



# OHDSI APAC 2022 Tutorial:

## An introductory journey from data to evidence



# Welcome!





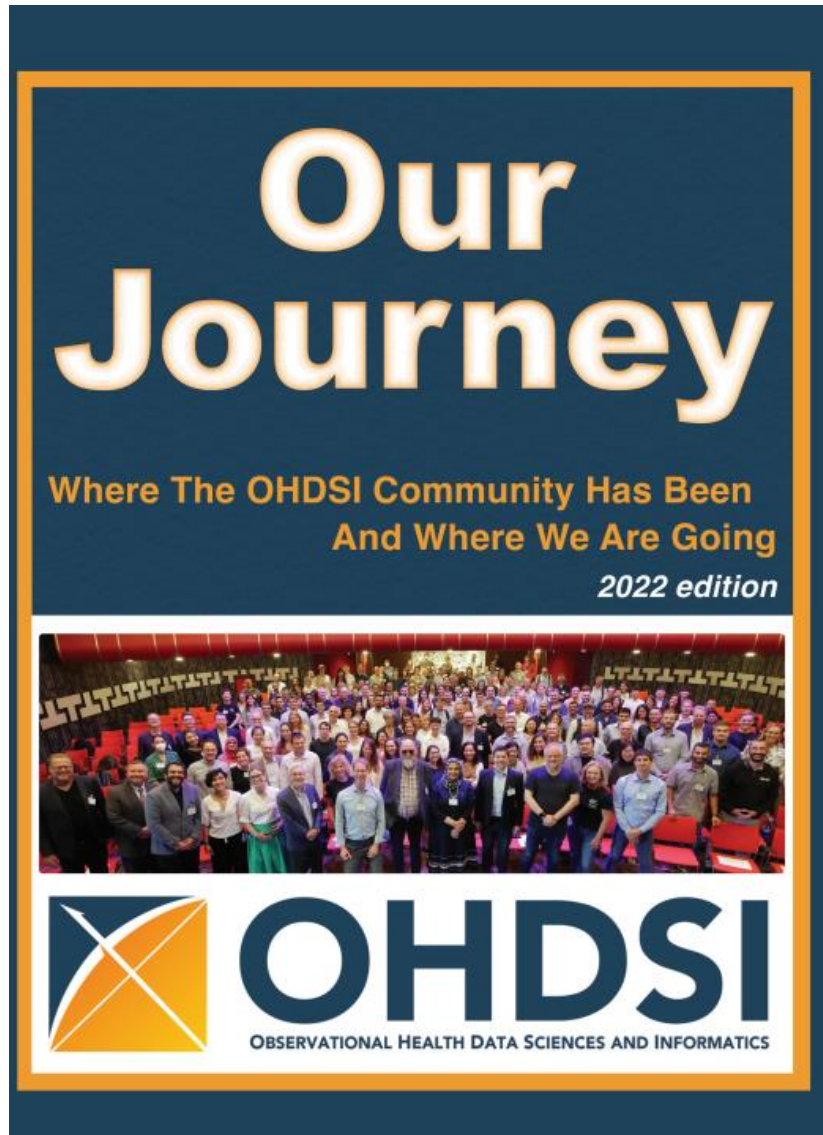
## OHDSI's mission

To improve health by empowering a community to collaboratively generate the evidence that promotes better health decisions and better care

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# OHDSI: Our Journey



To improve health by empowering a community to collaboratively generate the evidence that promotes better health decisions and better care.

