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OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

オデッセイ  
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イブニングカンファレンス(第58回)

2024.9.30



# 本日の内容

- OMOP変換事例

  - 「国がん研究センター東病院でのOMOP変換と課題について」

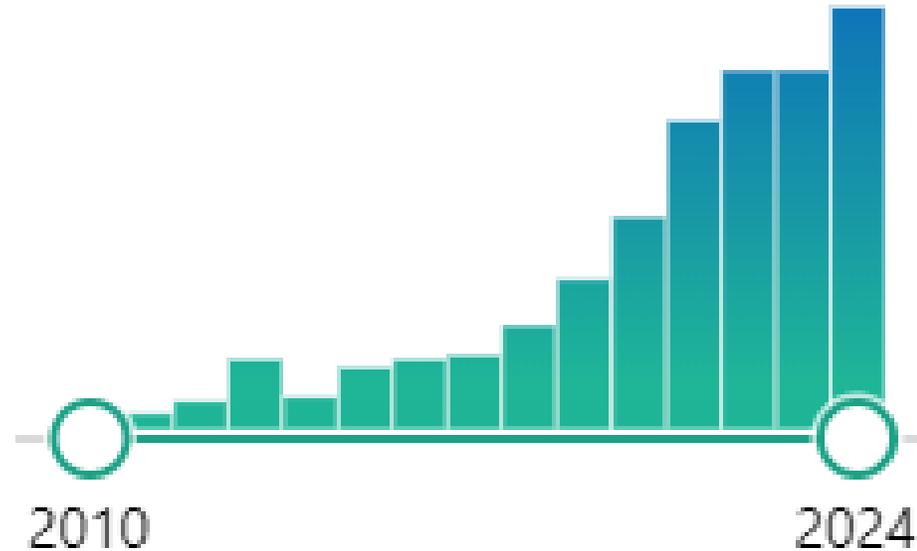
- OHDSI 論文の紹介

- OHDSI global/APAC から



# OHDSI関連論文

- Pubmedで“OHDSI or OMOP”を検索



pubmed.ncbi.nlm.nih.govにて作成

- 全期間累計：8月472本→9月479本
- 検索に漏れているものがあるため、実際は累計600本を超えている。
- 年間では約100本ペース。



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# データベースディスカバリを支援するチャットボットプラットフォームの提案

› Stud Health Technol Inform. 2024 Aug 22:316:1689-1693. doi: 10.3233/SHTI240748.

## A Chatbot-Like Platform to Enhance the Discovery of OMOP CDM Databases

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# データベースディスカバリを支援するチャットボットプラットフォームの提案

## Abstract:

Multicentre studies become possible with the current strategies to solve the interoperability problems between databases. With the great adoption of those strategies, new problems regarding data discovery were raised. Some were solved using database catalogues and graphical dashboards for data analysis and comparison. However, when these communities grow, these strategies become obsolete. In this work, we addressed those challenges by proposing a platform with a chatbot-like mechanism to help medical researchers identify databases of interest. The tool was developed using the metadata extracted from OMOP CDM databases.

**Keywords:** biomedical data discovery, data sharing, EHDEN Portal, OMOP CDM

## 要約

データベース間の相互運用性の問題を解決するための現在の戦略により、多施設研究が可能となった。これらの戦略が広く採用されるにつれ、データディスカバリに関する新たな問題が提起された。一部は、データ分析と比較のためのデータベースカタログとグラフィカルなダッシュボードを使用することで解決された。しかし、これらのコミュニティが成長すると、これらの戦略は時代遅れとなる。本研究では、医療研究者が関心のあるデータベースを特定するのを支援するチャットボットのようなメカニズムを備えたプラットフォームを提案することで、これらの課題に取り組んだ。このツールはOMOP CDMデータベースから抽出されたメタデータを利用して開発された。

**キーワード:** 生物医学データディスカバリ、データ共有、EHDENポータル、OMOP CDM

# EAVデータモデルをOMOP CDMに変換する

› Stud Health Technol Inform. 2024 Aug 22:316:356-357. doi: 10.3233/SHTI240419.

## Converting Entity-Attribute-Value Data Sources to OMOP's CDM: Lessons Learned

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PMID: 39176749 DOI: 10.3233/SHTI240419

## EAVデータモデルをOMOP CDMに変換する

### Abstract:

Clinical data repositories often use entity-attribute-value (EAV) data models. To be valuable for secondary use, these health data can be transformed to the Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM). The present paper describes the lessons learned from such an endeavour based on the concept of registering transformation functions on source data elements. We further provide future work directions for follow-up projects.

