



OHDSI APAC Community Call

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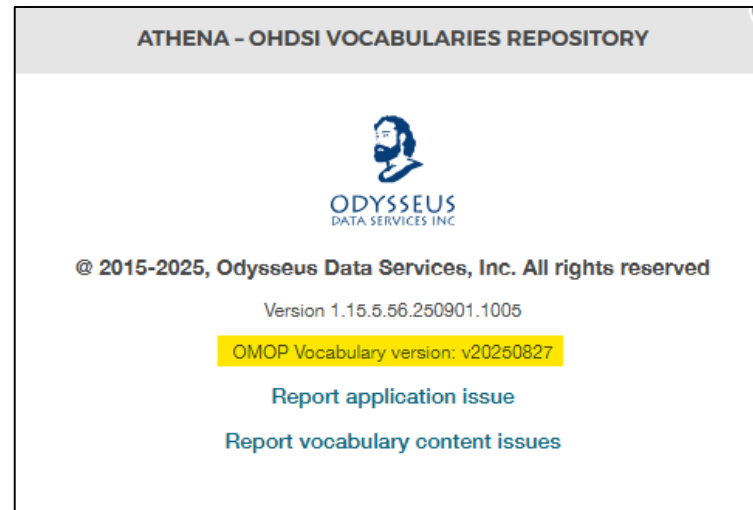
Agenda

- OHDSI News
- 2025 OHDSI Global Symposium: Highlight of Collaborator's Showcase
 1. LATTE: A one-shot lossless algorithm for federated target trial emulation with application to Alzheimer's disease and related dementia drug repurposing using decentralized data *by Lu Li*
 2. Comparative Effectiveness of Ticagrelor vs. Prasugrel in Patients with Acute Coronary Syndrome Undergoing Percutaneous Coronary Intervention *by Chang Hoon Han*
 3. Characterization of US standard certificate of birth data using OHDSI tools *by Cynthia Sung*



OHDSI News

- Latest update of OMOP Standardized Vocabularies has been released
- Adds new drugs, procedures and lab tests, improved mappings for conditions, and expanded hierarchies
- Full release notes available at https://github.com/OHDSI/Vocabulary-v5.0/releases/tag/v20250827_1756288395.000000





OHDSI News

- OHDSI Africa hosted their very first symposium!

Join Us At The Inaugural OHDSI Africa Symposium

Nov. 10-12, 2025 • Joint Clinical Research Centre (JCRC) & Mestil Hotel Kampala



The inaugural OHDSI Africa Symposium will be held in Kampala at the Joint Clinical Research Centre (JCRC) and Mestil Hotel. Our community is delighted to introduce a new face-to-face opportunity in Africa, where OHDSI is growing at an exciting pace. We hope you will join us for this historical moment.

The first OHDSI Africa symposium will be hosted by JCRC and will begin with a dedicated one-day training course at JCRC, followed by a two-day main conference at Mestil hotel. Below are some important dates for you to save to your calendar:







OHDSI News

- Registrations are open for OHDSI's 2026 Summer School!
 - Details available at <https://columbiauniversity1.regfox.com/columbia-ohdsi-summer-school-2026>

The 2026 Summer School in Observational Health Data Science & Informatics, AI, and Real World Evidence

July 22-26, 2026, Columbia University Department of Biomedical Informatics

The Columbia OHDSI Summer School offers health professionals, researchers, and industry practitioners an immersive, hands-on introduction to working with real-world health data and generating real-world evidence (RWE). Participants will learn how to transform electronic health records and claims data into the OMOP Common Data Model to support collaborative, distributed research.

Program Highlights

- Explore three analytic use cases:
 - *Clinical characterization – describing disease natural history and treatment patterns*
 - *Population-level estimation – assessing drug safety and comparative effectiveness*
 - *Patient-level prediction – applying machine learning for early detection and precision medicine*
- Work through the full RWE study lifecycle: study design, use of OHDSI open-source tools (ATLAS, HADES), and execution across real-world datasets.
- Blend of foundational lectures, interactive exercises, and faculty-led group work.
- Dedicated time to develop your own study ideas with mentoring and feedback.

Meet Our Faculty



George Hripcsak, MD MS,
Vivian Beaumont Allen Professor,
Columbia Biomedical Informatics



Patrick Ryan, PhD,
Adjunct Assistant Professor,
Columbia Biomedical Informatics

Registration Information

Program Fee: The registration fee includes five full days of instruction, hands-on exercises, access to computing infrastructure and datasets, and lunch each day. Please note that participants are responsible for their own travel and lodging.

\$5,900 – Early bird rate (available through May 15, 2026)

\$6,500 – Standard rate (after May 15, 2026)





2025 OHDSI APAC Symposium

December 6-7 • Shanghai Jiao Tong University, China





Registrations

Only 15 days away!!

2025 OHDSI APAC Symposium Registration Form

We are excited to announce that registrations for the 2025 OHDSI APAC Symposium are now open!

This year's symposium will take place in Shanghai, China at the Shanghai Jiao Tong University featuring a 1-day tutorial and a 1-day main conference.

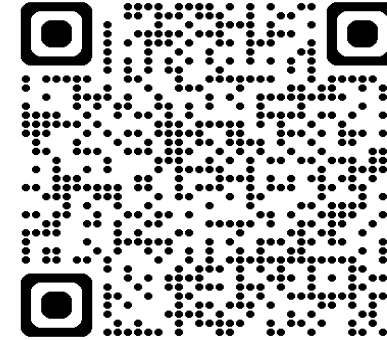
Learn more about the event at <https://www.ohdsi.org/apac2025/> and stay tuned for updates as they come.

When you submit this form, it will not automatically collect your details like name and email address unless you provide it yourself.

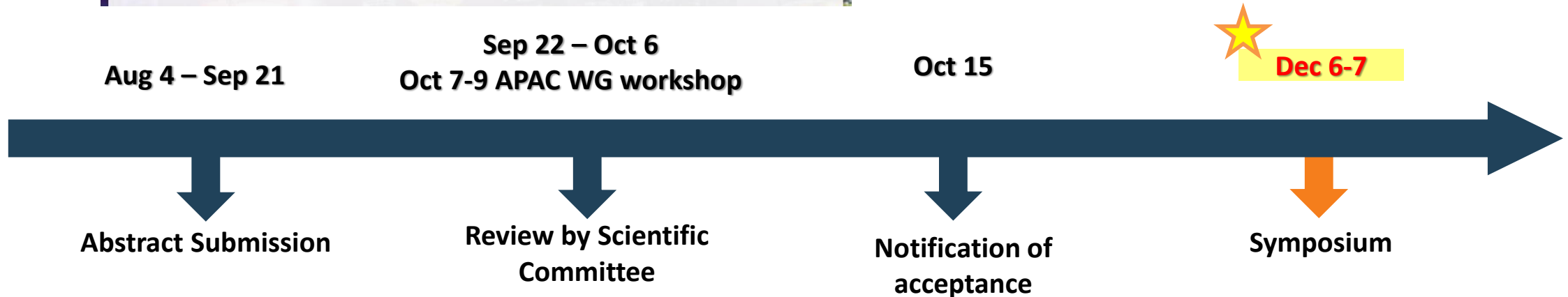
* Required

1. Email *

Please enter an email



<https://forms.office.com/r/rF28Mjk8C0>





Agenda

Day 1 (Sunday, December 6) - Tutorial

@ Room 102, Dongxia Yuan Building (Zheng-Cai Cuiju Teaching Building)

Morning Session

09:00-09:20	Introduction of OHDSI/OMOP
09:20-10:00	OMOP CDM and Vocabulary
10:00-10:30	OMOP Conversion Process
10:40-12:00	ETL Exercises

Afternoon Session

13:30-14:50	OHDSI Analyses: Building Cohorts & Hands-on
14:50-15:30	CohortDiagnostics and Population-Level Estimation
15:50-16:30	Interpreting Results



Agenda

Day 2 (Saturday, December 7) - Main Conference

@ Room 102, Dongxia Yuan Building

Session 1

09:00 – 09:15	Opening Speech
09:15 – 09:45	Keynote Speech from OHDSI Global
09:45 – 10:45	APAC Regional Chapter Updates
10:45 – 11:00	OHDSI Africa

Session 2

11:15 – 11:30	2025 APAC Study 1 by Fudan University
11:30 – 11:45	2025 APAC Study 2 by Peking University
11:45 – 12:00	2025 APAC Study 3 by University of Science and Technology of China (USTC)
12:00 – 12:10	Journal's Perspectives
12:10 – 12:30	Panel Discussion

Session 3

13:30 – 14:30	Collaborator Showcase: Lightning Talks
14:30 – 15:15	Real-World Evidence Talk 1 & 2 & 3
15:30 – 15:50	Real-World Evidence Using OHDSI/OMOP
15:50 – 16:10	Panel Discussion: Opportunities and Challenges Using OHDSI/OMOP for Real-World Evidence in China
16:10 – 16:50	Closing & Networking



For more information

- [APAC 2025 – OHDSI](#)
- Contact:
 - OHDSI APAC Coordination Team: apacsymposium@ohdsi.org



2025 OHDSI Global Symposium : Highlight of Collaborator's Showcase

Lu Li

Chang Hoon Han

Cynthia Sung

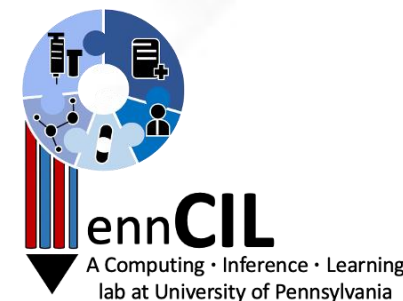
Department of Biostatistics, Epidemiology and Informatics

LATTE: A One-shot Lossless Algorithm for Federated Target Trial Emulation with Application to Alzheimer's Disease and Related Dementia Drug Repurposing Using Decentralized Data

