DevCon: The Present, Future of Our Open-Source Ecosystem

OHDSI Community Call
April 29, 2025 • 11 am ET

Upcoming Community Calls

Date	Topic
Apr. 29	DevCon 2025 Review
May 6	Evidence Synthesis
May 13	Maternal Health Fellowship Review
May 20	Guideline-Driven Evidence Study Review
May 27	Collaborator Showcase Brainstorm (Deadline is July 1)

May 6: Evidence Synthesis

Martijn Schuemie

Research Fellow, Global Epidemiology Organization
Johnson & Johnson

Yong Chen

Professor of Biostatistics
University of Pennsylvania

Three Stages of The Journey

Where Have We Been?

Where Are We Now?

Where Are We Going?

OHDSI Shoutouts!

Congratulations to the team of **Klaus Donsa, Patrick Mangesius, Aaron Lauschensky, Martin Baumgartner, Nikola Tanjga, Stefan Beyer, Günter Schreier, and Karl Kreiner** on the publication of **FOX BOXes as Fundamental Enablers for EHR-Standardised Data Sharing – Building the Austrian Health Data Donation Space** in *Volume 324 of Studies in Health Technology and Informatics: dHealth 2025.*

dHealth 2025
M. Baumgartner et al. (Eds.)

doi:10.3233/SHTI250187

FOX BOXes as Fundamental Enablers for EHR-Standardised Data Sharing - Building the Austrian Health Data Donation Space

Klaus DONSA[a,1], Patrick MANGESIUS[b], Aaron LAUSCHENSKY[a], Martin BAUMGARTNER[a], Nikola TANJGA[a,c], Stefan BEYER[a], Günter SCHREIER[a] and Karl KREINER[a]
[a] *AIT Austrian Institute of Technology, Graz & Vienna, Austria*
[b] *Siemens Healthcare Diagnostics GmbH, Austria*
[c] *ELGA GmbH, Vienna, Austria*

Abstract. Efficient secondary use of real-world data (RWD) is a cornerstone for advancing data-driven medical research and personalised healthcare. However, significant challenges persist, including data fragmentation in silos, the lack of record linkage, and legal constraints that often hinder data utilisation. Especially Electronic Health Records (EHRs) represent a valuable data source, yet their potential remains largely untapped due to these barriers. Especially modern data space solutions promise to address these challenges, focusing on standardisation and harmonisation efforts, data governance aspects, as well as federated data-sharing approaches. A significant push in this area represents the European Health Data Space (EHDS) Act, focusing on an opt-out based approach for secondary use of health data. An additional consent-based approach (opt-in) represents data donation, which empowers individuals to contribute their data to research while maintaining trust and privacy under the current legal situation. The flagship project Smart FOX lays the foundations for making citizen-based data donations of EHR-standardised information usable in clinical research in Austria. As part of the architecture of the Austrian Health Data Donation Space (AHDDS), data donation boxes - Federated Open data eXchange Boxes (FOX BOXes) - present the fundamental decentralised building blocks for sharing EHR-standardised data. This paper outlines the architecture, functionality, and governance of FOX BOXes, highlighting its role in overcoming key barriers to health data sharing and its potential to accelerate data-driven research.

Keywords. Health Data Spaces, Secondary Use, Data Donation, Electronic Health Records, Privacy Preservation, FHIR, OMOP CDM

OHDSI Shoutouts!

Congratulations to the team of **Jakob Thiel, Martin Sedlmayr, and Elisa Henke** on the publication of **Standardizing Heat-Related Diagnoses for Predictive Modeling in Healthcare** in *Volume 324 of Studies in Health Technology and Informatics: dHealth 2025.*

dHealth 2025
M. Baumgartner et al. (Eds.)

doi:10.3233/SHTI250156

Standardizing Heat-Related Diagnoses for Predictive Modeling in Healthcare

Jakob THIEL[a,1], Martin SEDLMAYR[a] and Elisa HENKE[a]
[a] *Institute for Medical Informatics and Biometry, Faculty of Medicine and University Hospital Carl Gustav Carus, TU Dresden University of Technology, Dresden, Germany*

Abstract. Climate change is increasing acute heat events, intensifying health risks and straining healthcare systems. This study aims to support heat-related diagnoses prediction models for Germany by assigning ICD-10-GM codes to relevant conditions identified from the literature. Using the OHDSI mapping tool and clinical validation, 64 heat-related conditions were coded, enhancing data standardization. This approach facilitates reliable inclusion of diagnoses in association analyses and paves the way for improved resource allocation during heat events.

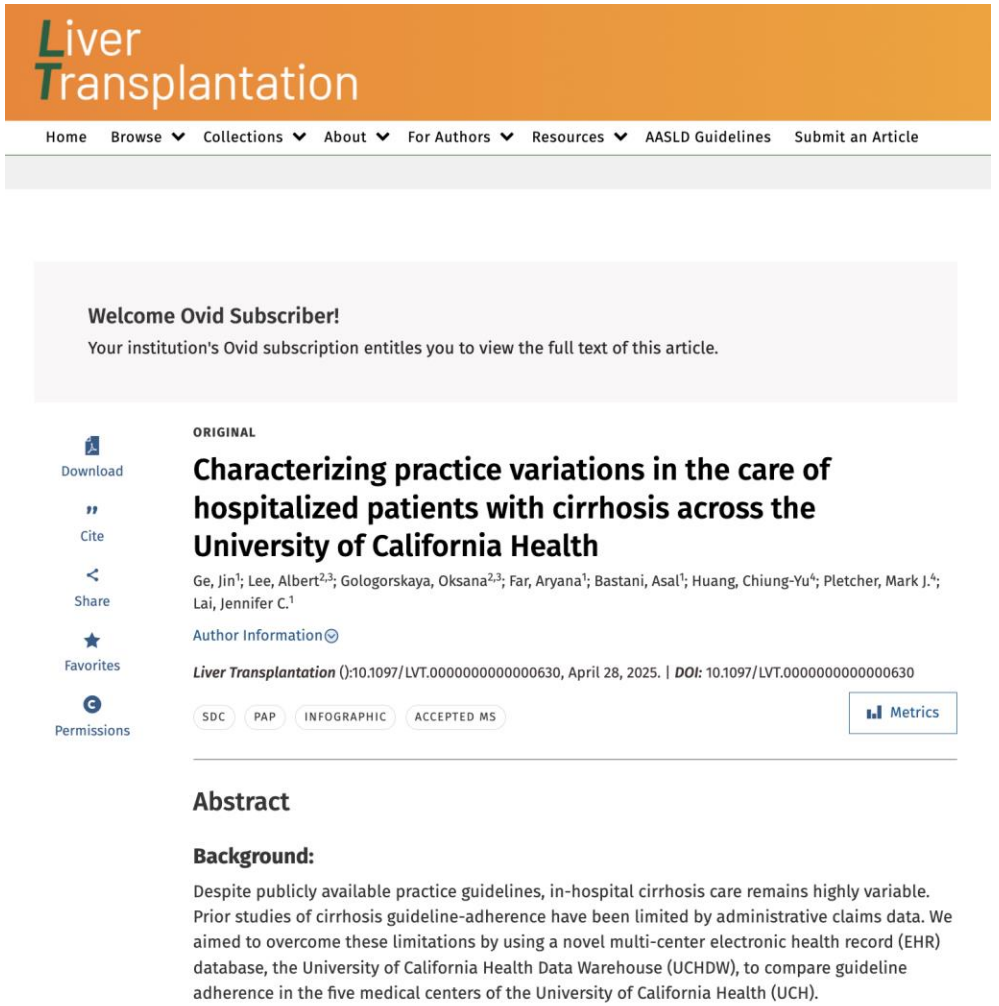
Keywords. heat forecast; heat events; interoperability; resource utilization