**Keywords:** CDM; Common Data Model; EAV; Entity Attribute Value; Health Information Interoperability; OMOP; RDA.

### 要旨:

臨床データリポジトリでは、エンティティ・アトリビュート・バリュー(EAV)データモデルがよく使用される。これらの医療データを二次利用に役立てるには、Observational Medical Outcomes Partnership(OMOP)共通データモデル(CDM)に変換する必要がある。本稿では、ソースデータ要素に変換関数を登録するという概念に基づく、このような取り組みから得られた教訓について説明する。さらに、今後のプロジェクトの方向性についても述べる。

**キーワード :** CDM、共通データモデル、EAV、実体-属性-値、医療情報相互運用性、OMOP、RDA。

## DATOS-CAT: OMOP-Common Data Model for the Standardization, Integration and Analysis of Population-Based Biomedical Data in Catalonia

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## カタルーニャの人口ベースのOMOP

### Abstract:

Transforming the population based biomedical cohort into the Common Data Model (OMOP-CDM) empowers researchers to access direct sources of information, enabling a deeper understanding of how genetic profiles relate to clinical outcomes and providing new knowledge that can significantly influence health care practices around the world.

**Keywords:** DATOS-CAT; FAIR principles; GCAT; OMOP-CDM.

### 要旨:

人口ベースの生物医学コホートを共通データモデル(OMOP-CDM)に変換することで、研究者は直接的な情報源にアクセスできるようになり、遺伝的プロファイルが臨床結果とどのように関連しているかをより深く理解できるようになる。また、世界中の医療行為に大きな影響を与える可能性がある新たな知識を提供できる。

**キーワード:**DATOS-CAT、FAIR原則、GCAT、OMOP-CDM。

## 患者が作成した健康データからエビデンスに基づく勧告へ

> [Stud Health Technol Inform.](#) 2024 Aug 22:316:230-234. doi: 10.3233/SHTI240387.

# Improving Healthcare Quality with a LHS: From Patient-Generated Health Data to Evidence-Based Recommendations

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PMID: 39176716 DOI: [10.3233/SHTI240387](#)

## 患者が作成した健康データからエビデンスに基づく勧告へ

### Abstract

One approach to enriching the Learning Health System (LHS) is leveraging vital signs and data from wearable technologies. Blood oxygen, heart rate, respiration rates, and other data collected by wearables (like sleep and exercise patterns) can be used to monitor and predict health conditions. This data is already being collected and could be used to improve healthcare in several ways. Our approach will be health data interoperability with HL7 FHIR (for data exchange between different systems), openEHR (to store researchable data separated from software but connected to ontologies, external terminologies and code sets) and maintain the semantics of data. OpenEHR is a standard that has an important role in modelling processes and clinical decisions. The six pillars of Lifestyle Medicine can be a first attempt to change how patients see their daily decisions, affecting the mid to long-term evolution of their health. Our objective is to develop the first stage of the LHS based on a co-produced personal health recording (CoPHR) built on top of a local LLM that interoperates health data through HL7 FHIR, openEHR, OHDSI and terminologies that can ingest external evidence and produces clinical and personal decision support and, when combined with many other patients, can produce or confirm evidence.

**Keywords:** HL7 FHIR; Health data interoperability; Learning Health System; clinical decision; openEHR; patient-generated health data; personal health recording.

### 要約:

学習型医療システム(LHS)を強化する一つのアプローチは、ウェアラブル技術から得られるバイタルサインやデータを活用することである。ウェアラブル機器(睡眠や運動パターンなど)によって収集された血中酸素濃度、心拍数、呼吸数などのデータは、健康状態のモニタリングや予測に利用することができる。このデータはすでに収集されており、いくつかの方法で医療の改善に役立てることができる。私たちのアプローチは、HL7 FHIR(異なるシステム間のデータ交換用)、openEHR(ソフトウェアから分離され、オントロジー、外部用語集、コードセットに接続された検索可能なデータを保存する)との健康データの相互運用性、およびデータのセマンティクスの維持である。OpenEHRは、プロセスや臨床判断のモデリングにおいて重要な役割を果たす標準規格である。ライフスタイル・メディシンの6つの柱は、患者が日々の意思決定をどのように捉えるかを変えるための最初の試みとなり、患者の健康状態の中長期的な進化に影響を与える可能性がある。私たちの目的は、ローカルLLM上に構築され、HL7 FHIR、openEHR、OHDSI、外部エビデンスを取り込み、臨床および個人向け意思決定支援を行い、他の多くの患者と組み合わせることでエビデンスの生成や確認を行うことができる相互運用可能な健康データ、用語集、CoPHR(co-produced personal health recording)を基盤としたLHSの第一段階を開発することである。

**キーワード:**HL7 FHIR、医療データ相互運用性、学習する医療システム、臨床判断、openEHR、患者生成医療データ、パーソナルヘルスレコーディング



# OMOP-CDMとFHIR for PGHDとのデータ連携を促進するFHIRサーバーの開発

› [Stud Health Technol Inform.](#) 2024 Aug 22:316:157-158. doi: 10.3233/SHTI240367.

