APAC Community Call

April 18, 2024
Agenda

• OHDSI News
• Newcomers Session
  – India
  – Vietnam
  – Thailand
  – Indonesia
OHDSI News

• April Olympians
  – Event GitHub repository: https://github.com/orgs/OHDSI/projects/27
  – Sign-up form: https://forms.gle/YjLgnX74H8UZK2Be7

• CBER BEST Seminar
  – April 17, 11 am to 12 pm ET (April 18, 12 am to 1 am Korea time)
  – Real-World Effectiveness of BNT162b2 Against Infection and Severe Diseases in Children and Adolescents: causal inference under misclassification in treatment status
  – Calendar invite: https://mcusercontent.com/9402e3dd40021ebda4b15a4b7/files/0afba715-26c6-d0cc-b589-24397e43198a/April_17_CBER_BEST_Seminar_Series__Yong_Chen.ics
DevCon 2024: April 26, 9 am-3 pm ET

Morning Agenda
9:00 am – Introduction
9:15 am – Developers Panel and Lightning Talks (Katy Sadowski)
  • OHDSI/OMOP – The hard way is the easy way! (Prof. Vishnu V Chandrabalan)
  • Moving OMOP to the Cloud With DBT and Snowflake (Roger Carlson)
  • Use cases for ORMs in OMOP (Dr. Georgina Kennnedy)
  • Carrot: code-free OMOP ETL without full data access (Dr. Sam Cox)
10:45 am – Darwin EU® Developers Update (Adam Black)
12:00 pm – Break

Afternoon Agenda
12:30 pm – OHDSI Ecosystem Updates
  • TAB Update (Frank DeFalco)
  • Strategus Update (Anthony Sena)
  • Broadsea Update (Lee Evans)
  • Kheiron Updates (Paul Nagy)
1:15 pm – JACKALOPE PLUS The Power of ML for Healthcare Data Mapping & Management (Denys Kaduk)
2:00 pm - An Introduction to Knowledge Graphs using PheKnowLator and OMOP2OBO with Example Applications in Drug Surveillance and Computational Phenotyping (Tiffany Callahan)
• 2024 OHDSI Europe Symposium
  – Event page: https://www.ohdsi-europe.org/symposium-event
  – Registrations are open at https://www.eventbrite.com/e/777555688997
Agenda

- Meet the Team
- JSS AHER Introduction
- Goals of OHDSI 2024
- OHDSI India Chapter - Ongoing work
- Navigating Current Challenges in OHDSI India
- Key Drivers Shaping the Future Potential of OHDSI India
- Collaborators
Meet the Team

