OHDSI Year In Review 2024

When poll is active respond at **PollEv.com/patrickryan800**

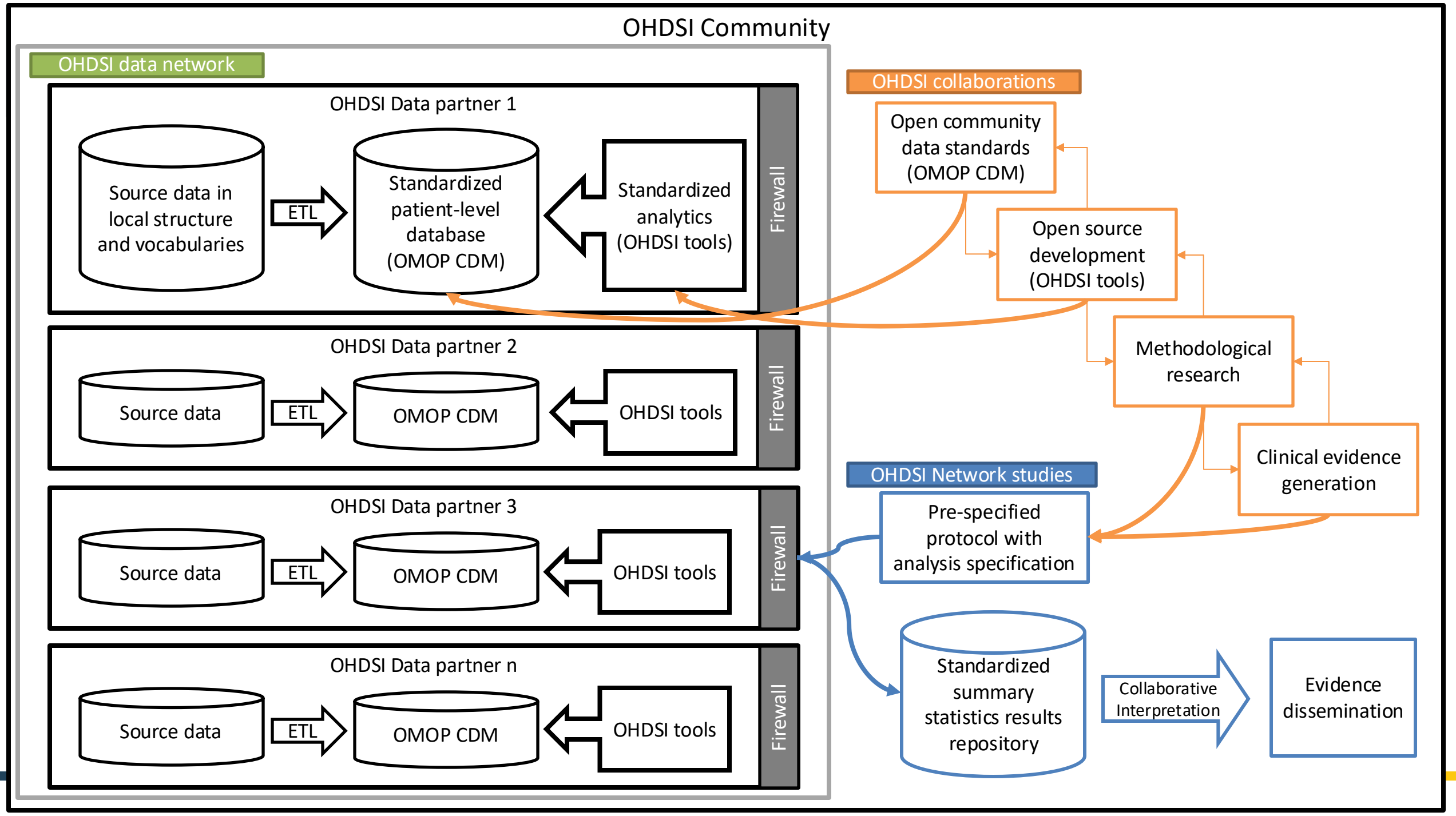
What was your favorite OHDSI highlight in 2024?

Nobody has responded yet.

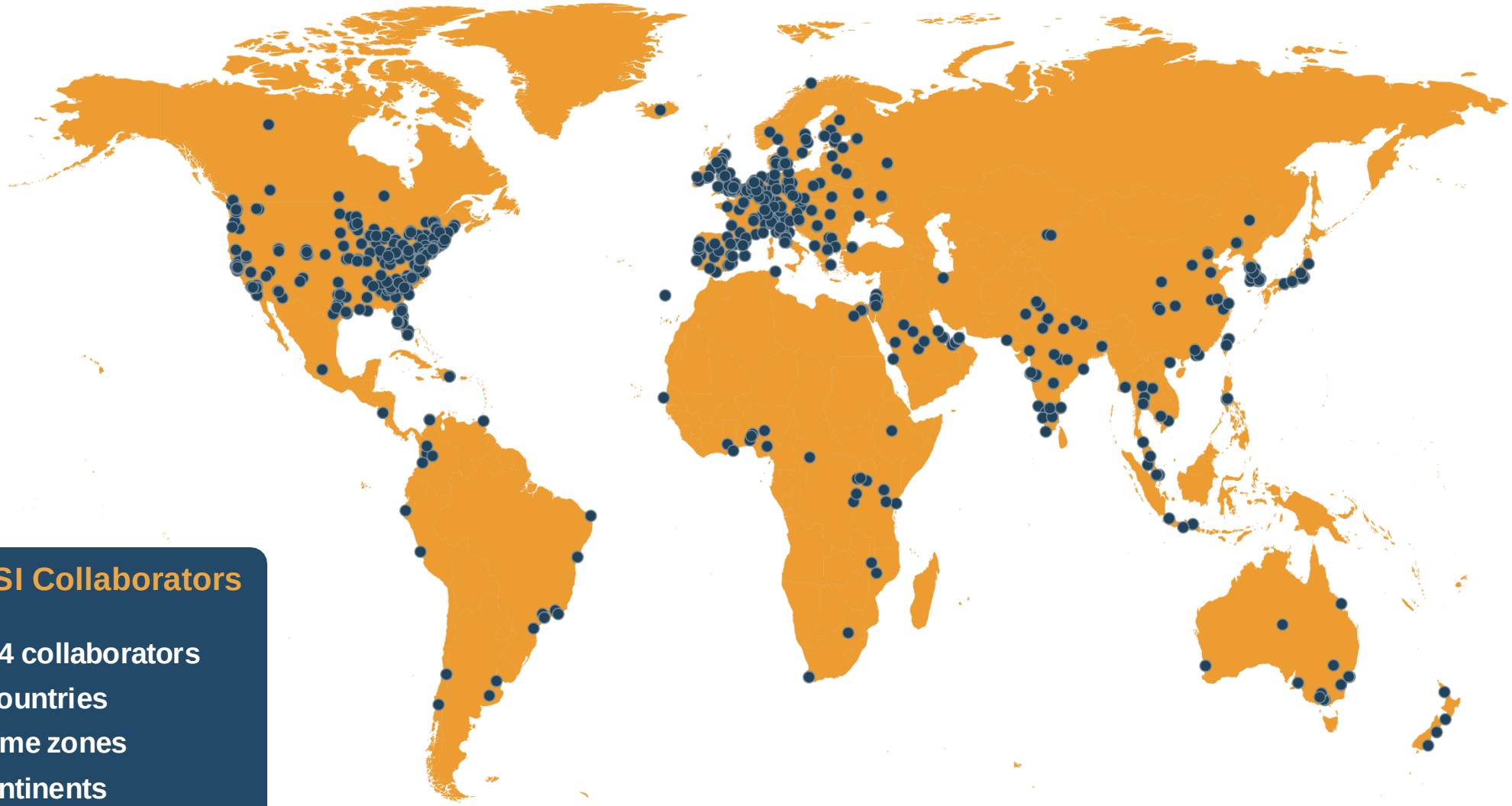
Hang tight! Responses are coming in.

OHDSI's mission

To improve health by empowering a community to collaboratively generate the evidence that promotes better health decisions and better care


OHDSI Community
OHDSI data network
OHDSI Data partner 1
Source data in local structure and vocabularies
ETL
Standardized patient-level database (OMOP CDM)
Standardized analytics (OHDSI tools)
Firewall
OHDSI Data partner 2
Source data
ETL
OMOP CDM
OHDSI tools
Firewall
OHDSI Data partner 3
Source data
ETL
OMOP CDM
OHDSI tools
Firewall
OHDSI Data partner n
Source data
ETL
OMOP CDM
OHDSI tools
Firewall
OHDSI collaborations
Open community data standards (OMOP CDM)
Open source development (OHDSI tools)
Methodological research
Clinical evidence generation
OHDSI Network studies
Pre-specified protocol with analysis specification
Standardized summary statistics results repository
Collaborative Interpretation
Evidence dissemination

OHDSI collaborators



OHDSI Collaborators

- 4,294 collaborators
- 83 countries
- 21 time zones
- 6 continents

Join the Journey at https://ohdsi.org/

Our Journey

Where The OHDSI Community Has Been
And Where We Are Going

2024 edition

OHDSI

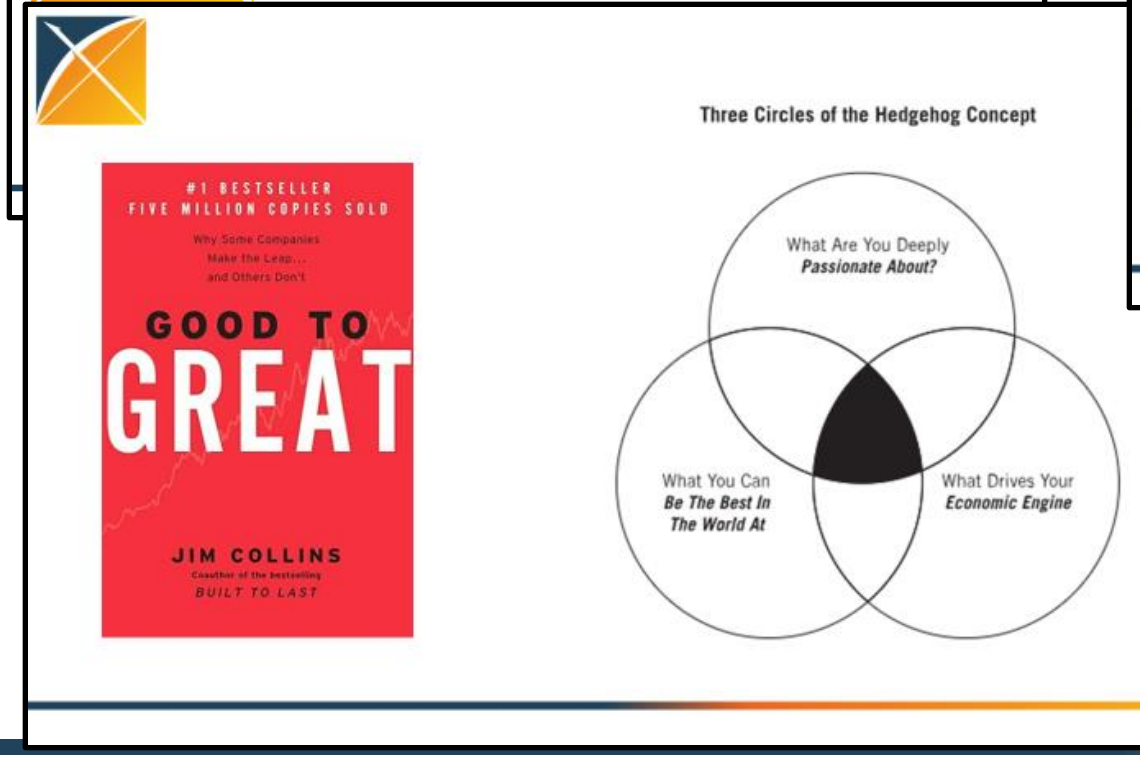
OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

