Data Visualization Challenge

OHDSI Community Call
March 30, 2021 • 11 am ET

March/April OHDSI Community Calls

Date	Topic
March 30	OHDSI Challenge
April 6	OHDSI Network Studies
April 13	10-Minute Tutorials
April 20	Community Presentations (Theme: Local Impacts of OHDSI)
April 27	OHDSI Networking Session
May 3	Workgroup Updates
May 10	OHDSI Debates
May 17	Focus Topic: Prostate Cancer Study-A-Thon
May 24	OHDSI Fun

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OHDSI Network Studies

Cancer Risk Between H2 Blockers

Seng Chan You

Calculating the background rates of adverse events of special interest (AESI) for the COVID vaccines

Xintong Li

MSKAI- Musculoskeletal adverse events following hormonal treatment for breast cancer: Cohort Diagnostics to establish feasibility

Jenny Lane

Covid-19 pandEmic impacts on mental health Related conditions Via multi-database nEtwork: a LongitutinaL Observational study (CERVELLO)

Carmen Olga-Torre

Alpha-1 blocker for Palliating Inflammatory injury Severity (APIS) study

Aki Nishimura

Evaluating Use of Methods for Adverse Event Under Surveillance (EUMAEUS)

Martijn Schuemie

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10-Minute Tutorials

ATHENA/Vocabulary

Mik Kallfelz

USAGI

Maxim Moinat

PHOEBE

Anna Ostropolets

ACHILLES

Frank DeFalco

Three Stages of The Journey

Where Have We Been?

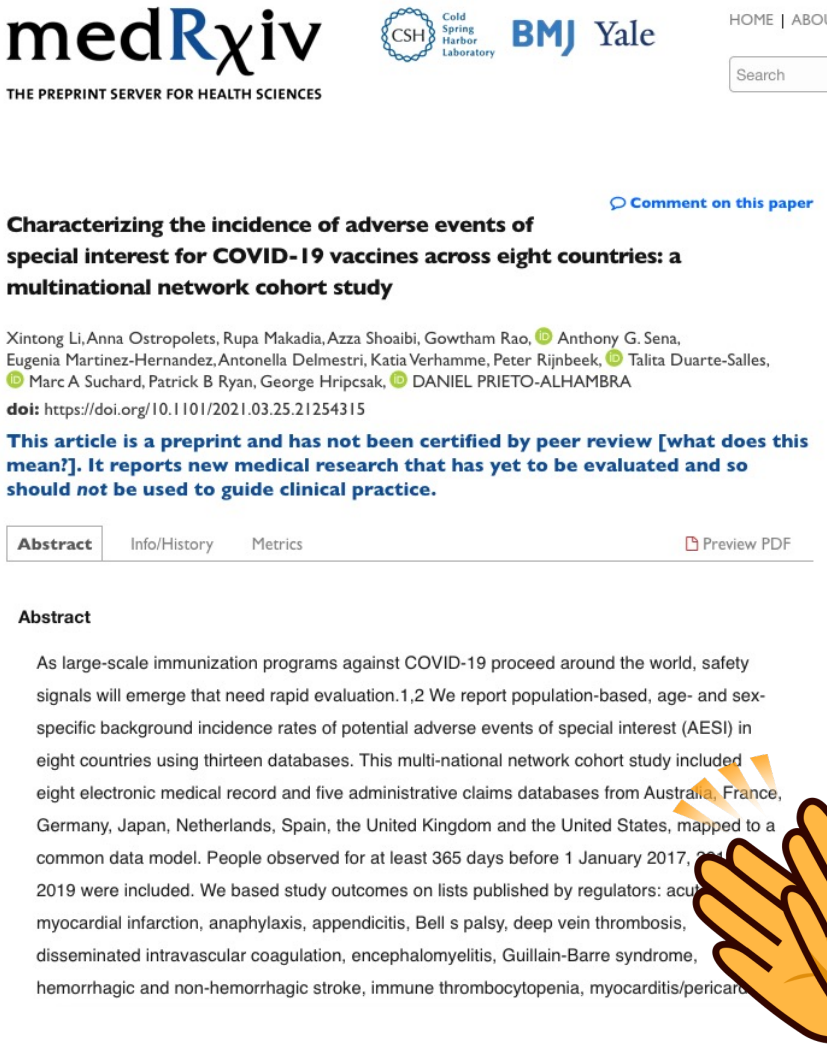
Where Are We Now?

Where Are We Going?

OHDSI Shoutouts!

OHDSI Shoutouts!

Congratulations to the team of **Xintong Li, Anna Ostropolets, Rupa Makadia, Azza Shaoibi, Gowtham Rao, Anthony Sena, Eugenia Martinez-Hernandez, Antonella Delmestri, Katia Verhamme, Peter Rijnbeek, Talita Duarte-Salles, Marc Suchard, Patrick Ryan, George Hripcsak, and Daniel Prieto-Alhambra** for the first preprint coming out of our work on vaccine surveillance: **Characterizing the incidence of adverse events of special interest for COVID-19 vaccines across eight countries: a multinational network cohort study**. This preprint has been posted to MedRxiv, and community feedback is both welcomed and encouraged.



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Characterizing the incidence of adverse events of special interest for COVID-19 vaccines across eight countries: a multinational network cohort study

Xintong Li, Anna Ostropolets, Rupa Makadia, Azza Shoaibi, Gowtham Rao, Anthony G. Sena, Eugenia Martinez-Hernandez, Antonella Delmestri, Katia Verhamme, Peter Rijnbeek, Talita Duarte-Salles, Marc A Suchard, Patrick B Ryan, George Hripcsak, DANIEL PRIETO-ALHAMBRA

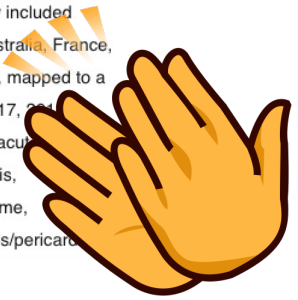
doi: https://doi.org/10.1101/2021.03.25.21254315

This article is a preprint and has not been certified by peer review [what does this mean?]. It reports new medical research that has yet to be evaluated and so should *not* be used to guide clinical practice.