Parthiban Sulur
President
OHDSI India Chapter

Dr. Vikram Patel
Vice President
OHDSI India Chapter

Dr. Swetha Kiranmayi
OHDSI India Chapter Leader

Sai Dileep
Data Engineer - OHDSI India Collaborator

Shreema
Data Engineer - OHDSI India Collaborator

Alisha
Market Research Analyst - OHDSI India Collaborator

Pragati Verma
Brand Manager - OHDSI India Collaborator

Khansa Fathima
Assistant Professor - OHDSI India Collaborator

Ranjini
Data Manager - OHDSI India Collaborator

Parthiban Sulur
President
OHDSI India Chapter

Dr. Vikram Patel
Vice President
OHDSI India Chapter

Dr. Swetha Kiranmayi
OHDSI India Chapter Leader

Sai Dileep
Data Engineer - OHDSI India Collaborator

Shreema
Data Engineer - OHDSI India Collaborator

Alisha
Market Research Analyst - OHDSI India Collaborator

Pragati Verma
Brand Manager - OHDSI India Collaborator

Khansa Fathima
Assistant Professor - OHDSI India Collaborator

Ranjini
Data Manager - OHDSI India Collaborator

Parthiban Sulur
President
OHDSI India Chapter

Dr. Vikram Patel
Vice President
OHDSI India Chapter

Dr. Swetha Kiranmayi
OHDSI India Chapter Leader

Sai Dileep
Data Engineer - OHDSI India Collaborator

Shreema
Data Engineer - OHDSI India Collaborator

Alisha
Market Research Analyst - OHDSI India Collaborator

Pragati Verma
Brand Manager - OHDSI India Collaborator

Khansa Fathima
Assistant Professor - OHDSI India Collaborator

Ranjini
Data Manager - OHDSI India Collaborator

Parthiban Sulur
President
OHDSI India Chapter

Dr. Vikram Patel
Vice President
OHDSI India Chapter

Dr. Swetha Kiranmayi
OHDSI India Chapter Leader

Sai Dileep
Data Engineer - OHDSI India Collaborator

Shreema
Data Engineer - OHDSI India Collaborator

Alisha
Market Research Analyst - OHDSI India Collaborator

Pragati Verma
Brand Manager - OHDSI India Collaborator

Khansa Fathima
Assistant Professor - OHDSI India Collaborator

Ranjini
Data Manager - OHDSI India Collaborator

Parthiban Sulur
President
OHDSI India Chapter

Dr. Vikram Patel
Vice President
OHDSI India Chapter

Dr. Swetha Kiranmayi
OHDSI India Chapter Leader

Sai Dileep
Data Engineer - OHDSI India Collaborator

Shreema
Data Engineer - OHDSI India Collaborator

Alisha
Market Research Analyst - OHDSI India Collaborator

Pragati Verma
Brand Manager - OHDSI India Collaborator

Khansa Fathima
Assistant Professor - OHDSI India Collaborator

Ranjini
Data Manager - OHDSI India Collaborator

Parthiban Sulur
President
OHDSI India Chapter

Dr. Vikram Patel
Vice President
OHDSI India Chapter

Dr. Swetha Kiranmayi
OHDSI India Chapter Leader

Sai Dileep
Data Engineer - OHDSI India Collaborator

Shreema
Data Engineer - OHDSI India Collaborator

Alisha
Market Research Analyst - OHDSI India Collaborator

Pragati Verma
Brand Manager - OHDSI India Collaborator

Khansa Fathima
Assistant Professor - OHDSI India Collaborator

Ranjini
Data Manager - OHDSI India Collaborator
Collaborators

Founding Organizations

- GLOBAL VALUE WEB
- JSS Academy of Higher Education & Research
- Janssen
- Digital Health Link
- OHDSI
- HEALTHARK
- ARAVIND EYE CARE SYSTEM
- HEALTH PARLIAMENT
- Lancashire Teaching Hospitals
- NHS Foundation Trust
- AMITY UNIVERSITY
- Ashoka University
About JSS AHER:

- **JSS Medical College**
- **JSS Dental & Hospital**
- **JSS College of Pharmacy, Mysuru**
- **JSS College of Pharmacy, Ooty**

**154 Academic Programs**

**7 University Departments**

- Department of Water & Health
- Department of Health System Management Studies
- Department of Nutrition & Diabetics
- Department of Yoga
- Department of Microbiology
- Department of Environmental Sciences
- Department of Bioinformatics & Biotechnology

**3 Schools**

- School of Public Health, Mysuru
- School of Life Sciences, Mysuru
- School of Public Health, Ooty

**TIMES HIGHER EDUCATION (THE) RANKINGS 2023**

- JSS College of Pharmacy, Ooty: 6th in India, 65th in World, 301-400 in World
- JSS College of Pharmacy, Mysuru: 2nd in India, 68th in Asia

**National Institutional Ranking Framework - 2023**

- JSS College of Pharmacy, Ooty: 4th
- JSS College of Pharmacy, Mysuru: 7th
- JSS Dental College & Hospital: 11th
- JSS Medical College: 37th
- JSS AHER: 34th

**Details of Publication, Citations and FWCI**

- **Clarivate**
  - Web of Science Citation: 47,526 (2020-2023)
  - SCOPUS Citation: 65,956
- **Scopus**
  - Field-Weighted Citation Impact: 1.67

**Citations per Publication**

- Web of Science: 56.74
- SCOPUS: 18.12
Why JSS chose OMOP

Average Hospital Statistics /month

<table>
<thead>
<tr>
<th>Modality</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of OP patients</td>
<td>80,735</td>
</tr>
<tr>
<td>Number of In-patient days</td>
<td>25,722</td>
</tr>
<tr>
<td>Number of Major Surgeries</td>
<td>1,594</td>
</tr>
<tr>
<td>Number of Pathology tests</td>
<td>1,01,173</td>
</tr>
<tr>
<td>Number of Biochemistry tests</td>
<td>90,182</td>
</tr>
<tr>
<td>Number of Microbiology tests</td>
<td>16,449</td>
</tr>
<tr>
<td>Number of CT Scans</td>
<td>1,041</td>
</tr>
<tr>
<td>Number of MRI Scans</td>
<td>530</td>
</tr>
<tr>
<td>Number of dialysis</td>
<td>2,048</td>
</tr>
</tbody>
</table>

