APAC Community Call

January 18, 2024

Agenda

- APAC 2024 Kickoff
- Training Session #7 by Japan
- Eye Care and Vision Research WG Intro

APAC 2024 Kickoff

Mui Van Zandt

2024 OHDSI APAC Goals

Research

Build research expertise and collaboration amongst the different chapters through publication

Milestones

- Conduct APAC SOS Challenge studies
- Replicate Cindy Kai's SOS Challenge study

Training

Create an APAC training program to expand reach to the general community

Milestones

- Host at least 2 in-person trainings in APAC
- Train community through APAC SOS Challenge studies

Communication

Create collaboration activities that encourage collaborative generation and dissemination of evidence that promotes better health decisions and better care

Milestones

- Host APAC symposium
- Distribute quarterly newsletters
- Host monthly community calls and scientific forums

OHDSI News

Collaborator Spotlight: Chungsoo Kim

Chungsoo Kim is a PhD candidate in the Department of Biomedical Informatics at Ajou University College of Medicine. He earned his Doctor of Pharmacy degree from the College of Pharmacy of the same university in 2019. His research interests include reliable real-world evidence for medication and prediction of individual drug effects/adverse events based on the OMOP common data models. He is also interested in data/analytics infrastructure for conducting data-driven research.

Since joining OHDSI in 2019, he has participated in and led several research projects at OHDSI. He currently participates in OHDSI working groups, including PatientLevelPrediction and the APAC group. He also served as a tutorial instructor for the 2019 OHDSI Korea International Symposium.

Chungsoo discusses his research focuses, his involvement in the OHDSI community, the growth of OHDSI around the Asia-Pacific region, and plenty more in the latest Collaborator Spotlight.

Read the full interview at https://www.ohdsi.org/spotlight-chungsoo-kim/!

RWD research efforts and internationalization in Japan.

2024-01-18 OHDSI APAC community call

National Cancer Center Hospital East
Yoshihiro Aoyagi

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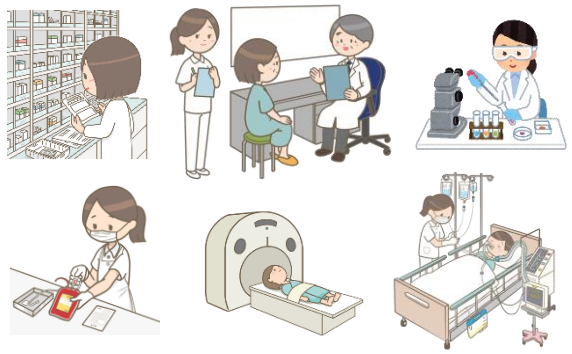
What is “Rinchu-net” ?

Hospital



Various department systems

Medical Data

HIS(EMR)
(Hospital Information System)
Patient information management, ordering, drug management, cost management, documentation, etc.

Quality Control For required data Extraction

SS-MIX Storage*, DWH, etc.
Cooperation between hospitals and diagnostic laboratories, in-hospital research, etc.

Standardization

Vocabulary harmonization

Analysis

Rinchu-Net:

- Build a system to collect medical information extracted from the clinical data of each hospital using quality-controlled methods, enabling integrated analysis.
- Establish a platform for analyzing the collected medical information.
- Foster the development of necessary human resources and establish an organizational system.

*Ministry of Health, Labor and Welfare's project to promote electronic medical information exchange

Core Hospitals for Clinical Research in Japan (臨床研究中核病院)

Developing innovative medicines and medical technologies originating from Japan.

These hospitals that playa a central role in international-level clinical study and investigator-initiated clinical trials.

Hokkaido Univ.

Tohoku Univ.

Tokyo Univ.

National Cancer Center Hospital

National Cancer Center Hospital East

Keio Univ.

Juntendo Univ.

Chiba Univ.

Nagoya Univ.

Kyoto Univ.

Osaka Univ.

Kobe Univ.

Okayama Univ.

Kyushu Univ.

Nagasaki Univ.