Lu Li, Ph.D. candidate at the University of Pennsylvania

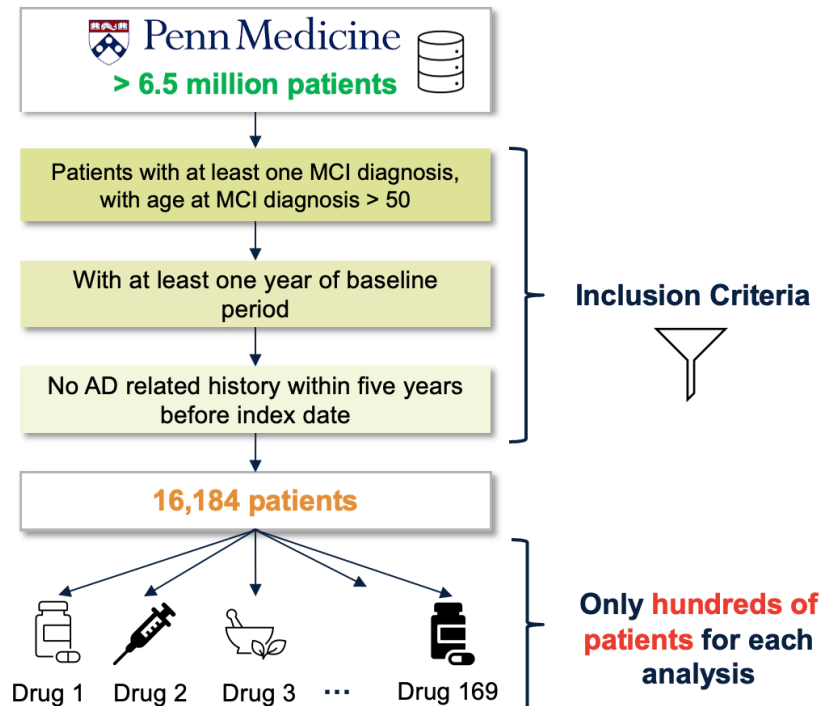
Advisor: Dr. Yong Chen

APAC Community Calls 2025



Motivation: Reliable Real-World Evidence (RWE) for regulatory decision making

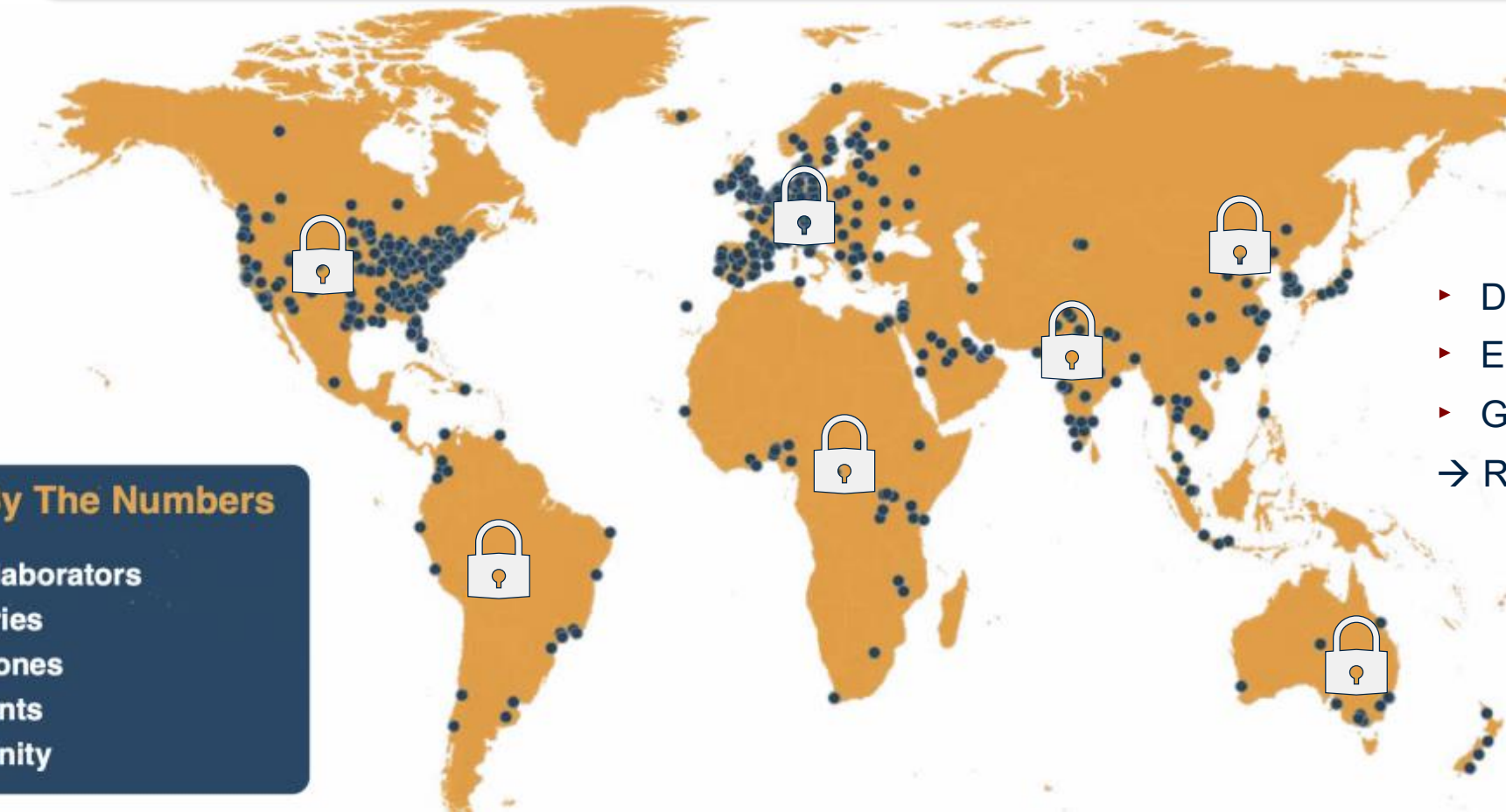
- ▶ A key challenge in performing target trial emulation (TTE) using **single site data**:
 - Rigorous eligibility criteria → **substantially smaller sample sizes**, especially for complex conditions such as ADRD, and rare diseases.
- ▶ FDA guidance on RWE for regulatory decision-making
 - “Reliability and relevance”



“The term relevance includes the availability of data for key study variables (exposures, outcomes, covariates) and sufficient numbers of representative patients for the study”.
-- FDA (March 2024)

International multi-site studies

- Key challenge:** Individual Patient-level Data (IPD) cannot be shared across sites
- Country/region specific laws (HIPAA in the U.S., GDPR in Europe)



OHDSI By The Numbers

- 4,294 collaborators
- 83 countries
- 21 time zones
- 6 continents
- 1 community

- ▶ Diverse population;
 - ▶ Enlarged sample size;
 - ▶ Greater statistical power;
- Relevant and reliable RWE

Privacy-preserving federated learning algorithms

- ▶ Enables multi-site studies without sharing IPD
- ▶ Allows to enlarge the study sample size to incorporate diverse population

OHDSI Studies using Federated Learning Algorithms for COVID-19 studies



ARTICLE

<https://doi.org/10.1038/s41467-022-29160-4> OPEN

DLMM as a lossless one-shot algorithm for collaborative multi-site distributed mixed models

Chongliang Luo^{1,2}, Md. Nazmul Islam³, Natalie E. Sheils³, John Buresh³, Jenna Rep Patrick B. Ryan⁴, Mackenzie Edmondson⁵, Rui Duan^{1,5}, Jiayi Tong⁶, Arielle M Zhaoyi Chen⁶, Talita Duarte-Salles⁷, Sergio Fernández-Bertolín⁷, Thomas Falconer⁸ Rae Woong Park^{9,10}, Stephen R. Pfohl¹¹, Nigam H. Shah¹¹, Andrew E. Williams Yujia Zhou¹³, Ebbing Lautenbach^{14,15}, Jalpa A. Doshi^{16,17}, Rachel M. Werner^{16,17} Yong Chen¹⁸

(Luo et al. 2022, Nature Communications)

npj | digital medicine

Published in partnership with Seoul National University Bundang Hospital



<https://doi.org/10.1038/s41467-025-01846-1>

COLA-GLM: collaborative one-shot lossless algorithms of generalized models for decentralized observational healthcare data

Qiong Wu^{1,2,3}, Jenna M. Reps^{4,5,6}, Lu Li^{3,7}, Bingyu Zhang^{3,7}, Yiwen Lu^{3,7}, Jiayi Tong^{2,3,8}, Dazhen Thomas Lumley⁹, Milou T. Brand¹⁰, Mui Van Zandt^{4,10}, Thomas Falconer¹¹, Xing He^{12,13}, Yu Hu Haoyang Li¹⁴, Chao Yan¹⁵, Guojun Tang¹⁶, Andrew E. Williams^{17,18}, Fei Wang¹⁴, Jiang Bian^{12,13}, Bradley Malin^{15,18,20}, George Hripcsak¹¹, Martijn J. Schuemie^{4,5,21}, Yun Lu²², Steve Drew¹⁶, Jiay David A. Asch^{24,25} & Yong Chen^{2,3,24,26,27} ✉

(Wu et al. 2025, npj Digital Medicine)

Article

npj | digital medicine

Published in partnership with Seoul National University Bundang Hospital



<https://doi.org/10.1038/s41467-025-01846-1>

Unlocking efficiency in real-world collaborative studies: a multi-site international study with one-shot lossless GLMM algorithm

Jiayi Tong^{1,2,3} ✉, Jenna M. Reps^{4,5,6}, Chongliang Luo⁷, Yiwen Lu^{1,2}, Lu Li^{1,2}, Juan Manuel Ramirez-Anguila⁸, Milou T. Brand⁹, Scott L. DuVal^{10,11}, Thomas Falconer¹², Alex Mayer Fuentes¹³, Xing He^{14,15}, Michael E. Matheny^{16,17}, Miguel A. Mayer⁸, Bhavnisha K. Patel^{16,17}, Katherine R. Simon^{16,17}, Marc A. Suchard^{11,18}, Guojun Tang¹⁹, Benjamin Viernes¹¹, Ross D. Williams⁸, Mui van Zandt⁹, Fei Wang²⁰, Jiang Bian^{14,15}, Jiayu Zhou²¹, David A. Asch^{22,23} & Yong Chen^{1,2,23} ✉

(Tong et al. 2025, npj Digital Medicine)



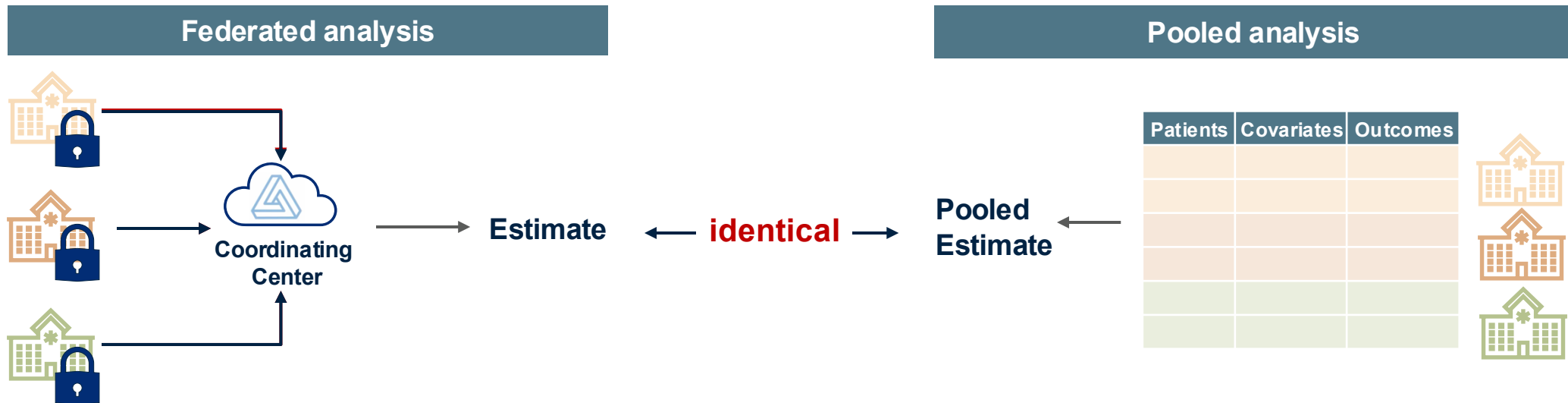
Desirable Properties

One-shot

Only a **single round of communication** is required in practice.

Lossless

Results are **identical** to pooled analysis, with no accuracy loss.



Desirable Properties

One-shot

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Results are **identical** to pooled analysis, with no accuracy loss.

However, only a few algorithms have achieved both **lossless and one-shot** properties simultaneously, and they are mainly for **regression tasks**.

We still need **Federated Learning Algorithms** for **Target Trial Emulation (TTE)**.

Desirable Properties

One-shot

Only a **single round of communication** is required in practice.

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Results are **identical** to pooled analysis, with no accuracy loss.

Handles Unmeasured Confounding


Mitigates residual systematic bias through a set of negative control outcomes (NCOs).