1. Introduction

Rising temperatures and more frequent heatwaves are among the most noticeable consequences of climate change [1]. One of the many resulting challenges is the growing burden on the healthcare system. With digital tools and statistical prediction models, limited healthcare resources could be better allocated during heat periods [2]. As part of the research project Medical Informatics Hub in Saxony, such a prediction model will initially be developed for Saxony (Germany). To gain an overview of heat-related diseases we already conducted a literature review [3]. The extracted diseases were available in various International Classification of Diseases (ICD) versions or English free text. In order to enable a uniform data base, it was necessary to standardize these various specifications to the German Modification of ICD.

OHDSI Shoutouts!

Congratulations to the team of **Jin Ge, Albert Lee, Oksana Gologorskaya, Aryana Far, Asal Bastani, Chiung-Yu Huang, Mark J Pletcher, and Jennifer C Lai** on the publication of **Characterizing practice variations in the care of hospitalized patients with cirrhosis across the University of California Health** in *Liver Transplantation*.



Liver Transplantation

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ORIGINAL

Characterizing practice variations in the care of hospitalized patients with cirrhosis across the University of California Health

Ge, Jin[1]; Lee, Albert[2,3]; Gologorskaya, Oksana[2,3]; Far, Aryana[1]; Bastani, Asal[1]; Huang, Chiung-Yu[4]; Pletcher, Mark J.[4]; Lai, Jennifer C.[1]

Author Information

Liver Transplantation ():10.1097/LVT.0000000000000630, April 28, 2025. | **DOI:** 10.1097/LVT.0000000000000630

SDC PAP INFOGRAPHIC ACCEPTED MS

Metrics

Abstract

Background:

Despite publicly available practice guidelines, in-hospital cirrhosis care remains highly variable. Prior studies of cirrhosis guideline-adherence have been limited by administrative claims data. We aimed to overcome these limitations by using a novel multi-center electronic health record (EHR) database, the University of California Health Data Warehouse (UCHDW), to compare guideline adherence in the five medical centers of the University of California Health (UCH).

Three Stages of The Journey

Where Have We Been?

Where Are We Now?

Where Are We Going?

Upcoming Workgroup Calls

Date	Time (ET)	Meeting
Tuesday	12 pm	ATLAS
Wednesday	8 am	Medical Imaging
Wednesday	10 am	Surgery and Perioperative Medicine
Wednesday	10 am	Women of OHDSI
Wednesday	7 pm	Medical Imaging
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	7 pm	Dentistry
Friday	10 am	Transplant
Friday	10 am	GIS-Geographic Information System
Friday	11:30 am	Steering
Monday	10 am	Healthcare Systems Interest Group
Monday	12 pm	Book of OHDSI
Tuesday	9:30 am	Common Data Model

