Farewell, 2023!

OHDSI Community Call
Dec. 19, 2023 • 11 am ET
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Thank You to the 113 people who participated in community calls this year:

Boudewijn Aasman, Atif Adam, Thamir Alshammary, Arya Aminorroaya, Faaizah Arshad, Cesar Barboza, Daniel Beachler, Adam Black, Clair Blacketer, Jack Brewster, Fan Bu, Ed Burn, Cindy Cai, Alison Callahan, Tiffany Callahan, Yong Chen, Catherine Cohet, Alexander Davydov, Lovedeep Dhingra, Paul Dougall, Talita Duarte-Salles, Dmitry Dymshyts, Clark Evans, Lee Evans, Mengling ‘Mornin’ Feng, Davera Gabriel, Sarah Gasman, Jamie Gilbert, Jake Gillberg, Hugh Glover, Kerry Goetz, Ismail Gogenur, Asieh Golozar, Mike Hamidi, Ben Hamlin, Jill Hardin, Oliver He, Tatsuo Hiramatsu, Cindy Ho, Stephanie Hong, Jared Houghtaling, Michelle Hribar, George Hripcsak, Jason Hsu, Nigel Hughes, Jack Janetzki, Michael Kallfelz, Vipina Keloth, Chungsoo Kim, Sylvia Kiwuwa-Muyingo, Robert Koski, Christopher Knoll, Jenny Lane, Laurence Lawrence-Archer, Peter Leese, Harold Lehmann, Xintong Li, Asiyah Lin, Lei Liu, Kim López Guell, Renske Los, Hao Luo, Craig Mayer, Jody-Ann McLeggon, Evan Minty, Maxim Moinat, Daniel Morales, Paul Nagy, Niklas Nóren, Anna Ostropolets, Chao Pang, Tina Parciak, Yuan Peng, Melanie Philofsky, Luis Pinheiro, Albert Prats-Uribe, Nicole Pratt, Daniel Prieto-Alhambra, Jose Posada, Gowtham Rao, Berta Raventós, Alexander Rekkas, Christian Reich, Peter Reinbeek, Jenna Reps, Patrick Ryan, Craig Sachson, Katy Sadowski, Martijn Schuemie, Sarah Seager, Anthony Sena, Azza Shoaibi, Louisa Smith, Andrey Soares, Gyeol Song, Marc Suchard, Cynthia Sung, Jiayi (Jessie) Tong, Michael van Campen, Mui Van Zandt, Katia Verhamme, Erica Voss, Jeff Weaver, Jamie Weaver, Nick Williams, DuWayne Willett, Qiong Wu, Junqing (Frank) Xie, Hua Xu, Zenas Yiu, Yue Yu, Oleg Zhuk, Kyle Zollo-Venecek
Three Stages of The Journey

Where Have We Been?
Where Are We Now?
Where Are We Going?
Congratulations to the team of Romina Blasini, Kornelia Marta Buchowicz, Henning Schneider, Birgit Samans, and Keywan Sohrabi on the publication of Implementation of inclusion and exclusion criteria in clinical studies in OHDSI ATLAS software in *Scientific Reports*. 

*Implementation of inclusion and exclusion criteria in clinical studies in OHDSI ATLAS software* 

Romina Blasini1,*, Kornelia Marta Buchowicz1,*, Henning Schneider1,*, Birgit Samans1 & Keywan Sohrabi1,2  

Clinical trials are essential parts of a medical study process, but studies are often cancelled due to a lack of participants. Clinical Trial Recruitment Support Systems are systems that help to increase the number of participants by seeking more suitable subjects. The software ATLAS (developed by Observational Health Data Sciences and Informatics) can support the launch of a clinical trial by building cohorts of patients who fulfill certain criteria. The correct use of medical classification systems aiming at clearly defined inclusion and exclusion criteria in the studies is an important pillar of this software. The aim of this investigation was to determine whether ATLAS can be used in a Clinical Trial Recruitment Support System to portray the eligibility criteria of clinical studies. Our analysis considered the number of criteria feasible for integration with ATLAS and identified its strengths and weaknesses. Additionally, we investigated whether nonrepresentable criteria were associated with the utilized terminology systems. We analyzed ATLAS using 223 objective eligibility criteria from 39 randomly selected trials conducted in the last 30 years. In the next step, we selected appropriate ICD, OPIS, LOINC, or SNOMED codes to feed the software. We classified each criterion and study based on its implementation capability in the software, ensuring a clear and logical progression of information. Based on our observations, 52% of the analyzed inclusion criteria were fully implemented in ATLAS. Within our selected example set, 16% of the studies were classified as fully portable, and 73% were portrayed to some extent. Additionally, we conducted an evaluation of the software regarding its technical limitations and interaction with medical classification systems. To improve and expand the scope of criteria within a cohort definition in a practical setting, it is recommended to work closely with personnel involved in the study to define the criteria precisely and to carefully select terminology systems. The chosen criteria should be combined according to the specific setting. Additional work is needed to specify the significance and amount of the extracted criteria.
Three Stages of The Journey

Where Have We Been?
Where Are We Now?
Where Are We Going?
Chris_Knoll

We are pleased to announce that the 2.14.0 release of Atlas and WebAPI have been formally released on GitHub. You can find the release notes at the following links:

WebAPI: https://github.com/OHDSI/WebAPI/releases/tag/v2.14.0

Many thanks to everyone who contributed to this release.