## OMOP-on-FHIR: A FHIR Server Development to Facilitate Data Interaction with the OMOP-CDM and FHIR for PGHD

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# OMOP-CDMとFHIR for PGHDとのデータ連携を促進するFHIRサーバーの開発

## Abstract:

This paper introduces the concept of the implementation of a FHIR server for bidirectional data exchange with the OMOP-CDM. Leveraging FHIR as a metamodel, the implementation aims to promote a more interconnected and patient-centric healthcare ecosystem. The methodology involves utilizing the Java HAPI FHIR API for server architecture and validating the solution through patient data exchange with a FHIR reference implementation server. This initiative signifies a significant advancement in healthcare data interoperability, promising improved patient care quality and clinical research vigor.

**Keywords:** FHIR; FHIR-API; OMOP-CDM; OMOP-on-FHIR.HAPI-FHIR Server.

## 要約:

本稿では、OMOP-CDMとの双方向データ交換を可能にするFHIRサーバーの実装の概念を紹介する。FHIRをメタモデルとして活用し、より相互接続された患者中心のヘルスケアエコシステムを促進することを目的としている。その手法は、サーバーアーキテクチャにJava HAPI FHIR APIを利用し、FHIRリファレンス実装サーバーとの患者データ交換を通じてソリューションを検証することを含む。この取り組みは、医療データ相互運用性の大幅な進歩を意味し、患者ケアの質の向上と臨床研究の活性化が期待される。

**キーワード:** FHIR、 FHIR-API、 OMOP-CDM、 OMOP-on-FHIR.HAPI-FHIR Server。

# カテゴリー理論推論をOMOP-CDMオントロジーモデルに統合する

> [Stud Health Technol Inform.](#) 2024 Aug 22;316:1427-1431. doi: 10.3233/SHTI240680.

## Enhancing Healthcare Informatics: Integrating Category Theory Reasoning into OMOP-CDM Ontology Model

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## カテゴリー理論推論をOMOP-CDMオントロジーモデルに統合する

### Abstract:

The task of managing diverse electronic health records requires the consolidation of data from different sources to facilitate clinical research and decision-making support, with the emergence of the Observational Medical Outcomes Partnership - Common Data Model (OMOP-CDM) as a standard relational database schema for structuring health records from different sources. Working with ontologies is strongly associated with reasoners. Implementing them over expansive and intricate Ontologies can pose computational challenges, potentially resulting in slow performance. In this paper, we propose the implementation of a new reasoner based on categorical logic over a translation of OMOP-CDM into an ontology model. This enables enhancements to the efficiency and scalability of implementing such models.

**Keywords:** OMOP-CDM; Ontologies; Reasoning.

### 要約:

多様な電子カルテを管理する作業では、臨床研究や意思決定支援を促進するために、異なるソースからのデータを統合する必要がある。Observational Medical Outcomes Partnership - Common Data Model (OMOP-CDM) が、異なるソースからの健康記録を構造化するための標準的なリレーショナルデータベーススキーマとして登場した。オントロジーの使用は、推論エンジンと密接に関連している。広範かつ複雑なオントロジーに実装すると、計算上の課題が生じ、パフォーマンスが低下する可能性がある。本稿では、OMOP-CDMをオントロジーモデルに変換した上で、カテゴリーカル・ロジックに基づく新しい推論器の実装を提案する。これにより、このようなモデルの実装の効率性と拡張性を向上させることができる。

**キーワード:**OMOP-CDM、オントロジー、推論

# がん領域でハイパーオロジーを用いた構文論的相互運用性から意味論的相互運用性へ

> [Stud Health Technol Inform.](#) 2024 Aug 22;316:1385-1389. doi: 10.3233/SHTI240670.

## From Syntactic to Semantic Interoperability Using a Hyperontology in the Oncology Domain

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PMID: 39176639 DOI: [10.3233/SHTI240670](#)

# がん領域でハイパーオロジーを用いた構文論的相互運用性から意味論的相互運用性へ

## Abstract:

Interoperability is crucial to overcoming various challenges of data integration in the healthcare domain. While OMOP and FHIR data standards handle syntactic heterogeneity among heterogeneous data sources, ontologies support semantic interoperability to overcome the complexity and disparity of healthcare data. This study proposes an ontological approach in the context of the EUCAIM project to support semantic interoperability among distributed big data repositories that have applied heterogeneous cancer image data models using a semantically well-founded Hyperontology for the oncology domain.

**Keywords:** Cancer image data; FHIR; Heterogeneous data models; Hyperontology; OMOP; Oncology; Semantic interoperability; Syntactic interoperability

## 要旨:

医療分野におけるデータ統合のさまざまな課題を克服するには、相互運用性が不可欠である。OMOPとFHIRのデータ標準は、異種データソース間の構文の不均一性を処理する一方、オントロジーは医療データの複雑性と不均一性を克服するための意味的な相互運用性をサポートする。本研究では、がん領域における意味的に十分に確立されたハイパーオントロジーを使用して、異種のがん画像データモデルを適用した分散型ビッグデータリポジトリ間の意味的相互運用性をサポートする、EUCAIMプロジェクトの文脈におけるオントロジー的アプローチを提案する。

**キーワード:**がん画像データ、FHIR、異種データモデル、ハイパーオントロジー、OMOP、腫瘍学、意味的相互運用性、構文相互運用性



# OMOP-CDMをRDFにマッピング : RWDをセマンティック・ウェブの領域にもたらす

› Stud Health Technol Inform. 2024 Aug 22:316:1406-1410. doi: 10.3233/SHTI240674.