Vision & Mission of Rinchu-Net

Vision

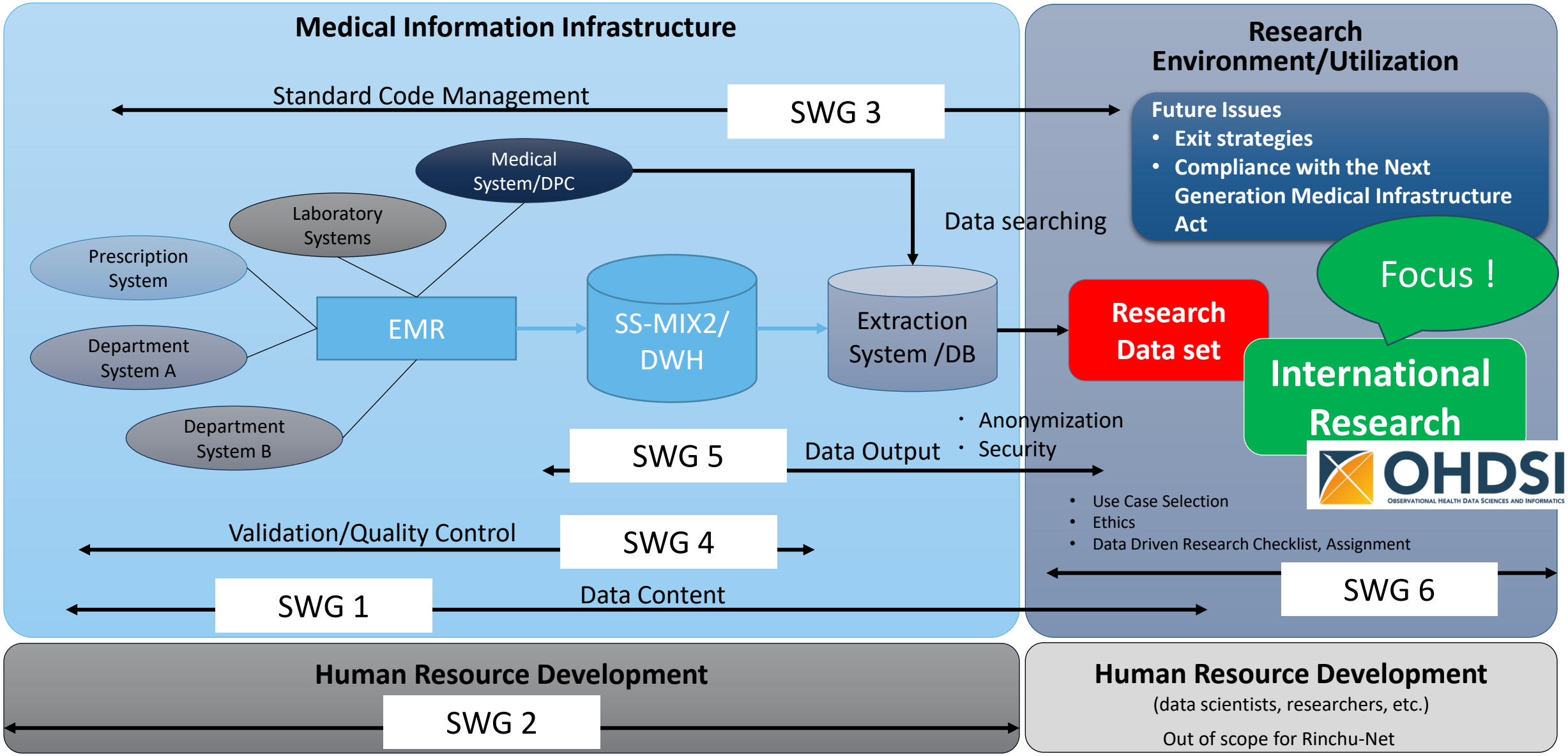
Contribution of the realization of optimal medical care by building a sustainable clinical study platform that can answer a wide range of issues including clinical questions as real world evidence.

Mission

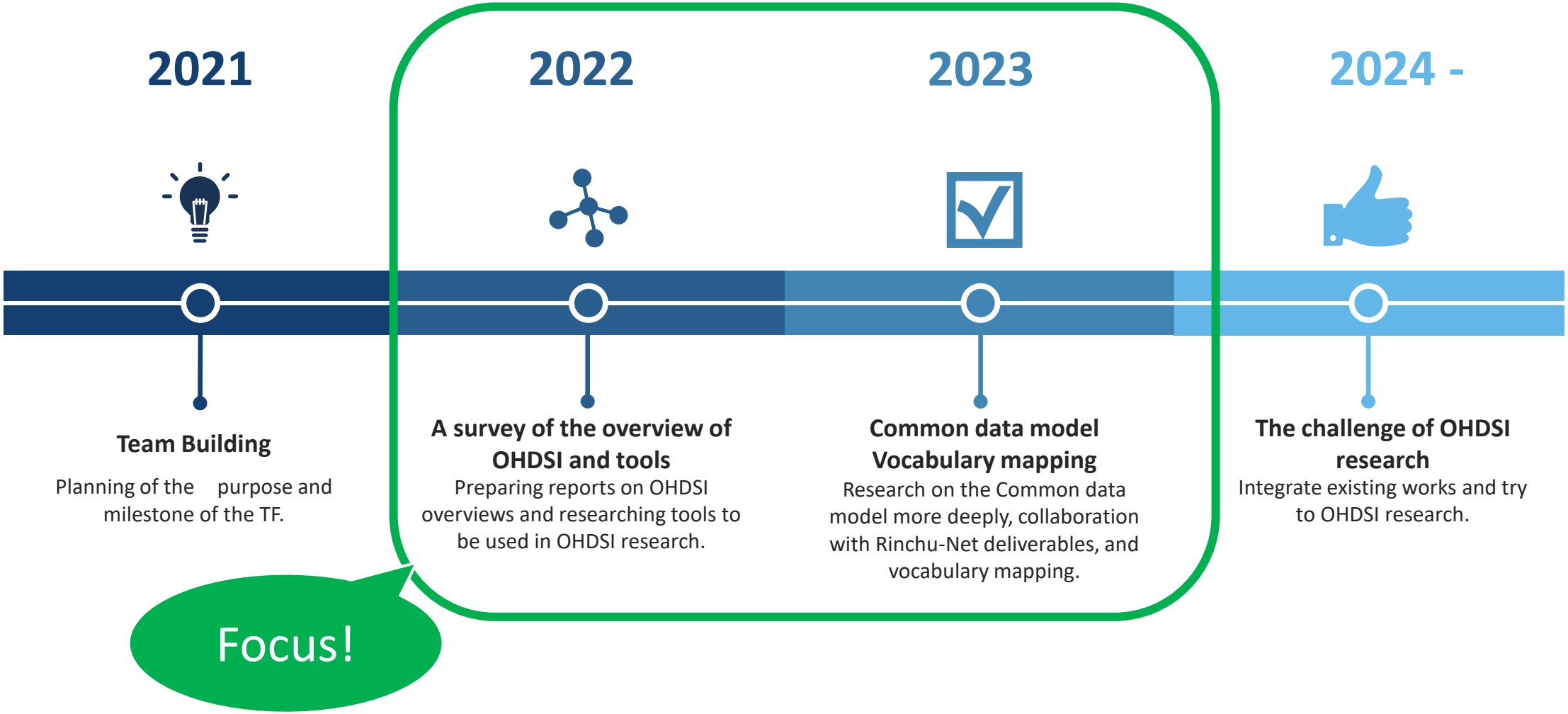
- Data management to ensure high quality
- System design with future expansion
- Consideration and development of an independent ecosystem that maintains the foundation
- Implementation of human resource development to support