Empirical confidence interval calibration for population-level effect estimation studies in observational healthcare data

Martijn J. Schuemie^{a,b,1}, George Hripcsak^{a,c,d}, Patrick B. Ryan^{a,b,c}, David Madigan^{a,e}, and Marc A. Suchard^{a,f,g,h}

^aObservational Health Data Sciences and Informatics, New York, NY 10032; ^bEpidemiology Analytics, Janssen Research & Development, Titusville, NJ 08560; ^cDepartment of Biomedical Informatics, Columbia University, New York, NY 10032; ^dMedical Informatics Services, New York–Presbyterian Hospital, New York, NY 10032; ^eDepartment of Statistics, Columbia University, New York, NY 10027; ^fDepartment of Biomathematics, University of California, Los Angeles, CA 90095; ^gDepartment of Biostatistics, University of California, Los Angeles, CA 90095; and ^hDepartment of Human Genetics, University of California, Los Angeles, CA 90095

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Comparative Effectiveness of Second-Line Antihyperglycemic Agents for Cardiovascular Outcomes: A Multinational, Federated Analysis of LEGEND-T2DM

Editorial Comment: Finding Truth in Observational and Interventional Studies in Diabetes and Cardiovascular Disease

Authors: Rohan Khera , Arya Aminorroaya, Lovedeep Singh Dhingra, Phyllis M. Thangaraj, Aline Pedroso Camargos, Fan Bu, Xiyu Ding, ... [SHOW ALL](#) ... , and Marc A. Suchard  | [AUTHORS INFO & AFFILIATIONS](#)

Negative control outcomes (NCOs), known a priori to be unrelated to exposure.

LEGEND-T2DM study (Khera et al. 2024, JACC) used "tooth loss" as an NCO that is known to be unrelated to the antihyperglycemic.



Our proposed method:

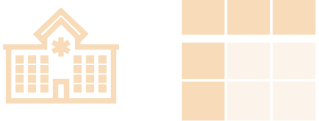
LATTE: One-shot Lossless Algorithm for Federated Target Trial Emulation

- ▶ Requires only one round of communication (**one shot**)
- ▶ Only requires aggregate data (2x2 tables)
- ▶ The results obtained is identical to the pooled analysis (**lossless**)

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- ▶ **Pipeline**

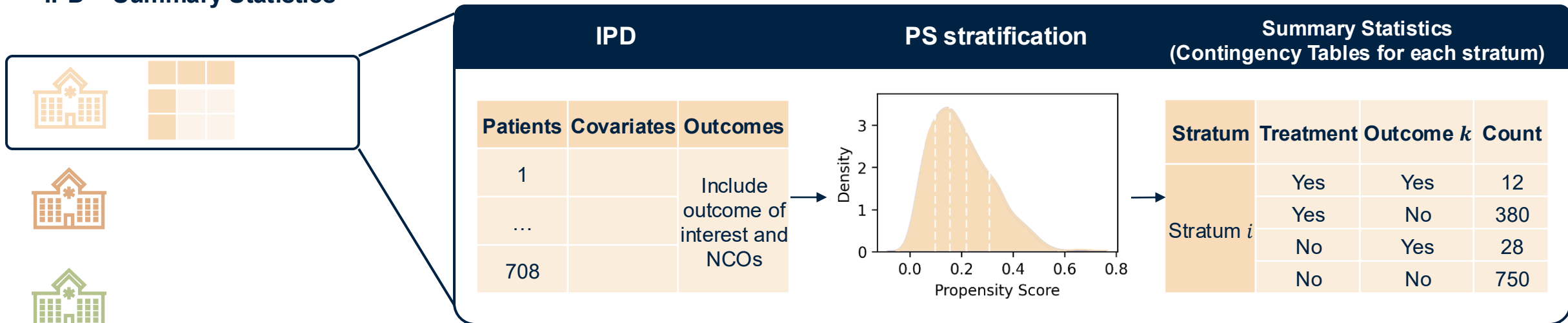
IPD Summary Statistics



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IPD Summary Statistics



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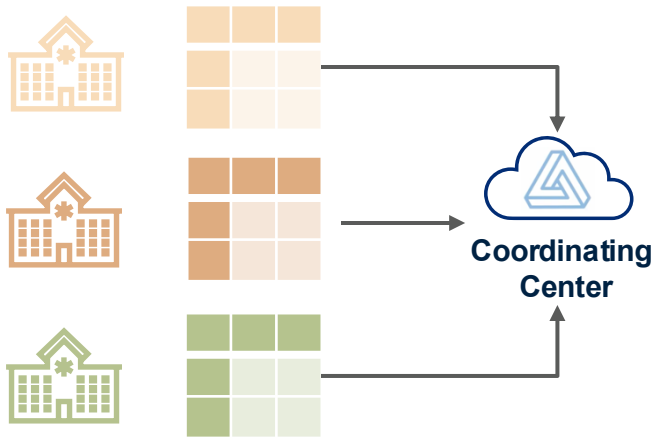
IPD Summary Statistics



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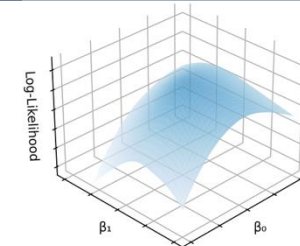
IPD Summary Statistics



LATTE

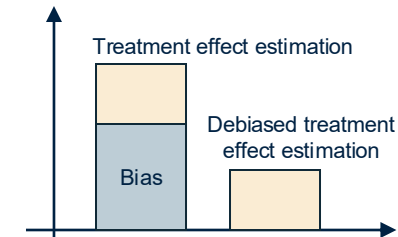
1. Reconstruct log likelihood

$$\ell_{jk}(\beta) = \beta a_{jk} - \log \sum_{t=0}^{\min(m_{jk}, a_{jk} + b_{jk})} \binom{a_{jk} + b_{jk}}{t} \binom{c_{jk} + d_{jk}}{m_{jk} - t} \exp(\beta t);$$
$$\ell_k(\beta) = \sum_{j=1}^{N \times S} \ell_{jk}(\beta)$$



2. NCO calibration

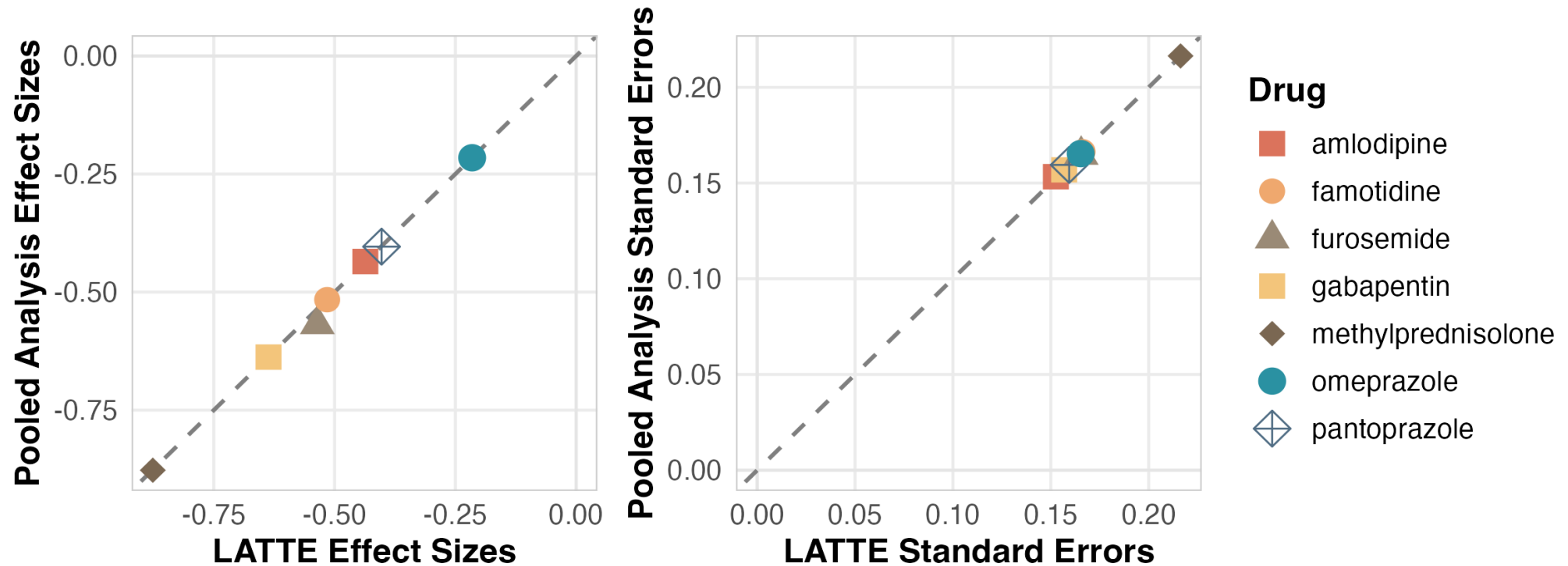
$$\hat{\tau}_q = \operatorname{argmax}_q \ell_q(\tau_q)$$
$$l(\tau, \xi^2) \propto \prod_{q=1}^Q \int p(\hat{\tau}_q | \tau_q, \tau, \xi) p(\tau_q | \tau, \xi) d\tau_q$$
$$\hat{\beta}_{\text{calibrated}} = \hat{\beta} - \hat{\tau}.$$



**Debiased
Treatment Effect
Estimates**

Simulation studies

- ▶ We randomly split the data at Penn Medicine into 3 sites
- ▶ Compared the results from pooled analysis and LATTE



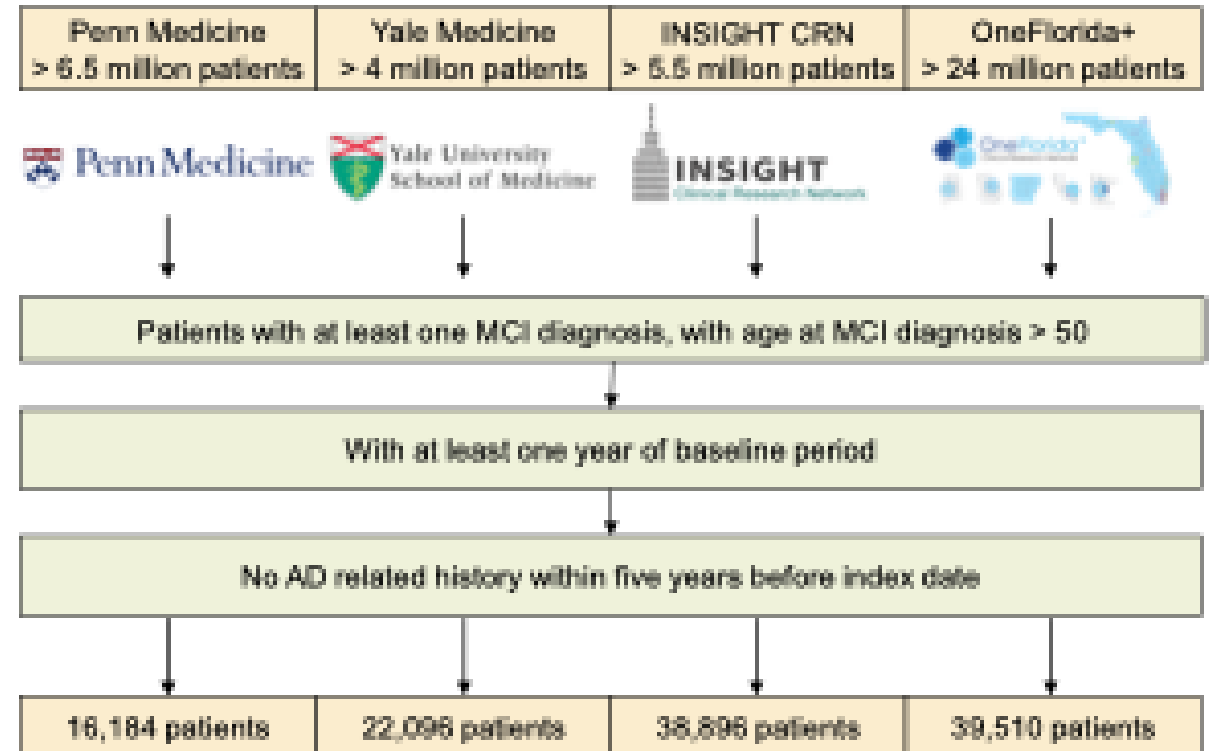
Real-world application to ADRD drug repurposing

► Scientific question

- Which drugs can potentially be repurposed to slow down progression from MCI to ADRD?

