optum Clinformatics)[1]
3	OCMQs	FDA Office of New Drugs custom medical queries for clinical-trial safety analyses[2]
4	Common Events	Diagnoses occurring >1 million times within days 1–30 after any first drug initiation in Optum
5	Tisdale	Chapter and section headings from Tisdale & Miller's *Drug-Induced Diseases*, 3rd edition[3]
6	FAERS Events	Outcomes flagged for ≥100 distinct drugs in FAERS
7	MEDLINE	Adverse events appearing in >150 MEDLINE case reports
8	FAERS PRR	Events reported for >50 ingredients using OHDSI CommonEvidenceModel[4]
9	Sentinel	Outcomes evaluated by the Sentinel Safety System, 2022–2024[5]

Conclusions

- We identified 282 high-priority outcomes for inclusion in pharmacovigilance systems
- The prioritized list incorporates outcome frequency, prior causal assessments from randomized controlled trials and observational data, and historical attribution to drug exposures
- Recommendation: Prioritize these outcomes when developing computable phenotypes to support drug-safety activities

Table 2. Complete alphabetical index of 282 prioritized outcomes

Abdominal Pain	Apnoea	Cardiac Conduction Disturbance	Decreased menstrual bleeding	Dyspnea	Gynecomastia	Hypertrichosis	Lipid disorder	Myoclonus	Posterior reversible encephalopathy syndrome	Seizure
Abnormal uterine bleeding	ARDS	Cardio-respiratory arrest	Delirium	Dystonia	Hallucination	Hyperuricemia	Liver disorder	Nasopharyngitis	Postoperative Complications	Serotonin syndrome
Acidosis	Arrhythmia	Cardiogenic shock	Delusion	Edema	Heart Diseases	Hypocalcemia	Liver failure	Nephrotic Syndrome	Proteinuria	Serum sickness or serum sickness-like reaction
Acne	Arthralgia	Cardiomyopathy	Dementia	Ejaculation disorder	heart failure	Hypoglycemia	Liver injury	Neuroleptic malignant syndrome	Pruritus	Sexual dysfunction
Acute and constrictive pericarditis	Arthritis	Cellulitis	Depression	Encephalitis	Hematoma	Hypokalemia	Local administration reactions	Neurotoxicity	Pseudomembranous colitis	Shock
Acute coronary syndrome	Ascites	Cerebral hemorrhage	Depressive Disorder	Encephalopathy	Hemolytic uremic syndrome	Hyponatremia	Long QT syndrome	Neutropenia	Psoriasis	SIADH
Acute interstitial nephritis	Asthma	Cerebral infarction	Dermatitis exfoliative generalized	Endometrial cancer	Hemorrhage	Hypotension	Low blood pressure	Orthostatic hypotension	Psychosis	Skin cancer
Acute kidney injury	Ataxia	Chest pain	Diabetes insipidus	Eosinophilia	Hepatic and cholestatic disease	Hypothermia	Lower gastrointestinal bleeding	Osteomalacia	Pulmonary edema	Skin Diseases
Acute myeloid leukemia	Atrial Fibrillation	Cholecystitis	Diabetes mellitus	Epilepsy	Hepatic Encephalopathy	Hypothyroidism	Lung disease	Ototoxicity	Pulmonary embolism	Skin ulcer