Create a platform(foundation) to enable Data-Driven Clinical Study

Overview of Rinchu-Net



Activity of the Internationalization TF



Activity of the Internationalization TF

- Medical data from different sources needs to be standardized to be analyzed together.
- One way to do this is to use the OMOP CDM, an open standard that is used for observational research around the world.
- However, OMOP CDM is not yet widely used in Japan.
- To help promote the use of OMOP CDM in Rinchu-Net and Japan, Japanese documents are created that provide step-by-step instructions on installing and using the necessary environment.

Deliverables for 2022-2023

- Overview of OHDSI for beginners (delivered)
- OHDSI Tools document for Installation and Functional description (delivered)
- Briefing document on the Common Data Model (under development)
- Research document on vocabulary mapping considering the Japanese situation (under development)

Overview of OHDSI for beginners

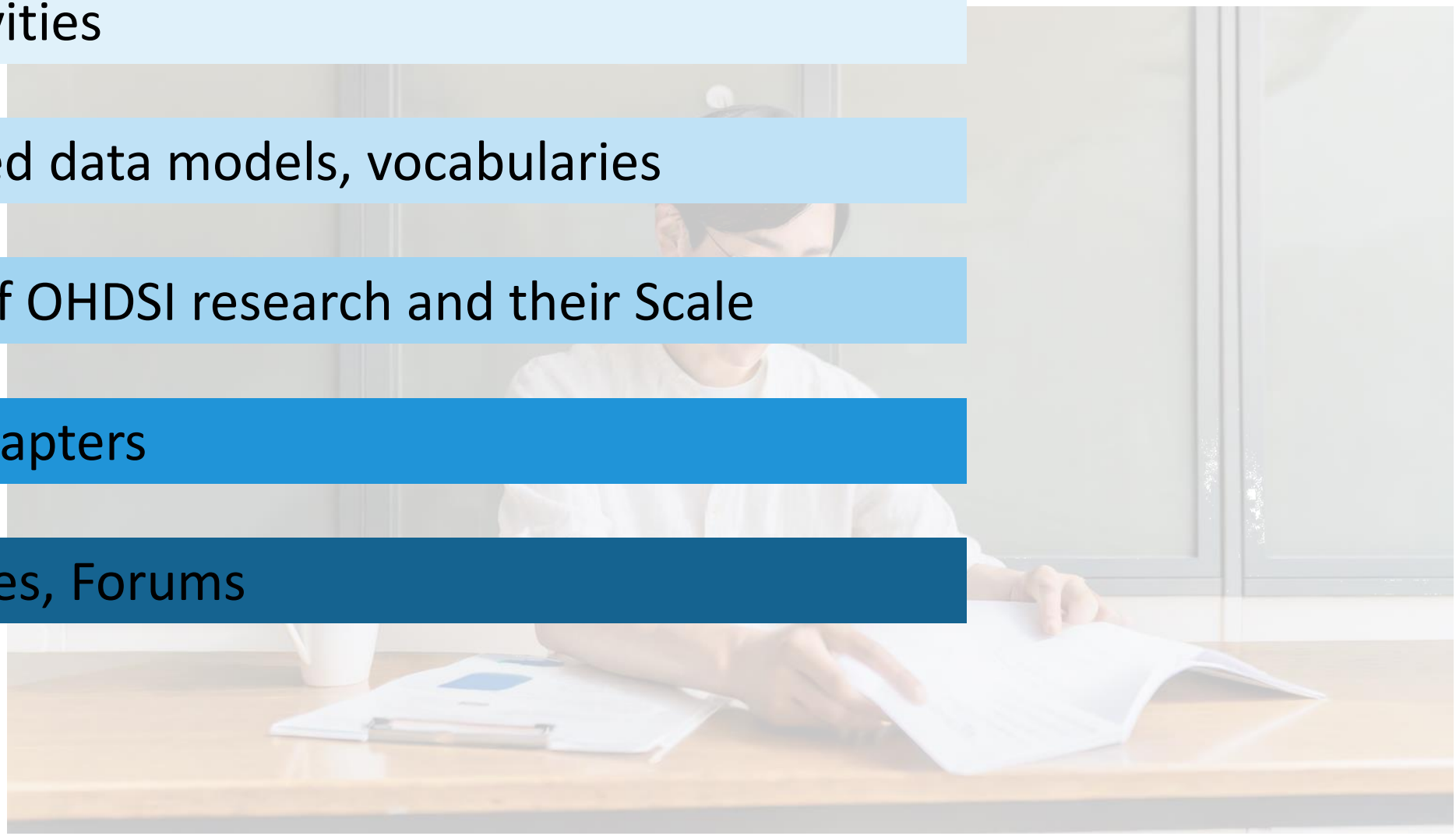
OHDSI activities

Standardized data models, vocabularies

Examples of OHDSI research and their Scale

Regional chapters

Communities, Forums



OHDSI Tools document for Installation and Functional description

ATLAS	ATLAS is a free, publicly available, web-based tool developed by the OHDSI community that facilitates the design and execution of analyses on standardized, patient-level, observational data in the CDM format.
USAGI	USAGI is a tool to aid the manual process of creating a code mapping. It can make suggested mappings based on the textual similarity of code descriptions.