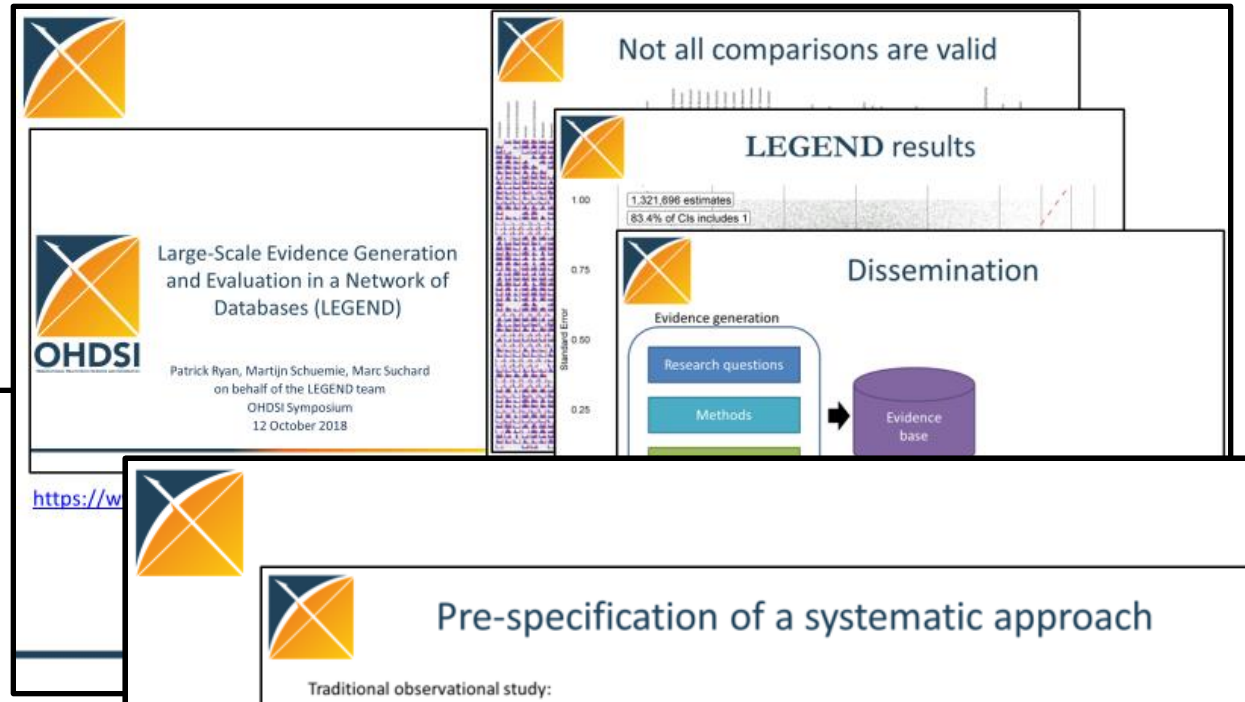
https://www.ohdsi.org/wp-content/uploads/2024/10/OurJourney2024.pdf

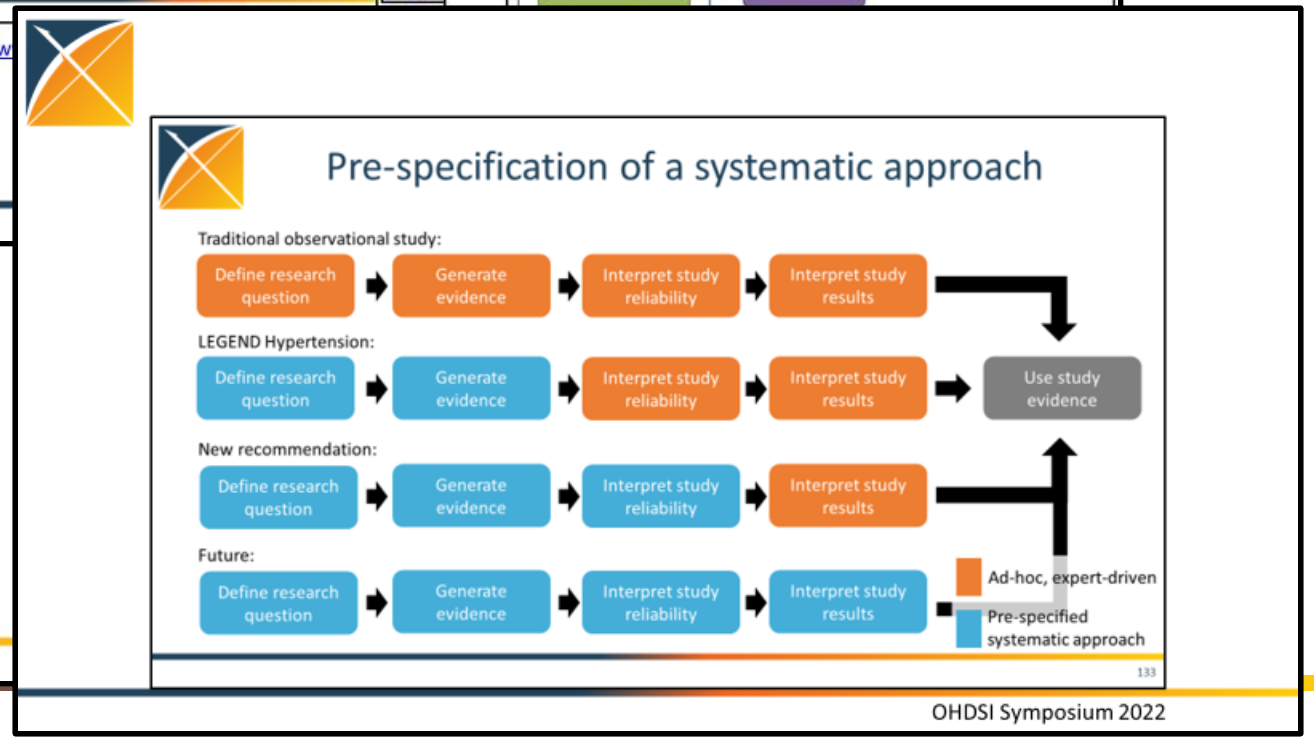
Kickoff of 2024…

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

OHDSI in 2024:
Where can we go together?

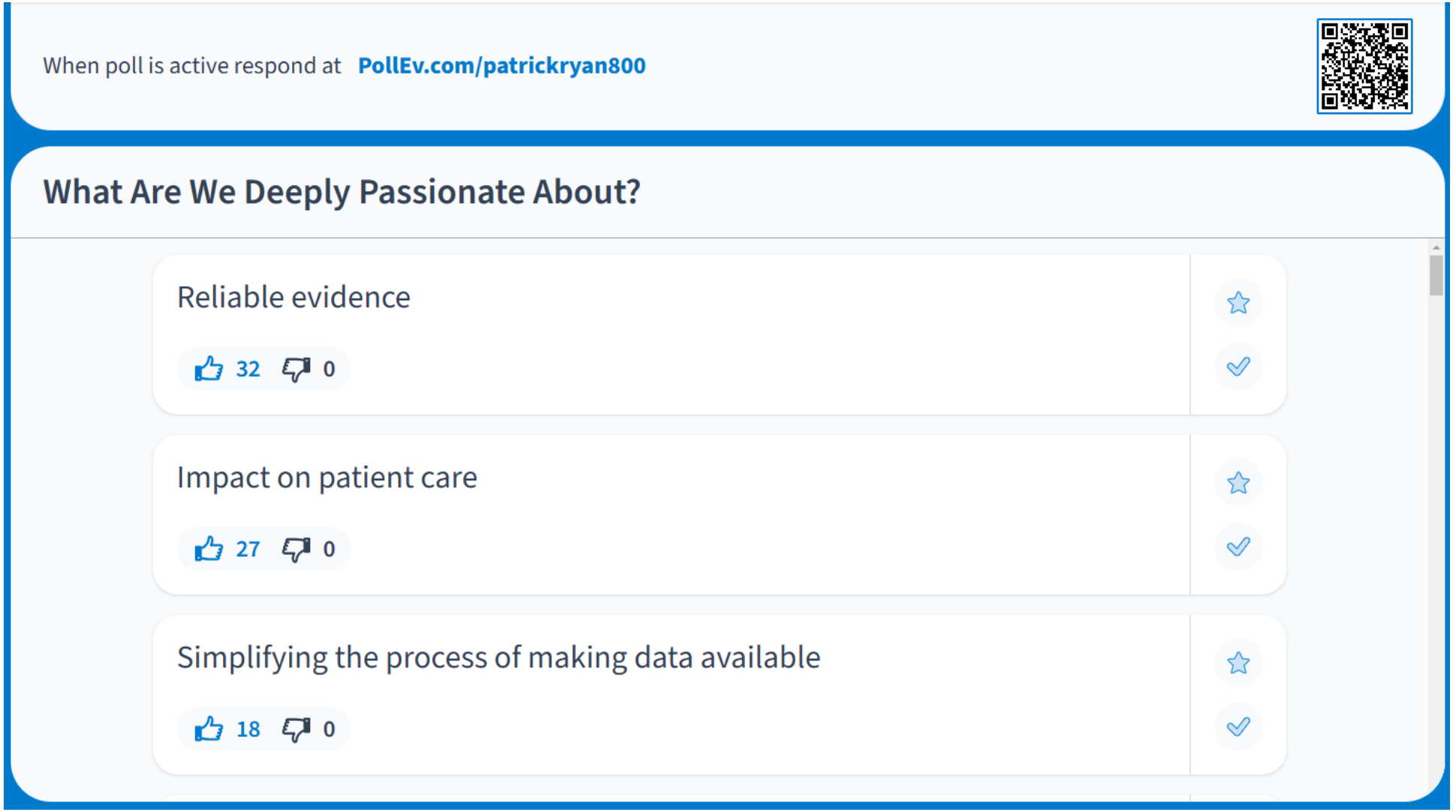






What we said at the start of 2024…

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec



What we said at the start of 2024…

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

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What Can We Be the Best at the World At?

Large scale evidence

30 0

Global network studies

21 0

Generating reliable evidence at scale

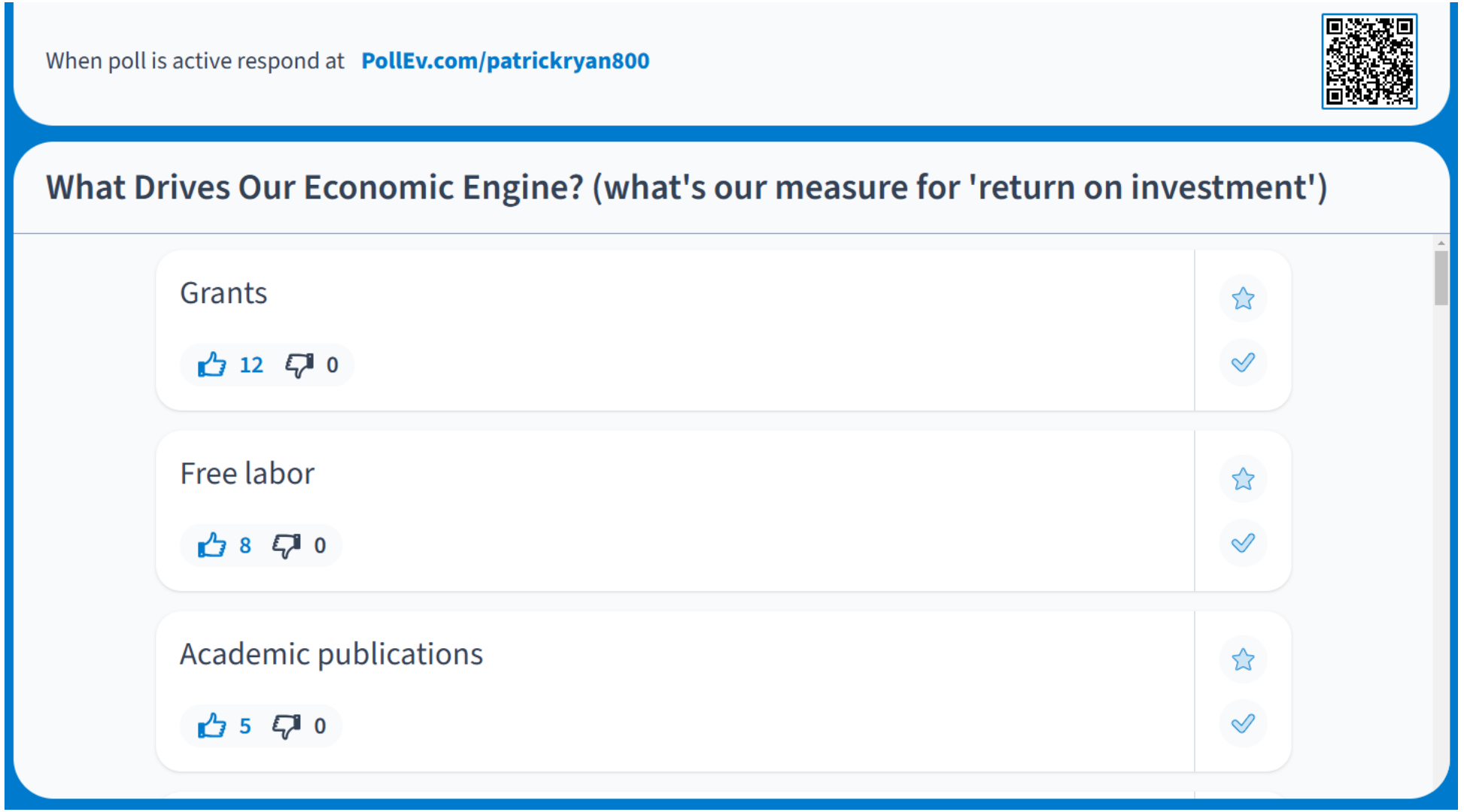
8 0

developing and validating methods in the use of Real World Data to generate evidence

6 0

What we said at the start of 2024…

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec



January accomplishments: Open-source tool releases

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

HADES

HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

V1.9

OhdsiShinyModules v2.1.0

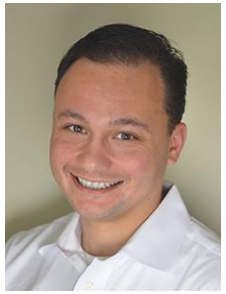
PhenotypeLibrary v3.32

PheValuator v2.2.11

Strategus v0.2.0







January publications

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

639. Baxter R, Nind T, Sutherland J, McAllister G, Hardy D, Hume A, MacLeod R, Caldwell J, Krueger S, Tramma L, Teviotdale R, Gillen K, Scobbie D, Baillie I, Brooks A, Prodan B, Kerr W, Sloan-Murphy D, Herrera JFR, van Beek EJR, Reel PS, Reel S, Mansouri-Benssassi E, Mudie R, Steele D, Doney A, Trucco E, Morris C, Wallace R, Morris A, Parsons M, Jefferson E. The Scottish Medical Imaging Archive: 57.3 Million Radiology Studies Linked to Their Medical Records. Radiol Artif Intell. 2024;6(1):e220266. doi: 10.1148/ryai.220266. PubMed PMID: 38166330; PubMed Central PMCID: PMC10831519.