Acute tubular necrosis	Atrial tachycardia	Cholestasis	Diabetic Ketoacidosis	Erectile dysfunction	Hepatitis	Hypoxemia	Lymphadenopathy	Ovarian hyperstimulation	Pulmonary hypertension	Status Epilepticus
Adrenal insufficiency	Atrioventricular block	Chorea	Diarrhea	Erythema	Hepatotoxicity	Infertility	Lymphoma	Pain	Purpura	Steatosis of liver
Agranulocytosis	Atrioventricular nodal reciprocating tachycardia	Chronic kidney disease	Disseminated intravascular coagulation	Erythema Multiforme	Hirsutism	Interstitial lung disease	Malignancy	Palpitations	Purulent material	Stevens-Johnson syndrome
Akathisia	Autoimmune Diseases	Cognitive disorder	Dizziness and giddiness	Esophageal disorder	Hyperbilirubinemia	Intestinal perforation	Malignant hyperthermia	Pancreatitis	Rash	Stroke-TIA
Allergic-mediated blood disorders	Bacteremia	Coma	DRESS syndrome	Esophagitis	Hypercalcemia	Intracerebral hemorrhage	Mania	Pancytopenia	Renal & urinary tract infection	Supraventricular tachycardia
Amenorrhea	Bacterial vaginosis	Confusion	Drug fever	Excessive menstrual bleeding	Hyperglycemia	Investigational agent abuse	Mental Disorders	Paralysis	Renal disease	Syncope
Amnesia	Bipolar disorder	Constipation	Drug hypersensitivity	Fall	Hyperkalemia	potential	Metabolic acidosis	Paresthesia	Renal impairment	Systemic lupus erythematosus
Anagen Effluvium Alopecia	Bladder cancer	Coronary arteriosclerosis	drug induced liver injury	Fatigue	Hyperlipidemia	Irritability	Metabolic alkalosis	Pemphigus	Respiratory acidosis	Tachycardia
anaphylaxis	Bleeding	Coronary vasospasm	Dry mouth	Fever	Hypermagnesemia	Ischemia	Methemoglobinemia	Pericardial tamponade	Respiratory alkalosis	Tardive dyskinesia
Androgenic Alopecia	Bradycardia	Cough	DVT	Fixed drug eruption	Hyperphosphatemia	Ischemic stroke	Multiple Organ Failure	Peripheral neuropathy	Respiratory depression	Telogen Effluvium Alopecia
Angina pectoris	Brain Edema	Cushing Syndrome	Dysgeusia	fractures	Hyperpigmentation of skin	Jaundice	Myalgia	Photosensitivity Disorders	Respiratory failure	Tendinopathy
Angioedema	Breast cancer	Cyanosis	Dyspepsia	Gastrointestinal hemorrhage	Hyperprolactinemia	Kidney stone	myocardial infarction	Pleural effusion	Respiratory Insufficiency	Thrombocytopenia
Anorexia	Bronchospasm	Cystitis	Dysphagia	Glaucoma	Hypersensitivity	Lactic acidosis	Myocardial Ischemia	Pneumonia	Respiratory system disorder	Thromboembolism
Anxiety	Bundle branch block	Cytokine release syndrome		Glomerulonephritis	Hypertension	Leg edema	Myocarditis	Pneumonia bacterial	Secondary parkinsonism	thrombosis
Anxiety disorder	Cachexia	Death		Growth hormone deficiency	Hyperthyroidism	Leukocytosis		Pneumonitis		
						Leukopenia				