WHITE RABBIT	WHITERABBIT and RABBIT-IN-A-HAT are software tools to help prepare for ETLs of longitudinal healthcare databases into the OMOP CDM. WhiteRabbit scans your data and creates a report containing all the information necessary to begin designing the ETL.
RABBIT IN A HAT	Rabbit-In-a-Hat is designed to read and display a White Rabbit scan document. White Rabbit generates information about the source data while Rabbit-In-a-Hat uses that information and through a graphical user interface to allow a user to connect source data to tables and columns within the CDM.
HADES	HADES is a collection of open-source R packages that offer functions which can be used together to perform a complete observational study, starting from data in the CDM, and resulting in estimates and supporting statistics, figures, and tables.

Includes Eunomia as practice data

OHDSI Tool Documents

Usagi

Usagi は、独自に定義した各種項目（薬品、病名など）を CONCEPT テーブルへマッピングするための補助ツールです。

- セットアップ手順
- 操作手順

WhiteRabbit & Rabbit-in-a-Hat

OMOP CDM の各リソースへマッピング支援するのが、Rabbit-in-a-Hat です。
Rabbit-in-a-Hat でマッピング作業を進めるために、White Rabbit では入力データを Rabbit-in-a-Hat で取り込み可能な形式に加工します。

- セットアップ手順
- 操作手順

Atlas

Atlas は、OMOP 共通データモデル（CDM）に変換され、標準化された観測データに対して科学的分析を実施するためのオープンソースソフトウェアツールです。
患者コホートの定義、分析設計の選択、パラメータの設定、データに対する分析手法の実行を可能にします。
Eunomia のテストデータは、Atlas の各分析の検証に役立ちます。

- セットアップ手順
- Eunomia テストデータのセットアップ手順
- 操作手順 ～Cohort Pathways 編～
- 操作手順 ～Characterizations 編～
- 操作手順 ～Incidence Rates 編～
- 機能調査資料

- 【参考】アプリケーションのバージョン
- プロキシ設定手順　※インストール時、プロキシサーバにより通信がブロックされる場合は、設定が必要です

HADES

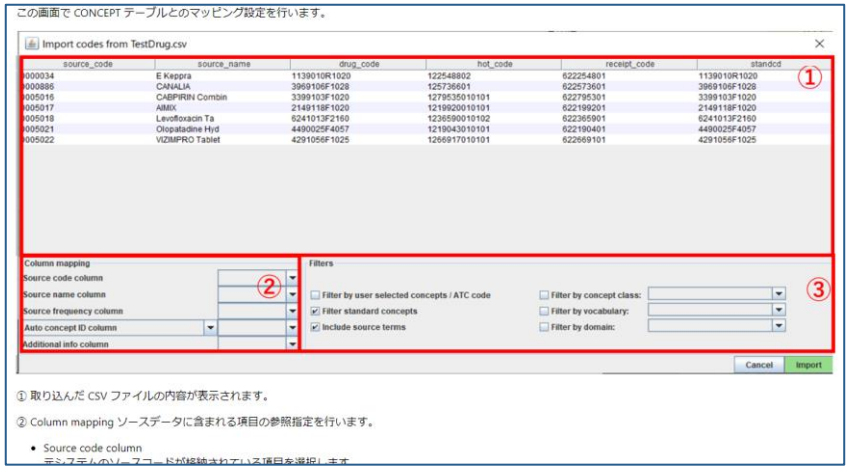
母集団の特性評価、母集団レベルの因果効果の推定、患者レベルの予測など、大規模な分析のための20個のオープンソース R パッケージのセットです。