Abstract | Info/History | Metrics | Preview PDF

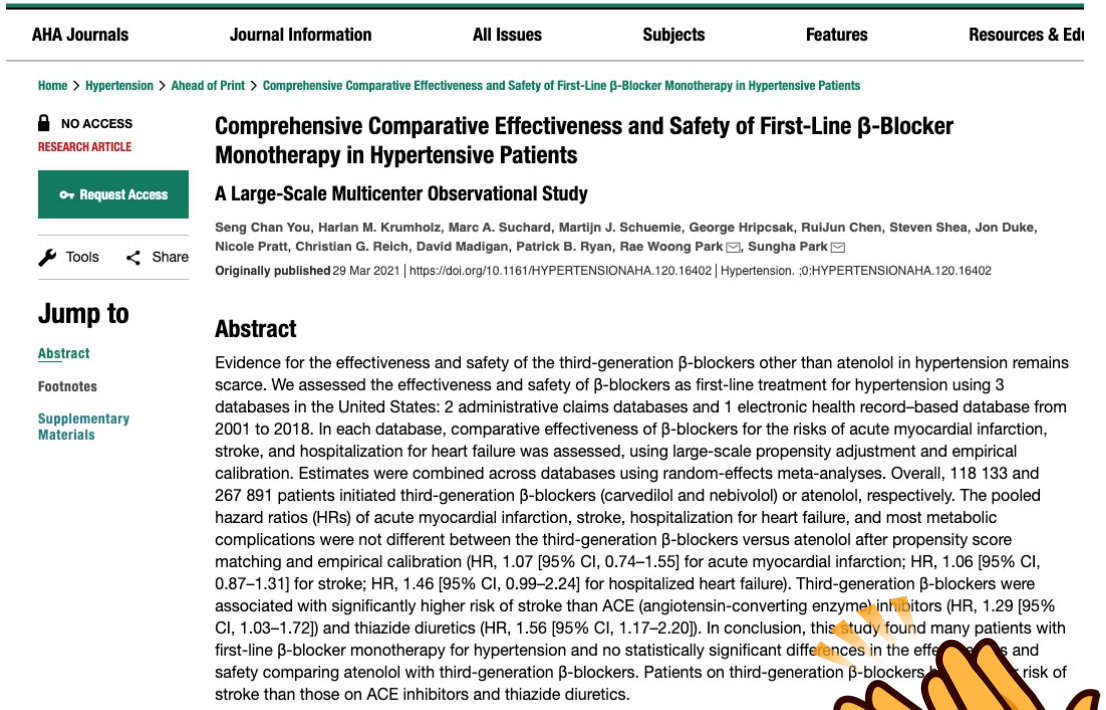
Abstract

As large-scale immunization programs against COVID-19 proceed around the world, safety signals will emerge that need rapid evaluation.1,2 We report population-based, age- and sex-specific background incidence rates of potential adverse events of special interest (AESI) in eight countries using thirteen databases. This multi-national network cohort study included eight electronic medical record and five administrative claims databases from Australia, France, Germany, Japan, Netherlands, Spain, the United Kingdom and the United States, mapped to a common data model. People observed for at least 365 days before 1 January 2017, [illegible] 2019 were included. We based study outcomes on lists published by regulators: acu[illegible] myocardial infarction, anaphylaxis, appendicitis, Bell s palsy, deep vein thrombosis, disseminated intravascular coagulation, encephalomyelitis, Guillain-Barre syndrome, hemorrhagic and non-hemorrhagic stroke, immune thrombocytopenia, myocarditis/pericard[illegible]



OHDSI Shoutouts!

Congratulations to the team of **Seng Chan You, Harlan Krumholz, Marc Suchard, Martijn Schuemie, George Hripcsak, RuiJun Chen, Steven Shea, Jon Duke, Nicole Pratt, Christian Reich, David Madigan, Patrick Ryan, Rae Woong Park, and Sungha Park** for this study published in Hypertension: **Comprehensive Comparative Effectiveness and Safety of First-Line β-Blocker Monotherapy in Hypertensive Patients**.



Hypertension

AHA Journals | Journal Information | All Issues | Subjects | Features | Resources & Edu

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Comprehensive Comparative Effectiveness and Safety of First-Line β-Blocker Monotherapy in Hypertensive Patients

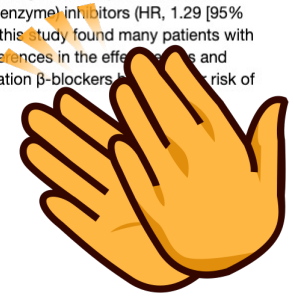
A Large-Scale Multicenter Observational Study

Seng Chan You, Harlan M. Krumholz, Marc A. Suchard, Martijn J. Schuemie, George Hripcsak, RuiJun Chen, Steven Shea, Jon Duke, Nicole Pratt, Christian G. Reich, David Madigan, Patrick B. Ryan, Rae Woong Park, Sungha Park

Originally published 29 Mar 2021 | https://doi.org/10.1161/HYPERTENSIONAHA.120.16402 | Hypertension. ;0:HYPERTENSIONAHA.120.16402

Abstract

Evidence for the effectiveness and safety of the third-generation β-blockers other than atenolol in hypertension remains scarce. We assessed the effectiveness and safety of β-blockers as first-line treatment for hypertension using 3 databases in the United States: 2 administrative claims databases and 1 electronic health record–based database from 2001 to 2018. In each database, comparative effectiveness of β-blockers for the risks of acute myocardial infarction, stroke, and hospitalization for heart failure was assessed, using large-scale propensity adjustment and empirical calibration. Estimates were combined across databases using random-effects meta-analyses. Overall, 118 133 and 267 891 patients initiated third-generation β-blockers (carvedilol and nebivolol) or atenolol, respectively. The pooled hazard ratios (HRs) of acute myocardial infarction, stroke, hospitalization for heart failure, and most metabolic complications were not different between the third-generation β-blockers versus atenolol after propensity score matching and empirical calibration (HR, 1.07 [95% CI, 0.74–1.55] for acute myocardial infarction; HR, 1.06 [95% CI, 0.87–1.31] for stroke; HR, 1.46 [95% CI, 0.99–2.24] for hospitalized heart failure). Third-generation β-blockers were associated with significantly higher risk of stroke than ACE (angiotensin-converting enzyme) inhibitors (HR, 1.29 [95% CI, 1.03–1.72]) and thiazide diuretics (HR, 1.56 [95% CI, 1.17–2.20]). In conclusion, this study found many patients with first-line β-blocker monotherapy for hypertension and no statistically significant differences in the effe[illegible]s and safety comparing atenolol with third-generation β-blockers. Patients on third-generation β-blockers h[illegible] risk of stroke than those on ACE inhibitors and thiazide diuretics.



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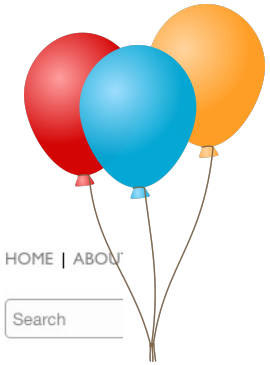
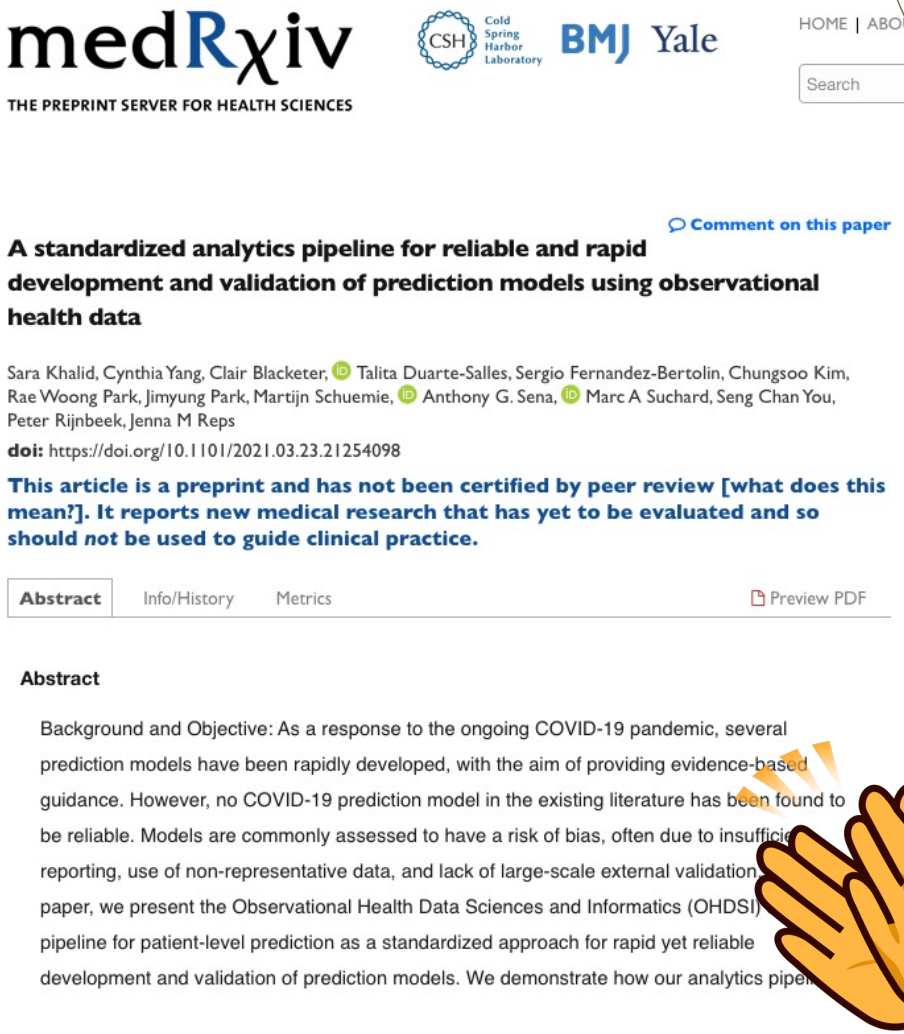