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How Can You Join The Journey?..... Inside Back Cover	

#JoinTheJourney

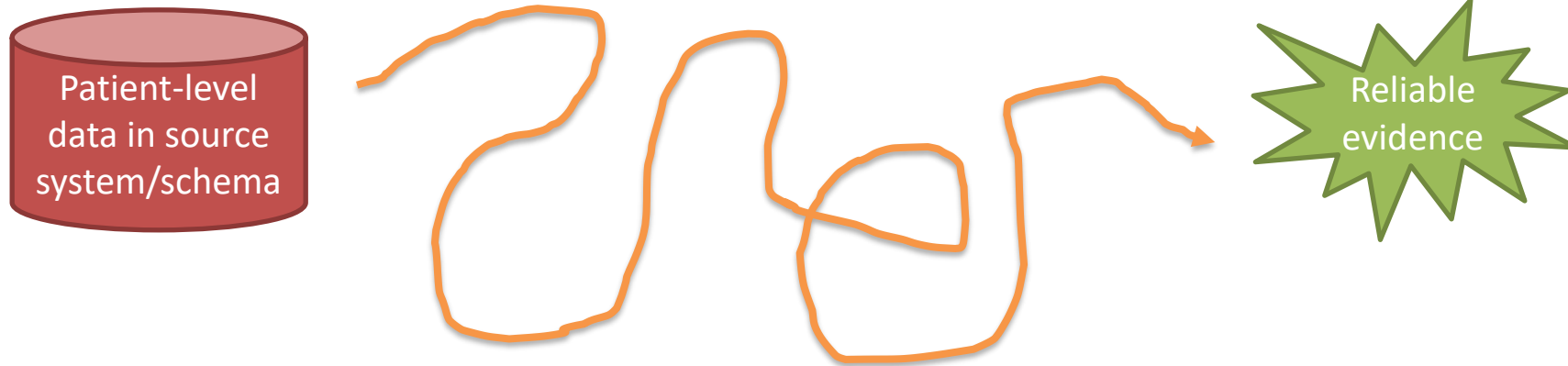
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OHDSI.org