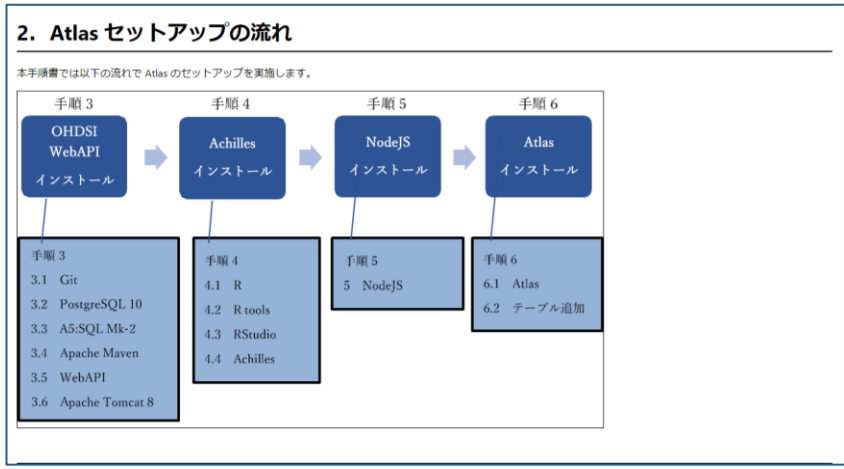
- セットアップ手順
- 機能概要

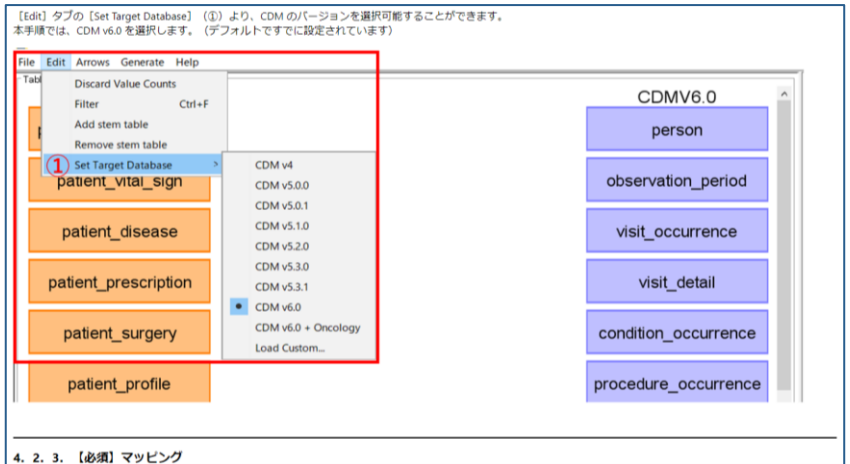
各ツールドキュメントの課題は、GitHub の Issues で管理しています。（GitHub Issues について）
https://github.com/RWD-data-environment-in-Hospital/Documents/issues

OHDSI Tools Document in detail

ツールのセットアップ手順、操作手順などのドキュメントに従い、OHDSI の環境を構築できるようドキュメントを作成した。







OHDSI Tools Document in detail

Setup Instructions

- It describes the setup procedure for each tool. Used to understand the internals of the tool. Created for online as well as offline use.

Operating Procedure

- It describes how to use these tools.
- It gives basic overview and brief usage, since ATLAS and HADES have many features, it gives a basic overview.
- ATLAS additionally provides specific instructions for Cohort Pathways, Characterizations, and Incidence Rates.
- HADES also provides detailed commands on how to connect to the server, extract data, and some analyses.

Access to the document

オデッセイ
ジャパン

ホーム | 概要 | OHDSI Japan資料 | お問い合わせ

OHDSI（オデッセイ）は、共通データ形式を使った医療ビッグデータ分析を推進するオープンサイエンスコミュニティ（研究会）です。国際的・ボランタリーベース・産学官病所属を問わないという特徴をもち、より良い医療を促進するエビデンスを共同して生みだすことを推進し、健康と病気の包括的な理解を観察研究から得られる世界を目指しています。OHDSIは米国で2014年にスタートし今では世界中に参加者がいます。オープンとは言っても、医療データは各参加組織のところで守られ、個人情報が各参加組織の外にでることはありません。この方法により開始わずか５年で、OHDSIの国際連携ネットワークには重複を除外して推定６億人以上のデータが含まれるまで成長しました。欧州、中国、韓国に引き続き、2019年秋に日
ます。

※OHDSIは古代ギリシャ叙事詩Odysseyにちなんでおり同じ発音をします。O
英語発音は人/場面により異なりますが、オデシーからオゥデシー、オゥデッ

You can find the link in OHDSI Japan site

■**臨中ネット**(国がん東病院)「OHDSI Tool Documents」
OHDSI の各種Toolの日本語資料が、国立がん研究センター東病院の青柳先生により臨中ネットの成果として整備されました。
https://rwd-data-environment-in-hospital.github.io/Documents/Files/

OHDSI Tool Documents

Usagi
WhiteRabbit & Rabbit-in-a-Hat
Atlas
HADES

https://www.ohdsi-japan.org/

In the future

Acknowledgement

Task Force member

Hiromi Hasegawa[1)], Ikeda Yuya[1)], Keiichi Nomura[1)], Masahiro Baba[1)], Suzue Terao[1)], Shoichi Chiyojima[2)], Eri Matsuki[3)], Naoto Akagawa[3)], Ryo Takemura[3)], Atsushi Takada[4)], Kenji Sakanashi[4)], Masashi Fujimoto[5)], Satoshi Yamashita[5)], Katsuya Tanaka[6)], Masami Mukai[6)], Toshihiro Takeda[7)], Satomi Nagashima[8)], Akihiro Sato[1)]