Congratulations to the team of **Sara Khalid, Cynthia Yang, Clair Blacketer, Talita Duarte-Salles, Sergio Fernandez-Bertolin, Chungsoo Kim, Rae Woong Park, Jimyung Park, Martijn Schuemie, Anthony Sena, Marc Suchard, Seng Chan You, Peter Rijnbeek, and Jenna Reps** for this preprint recently posted on MedRxiv: **A standardized analytics pipeline for reliable and rapid development and validation of prediction models using observational health data**.



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A standardized analytics pipeline for reliable and rapid development and validation of prediction models using observational health data

Sara Khalid, Cynthia Yang, Clair Blacketer, Talita Duarte-Salles, Sergio Fernandez-Bertolin, Chungsoo Kim, Rae Woong Park, Jimyung Park, Martijn Schuemie, Anthony G. Sena, Marc A Suchard, Seng Chan You, Peter Rijnbeek, Jenna M Reps

doi: https://doi.org/10.1101/2021.03.23.21254098

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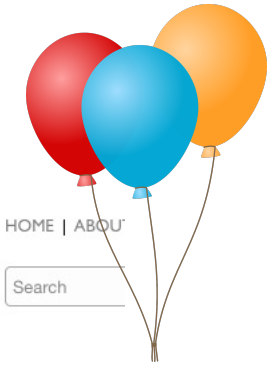
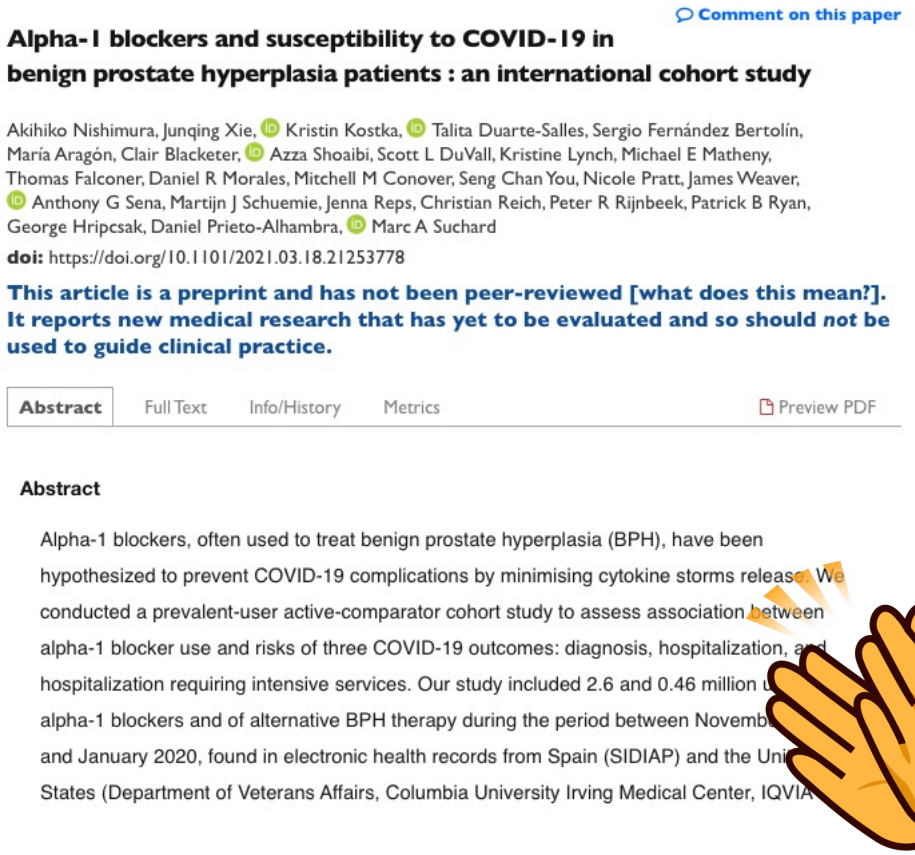
Abstract

Background and Objective: As a response to the ongoing COVID-19 pandemic, several prediction models have been rapidly developed, with the aim of providing evidence-based guidance. However, no COVID-19 prediction model in the existing literature has been found to be reliable. Models are commonly assessed to have a risk of bias, often due to insufficie reporting, use of non-representative data, and lack of large-scale external validation paper, we present the Observational Health Data Sciences and Informatics (OHDSI) pipeline for patient-level prediction as a standardized approach for rapid yet reliable development and validation of prediction models. We demonstrate how our analytics pipe

OHDSI Shoutouts!



Congratulations to the team of **Akihiko Nishimura, Junqing Xie, Kristin Kostka, Talita Duarte-Salles, Sergio Fernández Bertolín, María Aragón, Clair Blacketer, Azza Shoaibi, Scott DuVall, Kristine Lynch, Michael Matheny, Thomas Falconer, Daniel Morales, Mitchell Conover, Seng Chan You, Nicole Pratt, James Weaver, Anthony Sena, Martijn Schuemie, Jenna Reps, Christian Reich, Peter Rijnbeek, Patrick Ryan, George Hripcsak, Daniel Prieto-Alhambra, and Marc Suchard** for this preprint recently posted on MedRxiv: **Alpha-1 blockers and susceptibility to COVID-19 in benign prostate hyperplasia patients: an international cohort study**.



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Alpha-1 blockers and susceptibility to COVID-19 in benign prostate hyperplasia patients : an international cohort study

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doi: https://doi.org/10.1101/2021.03.18.21253778

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Abstract

Alpha-1 blockers, often used to treat benign prostate hyperplasia (BPH), have been hypothesized to prevent COVID-19 complications by minimising cytokine storms release. We conducted a prevalent-user active-comparator cohort study to assess association between alpha-1 blocker use and risks of three COVID-19 outcomes: diagnosis, hospitalization, and hospitalization requiring intensive services. Our study included 2.6 and 0.46 million u alpha-1 blockers and of alternative BPH therapy during the period between Novemb and January 2020, found in electronic health records from Spain (SIDIAP) and the Uni States (Department of Veterans Affairs, Columbia University Irving Medical Center, IQVIA

OHDSI Shoutouts!