ATLAS Usage & Feedback Survey

Atlas Survey

General

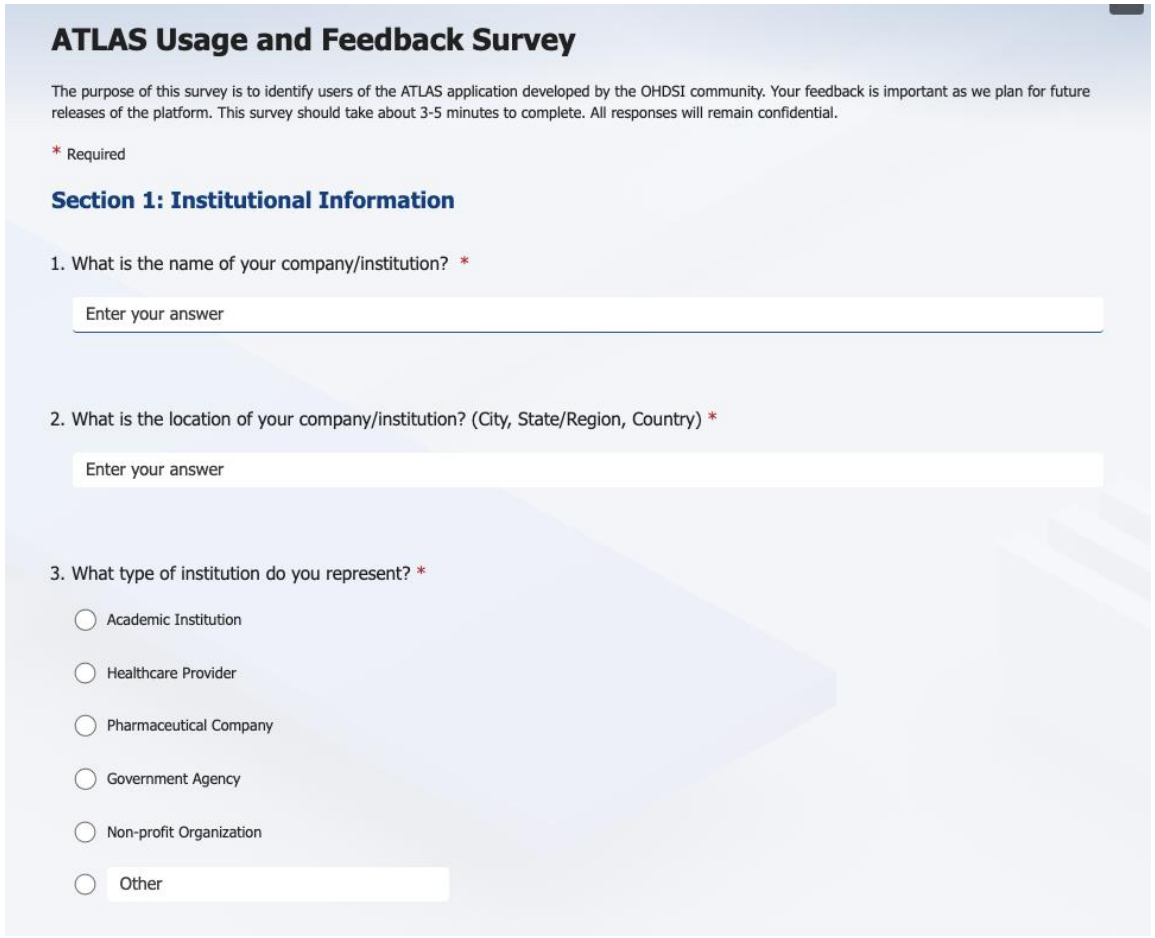
Chris_Knoll 5d

The ATLAS working group has put together a short survey (Microsoft Forms 6) to help us identify who is using ATLAS in our community. If you are not using ATLAS, we'd still ask you to fill in this survey so you can help us to identify any barriers for adoption in your company/institution.

Additionally, this survey will ask if you'd like to be interviewed for feedback on your usage of ATLAS. Data4Life (https://www.data4life.care/ 1) is working closely with our working group to conduct interviews (~1hr) that will help inform the future direction of the application.

We'd appreciate if you could fill out this survey and consider speaking with Data4Life regarding your experiences with ATLAS.

Tagging @anthonysena



ATLAS Usage and Feedback Survey

The purpose of this survey is to identify users of the ATLAS application developed by the OHDSI community. Your feedback is important as we plan for future releases of the platform. This survey should take about 3-5 minutes to complete. All responses will remain confidential.

* Required

Section 1: Institutional Information

1. What is the name of your company/institution? *

Enter your answer

2. What is the location of your company/institution? (City, State/Region, Country) *

Enter your answer

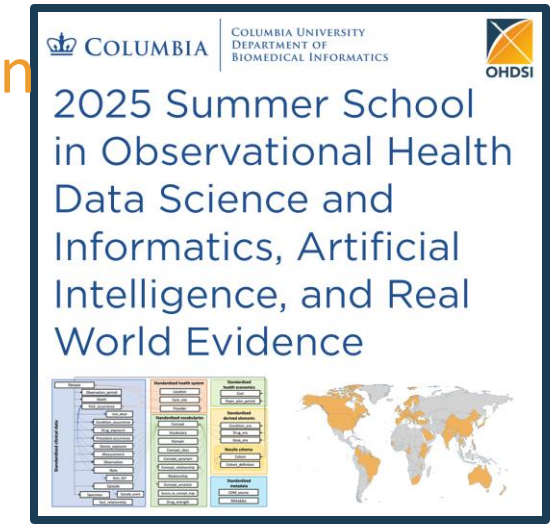
3. What type of institution do you represent? *

- Academic Institution
- Healthcare Provider
- Pharmaceutical Company
- Government Agency
- Non-profit Organization
- Other

Link on community calls page

Columbia Summer School on OHDSI

Registration is open for the first ever Columbia Summer School on OHDSI, held July 14-18, 2025,
at the Columbia University Department of Biomedical Informatics in New York City.



The Columbia Summer School in Observational Health Data Science and Informatics, Artificial Intelligence, and Real World Evidence (RWE) offers health professionals, researchers and industry practitioners the opportunity to gain familiarity and hands-on experience with real world data and generating real world evidence. Participants will learn about the different types of healthcare data captured during routine clinical care, including electronic health records and administrative records, and how these data can be standardized to the OMOP Common Data Model to enable distributed data network research.

Meet Our Faculty

George Hripcsak, MD MS
Vivian Beaumont Allen Professor of Biomedical Informatics

Patrick Ryan, PhD
Adjunct Assistant Professor of Biomedical Informatics

Anna Ostropolets, MD PhD
Adjunct Assistant Professor of Biomedical Informatics

Karthik Natarajan, PhD
Assistant Professor of Biomedical Informatics

DevCon 2025 Videos are Posted

DevCon 2025 Spotlights Open-Source Innovation, Sustainability, and the Future

The OHDSI community hosted DevCon 2025, the fourth annual gathering dedicated to advancing open-source development and collaboration, on April 25. This event brought together developers and innovators to explore the latest tools, technologies, and strategies shaping the future of open-source software in healthcare and data science. The event kicked off with an exciting series of talks showcasing cutting-edge OHDSI projects, including updates on core infrastructure, cohort construction, and novel integrations with modern data platforms.

That session followed with a dynamic developer dialogue on key topics such as DevOps, DBT, and the growing role of large language models in open-source development. This interactive session provided insights from industry leaders on emerging trends, challenges, and opportunities in the evolving open-source landscape.

Agenda

9:00 – 9:15am ET · Welcome & Introduction
- Paul Nagy, Johns Hopkins University

9:15 – 11:30am ET · OHDSI Projects Lightning Talks
- Stabilizing Gaia Core – Robert Miller, Miller Data Solutions
- CustomVocabularyBuilder – Jared Houghtaling, Tufts University
- CohortConstructor – Núria Mercadé-Besora, University of Oxford
- Updates on Strategus – Anthony Sena, Johnson & Johnson
- Experiences with SQLMesh/CICD integration with Databricks – Vishnu Chandrabalan, Lancashire Teaching Hospitals NHS Foundation Trust
- Updates from the Technical Advisory Board – Frank Defalco, Johnson & Johnson

11:30 – 12:30pm ET · Developer dialogue: Dev ops, DBT and, of course, LLMs
Moderator: Katy Sadowski, Boehringer Ingelheim
- Eduard Korchmar, EPAM Systems
- Egil Fridgeirsson, Erasmus MC
- Martin Lavallee, Boehringer Ingelheim
- Lawrence Adams, Artificial Intelligence Centre for Value Based Healthcare