1) National Cancer Center Hospital East, 2) Chiba University Hospital, 3) Keio University Hospital, 4) Kyushu University Hospital, 5) Nagoya University Hospital, 6) National Cancer Center Hospital, 7) Osaka University Hospital, 8) The University of Tokyo Hospital

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THANK YOU

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Eye Care and Vision Research Workgroup: First Year Update

Michelle R. Hribar, PhD
Kerry E. Goetz, PhDc
Sally L. Baxter, MD, MSc
Eye Care and Vision Research Workgroup

Getting Started

- OHDSI Eye Care and Vision Research Workgroup was started in spring 2022
  - Members of American Academy of Ophthalmology (AAO) Data Standards Workgroup identified need for updating ophthalmic concepts in standardized terminologies
  - Ophthalmic data elements were not in the OMOP common data model and large datasets (All of Us)
- Goals
  - Create access to large diverse datasets of ophthalmic and systemic data
  - Enable research in vision and systemic health

Challenges for Ophthalmic Data

- EHR Data
  - Data is named and stored differently in different EHRs/institutions
  - Ophthalmic data is not completely represented in standardized terminologies or OMOP
  - Free text field needs processing to extract values
  - Data may only be entered in notes, which requires natural language processing to extract
- Imaging
  - Most ophthalmic imaging is not standardized/fully compliant with the DICOM standard
  - Volumetric scans are large and difficult to share
  - Tools are needed to use this data in a distributed network

Optical Coherence Topography (OCT) Breakthrough Technology

- James Fujimoto, David Huang, Eric Swanson
- Lasker Award
- National Medal of Technology and Innovation

Eye as the window to the body

- American Possibilities: White House Demo Day
- Non-invasive OCT, CFP device to capture high-quality retina imaging at the push of a button in under a minute
- Predict neurodegenerative, cognitive, cardiac, and circulatory diseases

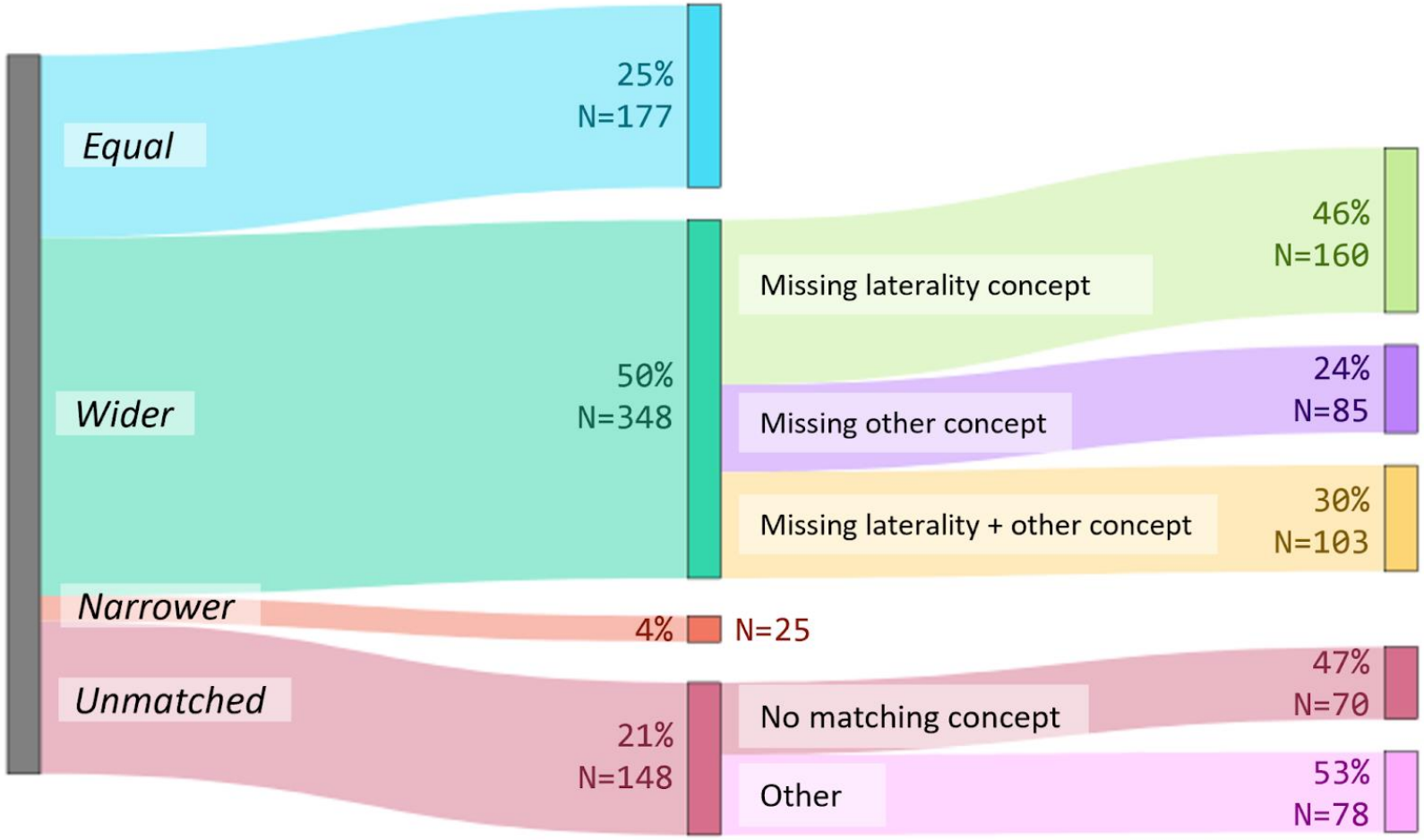
Milestones

- Membership
  - 122 total, ~40 active
  - Ophthalmologists, optometrists, informaticists, vision scientists
  - Formed 6 subgroups to focus on subspecialties and tasks
- Meetings
  - 17 Teams workgroup meetings, 3 in person
  - Many more subgroup meetings, ad hoc meetings