Thank you to the collaborators on our **Scientific Review Committee** for the 2021 OHDSI Symposium:

Fatemah Alnofal
Nsikak Akpakpan
Juan Banda
Maytal Bivas-Benita
Adrien Coulet
Jon Duke
Leanne Goldstein
Jill Hardin
Kristin Kostka
Christophe Lambert
Rupa Makadia
Melanie Philofsky
Jose Posada
Hanieh Razzaghi
Patrick Ryan
Sarah Seager
Rohit Vashisht
Mui Van Zandt
Andrew Williams
Chen Yanover
Seng Chan You

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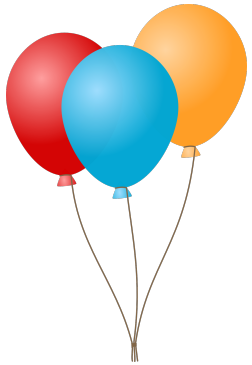

Any shoutouts from the community? Please share and help promote and celebrate OHDSI work!

Have a study published? Please send to sachson@ohdsi.org so we can share during this call and on our social channels.
Let's work together to promote the collaborative work happening in OHDSI!

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	1 pm	2-Hour Brainstorm on Proposed CDM Changes
Wednesday	10 am	OMOP CDM Oncology – Development Subgroup
Wednesday	2 pm	GIS-Geographic Information System
Thursday	9 am	Psychiatry
Thursday	1 pm	Patient-Level Prediction/Population-Level Estimation (Western)
Thursday	1 pm	OMOP CDM Oncology – CDM/Vocabulary Subgroup
Tuesday	9 am	OMOP CDM Oncology – Genomic Subgroup

www.ohdsi.org/upcoming-working-group-calls

CDM Brainstorm Session March 30

The CDM workgroup has scheduled a special two-hour planning session for CDM 5.4 today at 1 pm in the CDM Teams environment. Clair Blacketer has shared a proposed list of changes.

Please join for some or all of the meeting if you are interested in helping shape the next update of the OMOP CDM.

KR1: List of Changes

Tuesday, March 16, 2021 10:25 AM

Start with v5.3 -> v5.4?

Easy Additions

- PROCEDURE_OCCURRENCE
  - PROCEDURE_STATUS_CONCEPT_ID
    - Similar to CONDITION_STATUS_CONCEPT_ID #376 - maybe
- LOCATION_CONCEPT_ID
  - Make the location table international #365
  - Do we also need REGION_CONCEPT_ID and COUNTRY_CONCEPT_ID or is that subsumed by LOCATION_CONCEPT_ID?
- UDI field in DEVICE_EXPOSURE
  - Make 250 characters to allow all permutations of UDI - technically just a DDL change
- UNIT_CONCEPT_ID in DEVICE_EXPOSURE #264
- UNIT_SOURCE_CONCEPT_ID in MEASUREMENT #259
- Representation of infusion rates - is this solved with DOSE_UNIT_SOURCE_VALUE? #224
- Add METADATA_ID and VALUE_AS_NUMBER to METADATA #202
- Add VALUE_SOURCE_VALUE to OBSERVATION #193
- Change CDM_VERSION in CDM_SOURCE to numeric and use a concept_id #306
  - Also *technically* breaking but really a DDL change
- Add DEATH_DATE alongside the DEATH table?
  - Add DEATH_TYPE_CONCEPT_ID to PERSON
- EPISODE and EPISODE_EVENT

Potentials

- Rename VISIT_DETAIL_PARENT_ID to PARENT_VISIT_DETAIL_ID #329
  - This is *technically* breaking but I don't believe any standard processes currently reference it
- GENDER_CONCEPT_ID
  - Changing this to SEX_CONCEPT_ID would be a breaking change. Should we add it instead and keep both fields?
- PROCEDURE_END_DATETIME #286
  - Agree, convention that if no end_datetime then set to start_datetime
  - This would necessitate the addition of procedure_start_datetime or renaming of procedure_date
  - Instead, add length of procedure to get around the breaking change

MBLACKE@ITS.JNJ.COM

2021 OHDSI Symposium

Where Are We Going?

Any other announcements of upcoming work, events, deadlines, etc?

Three Stages of The Journey

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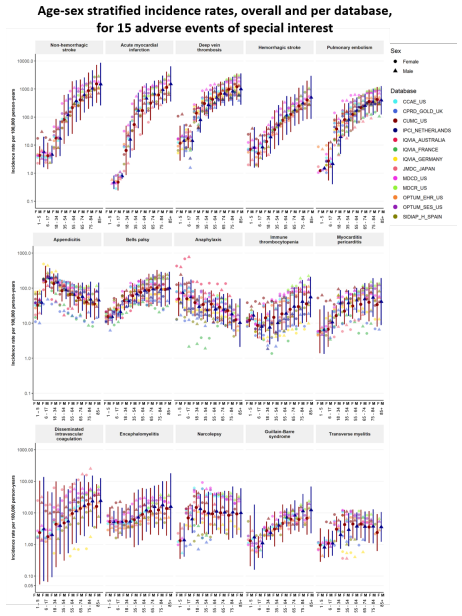
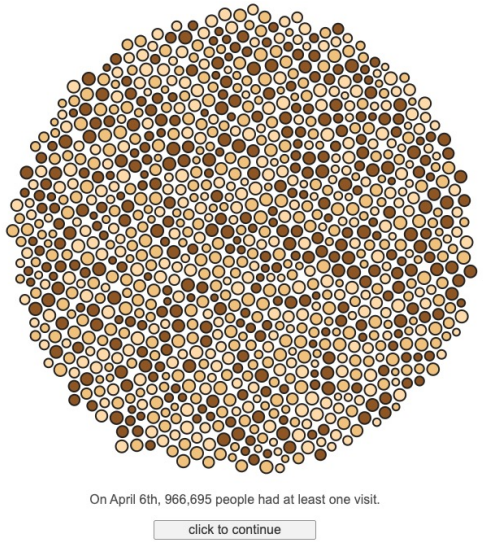
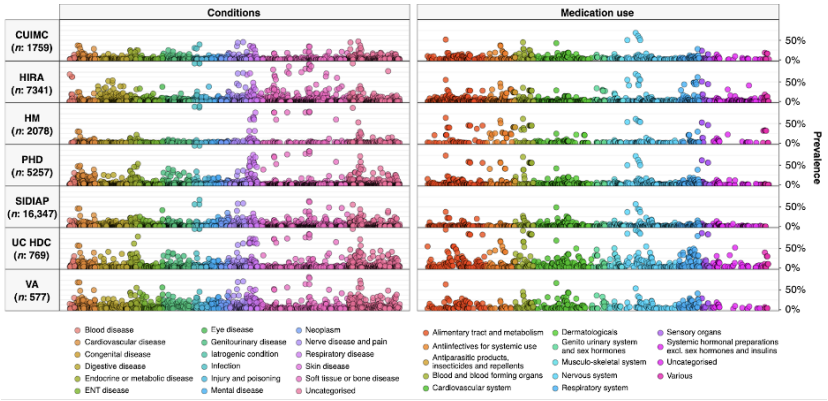
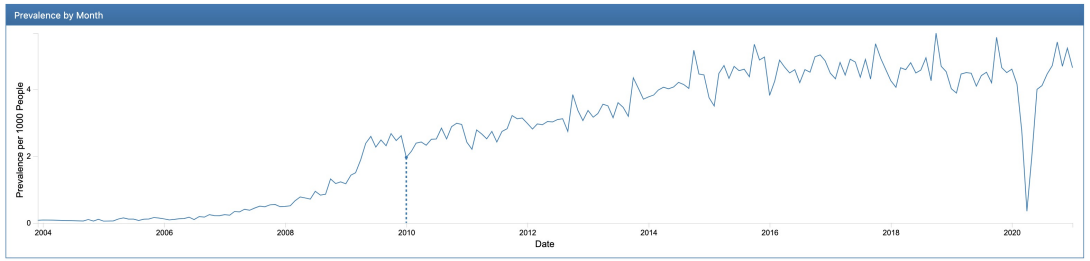
March 30 Community Call Topic