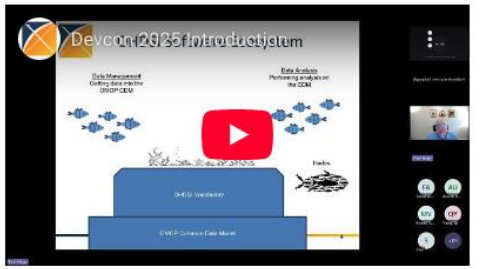
12:30 – 1:00pm ET · Break

1:00 – 2:00pm ET · Sustainable Open-Source Ecosystems Panel
Moderator: Paul Nagy, Sean O'Reilly
- Data4Life – Peter Hoffmann
- The Hyve – Jan Blom/Wouter Franke
- Cognome – James Green

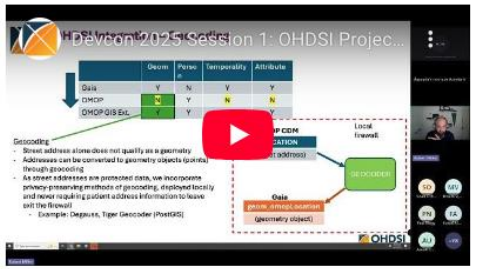
The day concluded with a panel on building sustainable open-source ecosystems, where experts shared their experiences in fostering long-term collaboration, innovation, and community-driven development. As the open-source movement continues to grow, understanding sustainable models becomes more critical than ever.

Videos from all presentations are posted below.

Videos



The opening was led by Paul Nagy (Johns Hopkins), who provided an overview of the open-source environment within the OHDSI global community.



The first session focused on OHDSI open-source projects, and featured six lightning talks, which are shared below:
0:00 – Stabilizing Gaia Core – Robert Miller, Miller Data Solutions
20:42 – CustomVocabularyBuilder – Jared Houghtaling, Tufts University
40:22 – CohortConstructor – Núria Mercadé-Besora, University of Oxford
59:40 – Experiences with SQLMesh/CICD integration with Databricks – Vishnu Chandrabalan, Lancashire Teaching Hospitals NHS Foundation Trust
1:22:05 – Updates from the Technical Advisory Board – Frank Defalco, Johnson & Johnson
1:30:20 – Updates on Strategus – Anthony Sena, Johnson & Johnson

The second session hosted a conversation between developers within

The third session featured a panel discussion on building a

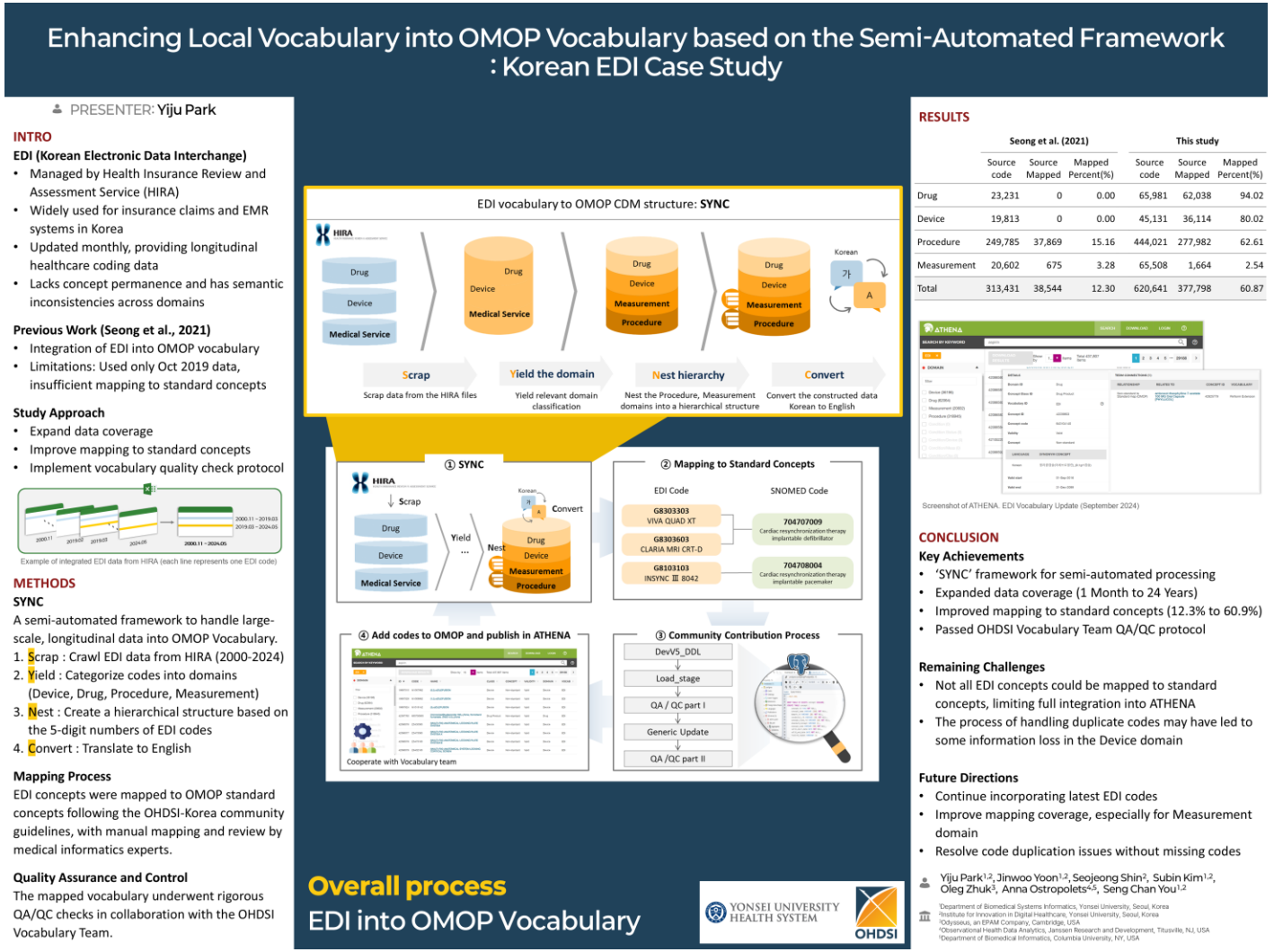
ohdsi.org/devcon2025

#OHDSISocialShowcase This Week

Monday

Enhancing Local Vocabulary into OMOP Vocabulary based on the Semi-Automated Framework: Korean EDI Case Study