640. Reich C, Ostropolets A, Ryan P, Rijnbeek P, Schuemie M, Davydov A, Dymshyts D, Hripcsak G. OHDSI Standardized Vocabularies-a large-scale centralized reference ontology for international data harmonization. J Am Med Inform Assoc. 2024;31(3):583-90. doi: 10.1093/jamia/ocad247. PubMed PMID: 38175665; PubMed Central PMCID: PMC10873827.

641. Català M, Mercadé-Besora N, Kolde R, Trinh NTH, Roel E, Burn E, Rathod-Mistry T, Kostka K, Man WY, Delmestri A, Nordeng HME, Uusküla A, Duarte-Salles T, Prieto-Alhambra D, Jödicke AM. The effectiveness of COVID-19 vaccines to prevent long COVID symptoms: staggered cohort study of data from the UK, Spain, and Estonia. Lancet Respir Med. 2024;12(3):225-36. Epub 20240111. doi: 10.1016/s2213-2600(23)00414-9. PubMed PMID: 38219763.

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644. Ranallo P, Southwell B, Tignanelli C, Johnson SG, Krueger R, Sevareid-Groth T, Carvel A, Melton GB. Promoting Learning Health System Cycles by Optimizing EHR Data Clinical Concept Encoding Processes. Stud Health Technol Inform. 2024;310:68-73. doi: 10.3233/shti230929. PubMed PMID: 38269767.

645. DuVall SL, Parker CG, Shields AR, Alba PR, Lynch JA, Matheny ME, Kamauu AWC. Toward Real-World Reproducibility: Verifying Value Sets for Clinical Research. Stud Health Technol Inform. 2024;310:164-8. doi: 10.3233/shti230948. PubMed PMID: 38269786.

646. Oh SW, Ko SJ, Im YS, Jung S, Choi BY, Kim JY, Park S, Choi W, Choi IY. Development of Integrated Data Quality Management System for Observational Medical Outcomes Partnership Common Data Model. Stud Health Technol Inform. 2024;310:349-53. doi: 10.3233/shti230985. PubMed PMID: 38269823.

647. Schuemie M, Reps J, Black A, Defalco F, Evans L, Fridgeirsson E, Gilbert JP, Knoll C, Lavallee M, Rao GA, Rijnbeek P, Sadowski K, Sena A, Swerdel J, Williams RD, Suchard M. Health-Analytics Data to Evidence Suite (HADES): Open-Source Software for Observational Research. Stud Health Technol Inform. 2024;310:966-70. doi: 10.3233/shti231108. PubMed PMID: 38269952; PubMed Central PMCID: PMC10868467.

648. Cha J, Ahn EK, Yoon YH, Park MY. Feasibility of Applying the OMOP Common Data Model to Traditional Eastern Asian Medicine Dataset. Stud Health Technol Inform. 2024;310:1349-51. doi: 10.3233/shti231189. PubMed PMID: 38270038.

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Journal of the American Medical Informatics Association, 2024, **31(3)**, 583–590
https://doi.org/10.1093/jamia/ocad247
Advance access publication 4 January 2024
Research and Applications

Research and Applications

OHDSI Standardized Vocabularies—a large-scale centralized reference ontology for international data harmonization

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Abstract

Importance: The Observational Health Data Sciences and Informatics (OHDSI) is the largest distributed data network in the world encompassing more than 331 data sources with 2.1 billion patient records across 34 countries. It enables large-scale observational research through standardizing the data into a common data model (CDM) (Observational Medical Outcomes Partnership [OMOP] CDM) and requires a comprehensive, efficient, and reliable ontology system to support data harmonization.

Materials and methods: We created the OHDSI Standardized Vocabularies—a common reference ontology mandatory to all data sites in the network. It comprises imported and *de novo*-generated ontologies containing concepts and relationships between them, and the praxis of converting the source data to the OMOP CDM based on these. It enables harmonization through assigned domains according to clinical categories, comprehensive coverage of entities within each domain, support for commonly used international coding schemes, and standardization of semantically equivalent concepts.

Results: The OHDSI Standardized Vocabularies comprise over 10 million concepts from 136 vocabularies. They are used by hundreds of groups and several large data networks. More than 8600 users have performed 50 000 downloads of the system. This open-source resource has proven to address an impediment of large-scale observational research—the dependence on the context of source data representation. With that, it has enabled efficient phenotyping, covariate construction, patient-level prediction, population-level estimation, and standard reporting.

Discussion and conclusion: OHDSI has made available a comprehensive, open vocabulary system that is unmatched in its ability to support global observational research. We encourage researchers to exploit it and contribute their use cases to this dynamic resource.

Key words: OHDSI; controlled vocabulary; common data model; observational data.

February activities: Workgroup OKRs

Jan	**Feb**	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

February activities: Phenotype Phebruary

Jan	**Feb**	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

Phenotype Phebruary

By The Numbers

- 4 condition phenotypes discussed
- 93 clinical studies identified and reviewed
- 1 Atlas and CohortDiagnostics demo
- 30 Cohort definitions built and publicly shared
- 3 shiny apps with full cohort diagnostics on results.ohdsi.org
- 8784 Incidence rate estimates
- 40 collaborators interacted in the posts, conducted literature review, built cohorts, or attended calls
- 1 AMIA submission accepted for oral presentation

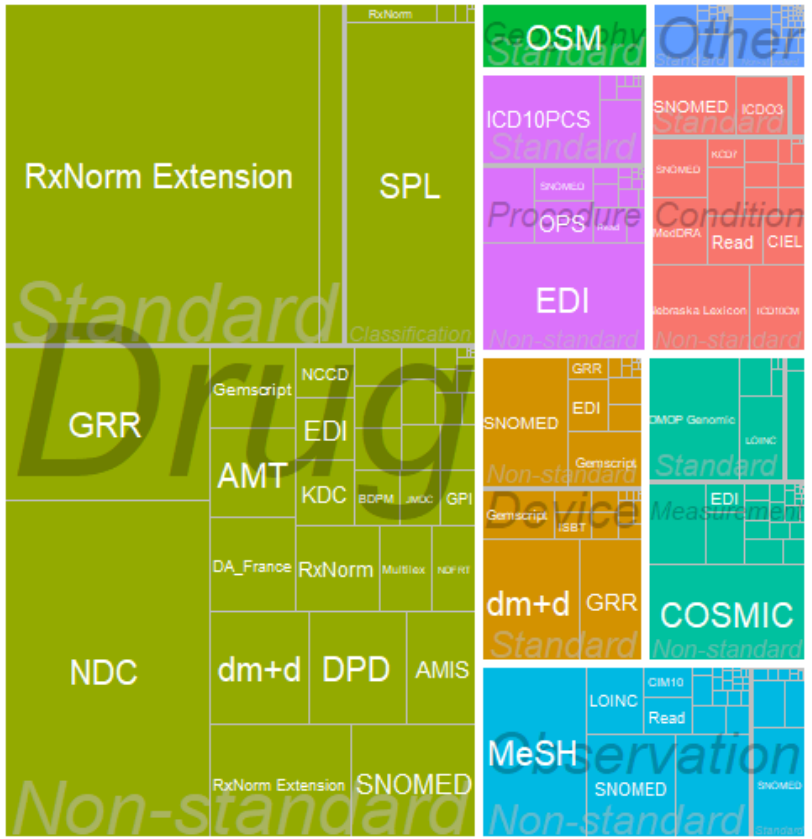
February accomplishment: OHDSI Standardized Vocabularies release

Jan	**Feb**	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec


Alexander Davydov


Oleg Zhuk


Anna Ostropolets



The team behind us


Timur Vakhitov


Aliaksei Katyshou


Vlad Korsik


Maria Rogozhkina


Mikita Salavei


Varvara Savitskaya


Irina Zherka


Dmitry Buralkin


Tetiana Orlova


Tanya Skugarevskaya


Janice Cruz


Masha Khitrun

February release

Why you should download this vocabulary release

- **More concepts**:
  - Refresh of SNOMED, MedDRA, ICD10PCS, ICD10CM, CVX, RxNorm and more
- **Better hierarchies**:
  - Improved LOINC - SNOMED hierarchy
  - de-novo constructed MedDRA - SNOMED hierarchy
- **More good mappings**:
  - ICD family refresh
  - community contributions
  - bug fixing
- **What you specifically asked for:**
  - We closed 41 GitHub issues and addressed many forum posts

February accomplishments: Open-source tool releases

Jan	**Feb**	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

HADES

HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

V1.11

OhdsiShinyModules v2.1.2

FeatureExtraction v3.4

DataQualityDashboard v2.6.0




February publications

Jan	Feb	Mar	Apr
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650. Park WY, Jeon K, Schmidt TS, Kondylakis H, Alkasab T, Dewey BE, You SC, Nagy P. Development of Medical Imaging Data Standardization for Imaging-Based Obse vational Research: OMOP Common Data Model Extension. J Imaging Inform Med. 2024;37(2):899-908. Epub 20240205. doi: 10.1007/s10278-024-00982-6. PubMed PMI 38315345; PubMed Central PMCID: PMC11031512.

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654. Lo Re III V, Cocoros NM, Hubbard RA, Dutcher SK, Newcomb CW, Connolly JG, Perez-Vilar S, Carbonari DM, Kempner ME, Hernández-Muñoz JJ, Petrone AB, Pish AM, Rogers Driscoll ME, Brash JT, Burnett S, Cohet C, Dahl M, DeFor TA, Delmestri A, Djibo DA, Duarte-Salles T, Harrington LB, Kampman M, Kuntz JL, Kurz X, Mer cadé-Besora N, Pawloski PA, Rijnbeek PR, Seager S, Steiner CA, Verhamme K, Wu F, Zhou Y, Burn E, Paterson JM, Prieto-Alhambra D. Risk of Arterial and Venous Throi botic Events Among Patients with COVID-19: A Multi-National Collaboration of Regulatory Agencies from Canada, Europe, and United States. Clin Epidemiol. 2024;16:71-I Epub 20240210. doi: 10.2147/clep.S448980. PubMed PMID: 38357585; PubMed Central PMCID: PMC10865892.

655. Boeker M, Zöller D, Blasini R, Macho P, Helfer S, Behrens M, Prokosch HU, Gulden C. Effectiveness of IT-supported patient recruitment: study protocol for an interrup time series study at ten German university hospitals. Trials. 2024;25(1):125. Epub 20240216. doi: 10.1186/s13063-024-07918-z. PubMed PMID: 38365848; PubMed Centr PMCID: PMC10870691.

656. Hallinan CM, Ward R, Hart GK, Sullivan C, Pratt N, Ng AP, Capurro D, Van Der Vegt A, Liaw ST, Daly O, Luxan BG, Bunker D, Boyle D. Seamless EMR data access: tegrated governance, digital health and the OMOP-CDM. BMJ Health Care Inform. 2024;31(1). Epub 20240221. doi: 10.1136/bmjhci-2023-100953. PubMed PMID: 38387 PubMed Central PMCID: PMC10882353.

657. Henke E, Zoch M, Peng Y, Reinecke I, Sedlmayr M, Bathelt F. Conceptual design of a generic data harmonization process for OMOP common data model. BMC Med Inform Decis Mak. 2024;24(1):58. Epub 20240226. doi: 10.1186/s12911-024-02458-7. PubMed PMID: 38408983; PubMed Central PMCID: PMC10895818.

658. Naderalvojoud B, Curtin CM, Yanover C, El-Hay T, Choi B, Park RW, Tabuenca JG, Reeve MP, Falconer T, Humphreys K, Asch SM, Hernandez-Boussard T. To wards global model generalizability: independent cross-site feature evaluation for patient-level risk prediction models using the OHDSI network. J Am Med Inform Assoc. 2024;31(5):1051-61. doi: 10.1093/jamia/ocae028. PubMed PMID: 38412331; PubMed Central PMCID: PMC11031239.

659. Markus AF, Rijnbeek PR, Kors JA, Burn E, Duarte-Salles T, Haug M, Kim C, Kolde R, Lee Y, Park HS, Park RW, Prieto-Alhambra D, Reyes C, Krishnan JA, Brusselle GG, Verhamme KM. Real-world treatment trajectories of adults with newly diagnosed asthma or COPD. BMJ Open Respir Res. 2024;11(1). Epub 20240227. doi: 10.1136/ bmjresp-2023-002127. PubMed PMID: 38413124; PubMed Central PMCID: PMC10900306.