Results

- We identified 1,952 outcomes mapped to at least one list: FDA Labeled Events (85), Hospitalized Events (1,359), OCMQs (86), Common Events (378), Tisdale (109), FAERS Events (231), MEDLINE (186), FAERS PRR (317), and Sentinel (55)
- Most outcomes were source-specific (1,494; 76.5%); 458 (23.5%) appeared in ≥2 sources and 206 (10.6%) appeared in ≥3 sources
- The high proportion of source-specific outcomes was driven by the substantially larger Hospitalized Events list
- **Figure 1** presents cumulative outcome counts across increasing list-number thresholds, stratified by OCMQ inclusion; green percentages indicate the proportion of OCMQs meeting each threshold

- We prioritized outcomes appearing in ≥3 lists, plus all outcomes included in the OCMQ or Tisdale lists
- **Figure 2** presents intersections containing ≥2 outcomes, with outcomes selected for the final list highlighted in orange
- Many OCMQ and Tisdale outcomes did not meet the ≥3-list criterion but were retained because these sources strongly identify outcomes as relevant to pharmacovigilance
- **Table 2** presents the final prioritized outcome set

Figure 2. UpSet plot showing the number of events per unique intersection pattern and highlighting intersections that were selected for inclusion in the final list

References

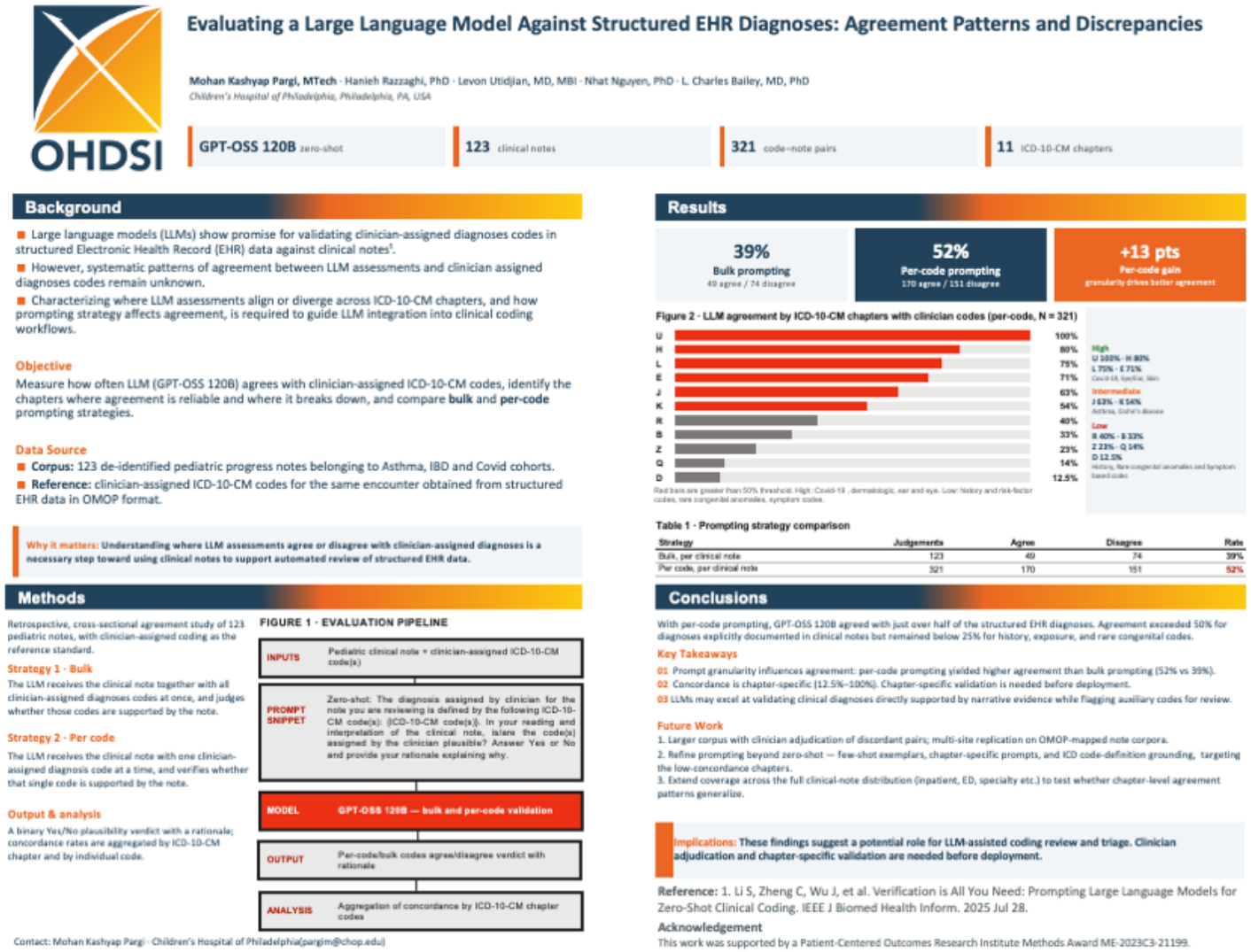
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#OHDSISocialShowcase This Week

Tuesday

Evaluating Large Language model against Structured EHR Diagnoses: Agreement Patterns and Discrepancies

(Mohan Kashyap Pargi, Hanieh Razzaghi, Levon Utidjian, Nhat Nguyen,Charles Bailey)



Evaluating a Large Language Model Against Structured EHR Diagnoses: Agreement Patterns and Discrepancies

Mohan Kashyap Pargi, MTech · Hanieh Razzaghi, PhD · Levon Utidjian, MD, MBI · Nhat Nguyen, PhD · L. Charles Bailey, MD, PhD

Children's Hospital of Philadelphia, Philadelphia, PA, USA

OHDSI

GPT-OSS 120B zero-shot | 123 clinical notes | 321 code–note pairs | 11 ICD-10-CM chapters

Background

- Large language models (LLMs) show promise for validating clinician-assigned diagnoses codes in structured Electronic Health Record (EHR) data against clinical notes[1].
- However, systematic patterns of agreement between LLM assessments and clinician assigned diagnoses codes remain unknown.
- Characterizing where LLM assessments align or diverge across ICD-10-CM chapters, and how prompting strategy affects agreement, is required to guide LLM integration into clinical coding workflows.