DATA MANAGEMENT AND SHARING POLICY OF JSS ACADEMY OF HIGHER EDUCATION & RESEARCH (JSS AHER) AND JSS HOSPITALS 2021

1. Preamble:

1.1 The Health Data Management and Sharing is the guiding principle for the protection of individuals data/personal digital health data in the health services institutions/hospitals. It acts as a guidance document across the JSS AHER and JSS Hospitals and sets out the minimum standards for data privacy protection that should be followed across the board in order to ensure compliance with relevant and applicable laws, rules and regulations. This Policy will be dynamic in nature and may be revised from time to time as may be required. Necessary guidelines may also be issued for the implementation of this policy.

1.2 Assets and value potential of data are widely recognised at all levels. The General Scientific Data collected or developed by JSS AHER and JSS Hospitals, when made publicly available and maintained over time, their potential value could be more fully realised. There has been an increasing demand by the community, that such data collected with the deployment of JSS AHER/JSS Hospitals’ funds/funds released by the external Govt. or private organisations to JSS AHER/JSS Hospitals for a specific/proposed/assigned work should be more readily available to all for enabling rational debate, research activities, better decision making and use in society needs.

1.3 The principle on which data management and sharing need to be based include: Openness, Flexibility, Transparency, Legal Conformity, Protection of Intellectual Property, Formal Responsibility, Professionalism, Standardization, Interoperability, Quality, Security, Efficiency, Accountability, Sustainability and Privacy.
Goals of OHDSI 2024

Promotions - Raise awareness and adoption of OHDSI methodologies in India through targeted promotional efforts.

POCs and feasibility Studies with New Data Partners - Feasibility studies and short proof of concepts will be conducted across the new data partners, providing an overview of real-world data for research purposes.

Collaboration - Foster strong partnerships and engagements among healthcare institutions, academia, and industry to promote data sharing and interdisciplinary research.

Education - Training programs, workshops, and resources tailored to diverse stakeholders' needs, ensuring widespread competence and confidence in implementing OHDSI methodologies effectively across the Indian healthcare.
Expanding Real-World Data (RWD) OMOP Network in India
Identifying new data partners and collaborators
Proposals for Grant Funding - Research Opportunities
Setting up RWD registries - OMOP Competent
OMOP Data Conversions – JSS AHER, Aravind Eye Hospital
Navigating Current Challenges in OHDSI India

- Insufficient funding for research
- Difficulty in accessing data partners
- Limited government backing
- Heterogeneous data sources
- Inadequate Coding Systems and Data Standards
Key Drivers Shaping the Future Potential of OHDSI India

- Patient Registries OMOP Competent
- National Digital Health Mission
- Increasing adoption of digital health technologies
- Growing availability of electronic health records (EHRs) in healthcare facilities
- Rising demand for RWD/RWE research initiatives
Follow OHDSI India Chapter

Reach us at

[LinkedIn icon]

[QR code]

[Phone icon]

[QR code]

[Website icon]

[QR code]
Thank You
Newcomer introduction

Viet Nam

PHAN THANH-PHUC, ALEX NGUYEN, BUI KIM CHUNG, JASON C. HSU
Early activities

- Time and Venue:
  - Department of Health, Ha Long city, Quang Ninh province, Viet Nam
  - October 24, 2023

- Activities:
  - Sharing the structure and operation of the HIS at Taipei Medical University including standardization, and utilization of electronic medical records – Dr. Alex Nguyen
  - Introducing the approach of the Observational Health Data Sciences and Informatics (OHDSI) – Thanh Phuc
  - Discussion on conversion and the implementation of EMR of HCOs in the province
Health information system characterization

❖ Advantages:
  - Comprehensive deployment of EHR and interoperability with NHIA.
  - The hospital proactively enhances its IT infrastructure for healthcare services and data storage.
  - Willingness to collaborate in standardizing data and transitioning data into the Common Data Model (CDM).

❖ Disadvantages
  - Unstable IT system to ensure continuous EHR operations and data quality.
  - Workstations for data conversion and shared data storage, knowledge in data conversion.