660. Bräuner KB, Tsouchnika A, Mashkoor M, Williams R, Rosen AW, Hartwig MFS, Bulut M, Dohrn N, Rijnbeek P, Gögenur I. Prediction of 30-day, 90-day, and 1-year mor tality after colorectal cancer surgery using a data-driven approach. Int J Colorectal Dis. 2024;39(1):31. Epub 20240229. doi: 10.1007/s00384-024-04607-w. PubMed PMID 38421482; PubMed Central PMCID: PMC10904562.

661. Liu S, Golozar A, Buesgens N, McLeggon JA, Black A, Nagy P. A framework for understanding an open scientific community using automated harvesting of public arti facts. JAMIA Open. 2024;7(1):ooae017. Epub 20240229. doi: 10.1093/jamiaopen/ooae017. PubMed PMID: 38425704; PubMed Central PMCID: PMC10903973.

662. Marcou Q, Berti-Equille L, Novelli N. Creating a computer assisted ICD coding system: Performance metric choice and use of the ICD hierarchy. J Biomed Inform. 2024;152:104617. Epub 20240301. doi: 10.1016/j.jbi.2024.104617. PubMed PMID: 38432534.

Journal of Imaging Informatics in Medicine (2024) 37:899–908
https://doi.org/10.1007/s10278-024-00982-6

Check for updates

Development of Medical Imaging Data Standardization for Imaging-Based Observational Research: OMOP Common Data Model Extension

Woo Yeon Park[1] · Kyulee Jeon[2,3] · Teri Sippel Schmidt[1] · Haridimos Kondylakis[4] · Tarik Alkasab[5] · Blake E. Dewey[6] · Seng Chan You[2,3] · Paul Nagy[1]

Received: 4 September 2023 / Revised: 10 November 2023 / Accepted: 14 November 2023 / Published online: 5 February 2024

Abstract

The rapid growth of artificial intelligence (AI) and deep learning techniques require access to large inter-institutional cohorts of data to enable the development of robust models, e.g., targeting the identification of disease biomarkers and quantifying disease progression and treatment efficacy. The Observational Medical Outcomes Partnership Common Data Model (OMOP CDM) has been designed to accommodate a harmonized representation of observational healthcare data. This study proposes the Medical Imaging CDM (MI-CDM) extension, adding two new tables and two vocabularies to the OMOP CDM to address the structural and semantic requirements to support imaging research. The tables provide the capabilities of linking DICOM data sources as well as tracking the provenance of imaging features derived from those images. The implementation of the extension enables phenotype definitions using imaging features and expanding standardized computable imaging biomarkers. This proposal offers a comprehensive and unified approach for conducting imaging research and outcome studies utilizing imaging features.

Keywords Data collection [MeSH] · Data standardization · Observational research · Data integration · Multimodal data analysis

March accomplishments: Open-source tool releases

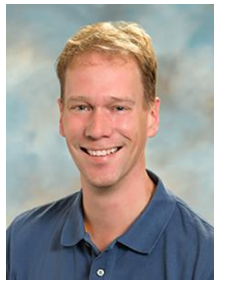
Jan	Feb	**Mar**	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

HADES

HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

Characterization v0.1.4

SqlRender v1.17



March publications

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662. Marcou Q, Berti-Equille L, Novelli N. Creating a computer assisted ICD coding system: Performance metric choice and use of the ICD hierarchy. J Biomed Inform. 2024;152:104617. Epub 20240301. doi: 10.1016/j.jbi.2024.104617. PubMed PMID: 38432534.

663. Chai Y, Man KKC, Luo H, Torre CO, Wing YK, Hayes JF, Osborn DPJ, Chang WC, Lin X, Yin C, Chan EW, Lam ICH, Fortin S, Kern DM, Lee DY, Park RW, Jang JW J, Seager S, Lau WCY, Wong ICK. Incidence of mental health diagnoses during the COVID-19 pandemic: a multinational network study. Epidemiol Psychiatr Sci. 2024;3 Epub 20240304. doi: 10.1017/s2045796024000088. PubMed PMID: 38433286; PubMed Central PMCID: PMC10940053.

664. Haug M, Oja M, Pajusalu M, Mooses K, Reisberg S, Vilo J, Giménez AF, Falconer T, Danilović A, Maljkovic F, Dawoud D, Kolde R. Markov modeling for cost-effecti ness using federated health data network. J Am Med Inform Assoc. 2024;31(5):1093-101. doi: 10.1093/jamia/ocae044. PubMed PMID: 38472144; PubMed Central PMC PMC11031209.

665. Anand TV, Bu F, Schuemie MJ, Suchard MA, Hripcsak G. Comparative safety and effectiveness of angiotensin converting enzyme inhibitors and thiazides and thia- zide-like diuretics under strict monotherapy. J Clin Hypertens (Greenwich). 2024;26(4):425-30. Epub 20240319. doi: 10.1111/jch.14793. PubMed PMID: 38501749; PubM Central PMCID: PMC11007801.

666. Mortier P, Amigo F, Bhargav M, Conde S, Ferrer M, Flygare O, Kizilaslan B, Latorre Moreno L, Leis A, Mayer MA, Pérez-Sola V, Portillo-Van Diest A, Ramírez-Angui JM, Sanz F, Vilagut G, Alonso J, Mehlum L, Arensman E, Bjureberg J, Pastor M, Qin P. Developing a clinical decision support system software prototype that assists in t management of patients with self-harm in the emergency department: protocol of the PERMANENS project. BMC Psychiatry. 2024;24(1):220. Epub 20240320. doi: 10.1 s12888-024-05659-6. PubMed PMID: 38509500; PubMed Central PMCID: PMC10956300.

667. Cai CX, Nishimura A, Bowring MG, Westlund E, Tran D, Ng JH, Nagy P, Cook M, McLeggon JA, DuVall SL, Matheny ME, Golozar A, Ostropolets A, Minty E, Desai P, Bu F, Toy B, Hribar M, Falconer T, Zhang L, Lawrence-Archer L, Boland MV, Goetz K, Hall N, Shoaibi A, Reps J, Sena AG, Blacketer C, Swerdel J, Jhaveri KD, Lee E, Gilbert Z, Zeger SL, Crews DC, Suchard MA, Hripcsak G, Ryan PB. Similar Risk of Kidney Failure among Patients with Blinding Diseases Who Receive Ranibizumab, Aflibercept, and Bevacizumab: An Observational Health Data Sciences and Informatics Network Study. Ophthalmol Retina. 2024;8(8):733-43. Epub 20240320. doi: 10.1 oret.2024.03.014. PubMed PMID: 38519026; PubMed Central PMCID: PMC11298306.

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Similar Risk of Kidney Failure among Patients with Blinding Diseases Who Receive Ranibizumab, Aflibercept, and Bevacizumab

An Observational Health Data Sciences and Informatics Network Study

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Purpose: To characterize the incidence of kidney failure associated with intravitreal anti-VEGF exposure; and compare the risk of kidney failure in patients treated with ranibizumab, aflibercept, or bevacizumab.

Design: Retrospective cohort study across 12 databases in the Observational Health Data Sciences and Informatics (OHDSI) network.

Subjects: Subjects aged ≥ 18 years with ≥ 3 monthly intravitreal anti-VEGF medications for a blinding disease (diabetic retinopathy, diabetic macular edema, exudative age-related macular degeneration, or retinal vein occlusion).

Methods: The standardized incidence proportions and rates of kidney failure while on treatment with anti-VEGF were calculated. For each comparison (e.g., aflibercept versus ranibizumab), patients from each group were matched 1:1 using propensity scores. Cox proportional hazards models were used to estimate the risk of kidney failure while on treatment. A random effects meta-analysis was performed to combine each database's hazard ratio (HR) estimate into a single network-wide estimate.

Main Outcome Measures: Incidence of kidney failure while on anti-VEGF treatment, and time from cohort entry to kidney failure.

Results: Of the 6.1 million patients with blinding diseases, 37 189 who received ranibizumab, 39 447 aflibercept, and 163 611 bevacizumab were included; the total treatment exposure time was 161 724 person-years. The average

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April activities:
April Olympians

Hunters
Focused on identifying and collecting ratified CDM conventions

Writers
Tasked with documenting these conventions for the resource library

Builders
Responsible for constructing the actual library

Thank You, Organizers, Leads & Contributors!


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Masha Khitrun

THEMIS Conventions

- **General Conventions** ▲
  - Person Exclusion
  - Gender Identity
  - One-to-Many Mappings
  - Providers with Multiple Addresses
  - Records with values
  - Patient reported data
  - Events outside of the Observation Period
  - Observation Periods for EHR data
- **CDM Tables** ▼
- **Tag Browser** ▼

April accomplishments: Open-source tool releases

Jan	Feb	Mar	**Apr**
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

HADES

HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

V1.12

Characterization v0.2

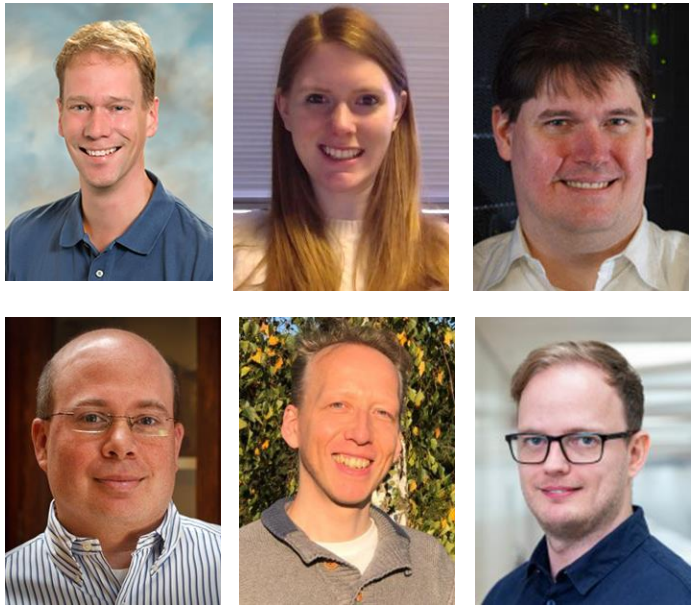
CirceR v1.3.3 — In CRAN!

Eunomia v2.0 — In CRAN!

FeatureExtraction v3.5

OhdsiShinyModules 2.1.3

PatientLevelPrediction v6.3.7



April publications

Jan	Feb	Mar	**Apr**
May	Jun	Jul	Aug
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THE LANCET
Respiratory Medicine

Effectiveness of COVID-19 vaccines to prevent long COVID: data from Norway

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Affiliations & Notes ^ Article Info v Linked Articles (1) v

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Show Outline

Our recent study using data from more than 20 million participants has shown that COVID-19 vaccines consistently prevent long COVID symptoms in adults, with meta-analytic calibrated subdistribution hazard ratio (sHRs) of 0·54 (95% CI 0·44–0·67) in CPRD GOLD, 0·48 (0·34–0·68) in CPRD AURUM, 0·71 (0·55–0·91) in SIDIAP, and 0·59 (0·40–0·87) in CORIVA.[1] In addition, when considering post-COVID thromboembolic and cardiovascular complications as outcomes of interest, recently published data have shown that vaccination with any COVID-19 first vaccine dose (ChAdOx1, BNT162b2, and mRNA-1273) is associated with reduced risk of post-acute heart failure (0·45 [0·38–0·53] 0–30 days after SARS-CoV-2 infection; 0·61 [0·51–0·73] 91–180 days after SARS-CoV-2 infection), venous thromboembolism (sHR 0·22 [95% CI 0·17–0·29] 0–30 days after SARS-CoV-2 infection; 0·53 [0·40–0·70] 91–180 days after SARS-CoV-2 infection), and arterial thrombosis (0·53 [0·44–0·63] 0–30 days after SARS-CoV-2 infection; 0·72 [0·58–0·88] 91–180 days after SARS-CoV-2 infection).[2] With the use of the Observational Medical Outcomes Partnership (OMOP) common data model (CDM), all our analyses were conducted across three European countries (Estonia, Spain, and the UK) without transferring patient data, using federated analyses similar to those used by the European Medicines Agency-funded Data Analysis and Real World Interrogation Network.