► Datasets

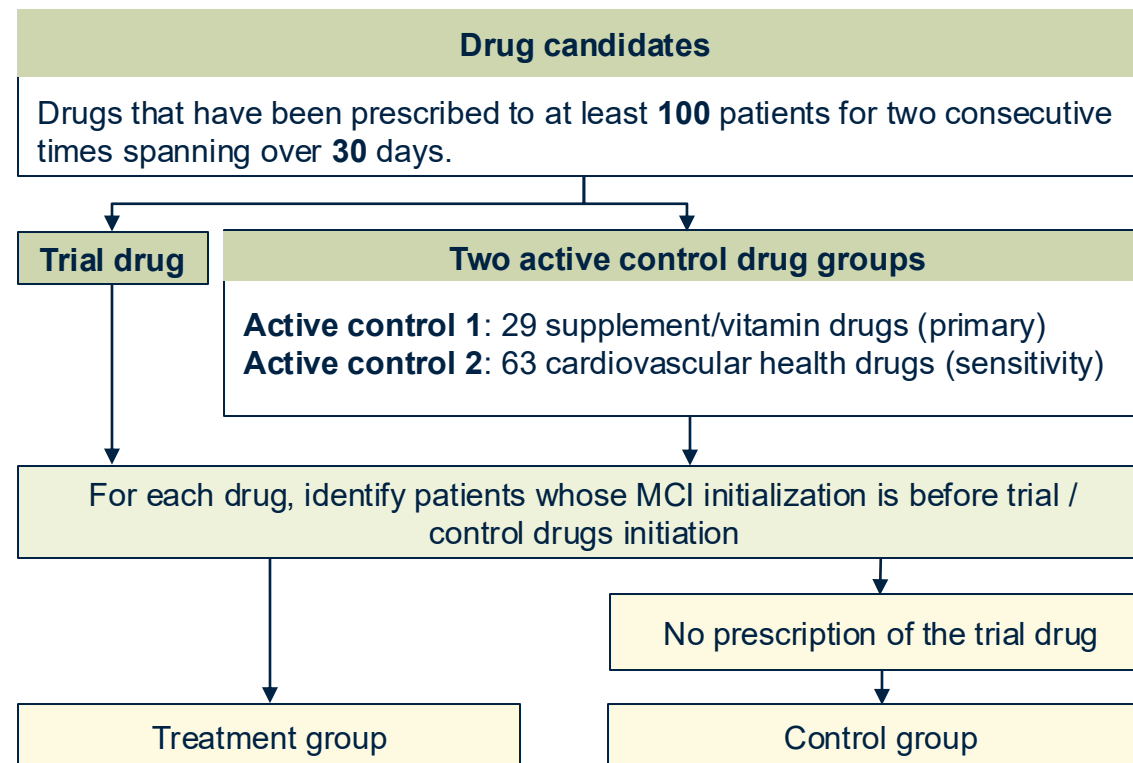
- 4 large-scale health learning systems, covering > 40 million patients.
- Yale site to be used as **external validation**



Real-world application: treatment

► Drug candidates

- **112 commonly used drugs** that have been prescribed to at least 100 patients for two consecutive times spanning over 30 days.



Active Controls

- Drugs that are known to have some **protective effects** in AD progression
- **Goal:** to avoid false positives

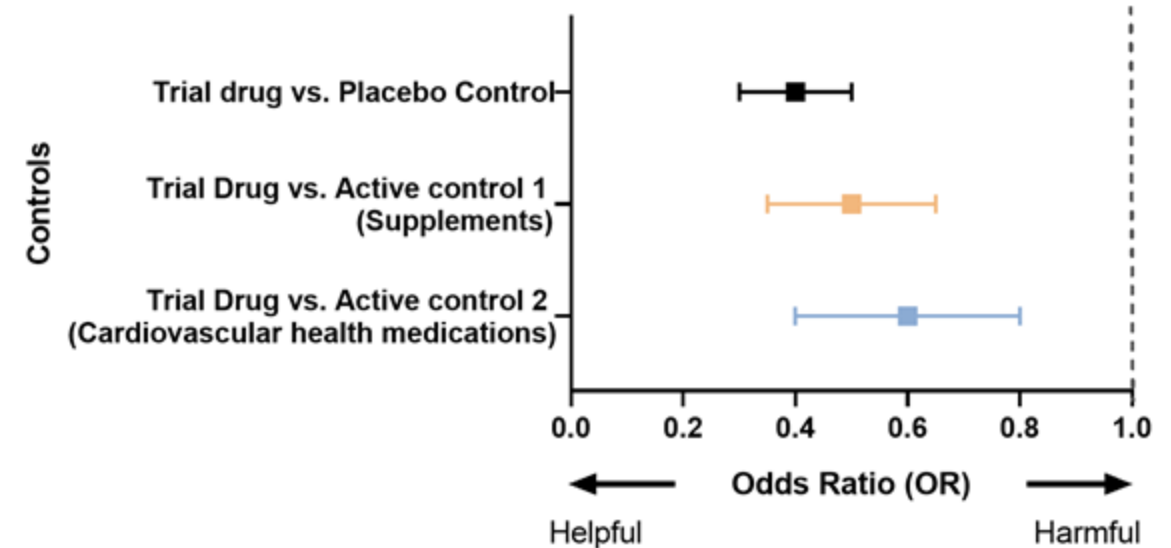
29 Supplements (Primary)

cholecalciferol, vitamin B12, ascorbic acid, folic acid, ergocalciferol, thiamine, vitamin D3, vitamin D, vitamin E, vitamin K1, vitamin B6, biotin, cobalamins, niacin, pyridoxine, riboflavin, vitamin A, vitamin B complex, sodium ascorbate, levomefolate, niacinamide, vitamin K, mecobalamin, vitamin K2, pantothenic acid, D-biotin, alpha tocopherol, hydroxocobalamin, pyridoxal

63 Cardiovascular Health Meds (Sensitivity):

atorvastatin, spironolactone, eplerenone, phenoxybenzamine, amiloride, metoprolol, lisinopril, amlodipine, furosemide, hydrochlorothiazide, hydralazine, losartan, clonidine, labetalol, carvedilol, diltiazem, propranolol, valsartan, atenolol, nifedipine, bumetanide, timolol, verapamil, nicardipine, guanfacine, doxazosin, chlorthalidone, enalapril, metolazone, olmesartan, ramipril, benazepril, prazosin, torsemide, irbesartan, alfuzosin, terazosin, nebivolol, telmisartan, candesartan, captopril, triamterene, bisoprolol, nadolol, minoxidil, quinapril, indapamide, chlorothiazide, felodipine, fosinopril, azilsartan, isradipine, methyldopa, aliskiren, betaxolol, pindolol, trandolapril, acebutolol, perindopril, nisoldipine, moexipril, methyclothiazide, reserpine

Illustration of Active Control Strategy



Outcome of Interest

- New ADRD onset
 - diagnosis of ADRD within a **5-year follow-up period**
- For each patient, follow-up starts from the baseline date until the date of first ADRD diagnosis, loss to follow-up, or five years after the baseline, whichever happens first.

Negative control outcomes

- Outcomes that are **causally unrelated** to the treatment drugs
- Help to identify **systematic bias** and **calibrate** the results

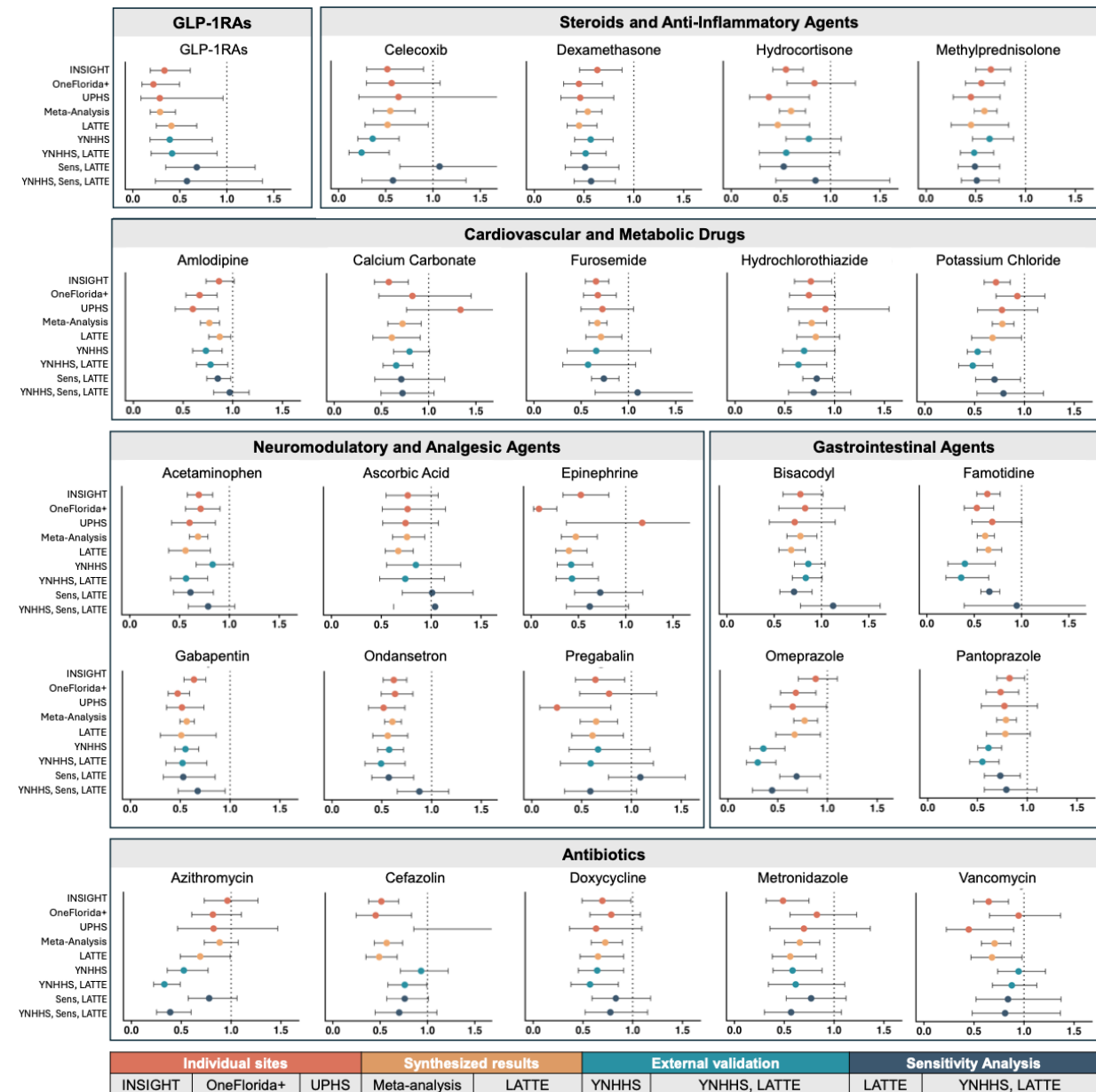
25 Negative control outcomes (NCO):

Foot drop, Hearing problem, Intra-abdominal and pelvic swelling, Irritability and anger, Wrist drop, Acute conjunctivitis, Acute tonsillitis, Adhesive capsulitis, Allergic rhinitis, Blepharitis, Carpal tunnel syndrome, Chalazion, Deviated nasal septum, Contact dermatitis, Dental caries, Hemorrhoids, Influenza, Meniere's disease, Osteoporosis, Sciatica, Gout, Foreign body in ear, Impacted cerumen, Ingrowing nail, Low back pain, Osteoarthritis of knee

Results

► Identified **25 drugs candidates** from **6 drug classes**

- **GLP-1RAs**
 - GLP-1RAs (aOR 0.41, 95% CI: 0.25–0.68)
- **Steroids and Anti-Inflammatory Agents**
 - Celecoxib (aOR 0.52, 95% CI 0.28-0.95) ...
- **Cardiovascular and Metabolic Drugs**
 - Amlodipine (aOR 0.87, 95% CI 0.76-0.98) ...
- **Neuromodulatory and Analgesic Agents**
 - Ondansetron (aOR 0.56, 95% CI 0.41-0.76) ...
- **Gastrointestinal Agents**
 - Famotidine (aOR 0.65, 95% CI 0.53-0.79) ...
- **Antibiotics**
 - Doxycycline (aOR 0.65, 95% CI 0.47-0.91) ...