Objective

Measure how often LLM (GPT-OSS 120B) agrees with clinician-assigned ICD-10-CM codes, identify the chapters where agreement is reliable and where it breaks down, and compare **bulk** and **per-code** prompting strategies.

Data Source

- **Corpus:** 123 de-identified pediatric progress notes belonging to Asthma, IBD and Covid cohorts.
- **Reference:** clinician-assigned ICD-10-CM codes for the same encounter obtained from structured EHR data in OMOP format.

Why it matters: **Understanding where LLM assessments agree or disagree with clinician-assigned diagnoses is a necessary step toward using clinical notes to support automated review of structured EHR data.**

Methods

Retrospective, cross-sectional agreement study of 123 pediatric notes, with clinician-assigned coding as the reference standard.

Strategy 1 - Bulk

The LLM receives the clinical note together with all clinician-assigned diagnoses codes at once, and judges whether those codes are supported by the note.

Strategy 2 - Per code

The LLM receives the clinical note with one clinician-assigned diagnosis code at a time, and verifies whether that single code is supported by the note.

Output & analysis

A binary Yes/No plausibility verdict with a rationale; concordance rates are aggregated by ICD-10-CM chapter and by individual code.

FIGURE 1 · EVALUATION PIPELINE

Contact: Mohan Kashyap Pargi · Children's Hospital of Philadelphia(pargim@chop.edu)

Results

39% Bulk prompting — 49 agree / 74 disagree

52% Per-code prompting — 170 agree / 151 disagree

+13 pts Per-code gain — granularity drives better agreement

Figure 2 - LLM agreement by ICD-10-CM chapters with clinician codes (per-code, N = 321)

Red bars are greater than 50% threshold. High: Covid-19 , dermatologic, ear and eye. Low: history and risk-factor codes, rare congenital anomalies, symptom codes.

Table 1 - Prompting strategy comparison

Strategy	Judgements	Agree	Disagree	Rate
Bulk, per clinical note	123	49	74	39%
Per code, per clinical note	321	170	151	52%

Conclusions

With per-code prompting, GPT-OSS 120B agreed with just over half of the structured EHR diagnoses. Agreement exceeded 50% for diagnoses explicitly documented in clinical notes but remained below 25% for history, exposure, and rare congenital codes.

Key Takeaways

01 Prompt granularity influences agreement: per-code prompting yielded higher agreement than bulk prompting (52% vs 39%).
02 Concordance is chapter-specific (12.5%–100%). Chapter-specific validation is needed before deployment.
03 LLMs may excel at validating clinical diagnoses directly supported by narrative evidence while flagging auxiliary codes for review.

Future Work

1. Larger corpus with clinician adjudication of discordant pairs; multi-site replication on OMOP-mapped note corpora.
2. Refine prompting beyond zero-shot — few-shot exemplars, chapter-specific prompts, and ICD code-definition grounding, targeting the low-concordance chapters.
3. Extend coverage across the full clinical-note distribution (inpatient, ED, specialty etc.) to test whether chapter-level agreement patterns generalize.

Implications: **These findings suggest a potential role for LLM-assisted coding review and triage. Clinician adjudication and chapter-specific validation are needed before deployment.**

Reference: 1. Li S, Zheng C, Wu J, et al. Verification is All You Need: Prompting Large Language Models for Zero-Shot Clinical Coding. IEEE J Biomed Health Inform. 2025 Jul 28.

Acknowledgement

This work was supported by a Patient-Centered Outcomes Research Institute Methods Award ME-2023C3-21199.

#OHDSISocialShowcase This Week

Wednesday

Reducing False Rejections in Covariate Balance Assessment for Target Trial Emulation Using a Joint Wald Diagnostic

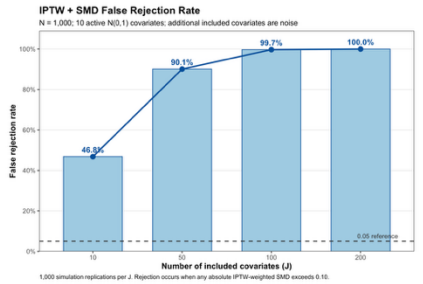
(Xinyao Jian, Jingyue Huang, Huiyuan Wang, Yuqing Lei, Jie Hu, Yumou Qiu, Yong Chen)