May accomplishments: Open-source tool releases

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May	Jun	Jul	Aug
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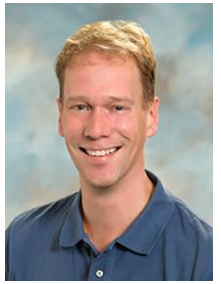
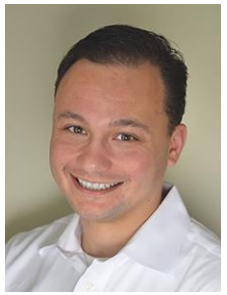
HADES

HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

V1.13

- CapR v2.0.8
- CohortGenerator v0.09
- CohortMethod v5.3
- ResultsModelManager v0.5.7
- SelfControlledCaseSeries 5.2.0
- SqlRender v1.18






May publications

Jan	Feb	Mar	Apr
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Open access Original research

BMJ Health & Care Informatics

Taipei Medical University Clinical Research Database: a collaborative hospital EHR database aligned with international common data standards

Phung-Anh Nguyen ,[1,2,3] Min-Huei Hsu,[4,5] Tzu-Hao Chang,[3,6,7] Hsuan-Chia Yang ,[3,6,7,8] Chih-Wei Huang,[6,7] Chia-Te Liao,[9,10,11] Christine Y. Lu,[12,13,14] Jason C. Hsu[1,2,3,15]

To cite: Nguyen P-A, Hsu M-H, Chang T-H, *et al*. Taipei Medical University Clinical Research Database: a collaborative hospital EHR database aligned with international common data standards. *BMJ Health Care Inform* 2024;**31**:e100890. doi:10.1136/bmjhci-2023-100890

► Additional supplemental material is published online only. To view, please visit the journal online (https://doi.org/10.1136/bmjhci-2023-100890).

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ABSTRACT

Objective The objective of this paper is to provide a comprehensive overview of the development and features of the Taipei Medical University Clinical Research Database (TMUCRD), a repository of real-world data (RWD) derived from electronic health records (EHRs) and other sources.

Methods TMUCRD was developed by integrating EHRs from three affiliated hospitals, including Taipei Medical University Hospital, Wan-Fang Hospital and Shuang-Ho Hospital. The data cover over 15 years and include diverse patient care information. The database was converted to the Observational Medical Outcomes Partnership Common Data Model (OMOP CDM) for standardisation.

Results TMUCRD comprises 89 tables (eg, 29 tables for each hospital and 2 linked tables), including demographics, diagnoses, medications, procedures and measurements, among others. It encompasses data from more than 4.15 million patients with various medical records, spanning from the year 2004 to 2021. The dataset offers insights into disease prevalence, medication usage, laboratory tests and patient characteristics.

Discussion TMUCRD stands out due to its unique advantages, including diverse data types, comprehensive patient information, linked mortality and cancer registry

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Existing knowledge encompasses the increasing use of digital solutions in healthcare, the importance of real-world data (RWD) for generating real-world evidence, and the limitations of traditional clinical trials with limited participant diversity.

WHAT THIS STUDY ADDS

⇒ This study presents the development and features of the Taipei Medical University Clinical Research Database (TMUCRD), highlighting its extensive collection of RWD spanning multiple hospitals over a decade. TMUCRD provides valuable insights into patient medical records, underscoring its role as a robust platform for collaborative research and evidence-driven healthcare improvements.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This study's establishment of the TMUCRD will significantly impact research by providing a rich source of RWD for diverse healthcare investigations. It has the potential to enhance evidence-based medical

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June activities:
OHDSI Europe Symposium

June accomplishments: Open-source tool releases

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HADES

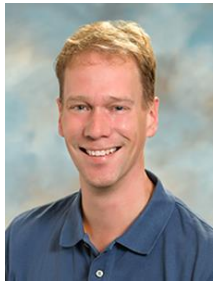
HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

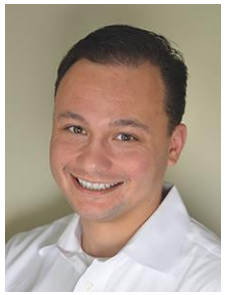
V1.14

KEEPER 0.2.0

ResultsModelManager v0.5.8

Strategus 0.3.0






June publications

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693. Barclay NL, Burkard T, Burn E, Delmestri A, Miquel Dominguez A, Golozar A, Guarner-Argente C, Avilés-Jurado FX, Man WY, Roselló Serrano À, Rose Tietzova I, Prieto Alhambra D, Newby D. The Impact of the COVID-19 Pandemic on Incidence and Short-Term Survival for Common Solid Tumours in the Ur Cohort Analysis. Clin Epidemiol. 2024;16:417-29. Epub 20240611. doi: 10.2147/clep.S463160. PubMed PMID: 38882578; PubMed Central PMCID: PMC111

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https://doi.org/10.1093/jamia/ocae109
Advance access publication 20 May 2024
Research and Applications

Research and Applications

Comparing penalization methods for linear models on large observational health data

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Abstract

Objective: This study evaluates regularization variants in logistic regression (L1, L2, ElasticNet, Adaptive L1, Adaptive ElasticNet, Broken adaptive ridge [BAR], and Iterative hard thresholding [IHT]) for discrimination and calibration performance, focusing on both internal and external validation.

Materials and Methods: We use data from 5 US claims and electronic health record databases and develop models for various outcomes in a major depressive disorder patient population. We externally validate all models in the other databases. We use a train-test split of 75%/25% and evaluate performance with discrimination and calibration. Statistical analysis for difference in performance uses Friedman's test and critical difference diagrams.

Results: Of the 840 models we develop, L1 and ElasticNet emerge as superior in both internal and external discrimination, with a notable AUC difference. BAR and IHT show the best internal calibration, without a clear external calibration leader. ElasticNet typically has larger model sizes than L1. Methods like IHT and BAR, while slightly less discriminative, significantly reduce model complexity.

Conclusion: L1 and ElasticNet offer the best discriminative performance in logistic regression for healthcare predictions, maintaining robustness across validations. For simpler, more interpretable models, L0-based methods (IHT and BAR) are advantageous, providing greater parsimony and calibration with fewer features. This study aids in selecting suitable regularization techniques for healthcare prediction models, balancing performance, complexity, and interpretability.

Key words: logistic regression; electronic health records; regularization; discrimination; calibration.

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May	Jun	**Jul**	Aug
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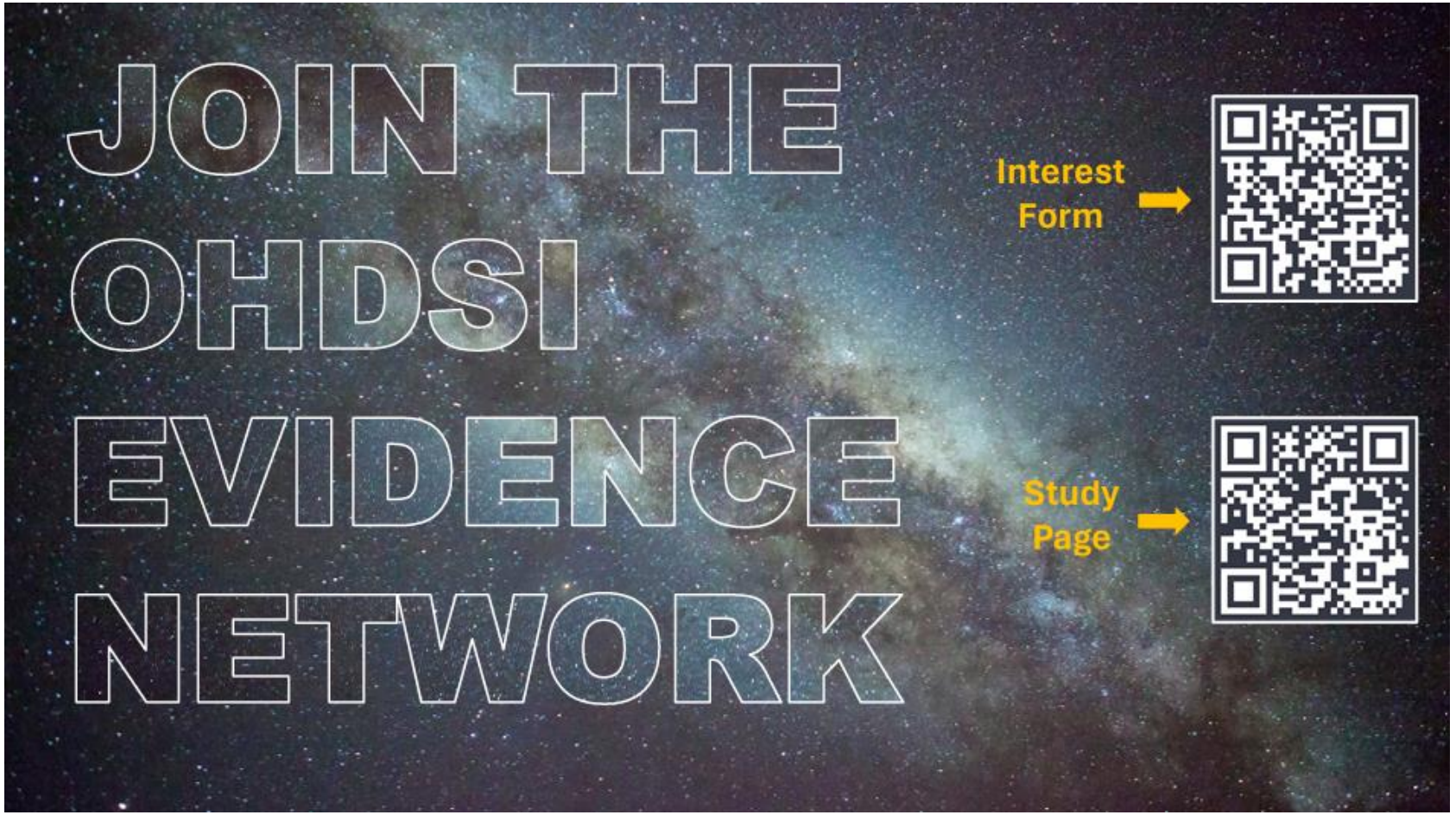
July activities:
OHDSI Evidence Network

OHDSI Evidence Network progress to date:

- 37 data sources across 18 data partner organizations
- >50 data partners in the onboarding process



Jan	Feb	Mar	Apr
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July activities:
OHDSI Evidence Network in Action

Research

JAMA Ophthalmology | Original Investigation

Risk of Nonarteritic Anterior Ischemic Optic Neuropathy in Patients Prescribed Semaglutide

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

CONCLUSIONS AND RELEVANCE This study's findings suggest an association between semaglutide and NAION. As this was an observational study, future study is required to assess causality.

JAMA Ophthalmol. doi:10.1001/jamaophthalmol.2024.2296
Published online July 3, 2024.

Nov. 19: Evidence Network in Action
The Semaglutide Study

Cindy Cai
Assistant Professor of Ophthalmology
Wilmer Eye Institute at Johns Hopkins Hospital

Topic: Semaglutide and NAION: An OHDSI Network Study

Paul Nagy
Program Director for Graduate Training in Biomedical Informatics and Data Science
Johns Hopkins University

Topic: Evidence Network

Linying Zhang
Assistant Professor of Biostatistics
Washington University

Topic: Methods

Anthony Sena
Director, Observational Health Data Analytics
Johnson & Johnson

Topic: Strategus

Ben Martin
Postdoctoral Fellow
Johns Hopkins University

Topic: Using the Results Schema

Erik Westlund
Assistant Scientist
Johns Hopkins University

Topic: Using the Results Schema

July accomplishments: Open-source tool releases

Jan	Feb	Mar	Apr
May	Jun	**Jul**	Aug
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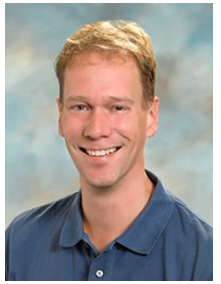
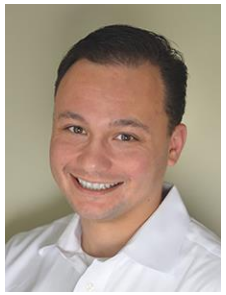
HADES

HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

V1.15

- CohortGenerator v0.10
- CohortIncidence v4.0.0
- DataQualityDashboard v2.6.1
- DeepPatientLevelPrediction v2.1.0
- FeatureExtraction v3.6
- OhdsiShinyModules v2.1.5




July publications

Jan	Feb	Mar	Apr
May	Jun	**Jul**	Aug
Sep	Oct	Nov	Dec

701. Shang Y, Tian Y, Lyu K, Zhou T, Zhang P, Chen J, Li J. Electronic Health Record-Oriented Knowledge Graph System for Collaborative Clinical Decision Support Using Multicenter Fragmented Medical Data: Design and Application Study. J Med Internet Res. 2024;26:e54263. Epub 20240705. doi: 10.2196/54263. PubMed PMID: 38968598; PubMed Central PMCID: PMC11259764.

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703. Ji H, Kim S, Sunwoo L, Jang S, Lee HY, Yoo S. Integrating Clinical Data and Medical Imaging in Lung Cancer: Feasibility Study Using the Observational Medical Outcomes Partnership Common Data Model Extension. JMIR Med Inform. 2024;12:e59187. Epub 20240712. doi: 10.2196/59187. PubMed PMID: 38996330; PubMed Central PMCID: PMC11282389.

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705. von Gerich H, Chomutare T, Peltonen LM. Building Bridges for Federated Learning in Healthcare: Review on Approaches for Common Data Model Development. Stud Health Technol Inform. 2024;315:711-2. doi: 10.3233/shti240292. PubMed PMID: 39049393.

706. Mehta N, Ribeyre BB, Dimitrov L, English LJ, Ewart C, Heinrich A, Joshi N, Munro KJ, Roadknight G, Romao L, Schilder AG, Spriggs RV, Norris R, Ross T, Tilston G. Creating a health informatics data resource for hearing health research. BMC Med Inform Decis Mak. 2024;24(1):209. Epub 20240729. doi: 10.1186/s12911-024-02589-x. PubMed PMID: 39075459; PubMed Central PMCID: PMC11285202.