## Mapping OMOP-CDM to RDF: Bringing Real-World-Data to the Semantic Web Realm

Achilleas Chytas <sup>1 2</sup>, Nick Bassileiades <sup>2</sup>, Pantelis Natsiavas <sup>1</sup>

Affiliations – collapse

### Affiliations

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PMID: 39176643 DOI: [10.3233/SHTI240674](https://doi.org/10.3233/SHTI240674)

# OMOP-CDMをRDFにマッピング : RWDをセマンティック・ウェブの領域にもたらす

## Abstract

Real-world data (RWD) (i.e., data from Electronic Healthcare Records - EHRs, ePrescription systems, patient registries, etc.) gain increasing attention as they could support observational studies on a large scale. OHDSI is one of the most prominent initiatives regarding the harmonization of RWD and the development of relevant tools via the use of a common data model, OMOP-CDM. OMOP-CDM is a crucial step towards syntactic and semantic data interoperability. Still, OMOP-CDM is based on a typical relational database format, and thus, the vision of a fully connected semantically enriched model is not fully realized. This work presents an open-source effort to map the OMOP-CDM model and the data it hosts, to an ontological model using RDF to support the FAIRness of RWD and their interlinking with Linked Open Data (LOD) towards the vision of the Semantic Web.

**Keywords:** Knowledge Graphs; OMOP-CDM; Real-World Data; Semantic Web.

## 要約 :

リアルワールドデータ(RWD)(すなわち、電子カルテ(EHR)、電子処方箋システム、患者レジストリなどからのデータ)は、大規模な観察研究をサポートできる可能性があるため、注目が高まっている。OHDSIは、共通データモデルOMOP-CDMの使用を通じてRWDの標準化と関連ツールの開発を目指す最も著名なイニシアティブの1つである。OMOP-CDMは、構文および意味のデータ相互運用性に向けての重要なステップである。しかし、OMOP-CDMは典型的なリレーショナルデータベース形式に基づいているため、完全に接続され、意味的に強化されたモデルというビジョンは完全に実現されているわけではない。本稿では、OMOP-CDMモデルと、そのモデルがホストするデータを、RDFを使用したオントロジーモデルにマッピングするオープンソースの取り組みを紹介する。この取り組みは、RWDのFAIRnessとLinked Open Data(LOD)との相互リンクをサポートし、セマンティックウェブのビジョン実現を目指すものである。

**キーワード:** 知識グラフ、OMOP-CDM、リアルワールドデータ、セマンティックウェブ。

## 集中治療における腎代替療法離脱を正確に検出する方法

› Stud Health Technol Inform. 2024 Aug 22;316:1584-1588. doi: 10.3233/SHTI240724.

### How to Accurately Detect Renal Replacement Therapy Weaning in Intensive Care: Data Quality and Standardization Considerations for the OMOP Common Data Model

Benjamin Popoff<sup>1 2</sup>, Boris Delange<sup>1</sup>, Julien Kallout<sup>2</sup>, Marc Cuggia<sup>1</sup>, Thomas Clavier<sup>2</sup>,  
Guillaume Bouzille<sup>1</sup>

Affiliations – collapse

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PMID: 39176511 DOI: [10.3233/SHTI240724](https://doi.org/10.3233/SHTI240724)

## 集中治療における腎代替療法離脱を正確に検出する方法

### Abstract:

This study assesses the effectiveness of the Observational Medical Outcomes Partnership common data model (OMOP CDM) in standardising Continuous Renal Replacement Therapy (CRRT) data from intensive care units (ICU) of two French university hospitals. Our objective was to extract and standardise data from various sources, enabling the development of predictive models for CRRT weaning that are agnostic to the data's origin. Data for 1,696 ICU stays from the two data sources were extracted, transformed, and loaded into the OMOP format after semantic alignment of 46 CRRT standard concepts. Although the OMOP CDM demonstrated potential in harmonising CRRT data, we encountered challenges related to data variability and the lack of standard concepts. Despite these challenges, our study supports the promise of the OMOP CDM for ICU data standardization, suggesting that further refinement and adaptation could significantly improve clinical decision making and patient outcomes in critical care settings.