Results

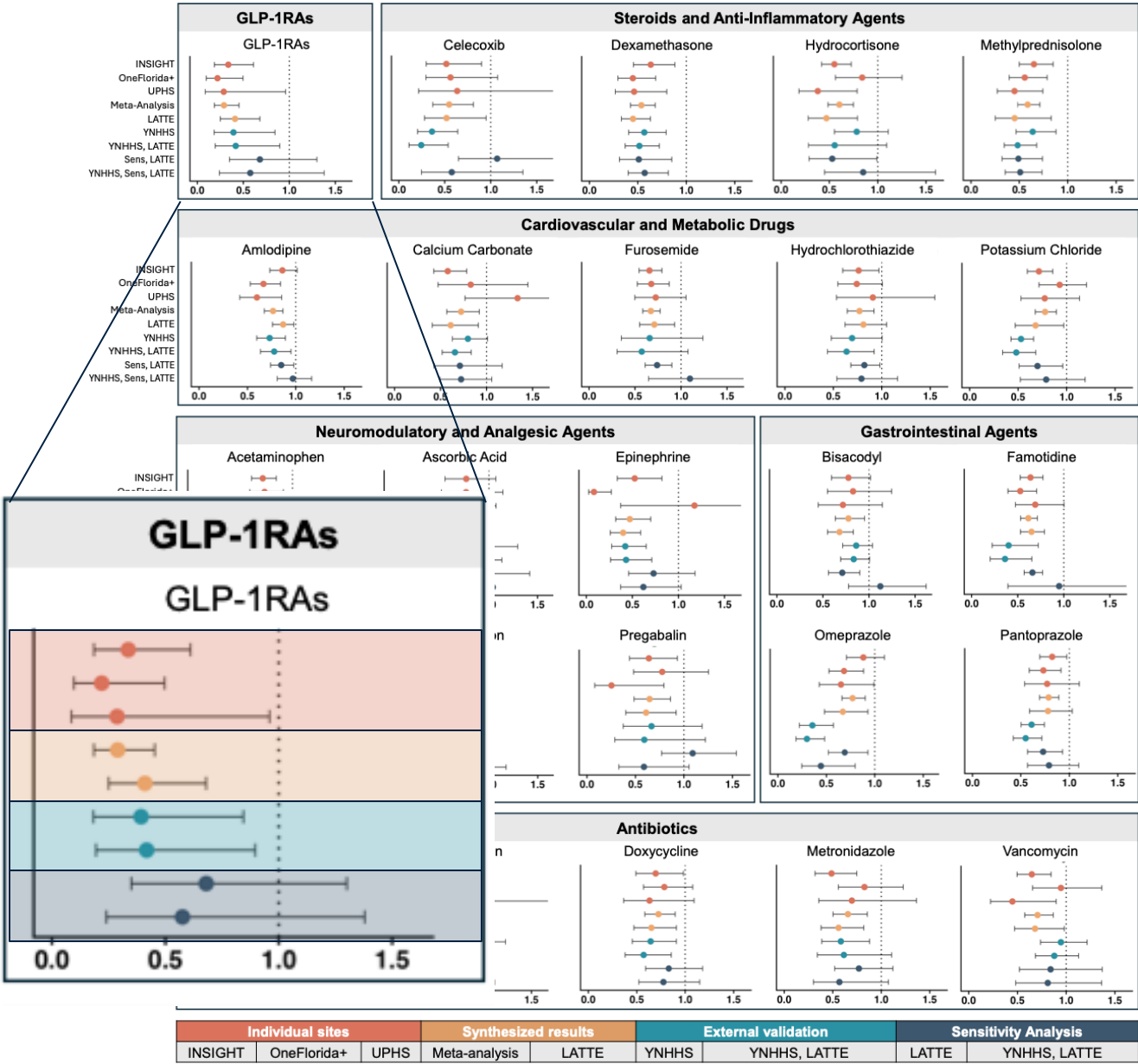
- Identified **25 drugs candidates** from **6 drug classes**
 - GLP-1RAs
 - Steroids and Anti-Inflammatory Agents
 - Cardiovascular and Metabolic Drugs
 - Neuromodulatory and Analgesic Agents
 - Gastrointestinal Agents
 - Antibiotics