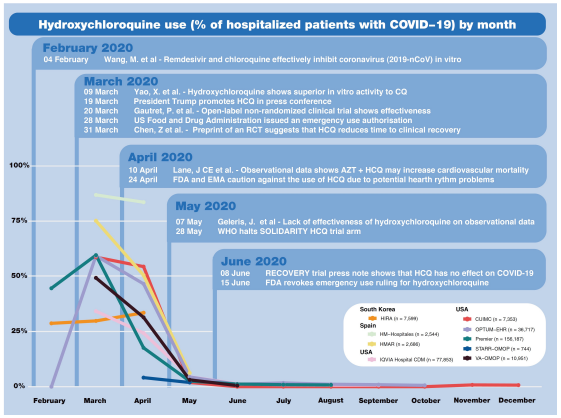
Community Data Visualization Discussion

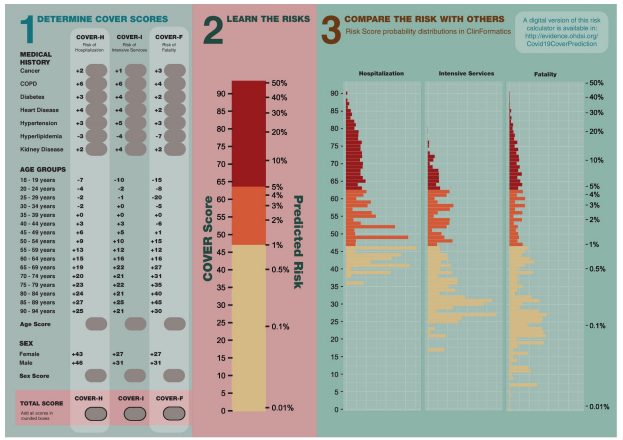




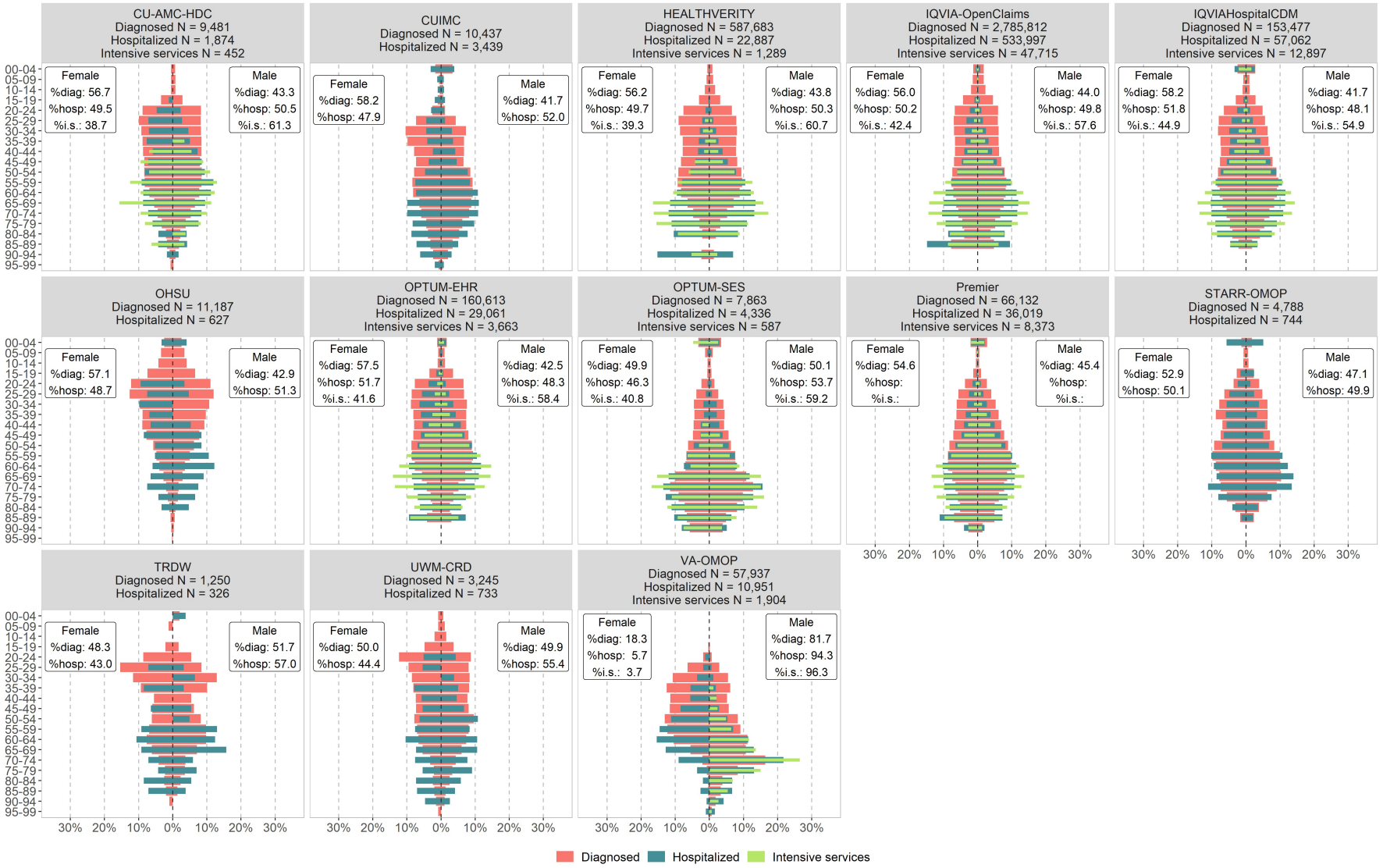