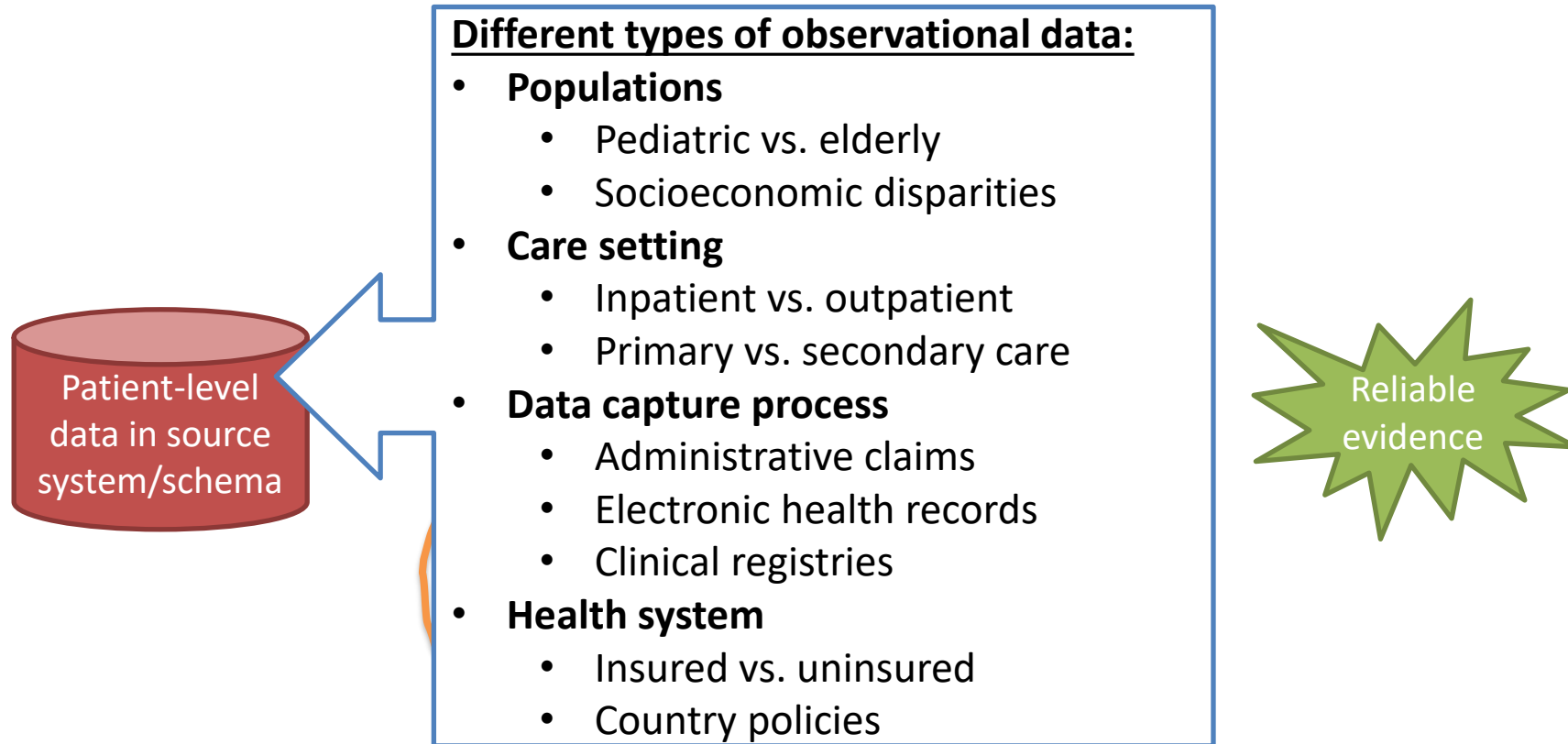


# The journey to real-world evidence



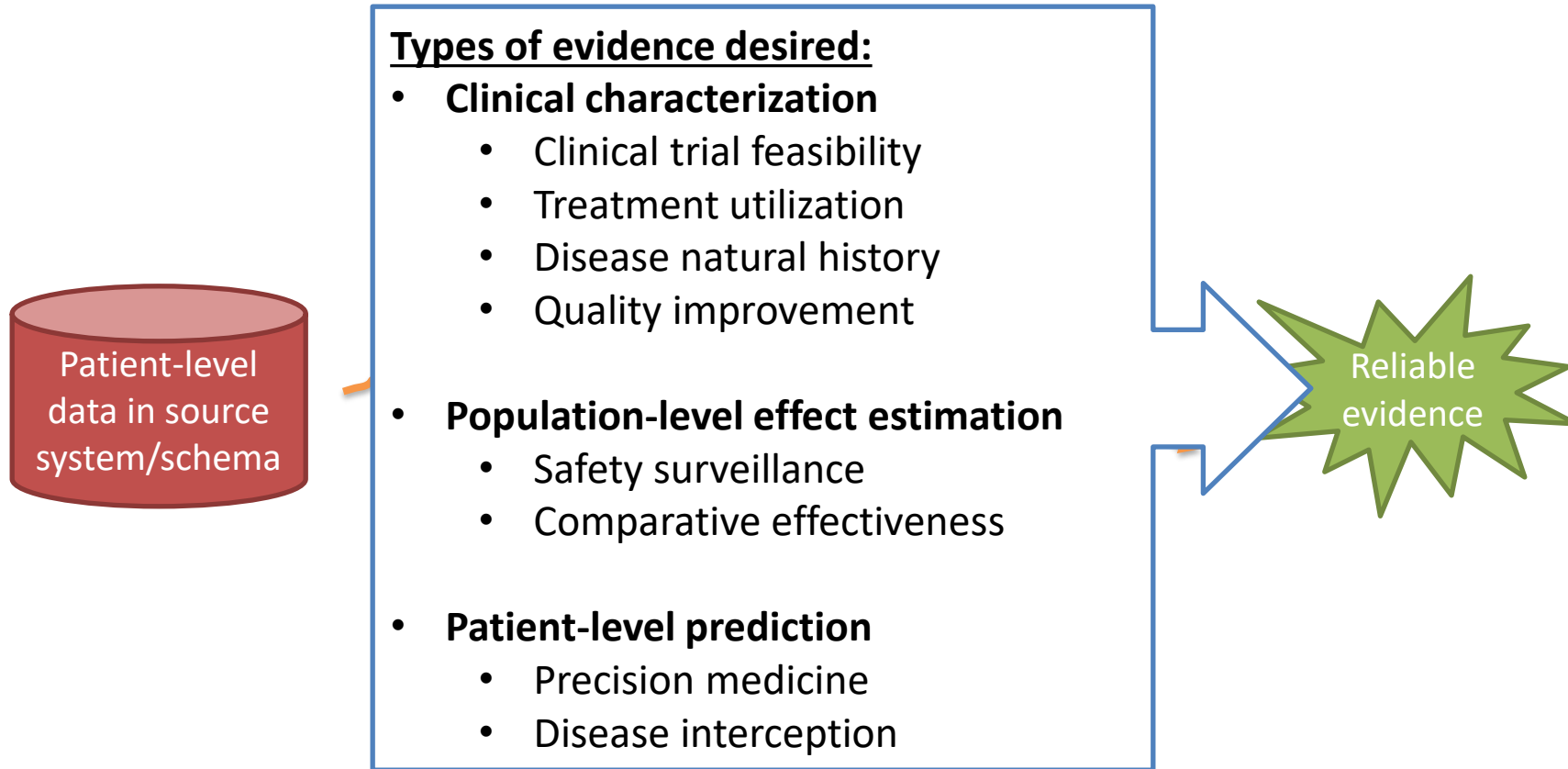


# The journey to real-world evidence





# The journey to real-world evidence





# Full-day Tutorial – November 12

## An Introductory Journey From Data To Evidence

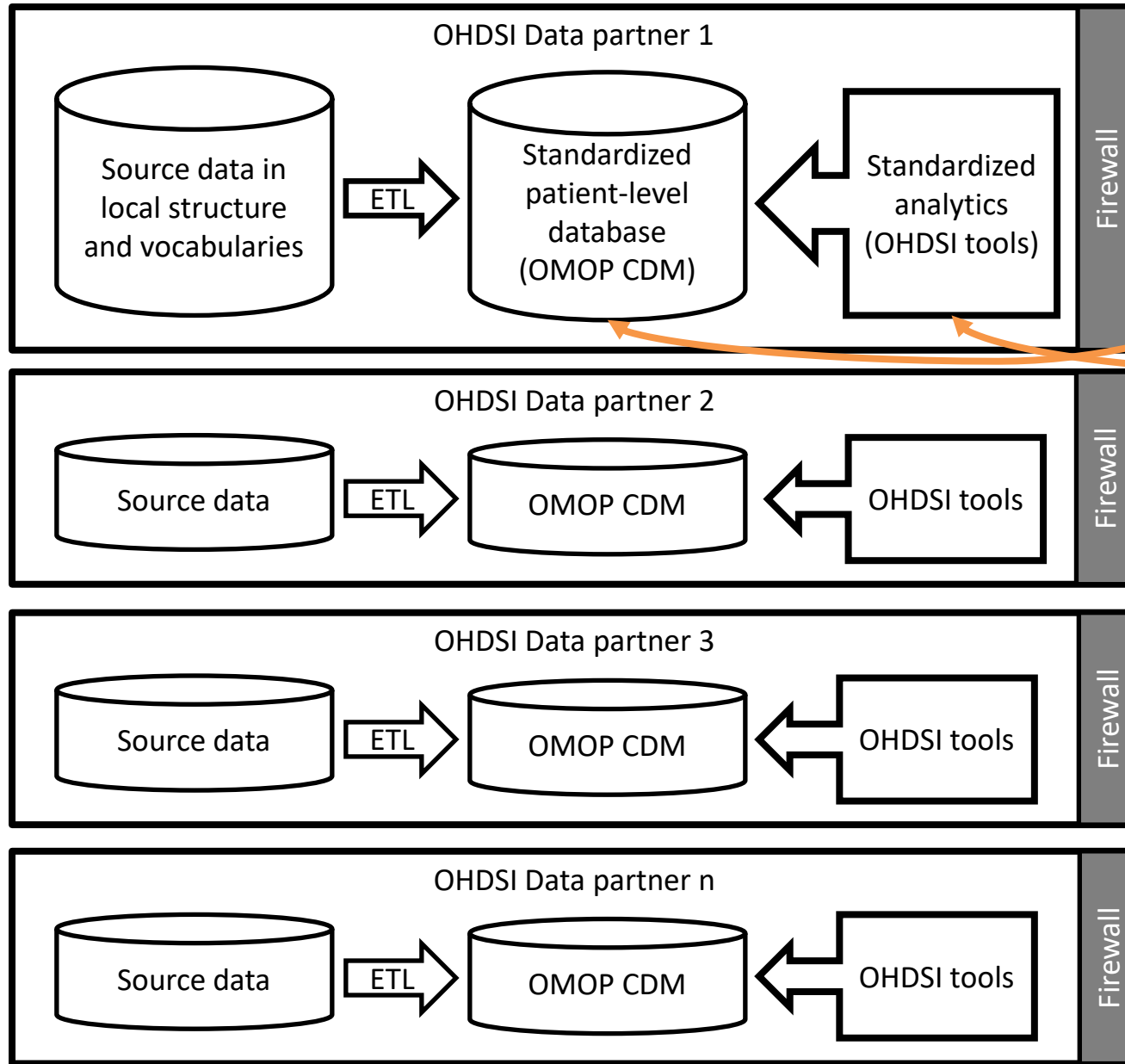
Time	Schedule
08:30-09:00	<b>Registration</b>
09:00-09:30 (30 mins)	<b>Overview of the OHDSI Journey: Where are we going</b> <i>Patrick Ryan</i> , Vice President, Observational Health Data Analytics, Janssen Research and Development
09:30-10:20 (50 mins)	<b>OMOP Common Data Model and vocabulary</b> <i>Mengling 'Mornin' Feng</i> , Ass. Director of Research (Healthcare), Institute of Data Science, National University of Singapore; OHDSI Singapore Chapter Chair <i>Mui Van Zandt</i> , Vice President and General Manager, Real World Data and Technology, IQVIA
10:20-10:30 (10 mins)	Break
10:30-11:20 (50 mins)	<b>ETL a source database into OMOP CDM</b> <i>Alex PA. Nguyen</i> , Assistant Research Fellow, Office of Data Science, Taipei Medical University <i>Mui Van Zandt</i> , Director of Product Development, IQVIA
11:20-11:30 (10 mins)	Break
11:30-12:20 (50 mins)	<b>Creating cohort definitions</b> <i>Seng Chan You</i> , Assistant Professor, Department of Biomedicine Systems Informatics, Yonsei University College of Medicine