707. John LH, Fridgeirsson EA, Kors JA, Reps JM, Williams RD, Ryan PB, Rijnbeek PR. Development and validation of a patient-level model to predict dementia across a network of observational databases. BMC Med. 2024;22(1):308. Epub 20240729. doi: 10.1186/s12916-024-03530-9. PubMed PMID: 39075527; PubMed Central PMCID: PMC11288076.

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

Jan	Feb	Mar	Apr
May	Jun	Jul	**Aug**
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August accomplishments:
OHDSI Standardized Vocabularies release

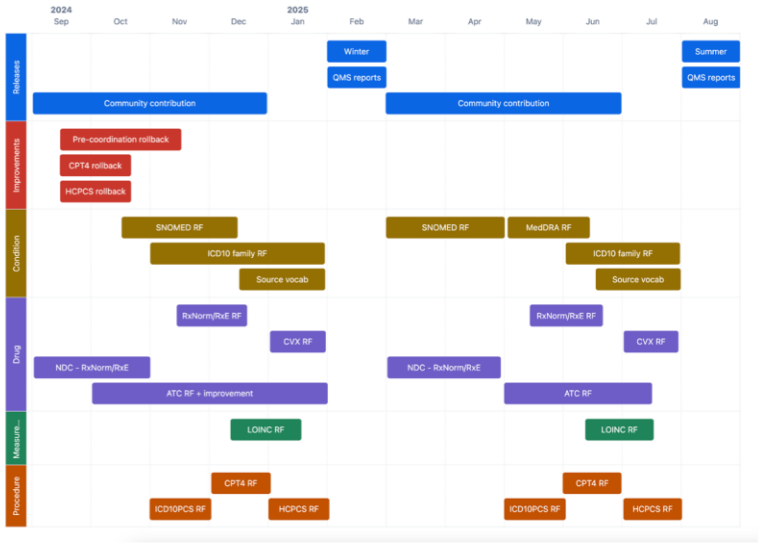
OHDSI Vocabularies By The Numbers

as of August 2024 release

- 11,561,982 concepts
  - 3,720,296 standard concepts
  - 883,766 classification concepts
- 143 vocabularies
- 43 domains
- 86,668,674 concept relationships
- 99,192,928 ancestral relationships
- 5,009,796 concept synonyms

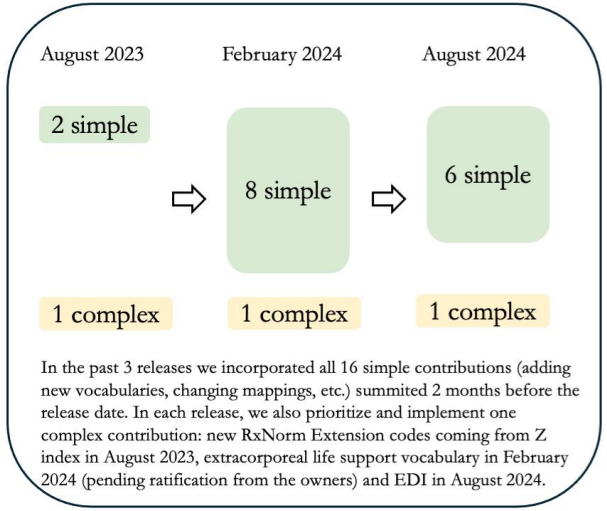
1 Shared Resource to Enable Data Standards

The roadmap for 2024/2025 was built using the insights from the landscape assessment to prioritize needs of the majority of the community and includes refreshes of the commonly used standard vocabularies such as SNOMED, CPT4 and LOINC, improvements in the mappings of the commonly used source terminologies and continuation of the work on a new approach to building drug classification to ATC (https://github.com/OHDSI/Vocabulary-v5.0/wiki/Vocab.-ATC).

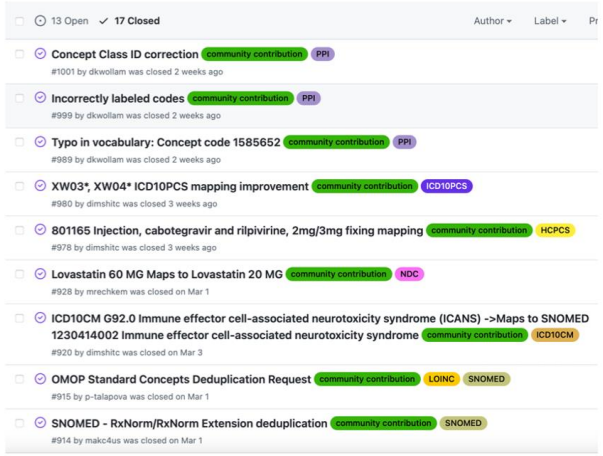


Community contributions

The formal pipeline we launched last year has enabled the community to incorporate their vocabularies and change the existing vocabulary content more easily, seamlessly as faster.



In the past 3 releases we incorporated all 16 simple contributions (adding new vocabularies, changing mappings, etc.) summited 2 months before the release date. In each release, we also prioritize and implement one complex contribution: new RxNorm Extension codes coming from Z index in August 2023, extracorporeal life support vocabulary in February 2024 (pending ratification from the owners) and EDI in August 2024.



August accomplishments: Open-source tool releases

Jan	Feb	Mar	Apr
May	Jun	Jul	**Aug**
Sep	Oct	Nov	Dec

HADES

HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

- Characterization v2.0
- OhdsiShinyModules v3.0.0
- PatientLevelPrediction v6.3.9
- ResultsModelManager v0.5.10
- SelfControlledCaseSeries v5.3.0
- ShinyAppBuilder v3.0.0




August publications

708. Amadi D, Kiwuwa-Muyingo S, Bhattacharjee T, Taylor A, Kiragga A, Ochola M, Kanjala C, Gregory A, Tomlin K, Todd J, Greenfield J. Making Metadata Machine-Readable as the First Step to Providing Findable, Accessible, Interoperable, and Reusable Population Health Data: Framework Development and Implementation Study. Online J Public Health Inform. 2024;16:e56237. Epub 20240801. doi: 10.2196/56237. PubMed PMID: 39088253; PubMed Central PMCID: PMC11327634.

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712. Barclay NL, Burn E, Delmestri A, Duarte-Salles T, Golozar A, Man WY, Tan EH, Tietzova I, Prieto-Alhambra D, Newby D. Trends in incidence, prevalence, and survival of breast cancer in the United Kingdom from 2000 to 2021. Sci Rep. 2024;14(1):19069. Epub 20240617. doi: 10.1038/s41598-024-69006-1. PubMed PMID: 39153995; PubMed Central PMCID: PMC11330450.

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715. Thiel J, Nesterow I, Sedlmayr M, Weidner J, Henke E. Towards Efficient Resource Utilization Forecasting in Acute Heat Events Using OMOP. Stud Health Technol Inform 2024;316:1555-9. doi: 10.3233/shti240715. PubMed PMID: 39176503.

716. Popoff B, Delange B, Kallout J, Cuggia M, Clavier T, Bouzille G. How to Accurately Detect Renal Replacement Therapy Weaning in Intensive Care: Data Quality and Standardization Considerations for the OMOP Common Data Model. Stud Health Technol Inform. 2024;316:1584-8. doi: 10.3233/shti240724. PubMed PMID: 39176511.

717. Delange B, Bouzille G, Popoff B, Pierre-Jean M, Maamar A, Cuggia M. Intensive Care Quality Indicators Dashboard Using Observational Medical Outcomes Partnership Common Data Model. Stud Health Technol Inform. 2024;316:1605-6. doi: 10.3233/shti240730. PubMed PMID: 39176517.

718. Reis JA, Almeida JR, Almeida TM, Oliveira JL. A Chatbot-Like Platform to Enhance the Discovery of OMOP CDM Databases. Stud Health Technol Inform. 2024;316:1689-93. doi: 10.3233/shti240748. PubMed PMID: 39176535.

719. Gyrard A, Gribbon P, Hussein R, Abedian S, Bonmati LM, Cabornero GL, Manias G, Danciu G, Dalmiani S, Autexier S, van Nuland R, Jendrossek M, Avramidis I, Alvarez EG. Synergies Among Health Data Projects with Cancer Use Cases Based on Health Standards. Stud Health Technol Inform. 2024;316:1292-6. doi: 10.3233/shti240649. PubMed PMID: 39176618.

720. Papapostolou G, Chytas A, Rekkas A, Bigaki M, Zeimpekis D, Dermentzoglou L, Tortopidis G, Natsiavas P. Real-World Data in Greece: Mapping the Papageorgiou General Hospital Data to the OMOP Common Data Model. Stud Health Technol Inform. 2024;316:1324-5. doi: 10.3233/shti240656. PubMed PMID: 39176625.

721. El Ghosh M, Kalokyri V, Sambres M, Vaterkowski M, Duclos C, Tannier X, Tsakou G, Tsiknakis M, Daniel C, Dhombres F. From Syntactic to Semantic Interoperability Using a Hyperontology in the Oncology Domain. Stud Health Technol Inform. 2024;316:1385-9. doi: 10.3233/shti240670. PubMed PMID: 39176639.

722. Chytas A, Bassileiades N, Natsiavas P. Mapping OMOP-CDM to RDF: Bringing Real-World-Data to the Semantic Web Realm. Stud Health Technol Inform. 2024;316:1406-10. doi: 10.3233/shti240674. PubMed PMID: 39176643.

723. Albarran R, Lamy JB. Enhancing Healthcare Informatics: Integrating Category Theory Reasoning into OMOP-CDM Ontology Model. Stud Health Technol Inform. 2024;316:1427-31. doi: 10.3233/shti240680. PubMed PMID: 39176649.

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726. Lymperidou A, Martínez-González J, Bracons Cucó G, Frid S, de Cid R, Labarga A. DATOS-CAT: OMOP-Common Data Model for the Standardization, Integration and Analysis of Population-Based Biomedical Data in Catalonia. Stud Health Technol Inform. 2024;316:200-1. doi: 10.3233/shti240378. PubMed PMID: 39176707.

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Journal of *Clinical Medicine*

MDPI

Article

Early Clinical Experience of Finerenone in People with Chronic Kidney Disease and Type 2 Diabetes in Japan—A Multi-Cohort Study from the FOUNTAIN (FinerenOne mUltidatabase NeTwork for Evidence generAtIoN) Platform

Atsuhisa Sato [1], Daloha Rodriguez-Molina [2], Kanae Yoshikawa-Ryan [3], Satoshi Yamashita [3], Suguru Okami [3,*], Fangfang Liu [2], Alfredo Farjat [2], Nikolaus G. Oberprieler [2], Csaba P. Kovesdy [4], Keizo Kanasaki [5,6] and David Vizcaya [2]

1 Department of Nephrology and Hypertension, International University of Health and Welfare Shioya Hospital, Yaita 329-2145, Japan
2 Integrated Evidence Generation & Business Innovation, Bayer AG, 13342 Berlin, Germany; fangfang.liu@bayer.com (F.L.)
3 Medical Affairs & Pharmacovigilance, Bayer Yakuhin Ltd., Breeze Tower, 2-4-9 Umeda, Kita-ku, Osaka 530-0001, Japan; satoshi.yamashita@bayer.com (S.Y.)
4 Division of Nephrology, Department of Medicine, University of Tennessee Health Science Center, Memphis, TN 38163, USA
5 Department of Internal Medicine 1, Faculty of Medicine, Shimane University, 89-1 Enya-cho, Izumo 693-8501, Japan
6 Center for Integrated Kidney Research and Advance, Faculty of Medicine, Shimane University, 89-1 Enya-cho, Izumo 693-8501, Japan
* Correspondence: suguru.okami@bayer.com; Tel.: +81-6-6133-7000

check for updates

Citation: Sato, A.; Rodriguez-Molina, D.; Yoshikawa-Ryan, K.; Yamashita, S.; Okami, S.; Liu, F.; Farjat, A.; Oberprieler, N.G.; Kovesdy, C.P.; Kanasaki, K.; et al. Early Clinical Experience of Finerenone in People with Chronic Kidney Disease and Type 2 Diabetes in Japan—A Multi-Cohort Study from the FOUNTAIN (FinerenOne mUltidatabase NeTwork for Evidence generAtIoN) Platform. *J.*

Abstract: Background: In the phase 3 clinical trials FIGARO-DKD and FIDELIO-DKD, finerenone reduced the risk of cardiovascular and kidney events among people with chronic kidney disease (CKD) and type 2 diabetes (T2D). Evidence regarding finerenone use in real-world settings is limited. **Methods:** A retrospective cohort study (NCT06278207) using two Japanese nationwide hospital-based databases provided by Medical Data Vision (MDV) and Real World Data Co., Ltd. (RWD Co., Kyoto Japan), converted to the OMOP common data model, was conducted. Persons with CKD and T2D initiating finerenone from 1 July 2021, to 30 August 2023, were included. Baseline characteristics were described. The occurrence of hyperkalemia after finerenone initiation was assessed. **Results:** 1029 new users of finerenone were included (967 from MDV and 62 from RWD Co.). Mean age was 69.5 and 72.4 years with 27.3% and 27.4% being female in the MDV and RWD Co.