**Keywords:** OMOP; common data model; data standardisation; intensive care unit; renal replacement therapy.

### 要約:

本研究では、フランスの2つの大学病院の集中治療室(ICU)における持続的腎代替療法(CRRT)データの標準化における、Observational Medical Outcomes Partnership 共通データモデル(OMOP CDM)の有効性を評価する。さまざまなソースからデータを抽出および標準化し、データの由来に関係なくCRRT離脱の予測モデルを開発することを目的とした。2つのデータソースから1,696件のICU滞在に関するデータを抽出し、変換し、46のCRRT標準概念の意味的整合性を図った上でOMOP形式に読み込んだ。OMOP CDMはCRRTデータの標準化に潜在的な可能性を示したが、データのばらつきや標準概念の欠如に関する課題に直面した。しかし、これらの課題にもかかわらず、本研究は、OMOP CDMがICUデータの標準化に有望であることを裏付けている。さらに改良と適応を進めることで、集中治療の現場における臨床的意思決定と患者の転帰を大幅に改善できる可能性があることを示唆している。

**キーワード:**OMOP;共通データモデル;データ標準化;集中治療室;腎代替療法

## 集中治療の質指標ダッシュボード

› Stud Health Technol Inform. 2024 Aug 22:316:1605-1606. doi: 10.3233/SHTI240730.

## Intensive Care Quality Indicators Dashboard Using Observational Medical Outcomes Partnership Common Data Model

Boris Delange<sup>1 2</sup>, Guillaume Bouzille<sup>1</sup>, Benjamin Popoff<sup>1</sup>, Morgane Pierre-Jean<sup>1</sup>, Adel Maamar<sup>2</sup>, Marc Cuggia<sup>1</sup>

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PMID: 39176517 DOI: 10.3233/SHTI240730



## 集中治療の質指標ダッシュボード

### Abstract:

This paper presents the development of a visualization dashboard for quality indicators in intensive care units (ICUs), using the Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM). The dashboard enables the user to visualize quality indicator data using histograms, pie charts and tables. Our project uses the OMOP CDM, ensuring a seamless implementation of our dashboard across various hospitals. Future directions for our research include expanding the dashboard to incorporate additional quality indicators and evaluating clinicians' feedback on its effectiveness.

**Keywords:** Intensive care unit; dashboard; data visualization; quality indicators.

### 要約:

本論文では、集中治療室(ICU)における品質指標の可視化ダッシュボードの開発について、Observational Medical Outcomes Partnership(OMOP)の共通データモデル(CDM)を使用して紹介する。このダッシュボードは、ヒストグラム、円グラフ、表を使用して品質指標のデータを可視化する。本プロジェクトではOMOP CDMを使用しており、さまざまな病院でダッシュボードをシームレスに実装できる。今後の研究の方向性としては、ダッシュボードを拡張してさらなる品質指標を組み込むこと、およびその有効性に関する臨床医のフィードバックを評価することが挙げられる。

**キーワード:**集中治療室、ダッシュボード、データ可視化、品質指標。



# 9月の OHDSI Global

## ● Global Community Call テーマ

Aug. (Last week) Cancelled due to ISPE 2024

Sep. 3            The latest standardized vocabulary refresh from our Vocabulary Team.

Sep. 10          Updates from our Asia-Pacific (APAC) collaborators

Sep. 17          The Book of OHDSI. Published in 2019 ([book.ohdsi.org](http://book.ohdsi.org))

Sep. 24          Recent publications from the OHDSI community

## ● APAC Call テーマ

Sep. 5            Scientific Forum    Ongoing community-wide ETL project sprint 2 review

Sep.18          Scientific Forum    Ongoing community-wide ETL project sprint 3 review