Discovery set

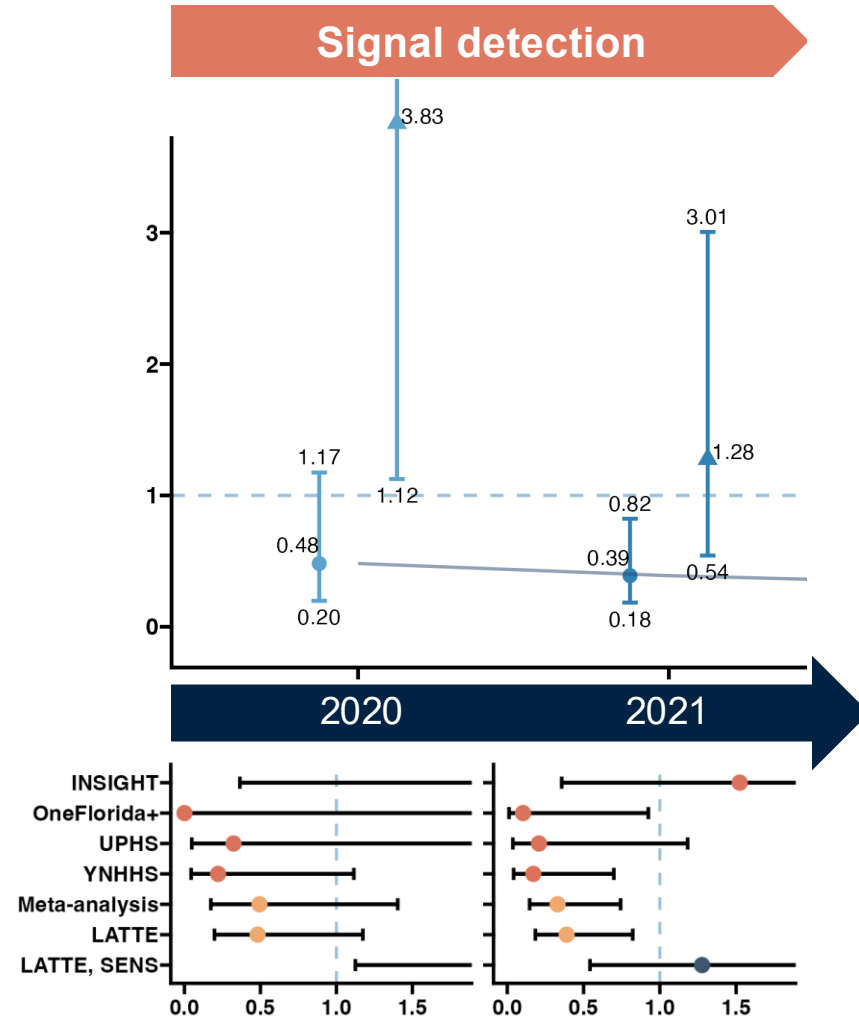
Synthesize results

Validation set

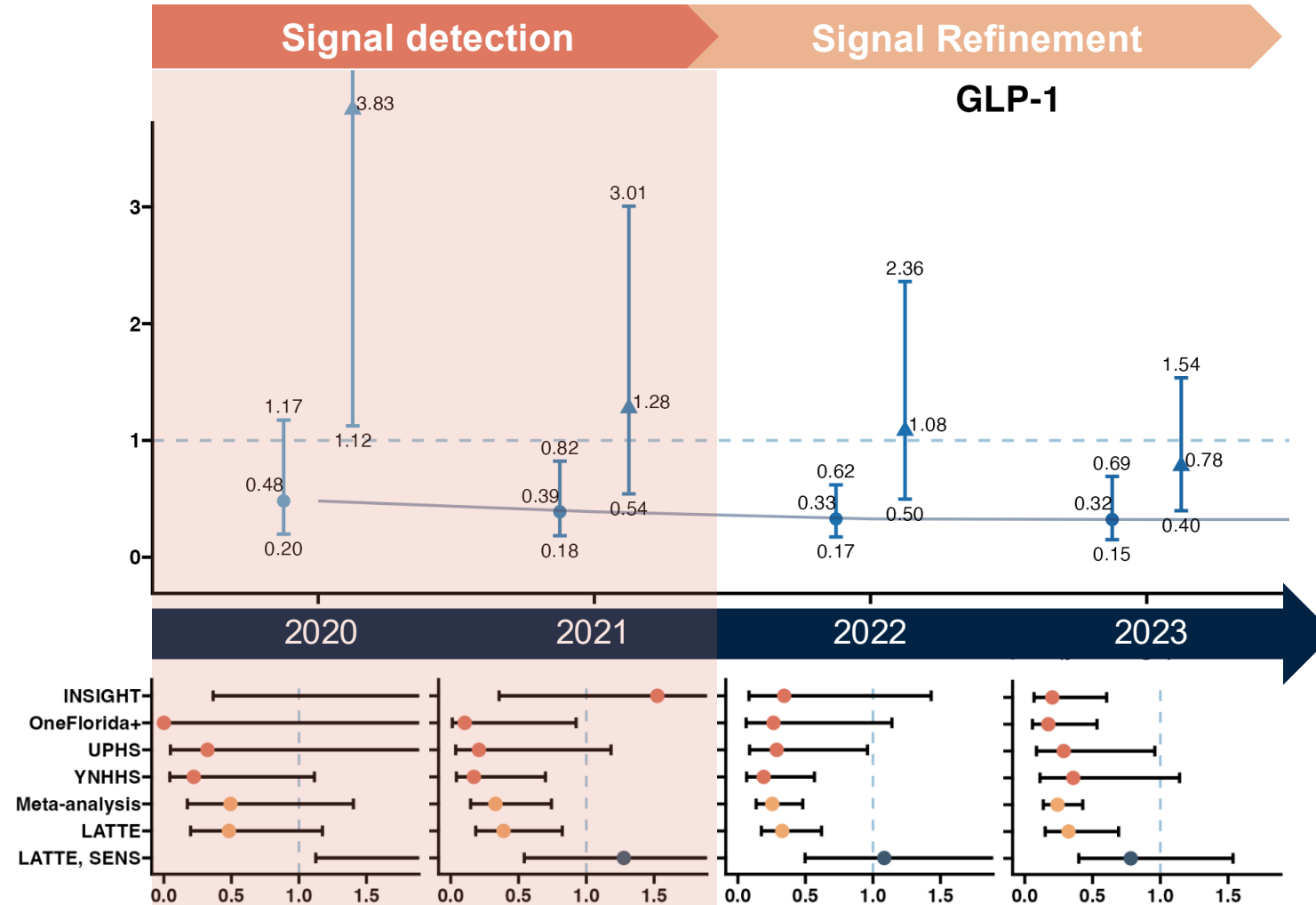
Sensitivity results



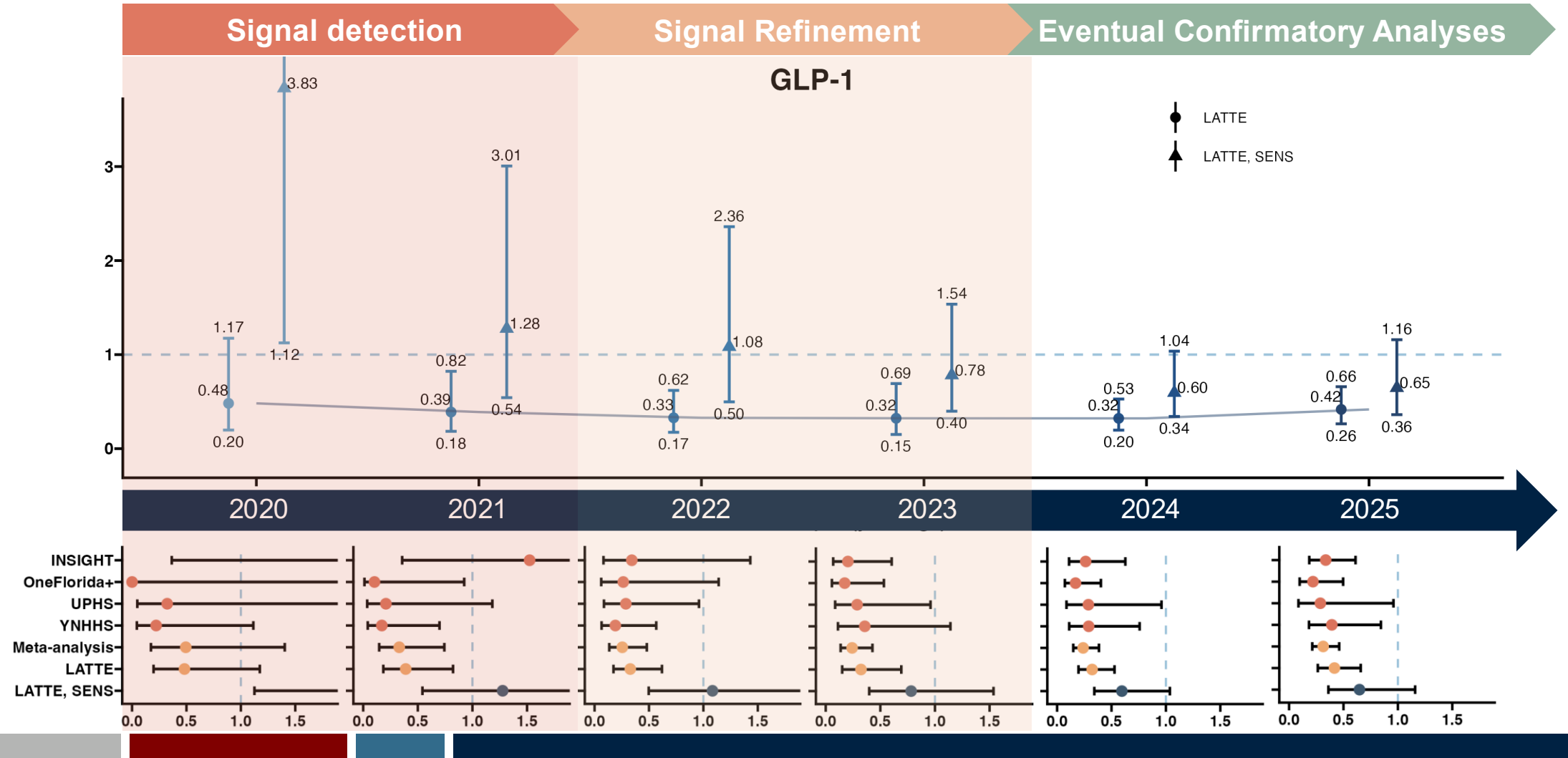
LATTE for Continuous Monitoring



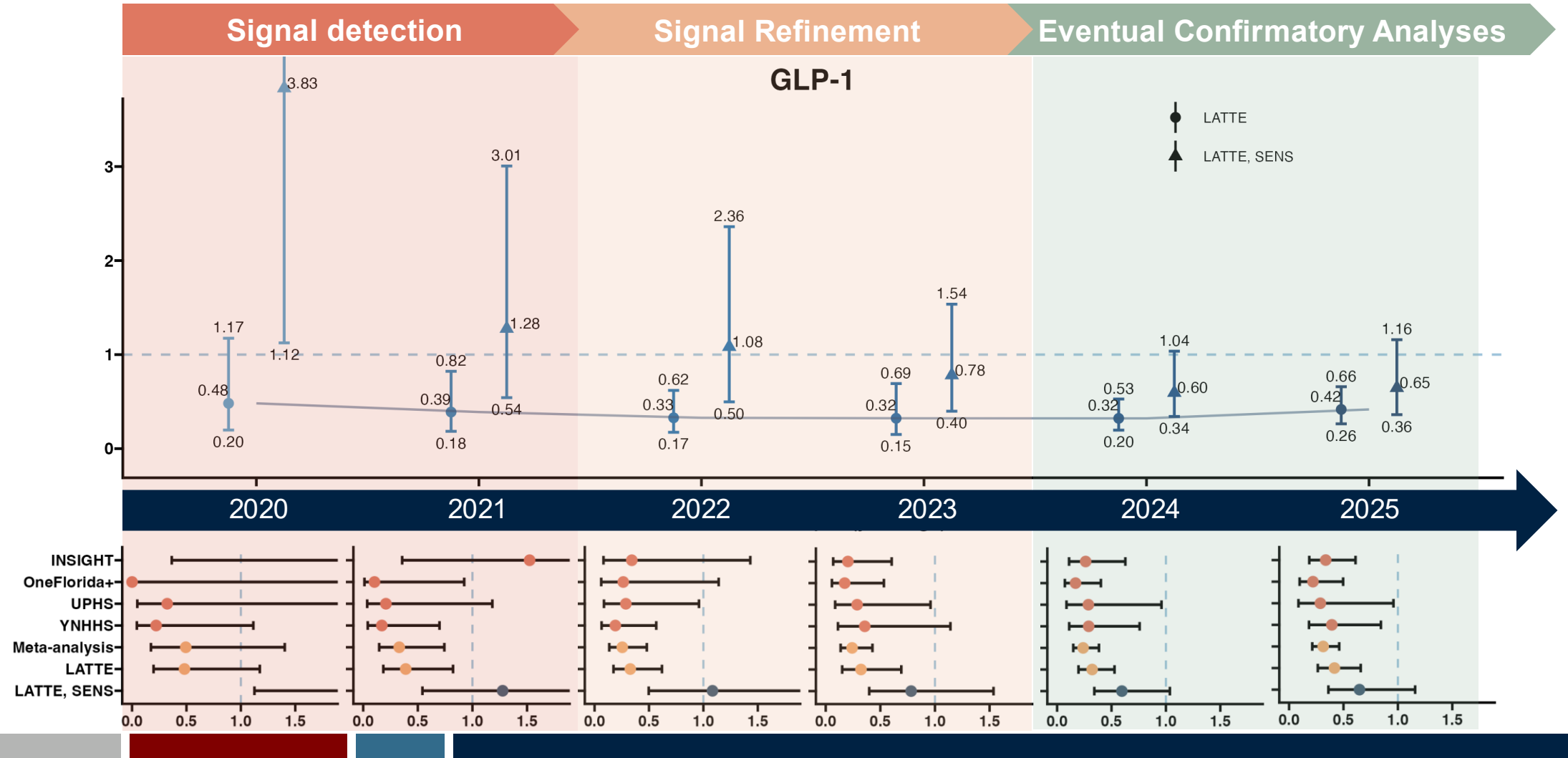
LATTE for Continuous Monitoring



LATTE for Continuous Monitoring



LATTE for Continuous Monitoring



Summary

- ▶ **LATTE** performs federated target trial emulation in **one-shot, lossless** manner, while **mitigating systematic biases**
- ▶ **Summary statistics only**
- ▶ **Ready-to-use** in 'pda' package

LATTE: Lossless One-shot Algorithm for Federated Target Trial Emulation



R package: 'pda'



<https://github.com/PennCIL/pda>

Acknowledgments

- Yong Chen, University of Pennsylvania
- David A. Asch, University of Pennsylvania
- Qiong Wu, University of Pittsburgh
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- Ting Zhou, University of Pennsylvania
- Jiayi Tong, University of Pennsylvania
- Dazheng Zhang, University of Pennsylvania
- Yuqing Lei, University of Pennsylvania
- Huilin Tang, University of Pennsylvania
- Haoyang Li, Cornell University
- Zhenxing Xu, Cornell University
- Yu Huang, Indiana University
- Yu Hu, University of Florida
- Yujia Zhou, Yale University
- Fongci Lin, Yale University
- Ying Jiang, Third Affiliated Hospital of Sun Yat-sen University
- Fei Wang, Cornell University
- Jiang Bian, Indiana University
- Hua Xu, Yale University
- Yong Chen, Pfizer Inc
- Jeff D. Williamson, Wake Forest University
- David A. Wolk, University of Pennsylvania
- Yun Lu, Food and Drug Administration

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Lu Li, luli1@sas.upenn.edu



Comparative Effectiveness of Ticagrelor vs. Prasugrel in Patients with Acute Coronary Syndrome Undergoing Percutaneous Coronary Intervention

Chang Hoon Han, Ben S. Gerber, Marc A. Suchard, Michael E. Matheny, Jitendra Jonnagaddala, Christophe G. Lambert, Justin M. Petucci, Anna Ostropolets, Clair Blacketer, Thamir M Alshammari, Behnood Bikdeli, Seng Chan You

OHDSI Community Call

Nov. 20, 2025

Chang Hoon Han



About Myself

Chang Hoon Han

- ✓ Pediatrician & Data scientist in training
- ✓ Dr. Chan's Lab, Yonsei University
- ✓ Interested in ...
 - Common data model & network studies
 - Pediatric pulmonology & intensive care
- ✓ One of study leads in GDE 2025





Ticagrelor vs. Prasugrel

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1. Background

2. Methods

3. Results

4. Next Steps



Ticagrelor vs. Prasugrel

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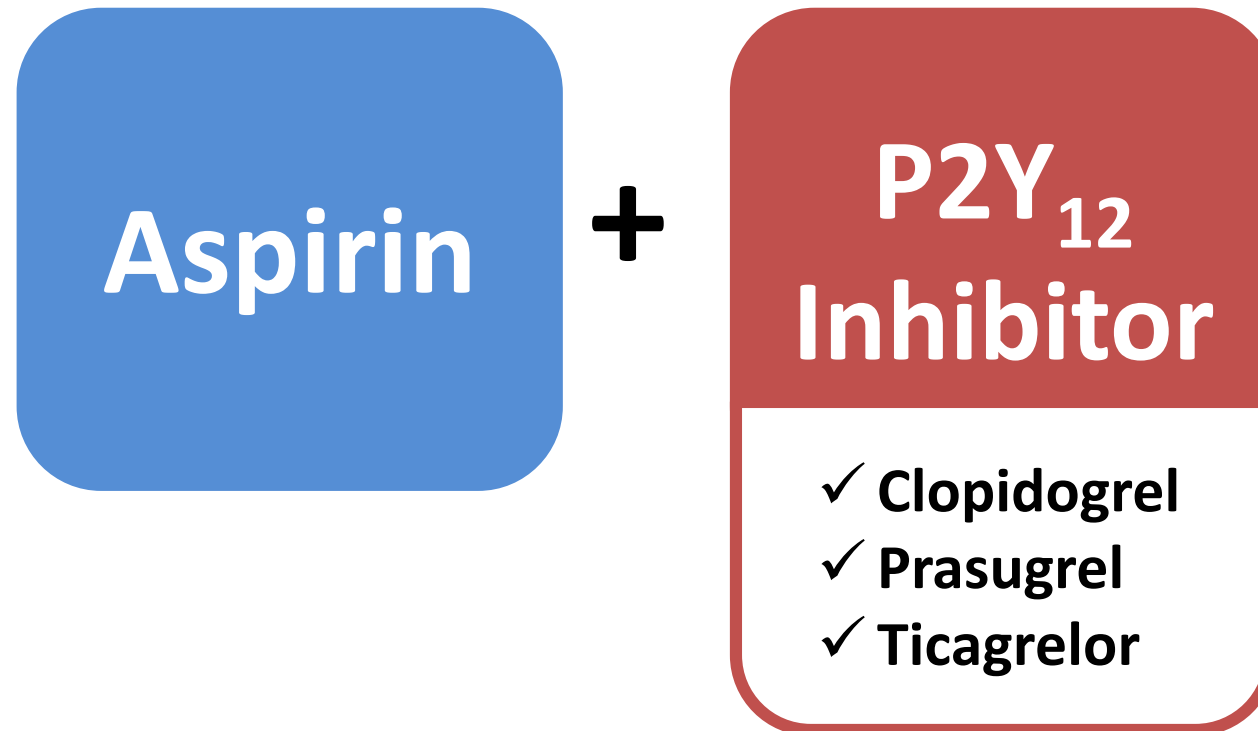
4. Next Steps