(Yiju Park, Jinwoo Yoon, Seojeong Shin, Oleg Zhuk, Anna Ostropolets, Seng Chan You)

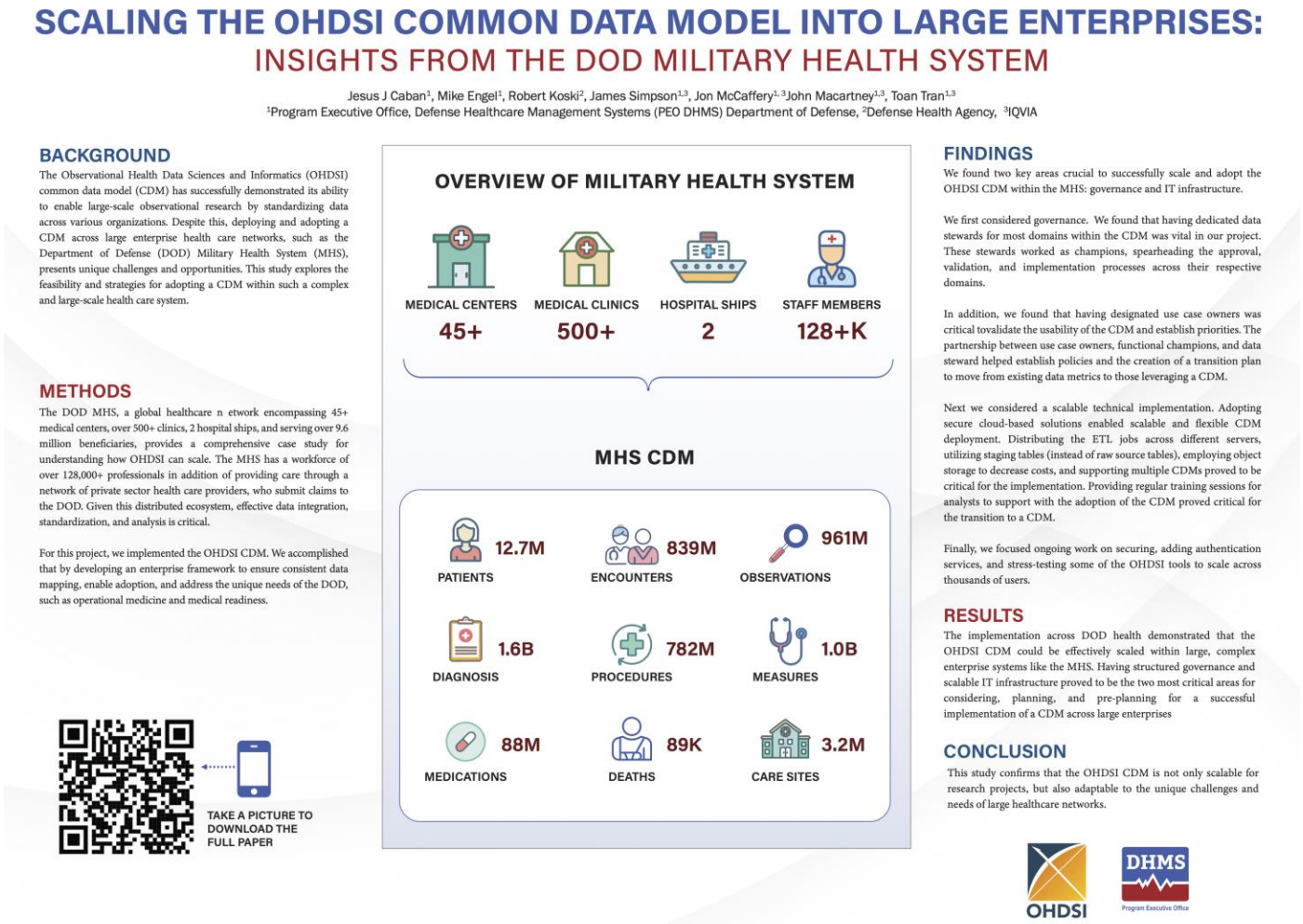


#OHDSISocialShowcase This Week

Tuesday

Scaling the OHDSI Common Data Model into Large Enterprises - Insights from the DoD Military Health System

(Jesus J Caban)



SCALING THE OHDSI COMMON DATA MODEL INTO LARGE ENTERPRISES:
INSIGHTS FROM THE DOD MILITARY HEALTH SYSTEM

Jesus J Caban[1], Mike Engel[1], Robert Koski[2], James Simpson[1,3], Jon McCaffery[1, 3]John Macartney[1,3], Toan Tran[1,3]
[1]Program Executive Office, Defense Healthcare Management Systems (PEO DHMS) Department of Defense, [2]Defense Health Agency, [3]IQVIA

BACKGROUND

The Observational Health Data Sciences and Informatics (OHDSI) common data model (CDM) has successfully demonstrated its ability to enable large-scale observational research by standardizing data across various organizations. Despite this, deploying and adopting a CDM across large enterprise health care networks, such as the Department of Defense (DOD) Military Health System (MHS), presents unique challenges and opportunities. This study explores the feasibility and strategies for adopting a CDM within such a complex and large-scale health care system.

METHODS

The DOD MHS, a global healthcare n etwork encompassing 45+ medical centers, over 500+ clinics, 2 hospital ships, and serving over 9.6 million beneficiaries, provides a comprehensive case study for understanding how OHDSI can scale. The MHS has a workforce of over 128,000+ professionals in addition of providing care through a network of private sector health care providers, who submit claims to the DOD. Given this distributed ecosystem, effective data integration, standardization, and analysis is critical.

For this project, we implemented the OHDSI CDM. We accomplished that by developing an enterprise framework to ensure consistent data mapping, enable adoption, and address the unique needs of the DOD, such as operational medicine and medical readiness.

TAKE A PICTURE TO DOWNLOAD THE FULL PAPER

OVERVIEW OF MILITARY HEALTH SYSTEM

MEDICAL CENTERS	MEDICAL CLINICS	HOSPITAL SHIPS	STAFF MEMBERS
45+	500+	2	128+K

MHS CDM

12.7M PATIENTS	839M ENCOUNTERS	961M OBSERVATIONS
1.6B DIAGNOSIS	782M PROCEDURES	1.0B MEASURES
88M MEDICATIONS	89K DEATHS	3.2M CARE SITES

FINDINGS

We found two key areas crucial to successfully scale and adopt the OHDSI CDM within the MHS: governance and IT infrastructure.