Reducing False Rejections in Covariate Balance Assessment for Target Trial Emulation Using a Joint Wald Diagnostic

Xinyao Jian1 , Jingyue Huang1 , Huiyuan Wang1 , Yuqing Lei1 , Jie Hu1 , Yumou Qiu2 , Yong Chen1
1. Department of Biostatistics, Epidemiology, and Informatics Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA
2. School of Mathematical Sciences and Center for Statistical Science, Peking University

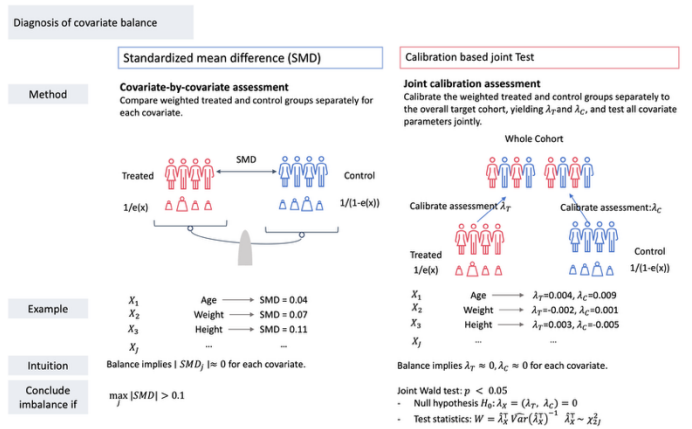
Background

Target trial emulation (TTE) uses observational data to mimic randomized controlled trials for estimating causal treatment effects. In TTE, propensity score methods such as inverse probability of treatment weighting (IPTW) are commonly used to adjust for baseline confounding and achieve covariate balance between treatment groups. Covariate balance after weighting is typically assessed using standardized mean differences (SMDs), where thresholds such as SMD < 0.1 are widely used. However, SMD-based diagnostics do not provide a formal statistical test for overall balance and may lead to inflated false rejection rates. We propose a joint calibration-based diagnostic that evaluates balance through calibration parameters and provides a formal statistical assessment.



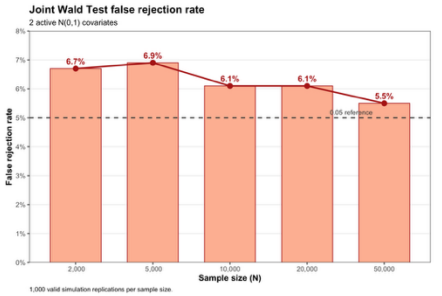
Methods

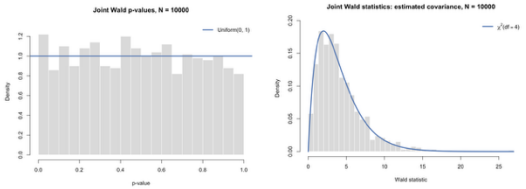
- **Calibration parameters:** We calibrate the IPTW-weighted treated and control groups separately to the whole cohort, yielding balance-constraint multipliers λ_T and λ_C.
  If the original IPTW weights already achieve balance, no additional covariate adjustment is needed.
- **Joint diagnostic:** The calibration parameters are asymptotically normal under regularity conditions. This motivates a joint Wald test of all treated- and control-side covariate parameters.



Results

The test was mildly liberal at smaller sample sizes, while the false rejection rate and p-value distribution moved toward their nominal asymptotic behavior as N increased.





Conclusions

- We proposed a calibration-based joint diagnostic for assessing covariate balance after IPTW.
- Further work will focus on improving finite-sample performance and evaluating the method under broader simulation settings.