Background

Dual Antiplatelet Therapy (DAPT)

- Cornerstone of medical treatment in ACS undergoing PCI





Background

Ticagrelor vs. Prasugrel

2019

❖ ISAR-REACT 5 (2019)

- ✓ Phase IV, open-label
- ✓ ACS with planned invasive evaluation (N = 4018)

✓ **Efficacy:** Composite (death + MI + stroke) **Prasugrel**

✓ **Safety:** Major bleeding **Comparable**

Controversial

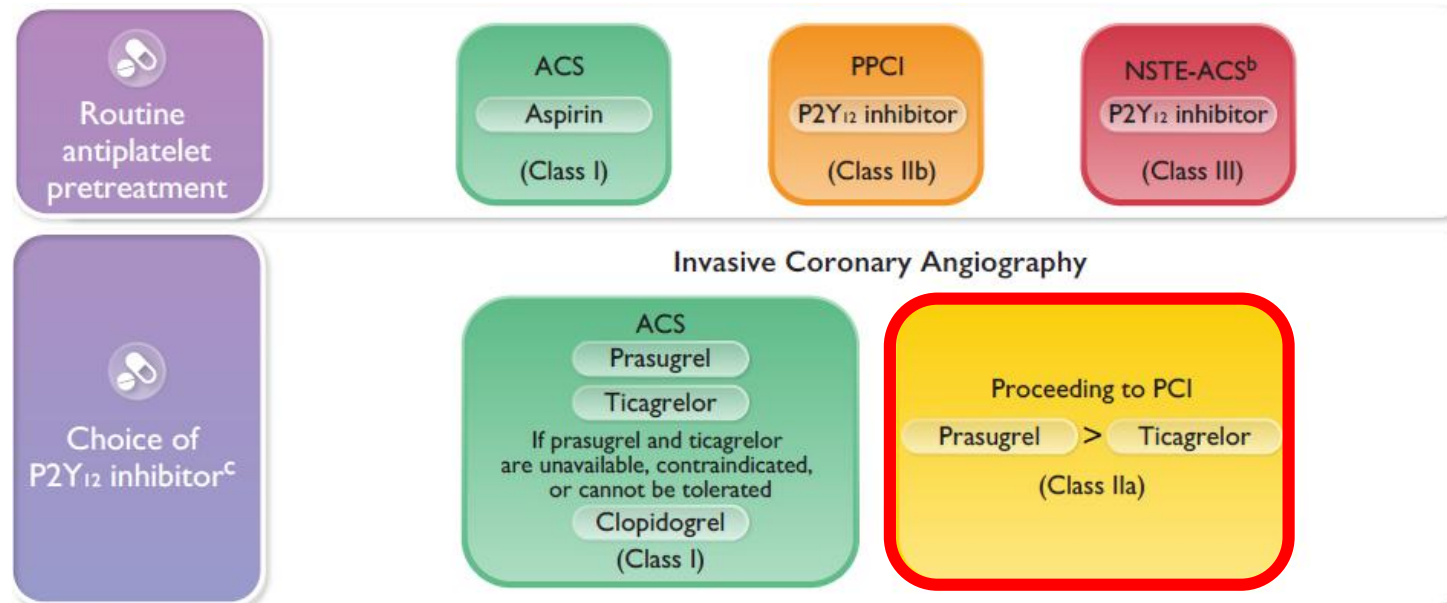


Latest Guidelines

2023

2023 ESC guideline

➤ Antiplatelet therapy in the acute phase



Prasugrel should be considered in preference to ticagrelor for ACS patients who proceed to PCI.^{244,290}

IIa

B



Latest Guidelines

2025 ACC/AHA guideline

2025

COR	LOE	Recommendations
All Patients With ACS (STEMI and NSTEMI-ACS)		
1	A	1. In patients with ACS, an oral P2Y12 inhibitor should be administered in addition to aspirin to reduce MACE. ¹⁻⁵
3: Harm	B-R	2. In patients with a history of stroke or transient ischemic attack, prasugrel should not be administered because of worse net clinical outcomes.*† ⁴
In-Hospital Management in Patients With NSTEMI-ACS		
1	B-R	3. In patients with NSTEMI-ACS undergoing PCI, prasugrel or ticagrelor is recommended to reduce MACE and stent thrombosis. ⁴⁻⁶
1	B-R	4. In patients with NSTEMI-ACS who are managed without planned invasive evaluation, ticagrelor is recommended to reduce MACE. ^{5,7}
1	B-R	5. In patients with NSTEMI-ACS, clopidogrel is recommended to reduce MACE when prasugrel or ticagrelor are unavailable, cannot be tolerated, or are contraindicated. ¹

Limited data exist to compare the efficacy and safety of prasugrel versus ticagrelor head-to-head. One open-label randomized trial reported a lower rate of MACE with similar bleeding with prasugrel administered at the time of PCI compared with ticagrelor used as upstream therapy in patients with ACS undergoing invasive evaluation.²²

**ISAR-REACT 5
only introduced**



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Methods

Study Population

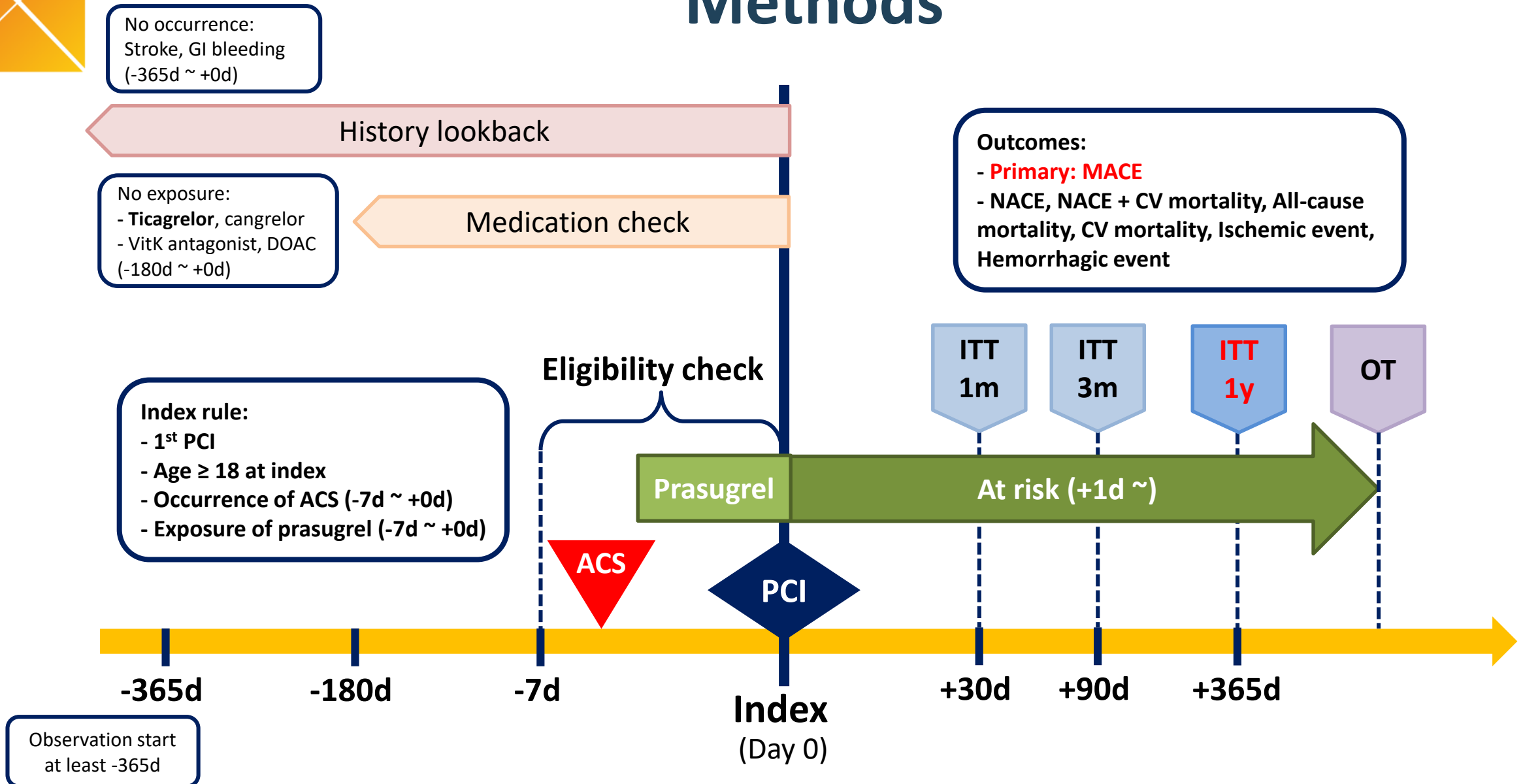
➤ Data Source

- ✓ Merative MarketScan databases: CCAE, MDCR
- ✓ EHR databases: UMass Memorial Health, Penn State Health
- ✓ Korean national claims database: HIRA

➤ Criteria

- ✓ Inclusion: Adults ≥ 18 with ACS undergoing PCI, initiating ticagrelor or prasugrel
- ✓ Exclusion: Prior stroke, GI bleeding, oral anticoagulants within 6 months

Methods





Methods

Statistical Analysis

- **Covariate adjustment**
 - ✓ Propensity score (PS) stratification
 - ✓ Sensitivity analysis: 1:1 PS matching
- **Outcome model**
 - ✓ Cox proportional hazards model

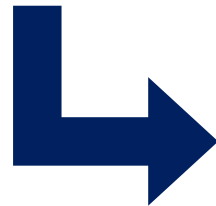


Methods

Diagnostics

Target	Metric	Description	Threshold
Covariate balance after PS adjustment	Standardized difference of means (SDM)	Whether the PS adjustment is sufficient to balance baseline patient characteristics.	Max SDM < 0.1
Empirical equipoise	Preference score (F)	The overlap in preference score distribution between the target and comparator cohorts.	At least 20% patients $0.3 \leq F \leq 0.7$
Systematic error	Expected Absolute Systematic Error (EASE)	Overall systematic error is calculated from the absolute expected value of the distribution of estimated results for negative control outcomes.	EASE < 0.25

All passed



Bayesian random-effects meta-analysis



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Results

Databases and Diagnostics

- **2 databases (HIRA, CCAE) passed diagnostics**
 - ✓ Total of 112,685 patients were included