Milestones

- Data Concepts
  - >3700 ophthalmic data elements analyzed & mapped
  - 11 retina condition codes submitted to SNOMED International
  - 224 visual acuity concepts submitted to LOINC
  - Glaucoma concepts currently in discussion with SNOMED International

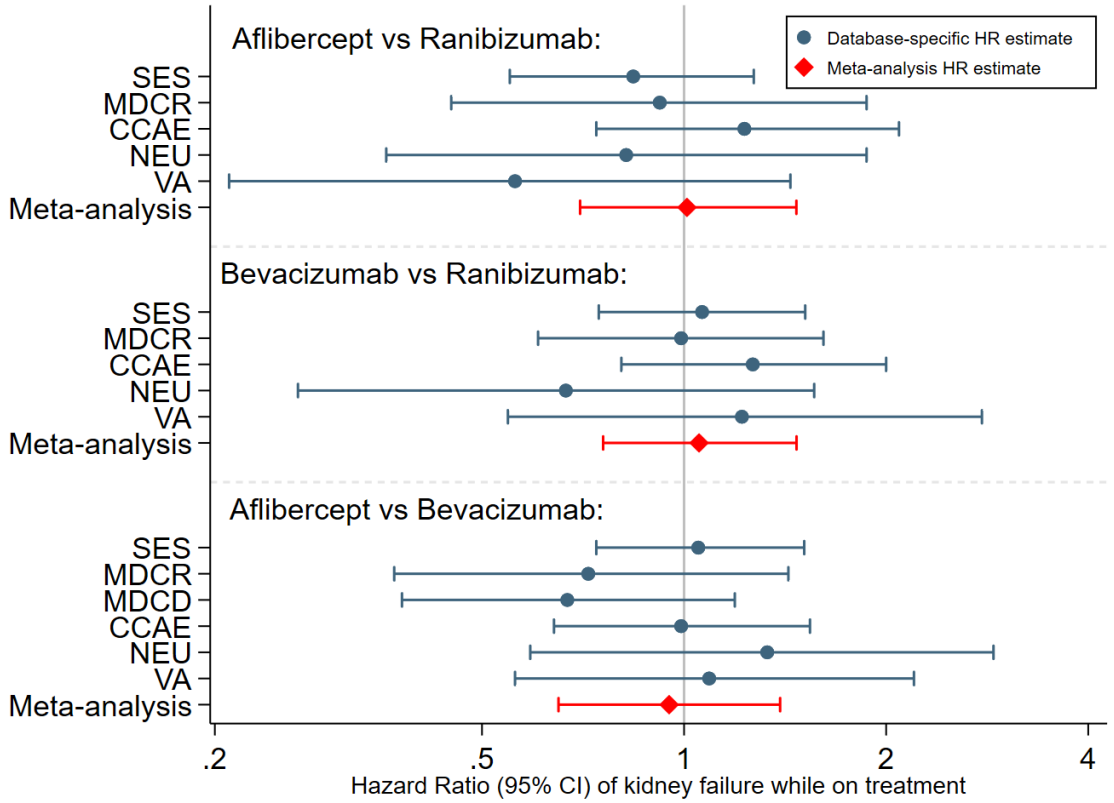
Epic EHR Concept Matches



Cai C.X., Halfpenny W., Boland M.V., Lehmann H.P., Hribar M., Goetz K.E. & Baxter S.L., Advancing toward a common data model in ophthalmology: gap analysis of general eye examination concepts to standard OMOP concepts, Ophthalmology Science (2023), doi: https://doi.org/10.1016/j.xops.2023.100391.

Milestones

- SOS Challenge 2023
  - Led by Cindy X. Cai MD MS from Johns Hopkins University
  - Comparison of 3 anti-VEGF agents for risk of kidney injury when injected intravitreally
  - Results: no increased risk for kidney injury in any pairwise comparisons
  - Manuscript is in process



Milestones: Phenotypes

- Developed multiple phenotypes
  - 3 visual impairment
  - 6 uveitis*
  - 3 new anti-VEGF users*
  - 1 blinding disease*
  - 5 diabetic retinopathy

*Submitted to HowOften

Milestones: Dissemination & Support

- Publications
  - 9 papers, 4 EyeWiki pages
  - 5 more in progress
- Presentations
  - 18 talks, 5 posters
- Support
  - 1 NEI/NIH Data Scholar
  - 2 Grant submissions