September accomplishments: Open-source tool releases

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

HADES

HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

CohortGenerator v0.11.2 — In CRAN!

CohortMethod v5.4

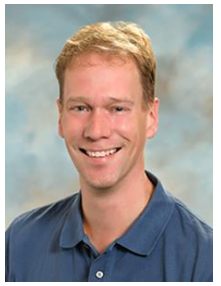
EmpiricalCalibration v3.1.3 — In CRAN!

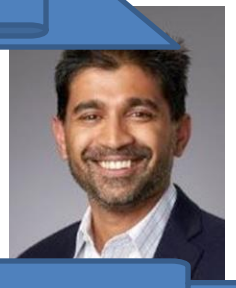
FeatureExtraction v3.7

PhenotypeLibrary v3.33

ResultsModelManager v0.5.11 — In CRAN!

ShinyAppBuilder v3.1.0




September publications

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

732. Khera R, Aminorroaya A, Dhingra LS, Thangaraj PM, Pedroso Camargos A, Bu F, Ding X, Nishimura A, Anand TV, Arshad F, Blacketer C, Chai Y, Chattopadhyay S, Cook M, Dorr DA, Duarte-Salles T, DuVall SL, Falconer T, French TE, Hanchrow EE, Kaur G, Lau WCY, Li J, Li K, Liu Y, Lu Y, Man KKC, Matheny ME, Mathioudakis N, McLeggon JA, McLemore MF, Minty E, Morales DR, Nagy P, Ostropolets A, Pistillo A, Phan TP, Pratt N, Reyes C, Richter L, Ross JS, Ruan E, Seager SL, Simon KR, Viernes B, Yang J, Yin C, You SC, Zhou JJ, Ryan PB, Schuemie MJ, Krumholz HM, Hripcsak G, Suchard MA. Comparative Effectiveness of Second-Line Antihyperglycemic Agents for Cardiovascular Outcomes: A Multinational, Federated Analysis of LEGEND-T2DM. J Am Coll Cardiol. 2024;84(10):904-17. doi: 10.1016/j.jacc.2024.05.069. PubMed PMID: 39197980.

733. Choi S, Kim JK, Lee J, Choi SJ, Lee YK. Limitations of NHIC claim code-based surveillance and the necessity of UDI implementation in Korea. Sci Rep. 2024;14(1):21014. Epub 20240909. doi: 10.1038/s41598-024-72063-1. PubMed PMID: 39251861; PubMed Central PMCID: PMC11383859.

734. Cha JJ, Yum Y, Kim YH, Kim EJ, Rah YC, Park E, Im GJ, Song JJ, Chae SW, Choi J, Joo HJ. Association of the protective effect of telmisartan on hearing loss among patients with hypertension. Front Neurol. 2024;15:1410389. Epub 20240827. doi: 10.3389/fneur.2024.1410389. PubMed PMID: 39258156; PubMed Central PMCID: PMC11384575.

735. Sato A, Rodriguez-Molina D, Yoshikawa-Ryan K, Yamashita S, Okami S, Liu F, Farjat A, Oberprieler NG, Kovesdy CP, Kanasaki K, Vizcaya D. Early Clinical Experience of Finerenone in People with Chronic Kidney Disease and Type 2 Diabetes in Japan-A Multi-Cohort Study from the FOUNTAIN (FinerenOne mUltidatabase NeTwork for Evidence generAtIoN) Platform. J Clin Med. 2024;13(17). Epub 20240828. doi: 10.3390/jcm13175107. PubMed PMID: 39274317.

JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY VOL. 84, NO. 10, 2024

Comparative Effectiveness of Second-Line Antihyperglycemic Agents for Cardiovascular Outcomes

A Multinational, Federated Analysis of LEGEND-T2DM

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ABSTRACT

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	**Oct**	Nov	Dec

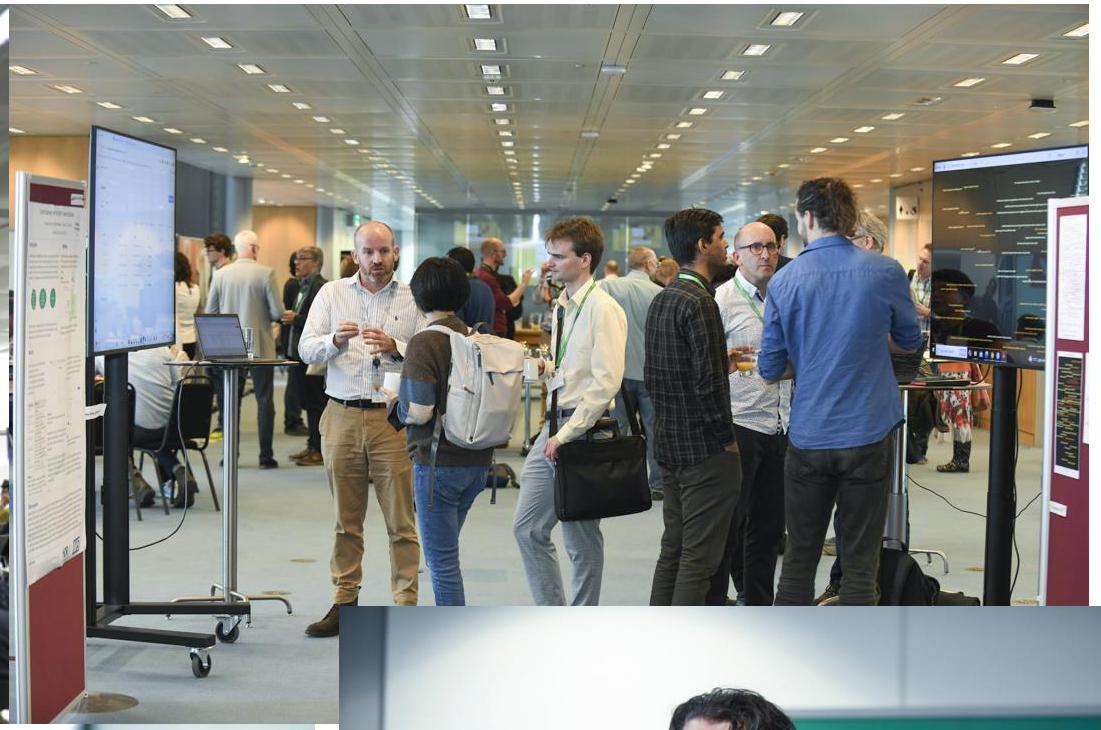
October activities:
OHDSI India Symposium

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	**Oct**	Nov	Dec

October activities: EHDEN Symposium

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	**Oct**	Nov	Dec

October activities:
OHDSI UK Symposium



Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	**Oct**	Nov	Dec

October activities:
OHDSI Global Symposium

October activities:
OHDSI Global Symposium:
LEGEND-T2DM

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	**Oct**	Nov	Dec

October activities:
OHDSI Global Symposium:
JACC

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	**Oct**	Nov	Dec

October activities:
OHDSI Global Symposium:
Collaborating on Evidence at Scale

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
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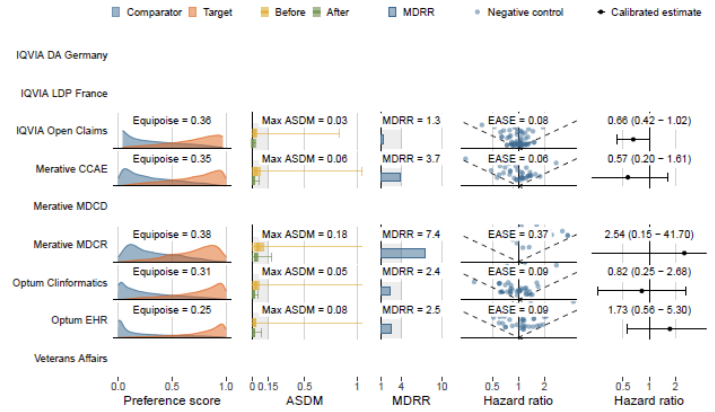
LEGEND-T2DM Evidence Dissemination Summary

- Target (class): **Semaglutide** (GLP-1 Receptor Agonists)
- Comparator (class): **Glimepiride** (Sulfonylureas)
- Outcome: **Acute pancreatitis**

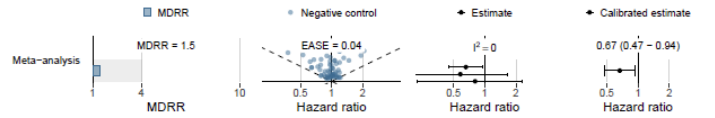
How Often? (Incidence rates in the PS-matched target cohorts)

Data source	Persons exposed	Person-time (yrs)	Persons with outcome	IR (/1,000 PY)
IQVIA DA Germany	-	-	-	-
IQVIA LDP France	-	-	-	-
IQVIA Open Claims	99,708	52,939	60	1.13
Merative CCAE	20,240	9,388	14	1.49
Merative MDCD	-	-	-	-
Merative MDCR	619	278	<5	<17.97
Optum Clinformatics	7,607	3,811	8	2.10
Optum EHR	6,717	2,098	7	3.34
Veterans Affairs	1,258	883	-	0.00

How Reliable Are the Effect Estimates? (Objective diagnostics)



What have we learned from the OHDSI Network? (Meta-analysis diagnostics and estimate)



October accomplishments: 2024 OHDSI Titans

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	**Oct**	Nov	Dec

October accomplishments: Open-source tool releases

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	**Oct**	Nov	Dec

HADES

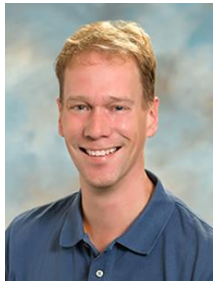
HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

- CohortDiagnostics v3.3
- FeatureExtraction v3.7.2
- OhdsiShinyModules v3.1.1
- PhenotypeLibrary v3.34
- PheValuator v2.2.12
- SqlRender v1.19
- Strategus v1.0

In CRAN!






October publications

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	**Oct**	Nov	Dec

Incidence of post-acute COVID-19 symptoms across healthcare settings in seven countries: an international retrospective cohort study using routinely-collected data

Junqing Xie,[a,aa] Kim López-Güell,[a,aa] Daniel Dedman,[b] Talita Duarte-Salles,[c,d] Raivo Kolde,[e] Raúl López-Blasco,[f] Álvaro Martínez,[g] Gregoire Mercier,[i] Alicia Abellan,[c] Johnmary T. Arinze,[d] Zara Cuccu,[b] Antonella Delmestri,[a] Dominique Delseny,[j] Sara Khalid,[a] Chungsoo Kim,[k] Ji-woo Kim,[l] Kristin Kostka,[a,m] Cara Loste,[n,o,p,q] Lourdes Mateu,[n,o,p,q,r] Miguel A. Mayer,[n] Jaime Meléndez-Cardiel,[f] Núria Mercadé-Besora,[a,c] Mees Mosseveld,[d] Akihito Nishimura,[s] Hedvig M. E. Nordeng,[a,t] Jessie O. Oyinlola,[b] Laura Pérez-Crespo,[c] Marta Pineda-Moncusí,[a] Juan Manuel Ramírez-Anguita,[n] Nhung T. H. Trinh,[a] Anneli Uusküla,[r] Bernardo Valdivieso,[g,s] Theresa Burkard,[a] Edward Burn,[a] Martí Català,[a] Daniel Prieto-Alhambra,[a,d,v] Roger Paredes,[n,q,w,x,y,z,ab] and Annika M. Jödicke[a,ab]

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[t]The University and Polytechnic La Fe Hospital of Valencia, Avenida Fernando Abril Martorell, 106 Torre H 1a Planta, 46026, Valencia, Spain
[v]CIBER Infectious Diseases (CIBERINFEC), Institute of Health Carlos III (ISCIII), Madrid, Spain
[w]Universitat Autònoma de Barcelona, Catalonia, Spain
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Summary

Background The World Health Organisation (WHO) has identified a range of symptomatic manifestations to aid in the clinical diagnosis of post-COVID conditions, herein referred to as post-acute COVID-19 symptoms. We conducted an international network cohort study to estimate the burden of these symptoms in North American, European, and Asian populations.

Methods A federated analysis was conducted including 10 databases from the United Kingdom, Netherlands, Norway, Estonia, Spain, France, South Korea, and the United States, between September 1st 2020 and latest data availability (which varied from December 31st 2021 to February 28th 2023), covering primary and secondary care, nationwide registries, and claims data, all mapped to the Observational Medical Outcomes Partnership

eClinicalMedicine 2024;77: 102903
Published Online 30 October 2024
https://doi.org/10.1016/j.eclinm.2024.102903

November accomplishments: Dr. Erica Voss

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	**Nov**	Dec

November accomplishments: Open-source tool releases

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	**Nov**	Dec

HADES

HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

Cyclops v3.5 — In CRAN!

SqlRender v1.19.1 — In CRAN!