12:20-13:30 (70 mins)	Lunch
13:30-14:20 (50 mins)	<b>Phenotype evaluation</b> <i>Patrick Ryan</i> , Vice President, Observational Health Data Analytics, Janssen Research and Development
14:20-14:30 (10 mins)	Break
14:30-15:20 (50 mins)	<b>Characterization</b> <i>Sarah Seager</i> , Director of Data Science, OMOP, IQVIA <i>Martijn Schuemie</i> , Observational Health Data Analytics, Johnson & Johnson and Department of Biostatistics, UCLA
15:20-15:30 (10 mins)	Break
15:30-16:20 (50 mins)	<b>Estimation</b> <i>Nicole Pratt</i> , Associate Professor, University of South Australia <i>Marc Suchard</i> , Professor, Departments of Biomathematics and Human Genetics, UCLA; Department of Biostatistics, UCLA;
16:20-16:30 (10 mins)	Break
16:30-17:20 (50 mins)	<b>Prediction</b> <i>Cynthia Yang</i> , Graduate student, Department of Medical Informatics, Erasmus MC <i>Chungsoo Kim</i> , Ph.D. candidate, Department of Biomedical Informatics, Ajou University
17:20-17:30 (10 mins)	<b>Recap of the OHDSI Journey: Where do we go from here</b> <i>Jason C. Hsu</i> , Associate Professor, International Ph.D. Program in Biotech and Healthcare Management, College of Management, Taipei Medical University