Sep.19          Community Call

Community-wide ETL Project Status Update

Medical Imaging Workgroup

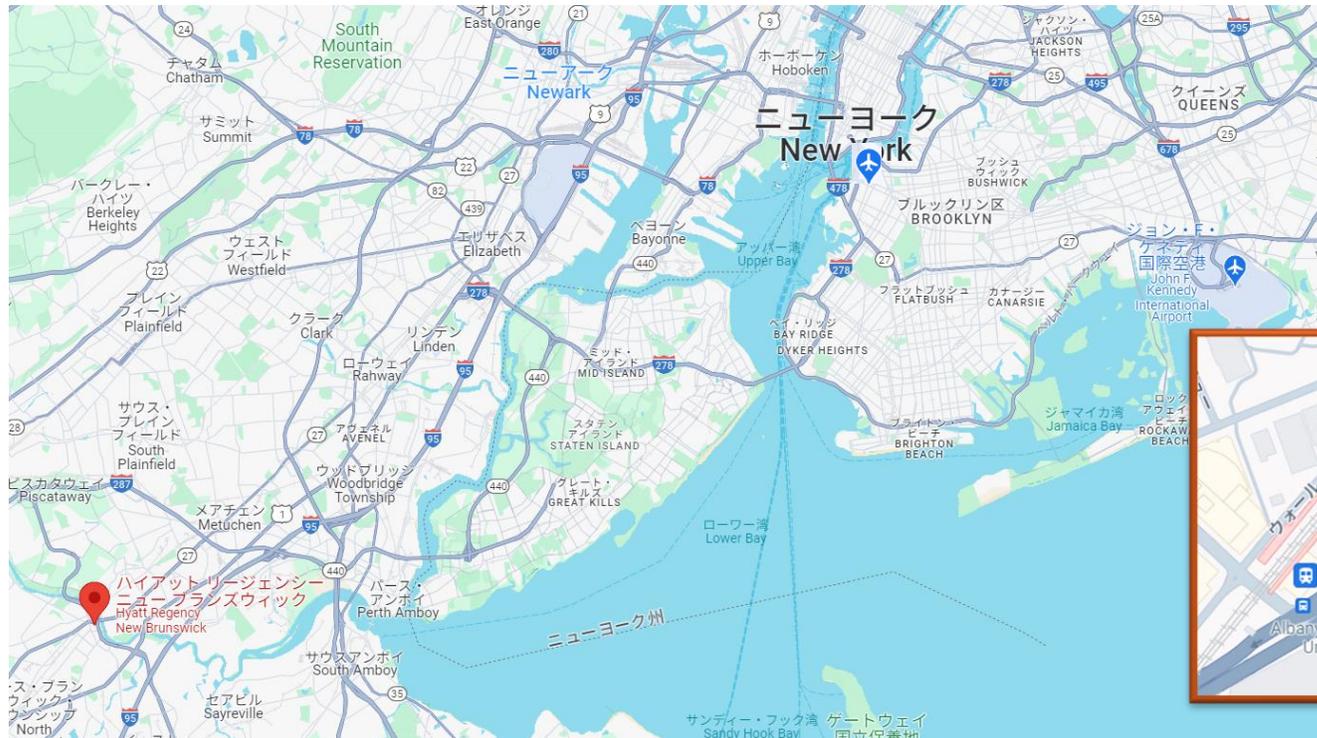


# 今後のOHDSI イベント

## 2024 OHDSI Global Symposium

Oct. 22-24 • New Brunswick, N.J. • Hyatt Regency Hotel

会期 10/22-24 @ニュージャージー



<https://ohdsi.org/ohdsi2024/>





# 今後のOHDSI イベント

Start	End	Tuesday, Oct. 22				Tutorials & Collaboration				
7:00	8:00	Registration/Lite Breakfast/Exhibits								
8:00	9:00	An Introduction to the Journey from Data to Evidence Using OHDSI								Collaboration Activities
9:00	10:00									
10:00	11:00									
11:00	12:00									
12:00	13:00	Buffet Lunch/Exhibits								
13:00	14:00	Conducting "Off-The-Shelf" Characterization Studies Using DARWIN EU Tools and the OMOP CDM	Developing & Evaluating Your Extract, Transform Load (ETL) Process to the OMOP Common Data Model	So, You Think You Want to Run an OHDSI Network Study?	Using the OHDSI Standardized Vocabularies for Research	Collaboration Activities				
14:00	15:00									
15:00	16:00									
16:00	17:00									

Start	End	THURSDAY, OCT. 24										WORKGROUP SCHEDULE									
7:00	8:00	Lite Breakfast and Exhibits																			
8:00	9:00	Africa Chapter	APAC Chapter	Perinatal & Reproductive Health	Patient-Level	HADES	Latin	Geographic	OMOP + FHIR	Oncology	Phenotype										
9:00	10:00	Collaborator Showcase																			
10:00	11:00	Natural Language Processing	Evidence Network Data Partners	Medical Devices	Prediction	Hackathon	America	Information System	Health Equity Combination	Workgroup	Evaluation										
11:00	12:00	Buffet Lunch and Exhibits																			
12:00	13:00																				
13:00	14:00																				
14:00	15:00	Psychiatry Workgroup	Surgery & Perioperative Medicine	Vaccine Vocabulary	Medical Imaging	HADES Hackathon	Dentistry Workgroup	Eyecare & Vision Research	Vocabularies Workgroup	Industry Workgroup	Atlas WebAPI										
15:00	16:00																				

# Agenda · Wednesday, Oct. 23

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


**LEGEND-T2DM Evidence Explorer**
[About](#) | [Explore results](#)

## Large-scale Evidence Generation and Evaluation across a Network of Database for Type 2 Diabetes Mellitus (LEGEND-T2DM)

PLEASE NOTE: All results are preliminary and subject to change

**Terms of Use:**

These results are being shared as part of OHDSI's open science community efforts to study the comparative cardiovascular effectiveness and safety of treatments for diabetes under the LEGEND-T2DM initiative. For the purpose of establishing collaborative research within the community, synthesis of the results and interpretation of the findings is underway and manuscripts are being prepared. All manuscripts must be reviewed and approved by all co-authors and data partner contributors prior to submission. Until final publication, all results are to be considered preliminary and subject to change, and may only be used under the terms of use of the respective data partner contributors.