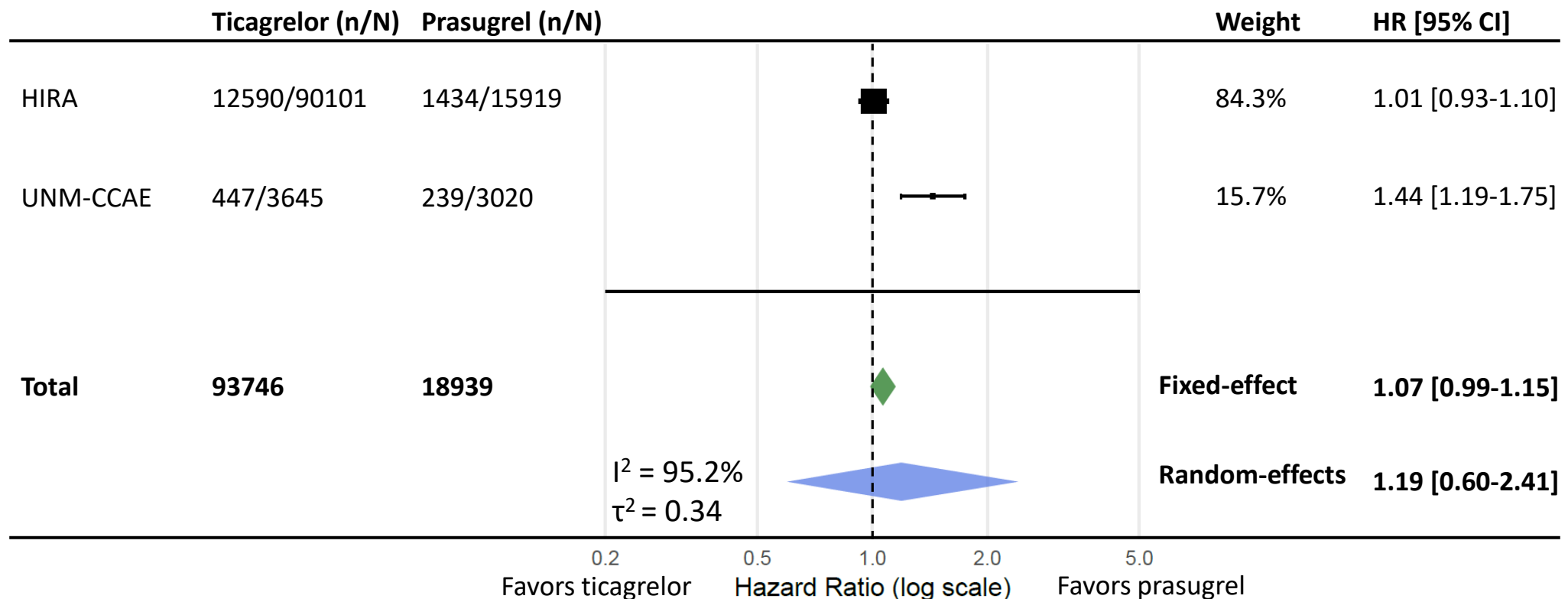
Database	Ticagrelor cohort (N)	Prasugrel cohort (N)	Diagnostics			Inclusion
			Max SDM	Equipoise	EASE	
HIRA	90101	15919	0.08 ✓	39% ✓	0.02 ✓	Yes
CCAE	3645	3020	0.03 ✓	84% ✓	0.13 ✓	Yes
MDCR	1008	548	0.32	73% ✓	0.08 ✓	No
UMMHC	1164	189	0.64	53% ✓	0.58	No
PSH	135	25	0.65	NA	0.75	No



Results

Primary Outcome: 1-year MACE (PS stratification)

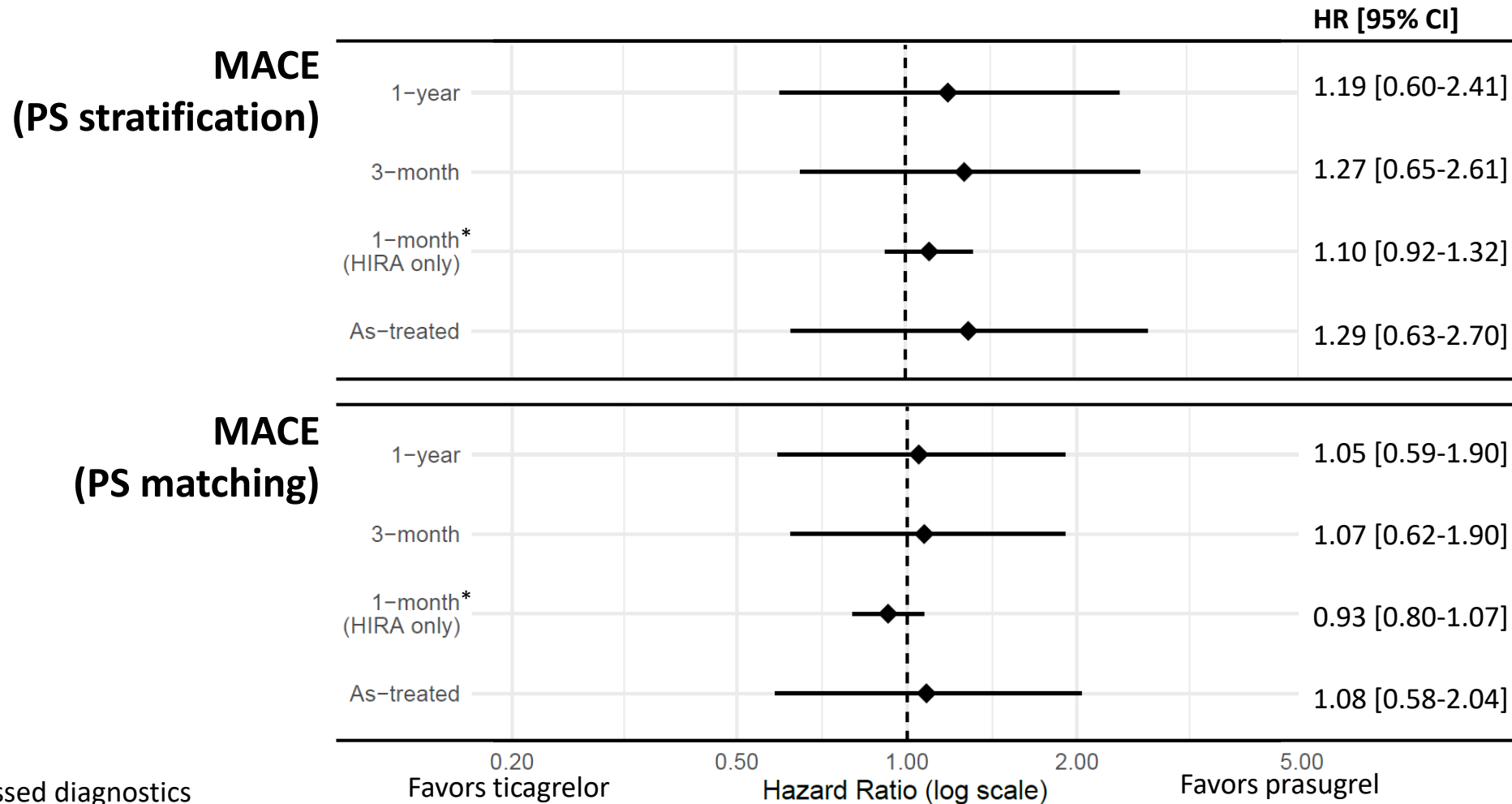
➤ No significant difference was observed





Results

Sensitivity Analyses (Random-Effects)



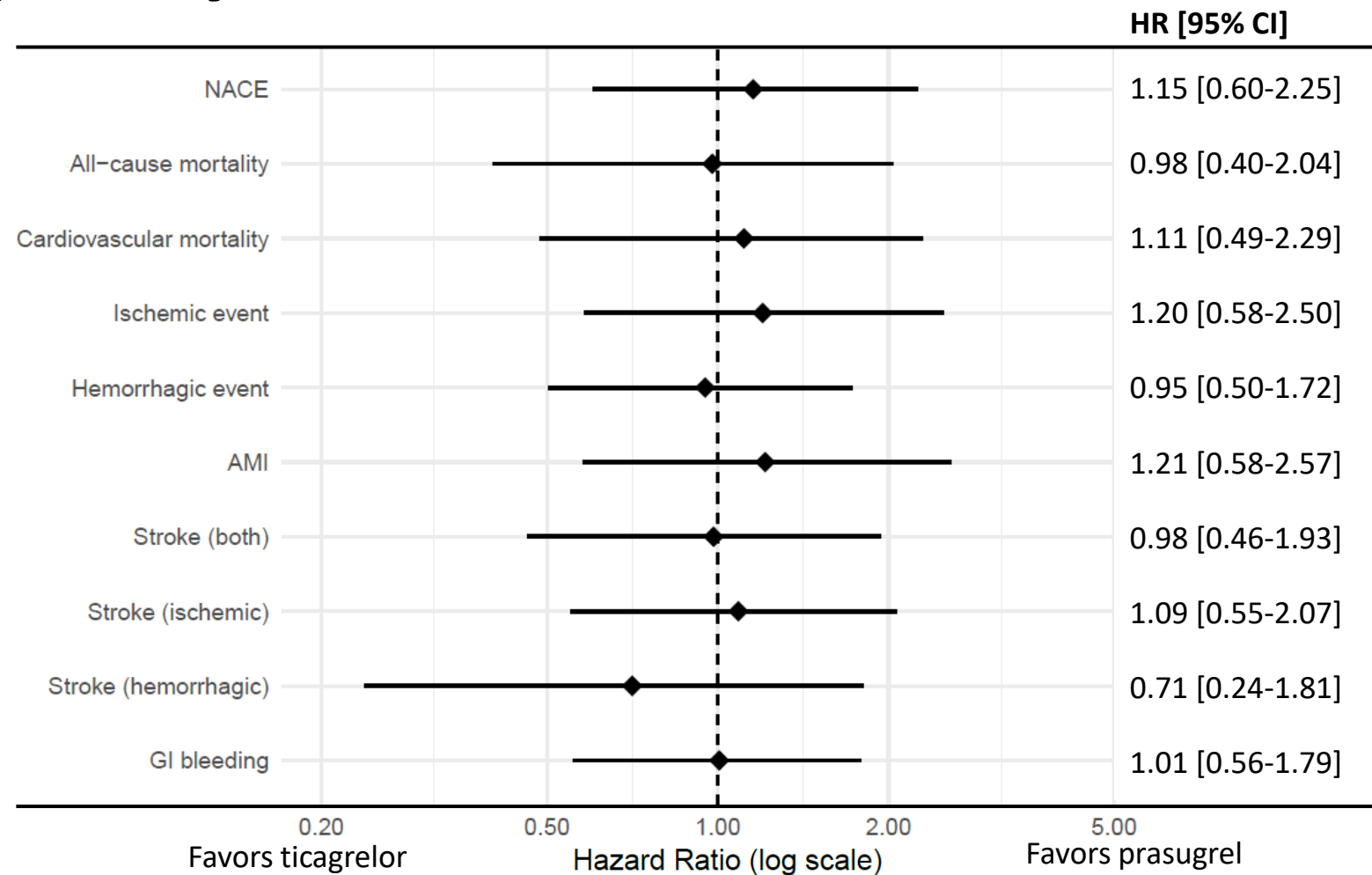
*Only HIRA passed diagnostics



Results

Secondary Analyses (Random-Effects)

1-Year Outcomes (PS stratification)





Conclusion

Based on the Current Data

- Ticagrelor vs. prasugrel showed **no clear difference** in effectiveness and safety.
- Only 2 databases were included with **high heterogeneity**, limiting certainty of results.



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Next Steps

Data Collection in Progress

- **Participation of other centers**
 - ✓ Taipei Medical University
 - ✓ Stanford
 - ✓ University of Texas Southwestern
- **Contact us if you are interested!**



Thank you for listening!

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