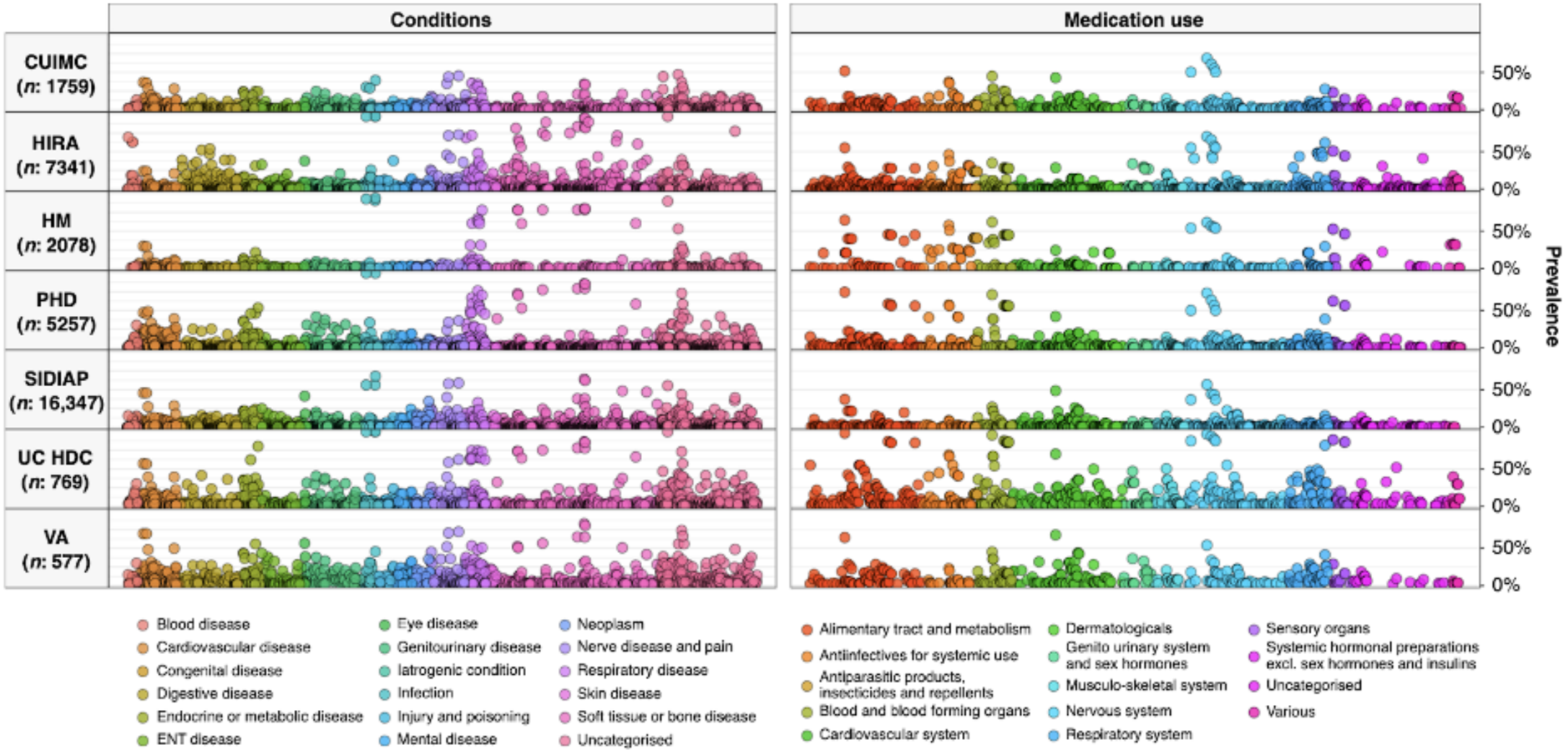




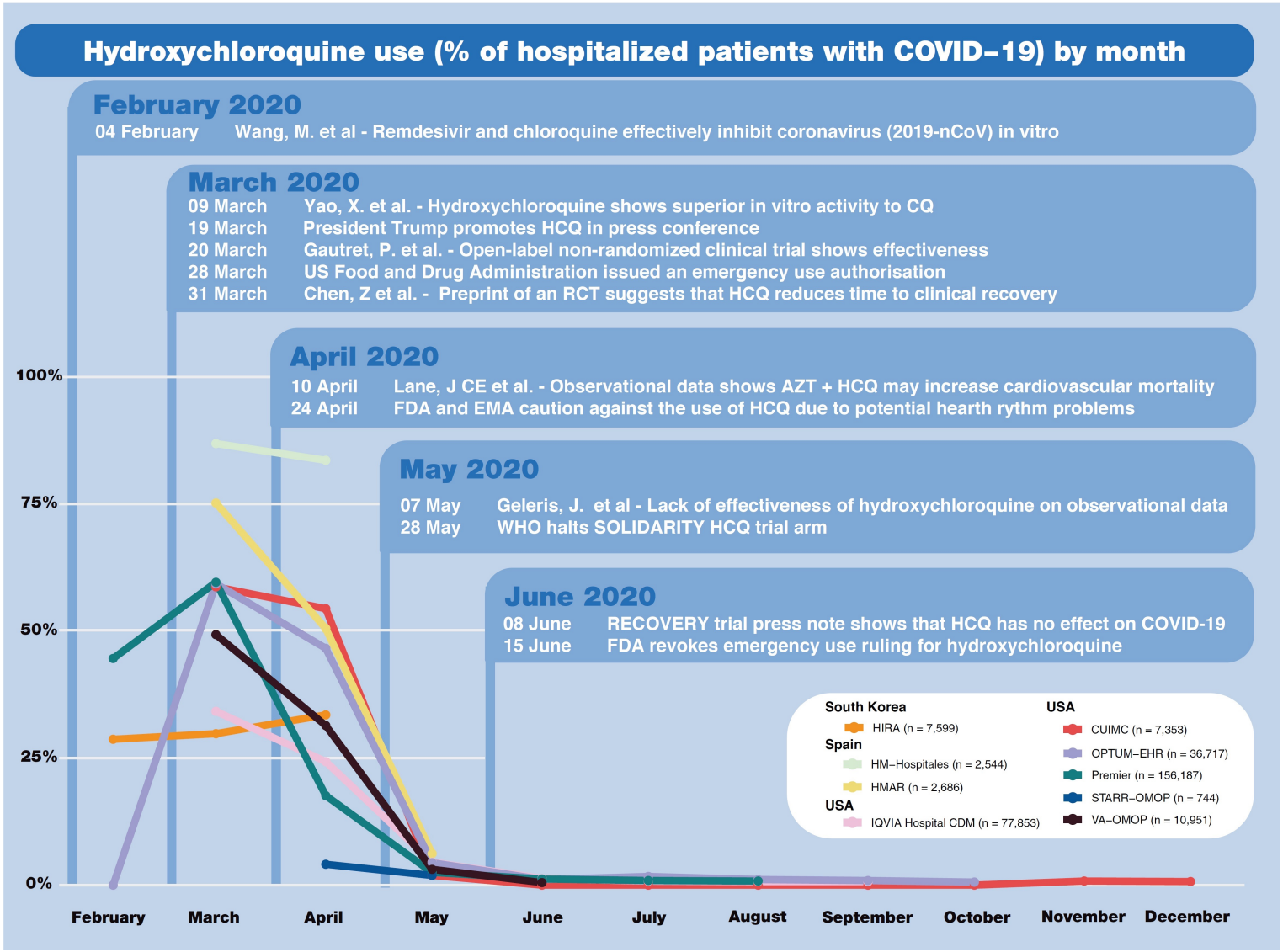
Andrea Pistillo



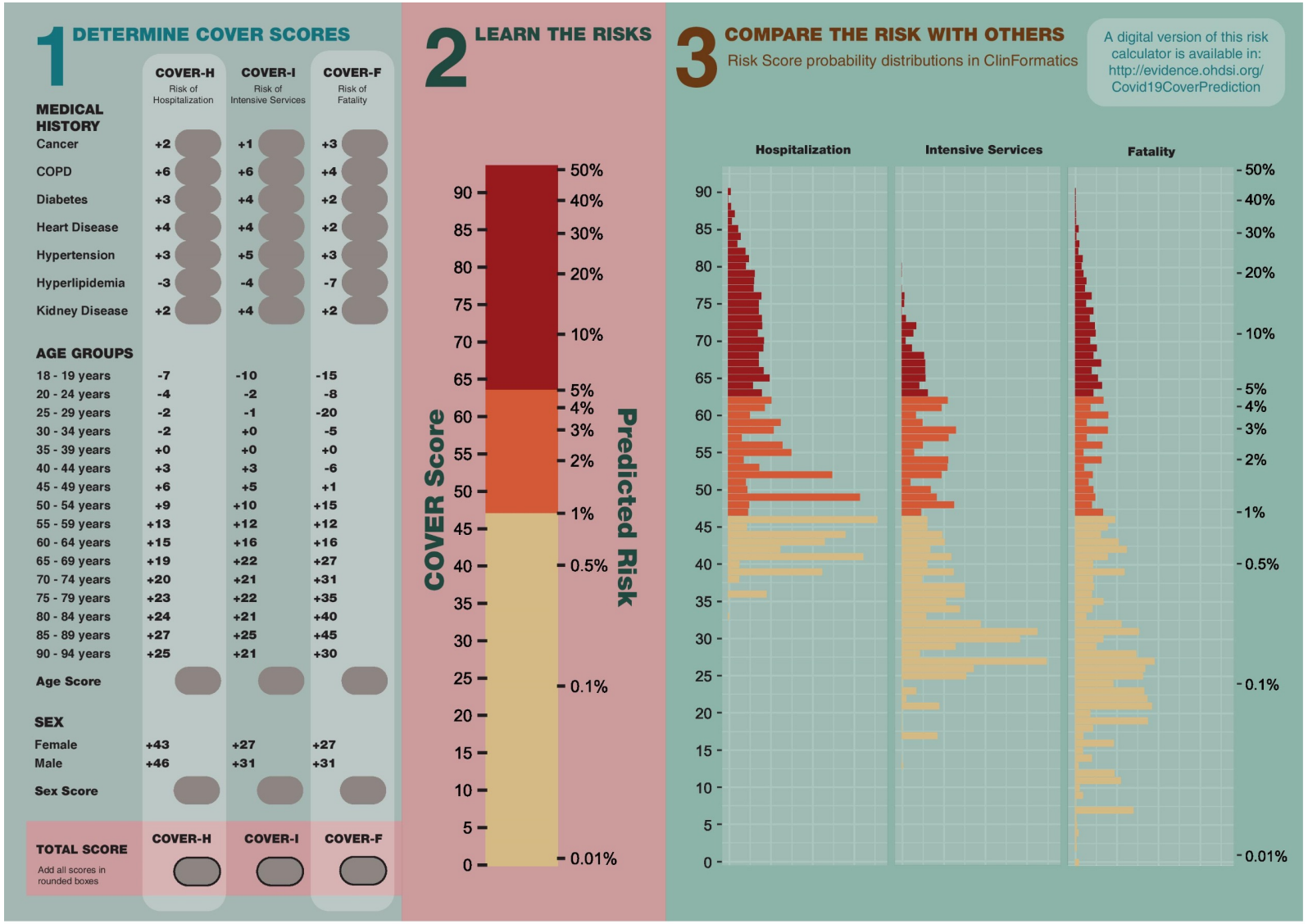
Faaizah Arshad



Albert Prats-Uribe

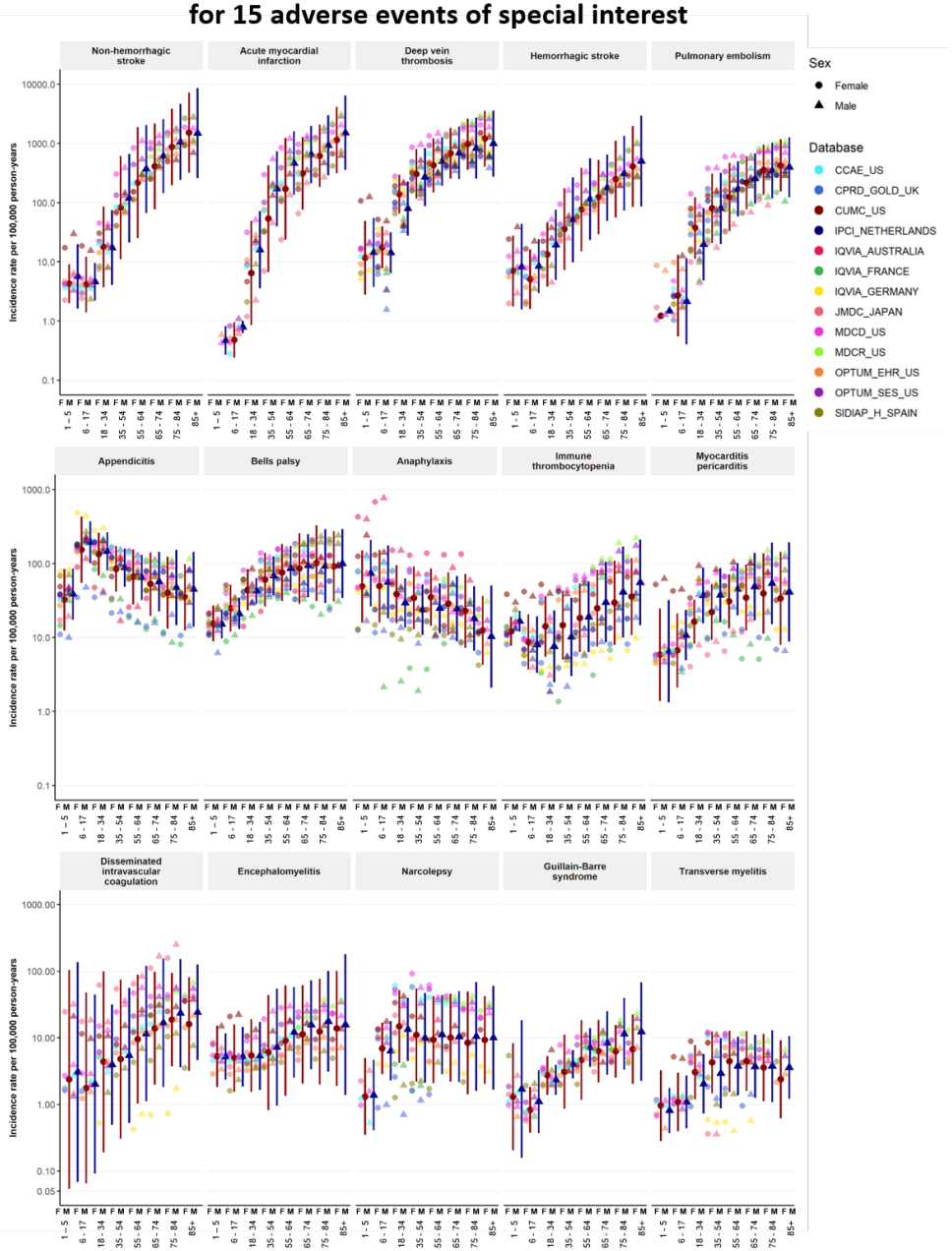