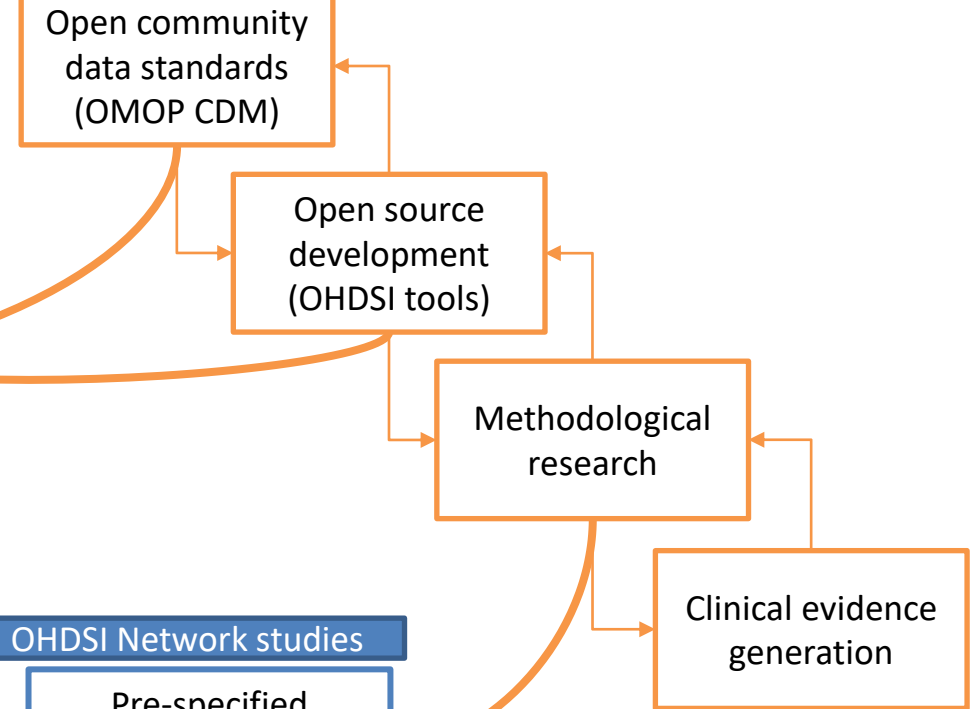




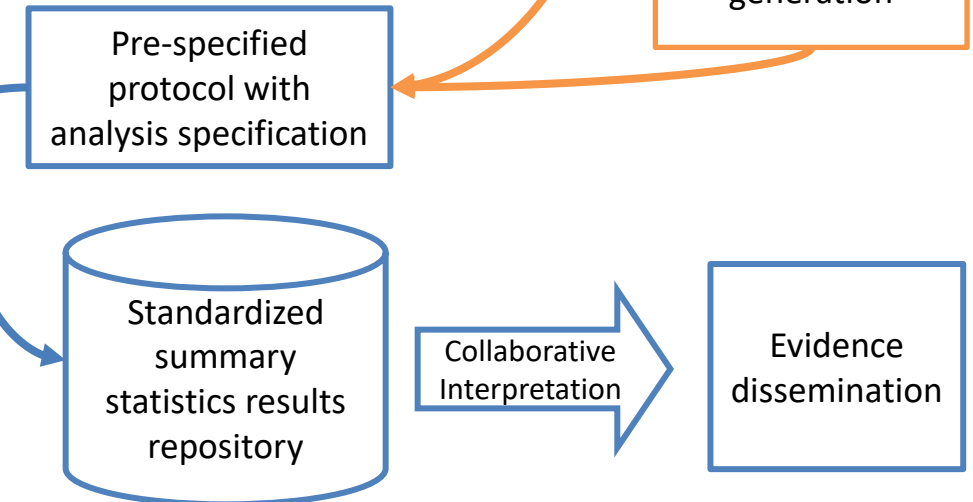
## OHDSI data network



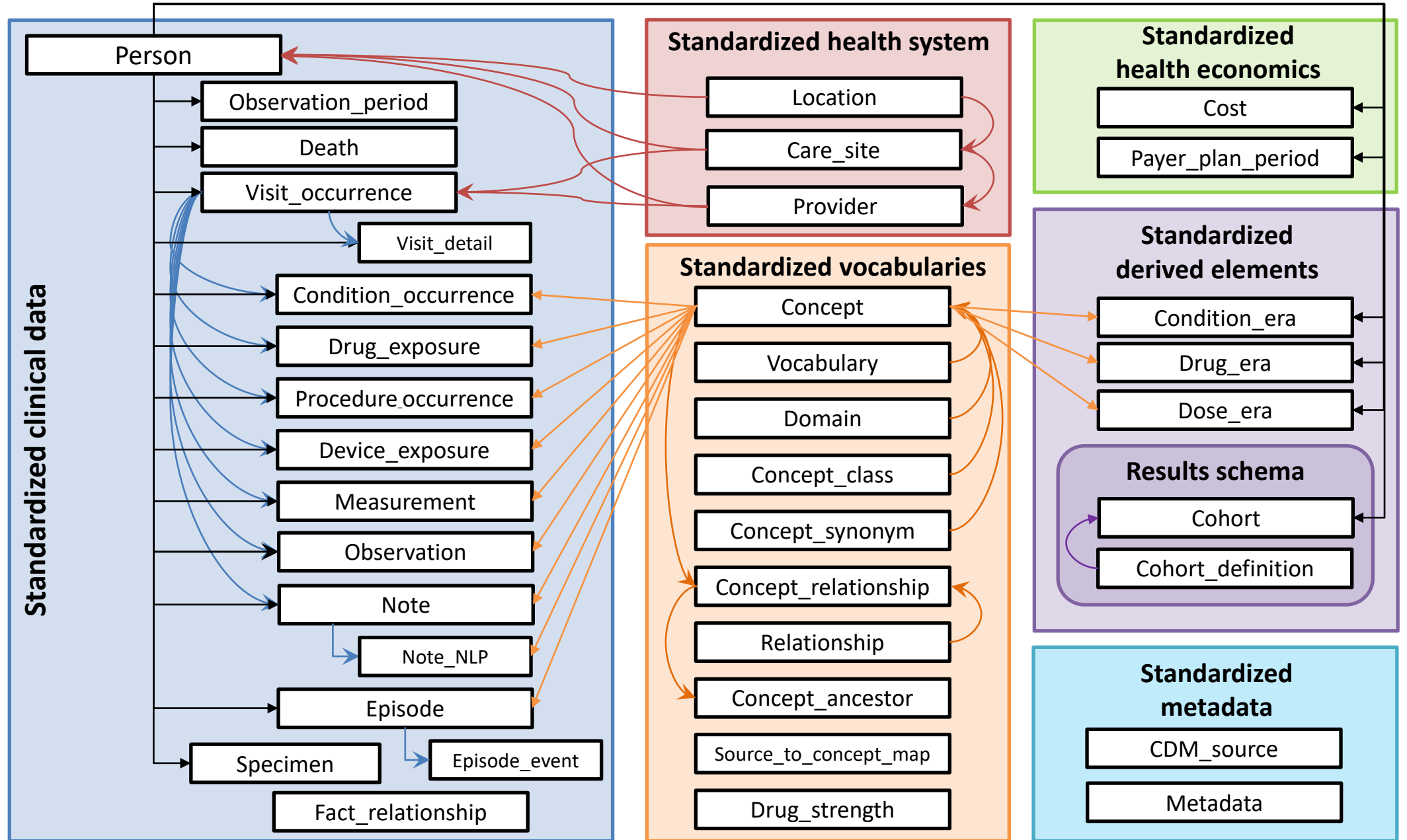
## OHDSI collaborations



## OHDSI Network studies



# OMOP Common Data Model



[Installation](#)[Learn How to Use HADES](#)

# HADES

## HEALTH ANALYTICS DATA-TO-EVIDENCE SUITE

HADES (formally known as the OHDSI Methods Library) is a set of open source R packages for large scale analytics, including population characterization, population-level causal effect estimation, and patient-level prediction.