We first considered governance. We found that having dedicated data stewards for most domains within the CDM was vital in our project. These stewards worked as champions, spearheading the approval, validation, and implementation processes across their respective domains.

In addition, we found that having designated use case owners was critical tovalidate the usability of the CDM and establish priorities. The partnership between use case owners, functional champions, and data steward helped establish policies and the creation of a transition plan to move from existing data metrics to those leveraging a CDM.

Next we considered a scalable technical implementation. Adopting secure cloud-based solutions enabled scalable and flexible CDM deployment. Distributing the ETL jobs across different servers, utilizing staging tables (instead of raw source tables), employing object storage to decrease costs, and supporting multiple CDMs proved to be critical for the implementation. Providing regular training sessions for analysts to support with the adoption of the CDM proved critical for the transition to a CDM.

Finally, we focused ongoing work on securing, adding authentication services, and stress-testing some of the OHDSI tools to scale across thousands of users.

RESULTS

The implementation across DOD health demonstrated that the OHDSI CDM could be effectively scaled within large, complex enterprise systems like the MHS. Having structured governance and scalable IT infrastructure proved to be the two most critical areas for considering, planning, and pre-planning for a successful implementation of a CDM across large enterprises

CONCLUSION

This study confirms that the OHDSI CDM is not only scalable for research projects, but also adaptable to the unique challenges and needs of large healthcare networks.

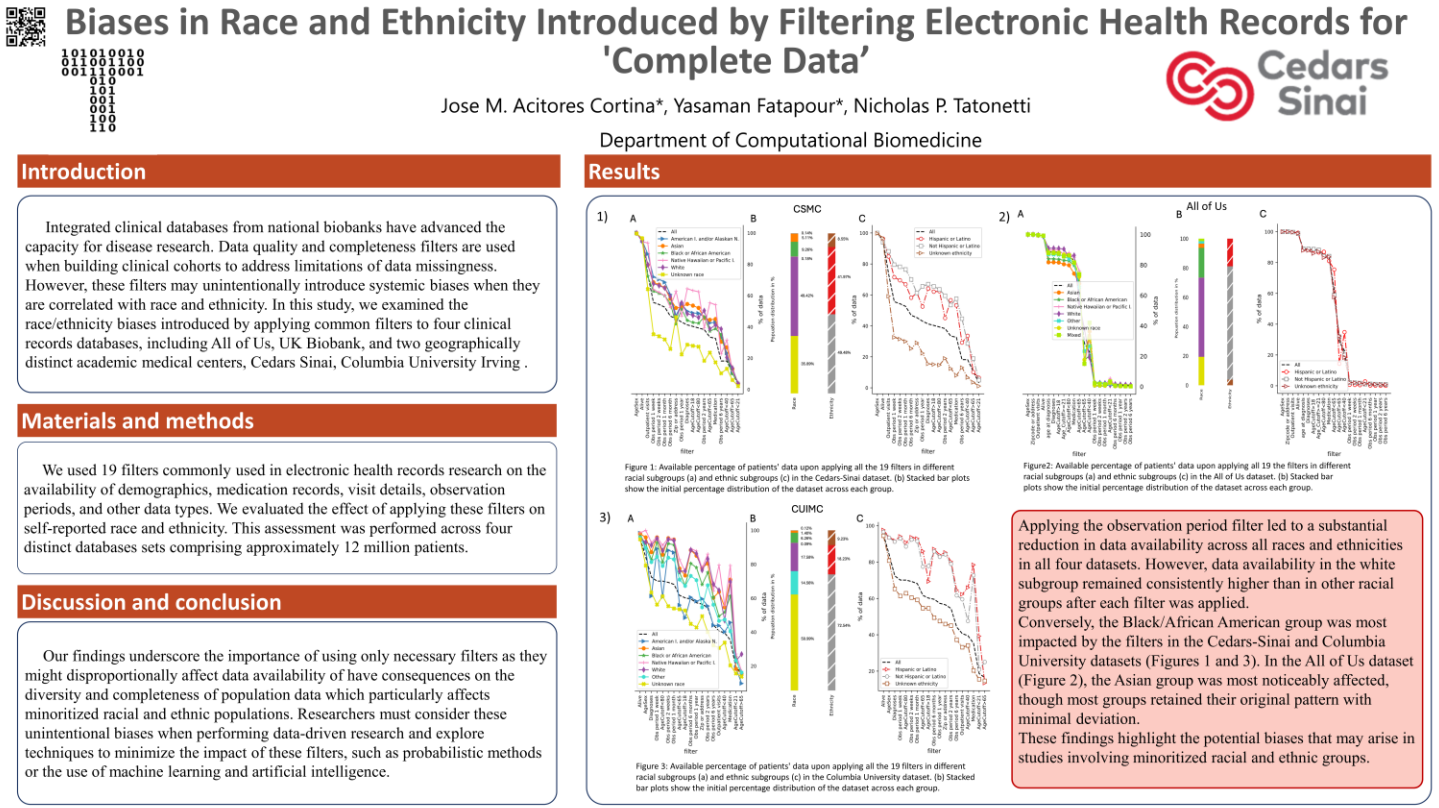
OHDSI DHMS Program Executive Office

#OHDSISocialShowcase This Week

Wednesday

Race and ethnicity biases introduced by filtering electronic health records for patients with “complete data”

(Yasaman Fatapour, Jose Acitores Cortina, Nicholas P Tatonetti)



Biases in Race and Ethnicity Introduced by Filtering Electronic Health Records for 'Complete Data'

Jose M. Acitores Cortina*, Yasaman Fatapour*, Nicholas P. Tatonetti

Department of Computational Biomedicine

Cedars Sinai

Introduction

Integrated clinical databases from national biobanks have advanced the capacity for disease research. Data quality and completeness filters are used when building clinical cohorts to address limitations of data missingness. However, these filters may unintentionally introduce systemic biases when they are correlated with race and ethnicity. In this study, we examined the race/ethnicity biases introduced by applying common filters to four clinical records databases, including All of Us, UK Biobank, and two geographically distinct academic medical centers, Cedars Sinai, Columbia University Irving .