Ross Williams



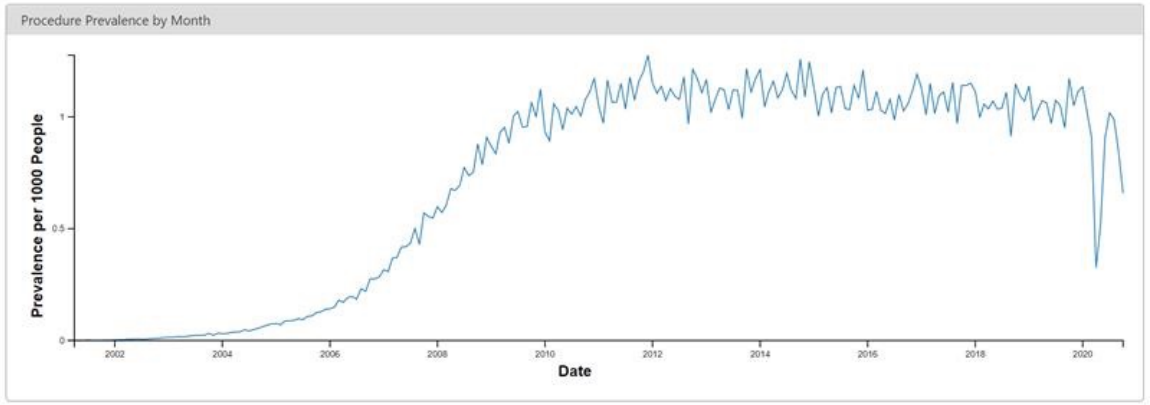
Xintong Li

Age-sex stratified incidence rates, overall and per database, for 15 adverse events of special interest