**Objectives:**

- To determine, through systematic evaluation, the comparative effectiveness of traditionally second-line T2DM agents, SGLT2 inhibitors and GLP1 receptor agonists, with each other and with DPP4 inhibitors and sulfonylureas, for cardiovascular outcomes.
- To determine, through systematic evaluation, the comparative safety of traditionally second-line T2DM agents among patients with T2DM.
- To assess heterogeneity in effectiveness and safety of traditionally second-line T2DM agents among key patient subgroups. Using stratified patient cohorts, we will quantify differential effectiveness and safety across subgroups of patients based on age, sex, race, renal impairment, and baseline cardiovascular risk.

**Resources:**

- The study protocol is available [here](#)
- All analytic code is available on [GitHub](#)

**Cohort Diagnostics:**

- Class-vs-class exposure cohorts
- Outcome cohorts


**LEGEND-T2DM Evidence Explorer**
[About](#) | [Explore results](#)

Target	Analysis	Data source	HR	LB	UB	P	CalHR
DPP4i main	Unadjusted, on-treatment1	Meta-analysis0	1.28	1.12	1.47	0.00	1.03
	Unadjusted, on-treatment1	OptumEHR	1.46	1.15	1.89	0.00	1.24
	Unadjusted, on-treatment1	OptumDod	1.61	1.39	1.86	0.00	1.41
	Unadjusted, on-treatment1	MDCD	1.20	0.84	1.74	0.34	1.21
	Unadjusted, on-treatment1	MDCR	1.42	1.05	1.95	0.03	1.34
	Unadjusted, on-treatment1	CCAE	1.09	0.92	1.29	0.31	1.04
	Unadjusted, on-treatment1	US_Open_Claims	1.57	1.50	1.63	0.00	1.15
	Unadjusted, on-treatment1	SIDIAP	1.12	0.82	1.57	0.49	1.06
	Unadjusted, on-treatment1	UK_IMRD	NA	NA	NA	NA	NA
	Unadjusted, on-treatment1	VA-OMOP	0.76	0.55	1.07	0.11	0.73
	Unadjusted, on-treatment1	CUIMC	1.09	0.52	2.40	0.82	1.00
	Unadjusted, on-treatment1	Germany_DA	NA	NA	NA	NA	NA
	PS matching, on-treatment1	Meta-analysis0	1.14	1.12	1.16	0.00	1.12
	PS matching, on-treatment1	OptumEHR	1.10	0.78	1.57	0.60	1.05
	PS matching, on-treatment1	OptumDod	1.17	0.94	1.45	0.16	1.16

Showing 1 to 15 of 91 entries Previous 1

All results are preliminary and subject to change

[LEGEND-T2DM Evidence Explorer \(ohdsi.org\)](https://ohdsi.org/LEGEND-T2DM-Evidence-Explorer)

# OHDSI 2024 Tutorials



## Conducting 'Off-The-Shelf' Characterization Studies Using DARWIN EU® Tools and the OMOP CDM

The European Medicines Agency (EMA) and the European Medicines Regulatory Network established the Data Analysis and Real-World Interrogation Network (DARWIN EU®) coordination center to provide timely and reliable evidence on the use, safety and effectiveness of medicines for human use, including vaccines, from real world healthcare databases across the European Union (EU). The DARWIN EU team has established a data network standardized to the OMOP CDM and has developed a series of open-source analytics tools that run atop the OMOP CDM to conduct characterization studies for disease natural history, drug utilization, and treatment patterns.

In this tutorial, students will learn from leaders in the DARWIN EU team about how to execute characterization analyses against their OMOP CDM instance using DARWIN EU packages, including how to define inputs to the standardized analytics and how to interpret standardized results. Students will also learn how DARWIN EU tools relate to and connect with OHDSI's broader open-source analytics ecosystem.

### Faculty



**Edward Burn**  
University of Oxford



**Daniel Prieto-Alhambra**  
University of Oxford,  
Erasmus M.C.



**Marti Català Sabatè**  
University of Oxford



**Maarten van Kessel**  
Erasmus M.C.

## Using the OHDSI Standardized Vocabularies for Research

The OHDSI Standardized Vocabularies serves as a foundation to data standardization process within the OMOP CDM. It also can be tremendously useful tool for enabling the appropriate design of analyses that can be executed across a network of databases. A core component within essentially all analysis is the specification of phenotypes and associated code lists to represent exposures, outcomes, and other features.

In this tutorial, students will learn how to take advantage of the OHDSI standardized vocabularies as an analytic tool to support your research, including searching for relevant clinical concepts, navigating concept relationships, creating Conceptsets and understanding source codes that map within these expressions. Students will also learn where the OHDSI standardized vocabularies is used throughout OHDSI's standardized analytic tools.