Please see release notes for special instructions related to the new features included in this release. Thank you!
Strategus sub-team formation

In the HADES Working Group, we’ve discussed and decided to form a sub-team focused on the design of Strategus software for OHDSI network studies. There has been a lot of discussion of Strategus here on the forums link, in the HADES workgroup, the Save Our Sisyphus Challenge, the 2023 OHDSI Hack-a-thon and of course on the Strategus GitHub Issue Tracker.

Now we’d like to formalize the work around the Strategus project into a sub-team of the HADES Working Group and we want to open this up to developers in the OHDSI community that are interested in collaborating. I have opened a poll on the HADES Working Group OHDSI Teams Channel to see who is interested in meeting and some options for meeting days/times. Please feel use that link to vote and to join the sub-team! I’m aiming to start this sub-team in January 2024.

(If you don’t have access to the OHDSI Teams environment, please see: OHDSI Workgroups – OHDSI and click the “Join A Workgroup” link)
MONDAY

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

(Woo Yeon Park, Kyulee Jeon, Teri Sippel Schmidt, Haridimos Kondylakis, Seng Chan You, Paul Nagy)
A distributed multi-site latent class analysis (dMLCA) algorithm for federated disease subphenotype detection

**Presenter:** Naimin Jing

**INTRO:**
LCA is a parametric model for detecting disease subphenotypes, but its application on distributed multi-site data is unclear due to:
1. Patient-level data cannot be shared.
2. Populations are heterogeneous across sites.
3. Divide-and-conquer doesn’t apply for unsupervised clustering.

We proposed dMLCA to address this issue.

**METHOD:**
- **dMLCA algorithm**
  - **Idea:** Modify categorical variables $Y$ and covariates $X_i$ for each patient.
  - **Modif:** based on LCA but allow the mixing proportions of the subphenotypes to vary across sites to handle heterogeneous populations.
  - **Estimation:** EM algorithm with 1-step Newton-Raphson updating formula, decomposable by sites so that each site only needs to store aggregated results for part of the formulas.
  - **Output:** The characteristics of the variables in each subphenotype, the proportion of each subphenotype, individual membership.
- **Application:** Detect subphenotypes of MIS-C in serious sequelae COVID-19 in children with EHR data of 864 MIS-C patients from YPECNet institutions (Mar 2020 - Dec 2021).

**RESULTS**
- **Three clusters meaningful subphenotypes detected using 50 variables.

- Heterogeneity in populations across sites interpreted by different mixing proportions.

**TUESDAY**

A distributed multi-site latent class analysis (dMLCA) algorithm for federated disease subphenotype detection

(Naimin Jing, Xiaokang Liu, Qiong Wu, Suchitra Rao, Asuncion Mejias, Mitchell Maltenfort, Julia Schuchard, Vitaly Lorman, Hanieh Razzaghi, Ryan Webb, Chuan Zhou, Ravi Jhaveri, Grace M. Lee, Nathan M. Pajor, Deepika Thacker, L. Charles Bailey, Christopher B. Forrest, and Yong Chen)
Building community, infrastructure, and insights for perinatal and reproductive health research in OHDSI

TEAM: Alison Callahan, Stephanie Leonard, Louisa Smith

INTRO:
- Childbirth is the number one reason for hospitalizations worldwide, but pregnancy is understudied.
- Pregnant people are systematically excluded from most trials and studies, despite often being in greatest need of effective therapies.
- More than 90% of pregnant patients use at least one medication, yet studies of medication safety and effectiveness during pregnancy using traditional approaches such as RCTs are limited due to concerns for fetal safety.

METHODS:
- We founded the Perinatal and Reproductive Health Work Group (PRHeG) in December 2022.
- PRHeG members (Figure 1) have expertise in informatics, data science, maternal-fetal medicine, and perinatal pharmacogenomics.
- Our objectives are to improve capture and representation of pregnancy and reproductive health data in the OMOP CDR, create an network of partners interested in pregnancy and reproductive health research, and launch at least one network study in our first year.

RESULTS:
- PRHeG members at Stanford University have developed ProgressDB, a database of 100,000 pregnancies and 30,000 live births (Figure 2).
- PRHeG members at Johnson & Johnson have developed an algorithm for linking mothers and infants in two USA commercial healthcare claims databases.
- PRHeG members at IDMP/ID in Spain, the University of Oslo in Norway, the University of Oxford in England, and the University of Dundee in Scotland have developed a perinatal expansion for the OMOP CDER, and implemented it at two OHDSI sites in Europe.