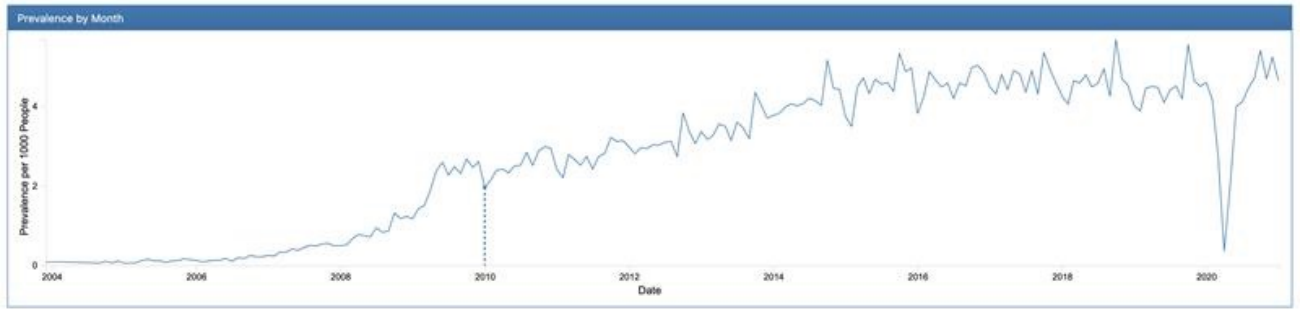


Greg Klebanov

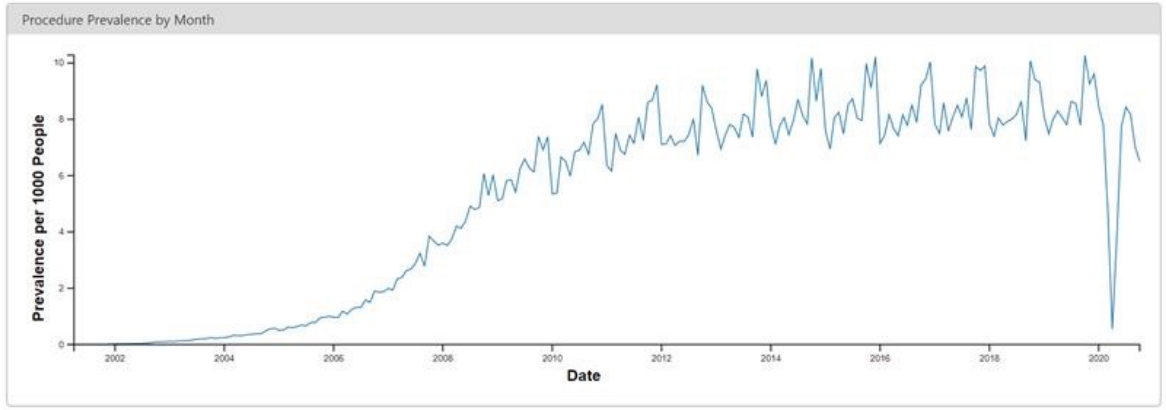
Diagnostic Mammography (CPT 77065) - Truven MarketScan



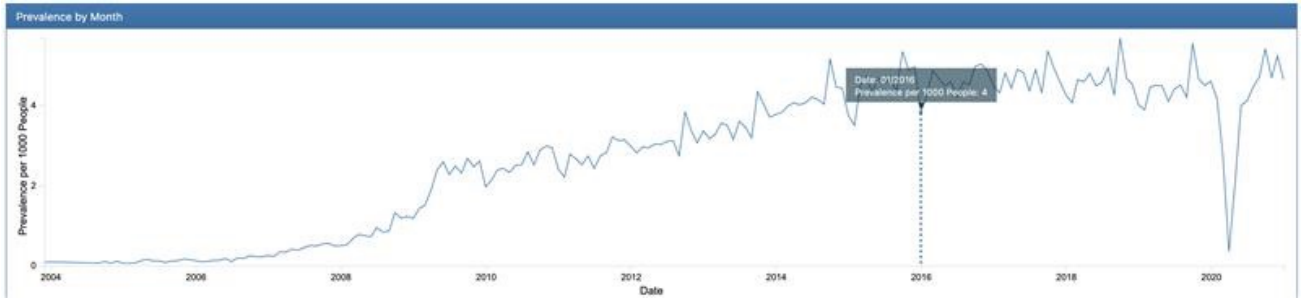
Diagnostic Mammography (CPT 77065) - IQVIA Open Claims



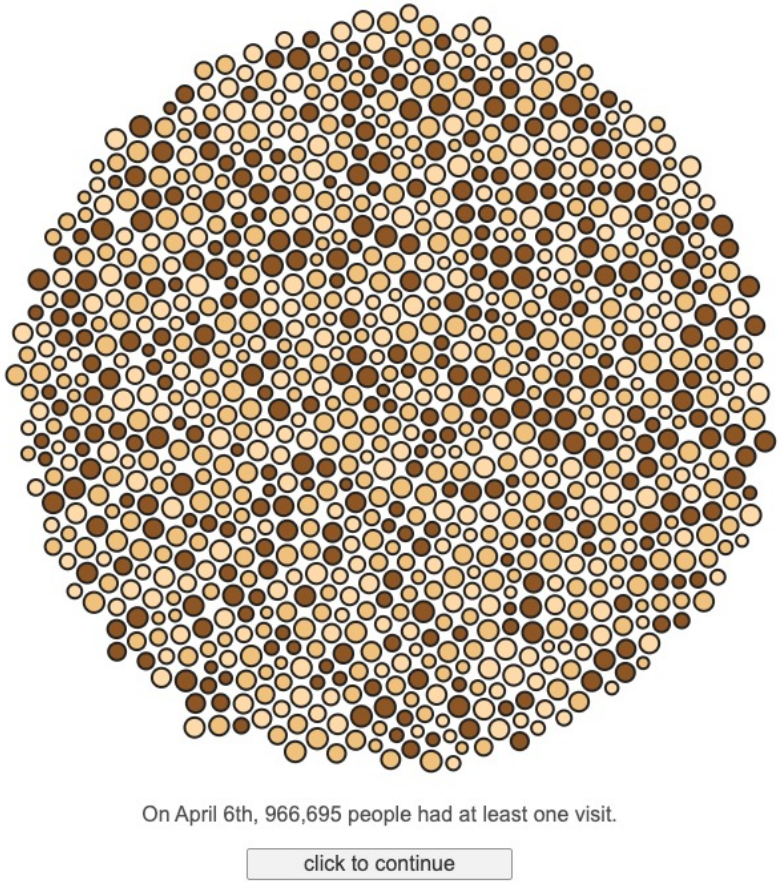
Screening mammography (CPT 77067) - Truven MarketScan



Screening mammography (CPT 77067) - IQVIA Open claims



Erica Voss / Frank DeFalco



https://fdefalco.github.io/ohdsi-challenge/