### Faculty



**Anna Ostropolets**  
Janssen Research &  
Development



**Vlad Korsik**  
Odysseus Data Services,  
Inc.



**Azza Shoabi**  
Janssen Research &  
Development



**Polina Talapova**  
SciForce



**Oleg Zhuk**  
Odysseus Data Services,  
Inc.

## Developing and Evaluating Your Extract, Transform, Load (ETL) Process to the OMOP Common Data Model

The OMOP Common Data Model has become one of the most widely used international health data standards. Standardizing data to the OMOP CDM requires development of an extract, transform, load (ETL) procedure that converts source data into the CDM structure while observing the appropriate conventions and adhering to the OHDSI standardized vocabularies. The OHDSI community maintains and provides resources for the OMOP CDM standard, Standardized Vocabularies, and THEMIS ETL conventions, and has developed a series of open-source analytic tools to support both ETL development and evaluation (including WhiteRabbit, CDMInspection, and DataQualityDashboard).

In this tutorial, students will learn about the tools and practices developed by the OHDSI community to support the journey to establish and maintain an ETL to standardize your data to OMOP CDM and enable standardized evidence generation across a data network.

### Faculty



**Clair Blacketer**  
Janssen Research &  
Development



**Evannette Burrows**  
Janssen Research &  
Development



**Melanie Philofsky**  
Odysseus Data Services,  
Inc.



**Katy Sadowski**  
Boehringer Ingelheim

## An Introduction to the Journey from Data to Evidence Using OHDSI

The journey from data to evidence can be challenging alone but is greatly enabled through community collaboration. In this half-day tutorial, we will introduce newcomers to OHDSI. Specifically, about the tools, practices, and open-science approach to evidence generation that the OHDSI community has developed and evolved over the past decade.

Faculty will highlight the ways community individuals can participate as well as receive value from the community's outputs. The course will include topics such as open community data standards – including the OMOP Common Data Model and OHDSI Standardized Vocabularies, open-source analytic tools – including HADES and ATLAS, and the conduct of open network studies for methodological research & clinical applications.

### Faculty



**Daniel Prieto-Alhambra**  
University of Oxford,  
Erasmus M.C.



**Jenna Reps**  
Janssen Research &  
Development



**Mui Van Zandt**  
IQVIA



**Erica Voss**  
Janssen Research &  
Development



**Lingying Zhang**  
Washington University in  
St. Louis

## So, You Think You Want To Run an OHDSI Network Study?

Reliable real-world evidence generation requires appropriate analyses applied to data sources fit-for-purpose for the research question of interest. The OHDSI community has developed open-source standardized analytics tools that can be executed across a network of OMOP CDM databases and processes to facilitate collaborations between researchers throughout the evidence generation process from design through implementation and dissemination.

In this tutorial, students will learn about the steps along the journey to turn your research question into reliable evidence and how to lead an OHDSI network study.

### Faculty



**Yong Chen**  
University of  
Pennsylvania



**Ben Martin**  
Johns Hopkins  
University



**Nicole Pratt**  
University of South  
Australia



**Anthony Sena**  
Janssen Research &  
Development



**Andrew Williams**  
Tufts University



**Seng Chan You**  
Yonsei University  
Health System



# 今後のOHDSIイベント

<https://ohdsi.org/apac2024/>

## 2024 OHDSI APAC Symposium

December 4-8 • Marina Bay Sands & National University of Singapore (NUS)

会期 12/4-8 (Main 5-6) @シンガポール  
Main2日間はマリーナベイ・サンズで開催されます。





# 2024 OHDSI APAC Symposium

December 4-8 • Marina Bay Sands & National University of Singapore (NUS)

- **IMPORTANT DATES**

- Collaborator Showcase
  - Submissions deadline: October 6
  - Submissions review: October 7-24
  - Notification of acceptance: October 31
- Symposium
  - Tutorial: December 4 at NUS
  - Main conference: December 5-6 at Marina Bay Sands
  - Datathon: December 7-8 at NUS

- **REGISTRATION**

- Tutorial (December 4) and Main Conference (December 5-6): 488 SGD
- Datathon (December 7-8): 199 SGD / 150 SGD, early bird / 50 SGD, student



# 2024 OHDSI APAC Symposium

December 4-8 • Marina Bay Sands & National University of Singapore (NUS)

- **December 4 – Tutorial at NUS**

- Introduction of OHDSI/OMOP, ETL Process
- OHDSI Analytical Tools

- **December 5-6 – Main conference at Marina Bay Sands**

Dec. 5

- OHDSI for Real-World Evidence (RWE)
- OHDSI APAC Regional Chapter Updates
- OHDSI APAC Updates
- Community-Wide ETL Project: Recap and Lessons Learned

- Large Language Model and OHDSI
- HL7 Singapore Chapter and OHDSI Singapore Chapter Collaboration

Dec. 6

- Introduction of 2024 APAC Study
- 2024 APAC Study: Journey from Data to Evidence
- 2024 APAC Study: Panel Discussion
- Lightning Talks

- **December 7-8 – Datathon at NUS**

- Participants of the datathon will split into teams to conduct studies using datasets contributed by data partners and present their results.