Milestones: Including Ophthalmic Data in NIH Large Dataset Generation Projects

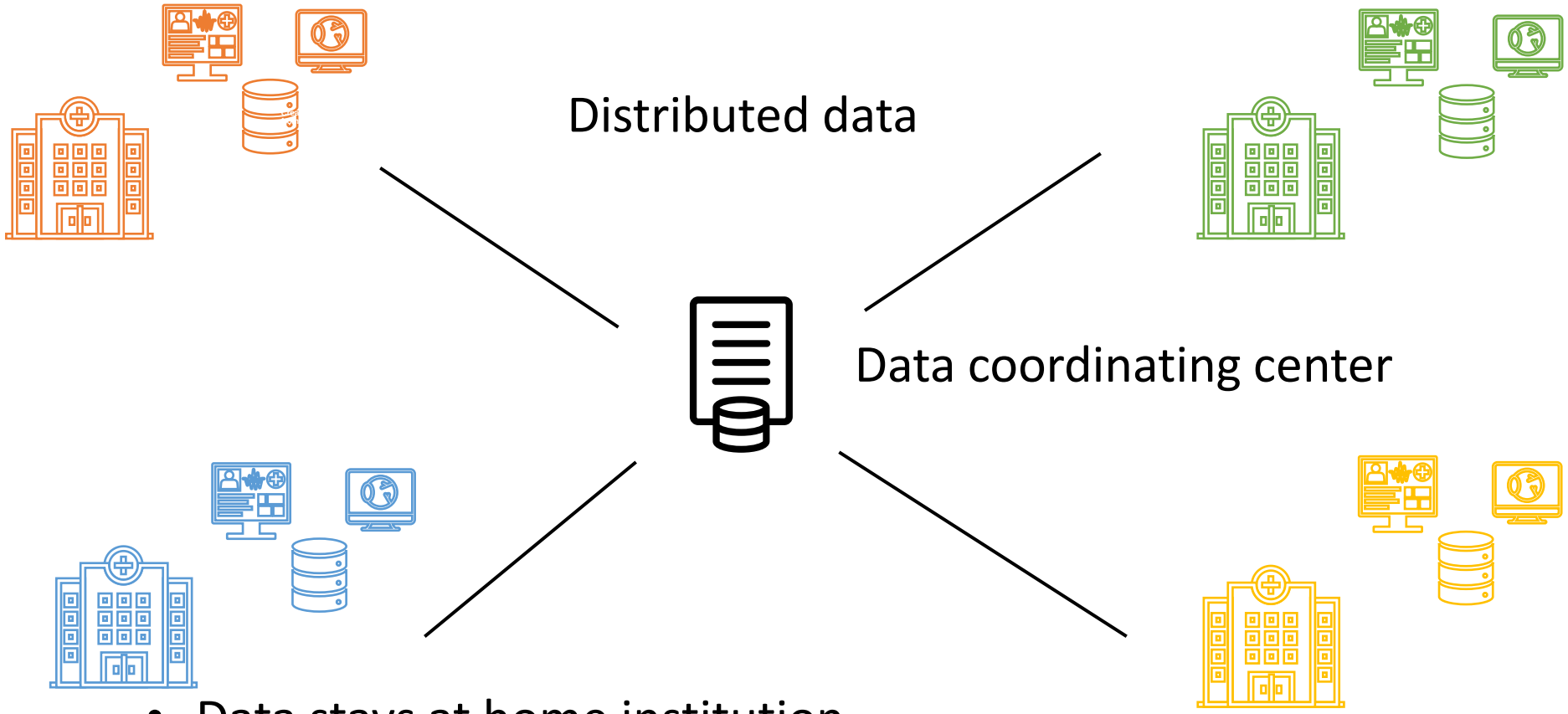
Bridge2AI: AI-READI

- Collect triple balanced prospective dataset of 4000 diabetic patients
- Working with OHDSI workgroup on adding elements to OMOP
- https://aireadi.org/

All of Us Dataset

- NEI-NIBIB All of Us Workshop 2023 was initial step towards integrating ocular data & imaging into All of Us
- Proposing a pilot study at 4 sites

Goal: Build OHDSI Ophthalmic Data Network



- Data stays at home institution
  - Avoids legal & privacy challenges of sharing data
  - Data is accessed through tools & federated learning
- Multimodal: Systemic & Ocular EHR data + Ocular imaging

Potential Use Cases of Standardized Ophthalmic Data

- Extension of clinical trials
- Validation of AI models
- Real world outcomes of treatments
- Systemic risk factors for eye disease and its progression
- Oculomics
- Rare disease studies
- Prevalence of eye disease
- Health care access/equity

Next Steps

- Pilot at test sites
  - Working on ETL of intraocular pressure and visual acuity
- Integrate imaging
  - Working with Medical Imaging workgroup to pilot ophthalmic imaging
- Expand workgroup
  - Include more diversity (geographic, practice, government)
- More network studies
- More funding support

US-Asia Pacific Panel Workshop on Standardization of Methodology in Ophthalmology hosted in Hong Kong on December 10th

Presentations by:
Mui Van Zandt; Kerry Goetz; Michelle Hribar

Summary

- Eye Care and Vision Research Workgroup had a productive year
- Working towards goal of including ophthalmic data and imaging in the OMOP common data model
- Collaborating with APAC partners
- Still much more work to do—come join us!


OHDSI
OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

Thank you!