November publications

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	**Nov**	Dec

Pharmacoepidemiology and Drug Safety

WILEY

ORIGINAL ARTICLE OPEN ACCESS

Standardised and Reproducible Phenotyping Using Distributed Analytics and Tools in the Data Analysis and Real World Interrogation Network (DARWIN EU)

Francesco Dernie[1,2] | George Corby[1,2] | Abigail Robinson[1,2] | James Bezer[1,2] | Nuria Mercade-Besora[2] | Romain Griffier[3] | Guillaume Verdy[3] | Angela Leis[4] | Juan Manuel Ramirez-Anguita[5] | Miguel A. Mayer[4,5] | James T. Brash[6] | Sarah Seager[6] | Rowan Parry[7] | Annika Jodicke[2] | Talita Duarte-Salles[7,8] | Peter R. Rijnbeek[7] | Katia Verhamme[7] | Alexandra Pacurariu[9] | Daniel Morales[9,10] | Luis Pinheiro[9] | Daniel Prieto-Alhambra[2,7] | Albert Prats-Uribe[2]

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Keywords: pancreatic cancer | phenotyping | systemic lupus erythematosus

ABSTRACT

Purpose: The generation of representative disease phenotypes is important for ensuring the reliability of the findings of observational studies. The aim of this manuscript is to outline a reproducible framework for reliable and traceable phenotype generation based on real world data for use in the Data Analysis and Real-World Interrogation Network (DARWIN EU). We illustrate the use of this framework by generating phenotypes for two diseases: pancreatic cancer and systemic lupus erythematosus (SLE).

Methods: The phenotyping process involves a 14-steps process based on a standard operating procedure co-created by the DARWIN EU Coordination Centre in collaboration with the European Medicines Agency. A number of bespoke R packages were utilised to generate and review codelists for two phenotypes based on real world data mapped to the OMOP Common Data Model.

Results: Codelists were generated for both pancreatic cancer and SLE, and cohorts were generated in six OMOP-mapped databases. Diagnostic checks were performed, which showed these cohorts had broadly similar incidence and prevalence figures to previously published literature, despite significant inter-database variability. Co-occurrent symptoms, conditions, and medication use were in keeping with pre-specified clinical descriptions based on previous knowledge.

Conclusions: Our detailed phenotyping process makes use of bespoke tools and allows for comprehensive codelist generation and review, as well as large-scale exploration of the characteristics of the resulting cohorts. Wider use of structured and reproducible phenotyping methods will be important in ensuring the reliability of observational studies for regulatory purposes.

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December activities: OHDSI APAC Symposium

December accomplishments: Open-source tool releases

Jan	Feb	Mar	Apr
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Sep	Oct	Nov	**Dec**

HADES

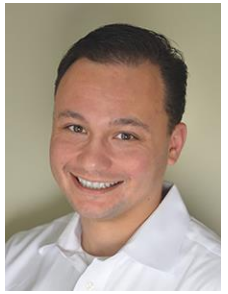
HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

V1.16

Characterization v2.1

ShinyAppBuilder v3.2.0

Strategus v1.1.2



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December publications

Evolution of a Graph Model for the OMOP Common Data Model

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Appl Clin Inform 2024;15:1056–1065.

Abstract

Objective Graph databases for electronic health record (EHR) data have become a useful tool for clinical research in recent years, but there is a lack of published methods to transform relational databases to a graph database schema. We developed a graph model for the Observational Medical Outcomes Partnership (OMOP) common data model (CDM) that can be reused across research institutions.

Methods We created and evaluated four models, representing two different strategies, for converting the standardized clinical and vocabulary tables of OMOP into a property graph model within the Neo4j graph database. Taking the Successful Clinical Response in Pneumonia Therapy (SCRIPT) and Collaborative Resource for Intensive care Translational science, Informatics, Comprehensive Analytics, and Learning (CRITICAL) cohorts as test datasets with different sizes, we compared two of the resulting graph models with respect to database performance including database building time, query complexity, and runtime for both cohorts.

Results Utilizing a graph schema that was optimized for storing critical information as topology rather than attributes resulted in a significant improvement in both data creation and querying. The graph database for our larger cohort, CRITICAL, can be built within 1 hour for 134,145 patients, with a total of 749,011,396 nodes and 1,703,560,910 edges.

Discussion To our knowledge, this is the first generalized solution to convert the OMOP CDM to a graph-optimized schema. Despite being developed for studies at a single institution, the modeling method can be applied to other OMOP CDM v5.x databases. Our evaluation with the SCRIPT and CRITICAL cohorts and comparison between the current and previous versions show advantages in code simplicity, database building, and query speed.

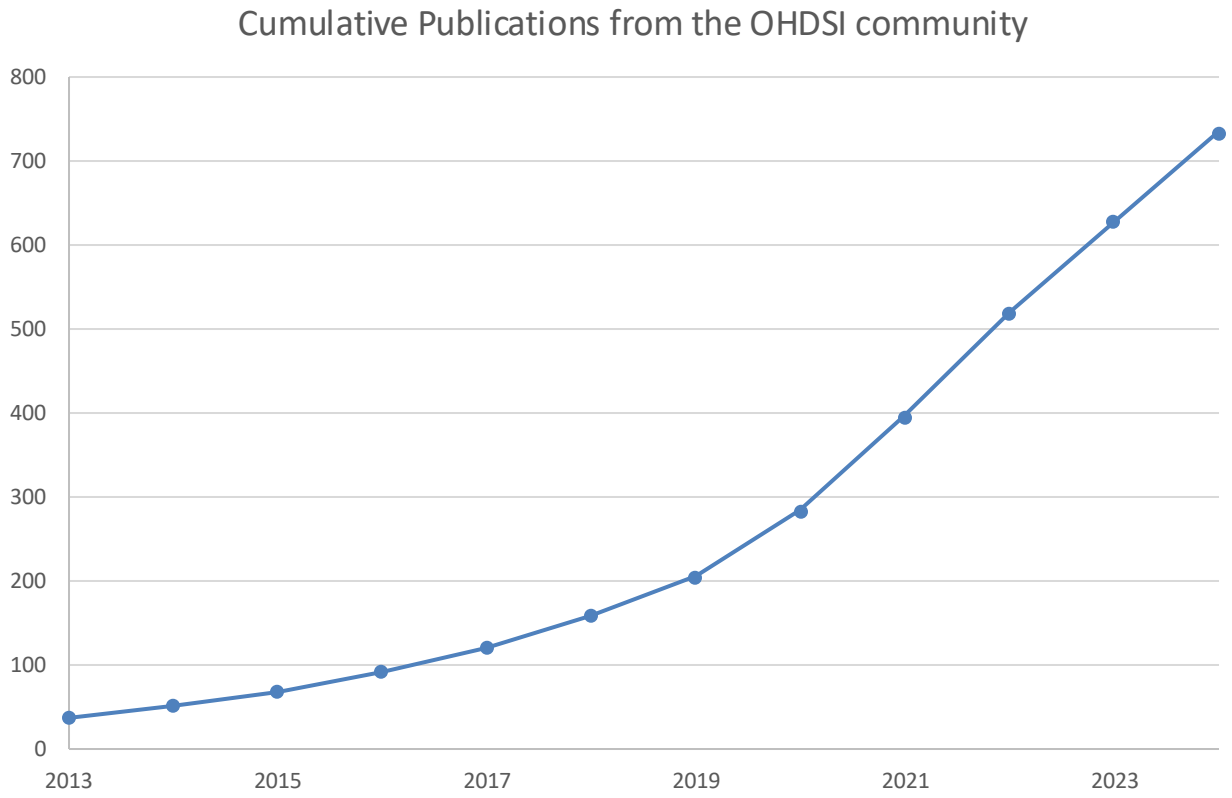
Conclusion We developed a method for converting OMOP CDM databases into graph databases. Our experiments revealed that the final model outperformed the initial

Keywords

- databases
- general information systems and technologies in clinical settings
- OMOP common data model
- clinical data management
- electronic health records and systems

Academic scholarship and clinical evidence generation

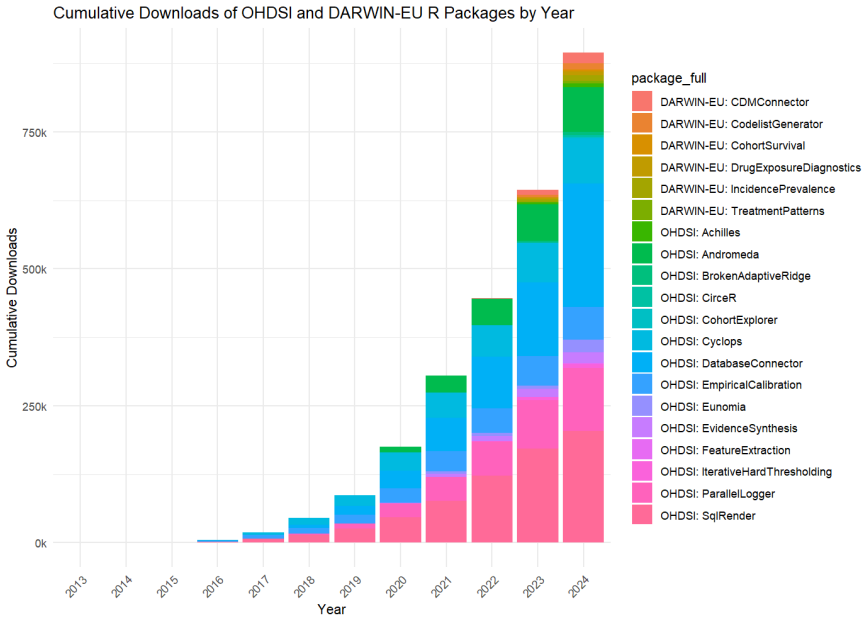
- >750 publications, including in top clinical journals (JAMA, BMJ, Lancet, JAMA Internal Medicine, JACC) and leading methodological journals (JAMIA, JBI, Nature Digital Medicine)
- Clinical evidence generated to inform range of therapeutic areas, including hypertension, diabetes, COVID-19, vision care, depression, oncology



Open-source software development

- HADES is an ecosystem of 37 R packages to support standardized analytics for the OMOP CDM and across OHDSI network
- OHDSI CRAN packages have been downloaded >800,000 times

Package	Version	Maintainer(s)	Availability
Achilles	v1.7.2	Frank DeFalco	CRAN
Andromeda	v0.6.7	Martijn Schuemie	CRAN
BigKnn	v1.0.2	Martijn Schuemie	GitHub
BrokenAdaptiveRidge	v1.0.0	Marc Suchard	CRAN
Capr	v2.0.8	Martin Lavallee	GitHub
Characterization	v2.0.1	Jenna Reps	GitHub
CirceR	v1.3.3	Chris Knoll	CRAN
CohortDiagnostics	v3.3.0	Jamie Gilbert	GitHub
CohortExplorer	v0.1.0	Gowtham Rao	CRAN
CohortGenerator	v0.11.2	Anthony Sena	GitHub
CohortIncidence	v4.0.0	Chris Knoll	GitHub
CohortMethod	v5.4.0	Martijn Schuemie	GitHub
Cyclops	v3.4.1	Marc Suchard	CRAN
DatabaseConnector	v6.3.2	Martijn Schuemie	CRAN
DataQualityDashboard	v2.6.1	Katy Sadowksi	GitHub
DeepPatientLevelPrediction	v2.1.0	Egill Fridgeirsson	GitHub
EmpiricalCalibration	v3.1.3	Martijn Schuemie	CRAN
EnsemblePatientLevelPrediction	v1.0.2	Jenna Reps	GitHub
Eunomia	v2.0.0	Frank DeFalco	CRAN
EvidenceSynthesis	v0.5.0	Martijn Schuemie	CRAN
FeatureExtraction	v3.7.1	Ger Inberg	CRAN
Hydra	v0.4.0	Anthony Sena	GitHub
IterativeHardThresholding	v1.0.2	Marc Suchard	CRAN
Keeper	v0.2.0	Anna Ostropolets	GitHub
MethodEvaluation	v2.3.0	Martijn Schuemie	GitHub
OhdsiSharing	v0.2.2	Lee Evans	GitHub
OhdsiShinyModules	v3.0.2	Jenna Reps	GitHub
ParallelLogger	v3.3.1	Martijn Schuemie	CRAN
PatientLevelPrediction	v6.3.9	Egill Friogeirsson & Jenna Reps	GitHub
PhenotypeLibrary	v3.34.0	Gowtham Rao	GitHub
PheValuator	v2.2.11	Joel Swerdel	GitHub
ResultModelManager	v0.5.11	Jamie Gilbert	GitHub
ROhdsiWebApi	v1.3.3	Gowtham Rao	GitHub
SelfControlledCaseSeries	v5.3.0	Martijn Schuemie	GitHub
SelfControlledCohort	v1.6.0	Jamie Gilbert	GitHub
ShinyAppBuilder	v1.3.1.0	Jenna Reps	GitHub
SqlRender	v1.18.1	Martijn Schuemie	CRAN



When poll is active respond at **PollEv.com/patrickryan800**

What was your favorite OHDSI highlight in 2024?

Nobody has responded yet.

Hang tight! Responses are coming in.