Materials and methods

We used 19 filters commonly used in electronic health records research on the availability of demographics, medication records, visit details, observation periods, and other data types. We evaluated the effect of applying these filters on self-reported race and ethnicity. This assessment was performed across four distinct databases sets comprising approximately 12 million patients.

Discussion and conclusion

Our findings underscore the importance of using only necessary filters as they might disproportionally affect data availability of have consequences on the diversity and completeness of population data which particularly affects minoritized racial and ethnic populations. Researchers must consider these unintentional biases when performing data-driven research and explore techniques to minimize the impact of these filters, such as probabilistic methods or the use of machine learning and artificial intelligence.

Results

1) CSMC

Figure 1: Available percentage of patients' data upon applying all the 19 filters in different racial subgroups (a) and ethnic subgroups (c) in the Cedars-Sinai dataset. (b) Stacked bar plots show the initial percentage distribution of the dataset across each group.

2) All of Us

Figure2: Available percentage of patients' data upon applying all 19 the filters in different racial subgroups (a) and ethnic subgroups (c) in the All of Us dataset. (b) Stacked bar plots show the initial percentage distribution of the dataset across each group.

3) CUIMC

Figure 3: Available percentage of patients' data upon applying all the 19 filters in different racial subgroups (a) and ethnic subgroups (c) in the Columbia University dataset. (b) Stacked bar plots show the initial percentage distribution of the dataset across each group.

Applying the observation period filter led to a substantial reduction in data availability across all races and ethnicities in all four datasets. However, data availability in the white subgroup remained consistently higher than in other racial groups after each filter was applied.
Conversely, the Black/African American group was most impacted by the filters in the Cedars-Sinai and Columbia University datasets (Figures 1 and 3). In the All of Us dataset (Figure 2), the Asian group was most noticeably affected, though most groups retained their original pattern with minimal deviation.
These findings highlight the potential biases that may arise in studies involving minoritized racial and ethnic groups.

#OHDSISocialShowcase This Week

Thursday

Implementation and Evaluation of the Prevalence of Low-Value Care Procedures Using the OHDSI Network: A Case Study of Early Peripheral Vascular Interventions for Claudication

(Chen Dun, Haeun Lee, Harold Lehmann, Paul Nagy, Caitlin Hicks)

Implementation and Evaluation of the Prevalence of Low-Value Care Procedures Using the OHDSI Network

Subtitle: A Case Study of Early Peripheral Vascular Interventions for Claudication

PRESENTER: **Chen Dun**

INTRODUCTION:

- Differences in healthcare systems, reimbursement structures, and healthcare policies across countries may lead to various clinical practice patterns and outcomes,
- Data from the U.S. has recently raised concerns about the overuse and potential harm associated with early PVI within 6 months of an initial diagnosis of claudication.
- It remains unclear whether similar patterns are prevalent in other countries.

- Aim to conduct a global network study to assess and evaluate the prevalence of early PVI for claudication.

METHODS

- EHR data from Johns Hopkins Medicine – OMOP CDM (version 5.4) – to identify patients with a new diagnosis of claudication between 2018 and 2022.
- ICD-10-CM and CPT codes mapped to SNOMED CT standard terminologies as concept sets

Call for Collaboration:

The **OMOP CDM** has proven **effective** for assessing **low-value care** procedures in vascular surgery

CPT4	SNOMED Concept Name	SNOMED Concept ID	Descendant Name
Femoropopliteal PVI (37224, 37225, 37226, 37227)	Revascularization of lower limb (4049828)	4052406	Revascularization of whole leg
	Transluminal angioplasty (40489873)	46271002	Percutaneous transluminal arterial angioplasty with insertion of stent
		4289770	Intraoperative transluminal angioplasty of iliac artery
		4184298	Percutaneous transluminal angioplasty
		4196976	Intraoperative transluminal femoral-popliteal angioplasty
		4239323	Intraoperative transluminal angioplasty of visceral artery
	Atherectomy (4284964)	1126206	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(ies), unilateral, with atherectomy, includes angioplasty within the same vessel, when performed with intravascular ultrasound (initial noncoronary vessel) during diagnosti...
		3190814	Angioplasty and atherectomy of femoral artery
		40756783	Atherectomy of other non-coronary vessel(s)
		4330921	Fluoroscopic angiography and atherectomy of artery with contrast
		4190630	Percutaneous atherectomy of artery
		4257823	Directional atherectomy
		4194238	Endarterectomy
		4106321	Radiofrequency endarterectomy
		4280522	Rotational atherectomy
		4297862	Atherectomy by laser
	Insertion of arterial stent (4051039)	3654286	Endovascular insertion of stent into artery of lower limb
		36714397	Fluoroscopy guided insertion of bioabsorbable arterial stent with contrast
		46271002	Percutaneous transluminal arterial angioplasty with insertion of stent
		46271897	Fluoroscopic angiography of artery of abdomen with contrast and insertion of stent
		45769209	Percutaneous transluminal insertion of peripheral stent into artery
		43530797	Fluoroscopic angiography of penile artery with contrast and insertion of stent
		4176449	Insertion of stent into ductus arteriosus
		4181610	Insertion of stent into femoral artery
		44790500	Percutaneous transluminal placement of peripheral stent in artery
		4303275	Fluoroscopic angiography of lower limb artery with contrast and insertion of stent
		4306749	Insertion of iliac artery stent
		4050289	Insertion of popliteal artery stent

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RESULTS:

- Characteristics of patients who underwent PVI for claudication, stratified by receipt of early vs. non-early PVI. Data from Johns Hopkins Hospital.

Patient Characteristics	Patients without an early PVI (N=5470)	Patients with an early PVI (N=16)
Age (years) Median (IQR)	73 (64, 84)	74 (60, 80)
≤64	1426 (26.07)	5 (31.25)
65-74	1633 (29.85)	4 (25.00)
75-84	1594 (29.14)	4 (25.00)
≥85	817 (14.94)	3 (18.75)
Male Sex	4153 (51.94)	7 (43.75)
Race		
White	3743 (68.43)	11 (68.75)
Black	1327 (24.26)	3 (18.75)
Other/unknown	400 (7.31)	2 (13.50)
Comorbidities		
ESKD	4148 (75.83)	1 (6.25)
Diabetes	1313 (24.00)	5 (31.25)
Hypertension	864 (15.80)	14 (87.50)
Smoking	27 (0.49)	0
Conversion to CLTI (N, %)	1336 (24.42)	7 (43.75)

CONCLUSIONS:

- We successfully demonstrated the potentials of using OMOP CDM to evaluate low-value care procedures in vascular surgery within a standardized dataset. Analysis packages will be exported and shared with external partners overseas to replicate the cohorts in their databases to allow for comparative analysis across different institutions and countries.