Fig. The workshop to introduce OHDSI
On-going project

Quang Ninh CDM conversion and scaling up project

Select a period to highlight at right. A legend describing the charting follows.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>PLAN START</th>
<th>PLAN DURATION</th>
<th>ACTUAL START</th>
<th>ACTUAL DURATION</th>
<th>PERCENT COMPLETE</th>
<th>Note</th>
<th>PERIODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharing exp workshop</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>100%</td>
<td></td>
<td>Oct-23</td>
</tr>
<tr>
<td>Investigating 2 hospital IT settings</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning and applying project proposal at the provincial level</td>
<td>2</td>
<td>8</td>
<td>3</td>
<td>7</td>
<td>50%</td>
<td>Submitted proposal</td>
<td></td>
</tr>
<tr>
<td>Build automatic conversion system of all 21 sites</td>
<td>9</td>
<td>12</td>
<td></td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creating outcome indicators dashboard</td>
<td>15</td>
<td>6</td>
<td></td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M&amp;E</td>
<td>9</td>
<td>12</td>
<td></td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintain CDM conversion system</td>
<td>21</td>
<td>3</td>
<td></td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- **Plan Duration**
- **Actual Start**
- **% Complete**
Core members

Dr. Alex Nguyen

Dr. Bui Kim Chung

Dr. Phan Thanh Phuc
Thank you & welcome to Viet Nam!
OHDSI in Thailand

OMOP CDM Ready

- Mahidol University Faculty of Medicine Siriraj Hospital
- EHR data over 20 years:
  - 2.5M total patients
  - 49M clinic visits
  - 1.9M admissions

OMOP CDM Conversion in Progress

- Mahidol University Faculty of Medicine Ramathibodi Hospital

Thai Coding System

- Diagnosis: ICD-10-TM
- Procedure: ICD-9-CM
- Drug: Thai Medicines Terminology (TMT) → SNOMED-CT
- Lab: Thai Medical Laboratory Terminology (TMLT) → LOINC

OHDSI Community Contribution from Siriraj

ETL Tool presented at OHDSI Global Symposium 2022 (see next slide for the poster)

Currently migrating to SQLMesh and will be sharing lessons learned

research publications coming soon...

Presented by Natthawut Adulyanukosol, Deputy Director of Siriraj Informatics and Data Innovation Center, natthawut.edu@mahidol.edu

...not formalized as a local chapter yet, but hopefully soon to be.
"An organized approach to build a maintainable ETL pipeline for the OMOP CDM with minimal cost while keeping our data engineers sane 😄"

**METHODS:**

The data conversion pipeline at Siriraj Hospital can be summarized as:

- **Data ingestion:** Collection of data from hospital sources with Apache Spark.
- **Data transformation:** Transformation of the collected data into OMOP CDM format using dbt.
- **Data loading:** Loading the transformed data into the OMOP CDM schema using dbt.

The dbt pipeline follows these steps:

1. Data ingestion: The data is collected from various sources such as electronic medical records and laboratory results through Apache Spark.
2. Data transformation: The data is then transformed into the OMOP CDM format using dbt. This involves creating a command-line interface with dbt, which generates SQL scripts automatically.
3. Data loading: The transformed data is then loaded into the OMOP CDM schema using dbt.

**CONCLUSION:**

- dbt is a powerful tool that simplifies the data transformation process for OMOP CDM.
- dbt drastically reduces the time and effort required for data conversion.
- The use of dbt in the pipeline ensures that the data is transformed consistently and efficiently, making it easier for data engineers to maintain and update the pipeline.

**REFERENCES:**

- dbt documentation: https://docs.getdbt.com
- OMOP CDM: https://www.ohdsi.org/omop-cdm/
- PostgreSQL: https://www.postgresql.org/
- Apache Spark: https://spark.apache.org/
- Python: https://www.python.org/
- Schema: https://schema.org/

**Authors:**

- Thanasak Pitchayarat, Gun Finny, Muhammed Tachtor, Srijad Hamirun, Chalisa Issara Pitthiphal, Chalermchai Sathampetch, Noopun Sirichai, Rangpicha Pramerma, Nattachai Sivammoongkolsri, Praphat Suryapru "Adulyanukosol," Mahidol University, Siriraj Hospital, Thailand.
Thank you!