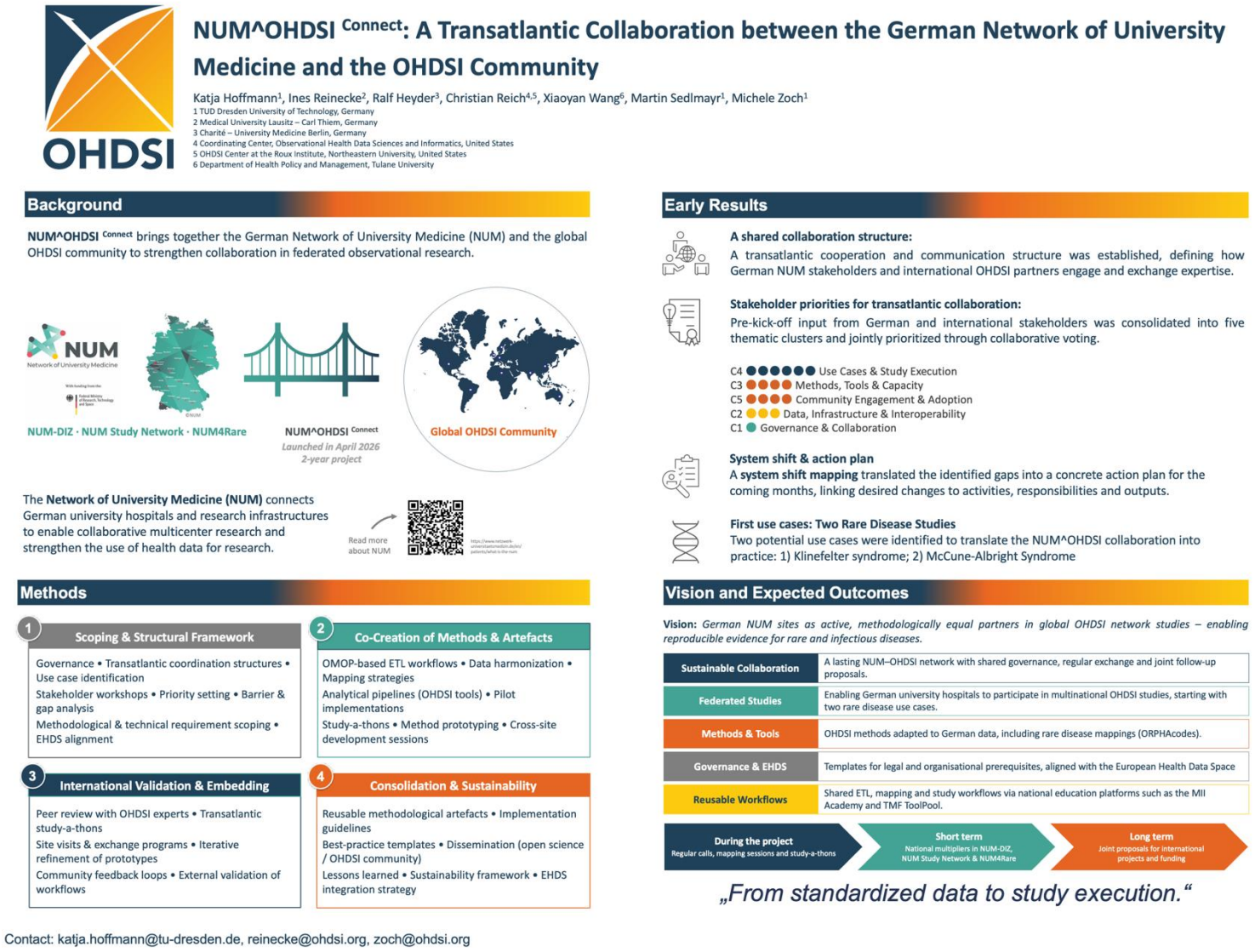
Contact: ychen123@upenn.edu

#OHDSISocialShowcase This Week

Thursday

NUM^OHDSI Connect: A Transatlantic Collaboration between the German Network University Medicine and the OHDSI Community

(Katja Hoffmann, Ines Reinecke, Ralf Heyder, Christian Reich, Xiaoyan Wang, Martin Sedlmayr, Michele Zoch)



#OHDSISocialShowcase This Week

Friday

A Standardized Schema for Sharing Probabilistic Phenotypes

(Arootin Gharibian, Eva Kriegova, Milos Kudelka)

A Standardized Schema for Sharing Probabilistic Phenotypes

Arootin Gharibian[1], Eva Kriegova[2], Milos Kudelka[1]

1) Department of Computer Science, Faculty of Electrical Engineering and Computer Science, VSB - Technical University of Ostrava, Czech Republic.
2) Department of Immunology, Faculty of Medicine and Dentistry, Palacký University Olomouc and University Hospital Olomouc, Czech Republic.