Chen Dun, Haeun Lee, Harold P. Lehmann, Paul G. Nagy, Caitlin W. Hicks

JOHNS HOPKINS SCHOOL of MEDICINE

OHDSI

#OHDSISocialShowcase This Week

Friday

Accelerating FHIR to OMOP conversions on IQVIA Health Data Transformation Platform

(Jonathon Cook, Filip Rzyszkiewicz)

Accelerating FHIR to OMOP Conversions with IQVIA Health Data Transformation Platform

PRESENTER: **Jonathon Cook, Filip Rzyszkiewicz**

INTRO:
FHIR has increasingly become the adopted interoperability standard in healthcare. Enabling FHIR and OMOP interoperability benefits organizations as follows:

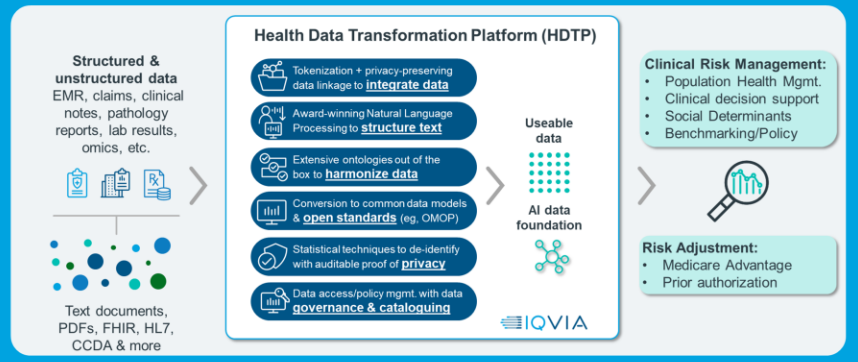
- Enable research grade analytics from OHDSI on top of easily exchanged healthcare data
- Reduce implementation costs and increase Extract, Transform and Load (ETL) speed and quality with FHIR server to OMOP database connections .
- Deliver open research implementations using the OMOP CDM and OHDSI toolset while still supporting FHIR conformance across the organization.

METHODS
The process we followed:

1) ATHENA references loaded into a Snowflake database.
2) FHIR resources loaded into staging database then flattened using SQL scripts.
3) From the flattened file, IQVIA OMOP accelerators were applied in a configuration driven approach. All the facts were standardized into a single Event table, from which pre-existing logic was applied to distribute them to the relevant OMOP target tables.
4) In parallel unmapped concepts are processed via Bridging Tool and mapped to the OMOP standard concepts.
5) Applied IQVIA custom quality checks via Insights Builder to confirm the transformation had processed as intended and to review the quality of the transformed data.

IQVIA Health Data Transformation Platform makes **FHIR to OMOP** easier by:

- Using template scripts to **automate and reduce development**
- Standardising to an Event table to **simplify and maximise reuse of code**
- Using a mapping tool built to do **custom mappings without code**
- Algorithmic mapping to **minimise domain expertise** requirement on users



Take a picture to **download** the **full paper**

RESULTS
IQVIA's Health Data Transformation Platform successfully converted the synthetic FHIR data to OMOP. The results of the conversions were validated in IQVIA Quality Dashboards and OMOP Data Quality Dashboard.

Health Data Transformation Platform	Legacy Process
19 minutes average run time	189 minutes average run time

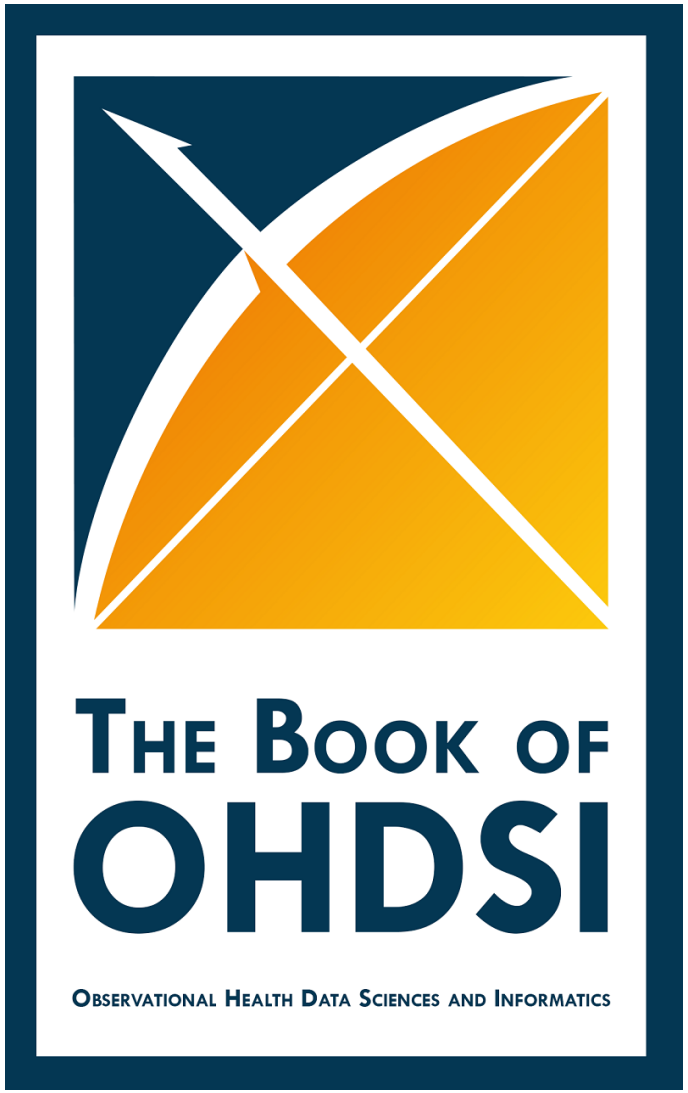
Scenarios covered by algorithmic mapping

- **Scenario 1** – exact code to code
- **Scenario 2** – no code, exact description
- **Scenario 3** – free text with code pulled from text
- **Scenario 4**- similar description or code found with fuzzy search

IQVIA

OHDSI

Book of OHDSI Update



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?

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-2025