The Perinatal and Reproductive Health Work Group consists of more than 40 investigators across approximately 20 institutions. PRHeG’s purpose is to develop tools and standards for pregnancy and reproductive health data to foster collaborative studies and advance research in the field.

Figure 1: Locations of PRHeG members.
The importance of including socioeconomic characteristics in prediction models of COVID-19 in Brazil, and in other highly unequal societies

(Valentina Martufi, Renzo Flores-Ortiz, Priscilla Normando, Vinicius A. Oliveira, Maria Yury Ichihara, Mauricio L. Barreto, Elzo P. P. Júnior)
Telehealth Utilization for Diabetes Care Among Individuals with Medicare and Medicaid Coverage

(Nick Williams)

Title: Study effects lost in translation? ICD-10-CM vs SNOMED-CT
Nick Williams, Ph.D.

INTRODUCTION:
1. Translation of data from one vocabulary to another is standard practice in our era.
2. The information loss which occurs when mapping real-world data across vocabularies is under described.
3. Some translations can cause type 1 or type 2 study errors.

METHODS:
1. We used a 100% sample of Medicare and Medicaid Records from 2018-2020.
2. We extracted a case series of diabetes by telehealth and survival status before and during the Covid-19 emergency.
3. Extracts were other left native ICD-10-CM or mapped through Athena to SNOMED-CT.
4. Detection of study effects were graphed and evaluated.

RESULTS:
The study period (2018-2020) included 24,693,384 distinct individuals across 362,739,748 diagnostic events. Cases were more likely to survive the study period if they used telehealth at least once (350 monthly births or 650). We detect an exponential increase in telehealth utilization within diabetes claims over the study period (monthly distinct case range of 2,269-26,675).

SNOMED-CT mapping within index aggregation terms returned 143 distinct diagnostic codes, while ICD-10CM returned 235 codes within index aggregation terms. The SNOMED-CT aggregates produced 503,140 aggregate records while ICD-10CM produced 627,219 records.

Distinct aggregates demonstrate that telehealth-ever and non-surviving users have smaller diagnostic breath in both vocabulary aggregations. However, case event volumes are inflated after Snomed-CT conversion, and model effects were deflated too.
Opening: Limerick Digital Cancer Research Centre

University of Limerick local time: 31-November-2023 14:39

Job Spec

Advertisement/Information for Applicants
Please click on Information for Applicants/Job Description link below for full job

Post Doctoral Researcher (Level 1 or 2) in Cancer Digital Health Real World Evidence (2 Positions)

With over 16,000 students and 2,600 members of staff, the University of Limerick (UL) is an energetic, research-led and enterprising institution with a proud record in innovation and excellence in education, research and scholarship. The dynamic, entrepreneurial and pioneering values which drive UL’s mission and strategy ensure that we capitalise on local, national and international engagement and connectivity. We are renowned for providing an outstanding student experience and conducting leading-edge research. Our commitment is to make a difference by shaping the future through educating and empowering our students.

With the River Shannon as a unifying focal point, UL is situated on a superb riverside campus of over 130 hectares. Outstanding recreational, cultural and sporting facilities further enhance the campus’s exceptional learning and research environment.

Applications are invited for the following position:

Faculty of Education & Health Sciences

School of Medicine

Post Doctoral Researcher (Level 1 or 2) in Cancer Digital Health Real World Evidence (2 Positions) Specific Purpose Contract

Salary Scales: PD1 €42,033 - €48,427 p.a. pro rata

PD2 €49,799 – €54,153 p.a. pro rata

Informal enquiries regarding the post may be directed to:
Professor Aidan Coughan
School of Medicine
University of Limerick
Email: aidan.coughan@ul.ie

"This is a professional training and development role and the training and development relevant to this position will be completed within the period of the contract. Postdoctoral Researchers appointed will be expected to complete the Researcher Career Development Programme."

The closing date for receipt of applications is Friday, 15th December 2023. Applications must be completed online before 12 noon, Irish Standard Time on the closing date.

The University of Limerick supports blended working
Openings: Bill and Melinda Gates Foundation

Distinguished Scientist, Artificial Intelligence & Large Language Models
Apply

Deputy Director, Quantitative Sciences
Apply
Job Opening: Stanford University

Open Postdoctoral position, faculty mentor Brian Bateman

Our research team is looking for a postdoctoral scholar in perinatal pharmacoepidemiology. The scholar will work closely with Drs. Brian Bateman and Stephanie Leonard on NIH-funded research projects on the comparative safety and effectiveness of medications in pregnancy and related research topics. Our projects employ advanced analytical methods in large databases, which include claims data and electronic health record data in conventional structures and in common data models. Current topical focus areas include mental health, behavioral health and cardiovascular health of people who are pregnant or postpartum.

Our research group prioritizes a collaborative and inclusive team environment. The principal investigators are experienced mentors who are highly committed to supporting the postdoctoral scholar in advancing their career as a future independent investigator. The
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?
OHDSI End-of-year holiday fun!