Background

Probabilistic phenotypes are usually considered inferior for reproducible evidence generation from real-world datasets. An unsupervised cluster that is stable and captures latent subgroups in patients but cannot be reconstructed across a health network is a site-specific observation and cannot be generalized. Although past efforts such as APHRODITE standardized the discovery and transport of probabilistic cohorts (PCD), clustering-based phenotypes are not a transportable object in OHDSI or other health networks; from a regulatory perspective, phenotype definitions are reproducible only after they are discovered and defined.[1,2] Despite this, a convergence toward rule-based phenotype definitions can be accelerated if distributed sites are able to share cluster phenotypes and reach consensus regarding PCDs which are discovered from clusters of patients.[3] Using the existing OHDSI definitions and standardized methods, we formalized the sharing of feature subset probabilistic values, computational steps, cluster-label matching measurements, rule-based defined parent cohort, and expert opinion within a machine-readable JSON file. We propose a reproducible and interoperable PCD transport method, namely the cluster phenotype card, to bridge this transportability and reproduction gap (Fig. 1 A and Fig. 1 B).

Methods

We demonstrate an example of generating and sharing a probabilistic cluster phenotype by encapsulating the clustering outcomes from a clustering algorithm (k-means) applied to the demo dataset of MIMIC-IV with OMOP concept mapping. Then, using the resulting RO-Crate, the information from the cluster phenotype card was applied to a subset of the MIMIC-IV v3.1 dataset, and individual cluster-level results from both subpopulations were compared[4,5].

Results

We found a cluster of enrichment with respiratory failure, which was discovered using three features, after filtering patients who had missing data for that specific features, in 74 patients from the MIMIC-IV demo dataset in the OMOP common data model. We encapsulated the cluster's probabilistic definition using the cluster phenotype schema. We used the resulting RO-Crate to apply the same cohort selection and algorithmic rules on a 1,144-patient export of the MIMIC IV v3.1 dataset. Using the same algorithmic method on different data, which was only confined by the rule-based definition of its parent cohort, we show that the probabilistic cluster standard schema encapsulation can transform any manuscript-specific cluster profile into a transportable, reproducible object (Fig. 1 C).

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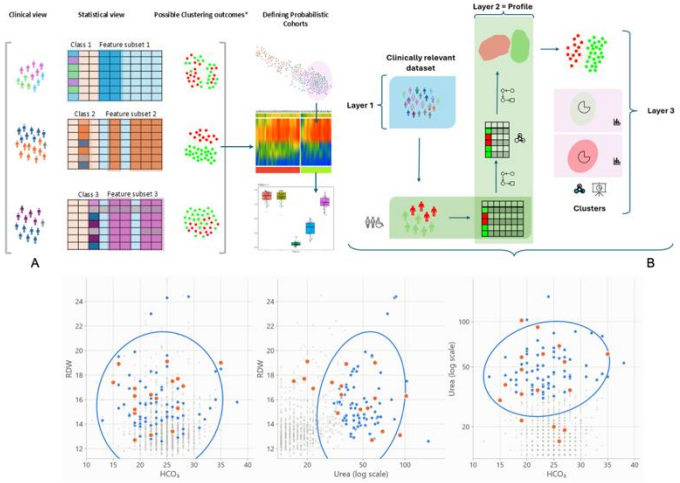


Figure 1: **Top**; A: Defining a probabilistic cohort based on one clinically relevant cluster within several tested algorithms and target labels; B: Layers of the proposed shareable JSON cluster phenotype. **Bottom**: Clustering outcomes from both datasets for each feature pair; gray dots are outside the cluster, orange is from the MIMIC-IV demo dataset converted to OMOP CDM, and Blue is the extract from MIMIC-IV v3.1.

Conclusion

Phenotype discovery remains a labor-intensive task and is heavily dependent on local expertise and patient data availability. Treating latent clusters as a discovery mechanism across sites rather than as a final definition can accelerate derivation of rule-based phenotypes. Stable, generalizable latent-phenotype discovery improves deterministic cohort construction by making them accessible without the privacy limitations of patient-level prediction. To this end, we have defined a formalized structure that can make PCDs shareable across sites within the OHDSI network infrastructure.

Code availability:
The formal definition of the schema is available from: https://github.com/A-Gharibian/PhenoCard.

Acknowledgments:
This work was supported by the SGS, VŠB - Technical University of Ostrava, under grant no. SP2026/008

Contact: contact@ohdsi.org

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?

Meet the Titans





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-2026



Find your workgroup.

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