The packages offer R functions that together can be used to perform an observation study from data to estimates and supporting statistics, figures, and tables. The packages interact directly with observational data in the [Common Data Model \(CDM\)](#), and are designed to support both large datasets and large numbers of analyses (e.g. for testing many hypotheses including control hypotheses, and testing many analyses design variations). For this purpose, each Method package includes functions for specifying and subsequently executing multiple analyses efficiently. HADES supports best practices for use of observational data as learned from previous and ongoing research, such as transparency, reproducibility, as well as measuring of the operating characteristics of methods in a particular context and subsequent empirical calibration of estimates produced by the methods.

HADES has already been used in many published clinical and methodological studies, as can be seen in the [Publications section](#).

## Installation

See the Support section for instructions on [setting up the R environment](#) for HADES, including Java and RTools. Each package in HADES can be installed independently, but it is also possible to install all HADES packages at once, as described [here](#). You can learn how connect to your database using HADES [here](#).

## Learn How to Use HADES



## **ZESTRIL- lisinopril tablet**

### **Almatica Pharma LLC**

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#### **HIGHLIGHTS OF PRESCRIBING INFORMATION**

**These highlights do not include all the information needed to use ZESTRIL safely and effectively. See full prescribing information for ZESTRIL**  
**ZESTRIL® (lisinopril) tablets, for oral use**  
**Initial U.S. Approval: 1988**

#### **WARNING: FETAL TOXICITY**

***See full prescribing information for complete boxed warning.***

- **When pregnancy is detected, discontinue Zestril as soon as possible. (5.1)**
- **Drugs that act directly on the renin-angiotensin system can cause injury and death to the developing fetus. (5.1)**

#### **INDICATIONS AND USAGE**

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Zestril is an angiotensin converting enzyme (ACE) inhibitor indicated for:

- Treatment of hypertension in adults and pediatric patients 6 years of age and older (1.1)
- Adjunct therapy for heart failure (1.2)
- Treatment of Acute Myocardial Infarction (1.3)



## *Angioedema*

### *Head and Neck Angioedema*

Angioedema of the face, extremities, lips, tongue, glottis and/or larynx, including some fatal reactions, have occurred in patients treated with angiotensin converting enzyme inhibitors, including Zestril, at any time during treatment. Patients with involvement of the tongue, glottis or larynx are likely to experience airway obstruction, especially those with a history of airway surgery. Zestril should be promptly discontinued and appropriate therapy and monitoring should be provided until complete and sustained resolution of signs and symptoms of angioedema has occurred.

Patients with a history of angioedema unrelated to ACE inhibitor therapy may be at increased risk of angioedema while receiving an ACE inhibitor [*see Contraindications (4)*]. ACE inhibitors have been associated with a higher rate of angioedema in black than in non-black patients.

### *Intestinal Angioedema*

Intestinal angioedema has occurred in patients treated with ACE inhibitors. These patients presented with abdominal pain (with or without nausea or vomiting); in some cases there was no prior history of facial angioedema and C-1 esterase levels were normal. In some cases, the angioedema was diagnosed by procedures including abdominal CT scan or ultrasound, or at surgery, and symptoms resolved after stopping the ACE inhibitor.



## Comprehensive comparative effectiveness and safety of first-line antihypertensive drug classes: a systematic, multinational, large-scale analysis



Marc A Suchard, Martijn J Schuemie, Harlan M Krumholz, Seng Chan You, Ruijun Chen, Nicole Pratt, Christian G Reich, Jon Duke, David Madigan, George Hripcsak, Patrick B Ryan

### Summary

**Background** Uncertainty remains about the optimal monotherapy for hypertension, with current guidelines recommending any primary agent among the first-line drug classes thiazide or thiazide-like diuretics, angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, dihydropyridine calcium channel blockers, and non-dihydropyridine calcium channel blockers, in the absence of comorbid indications. Randomised trials have not further refined this choice.

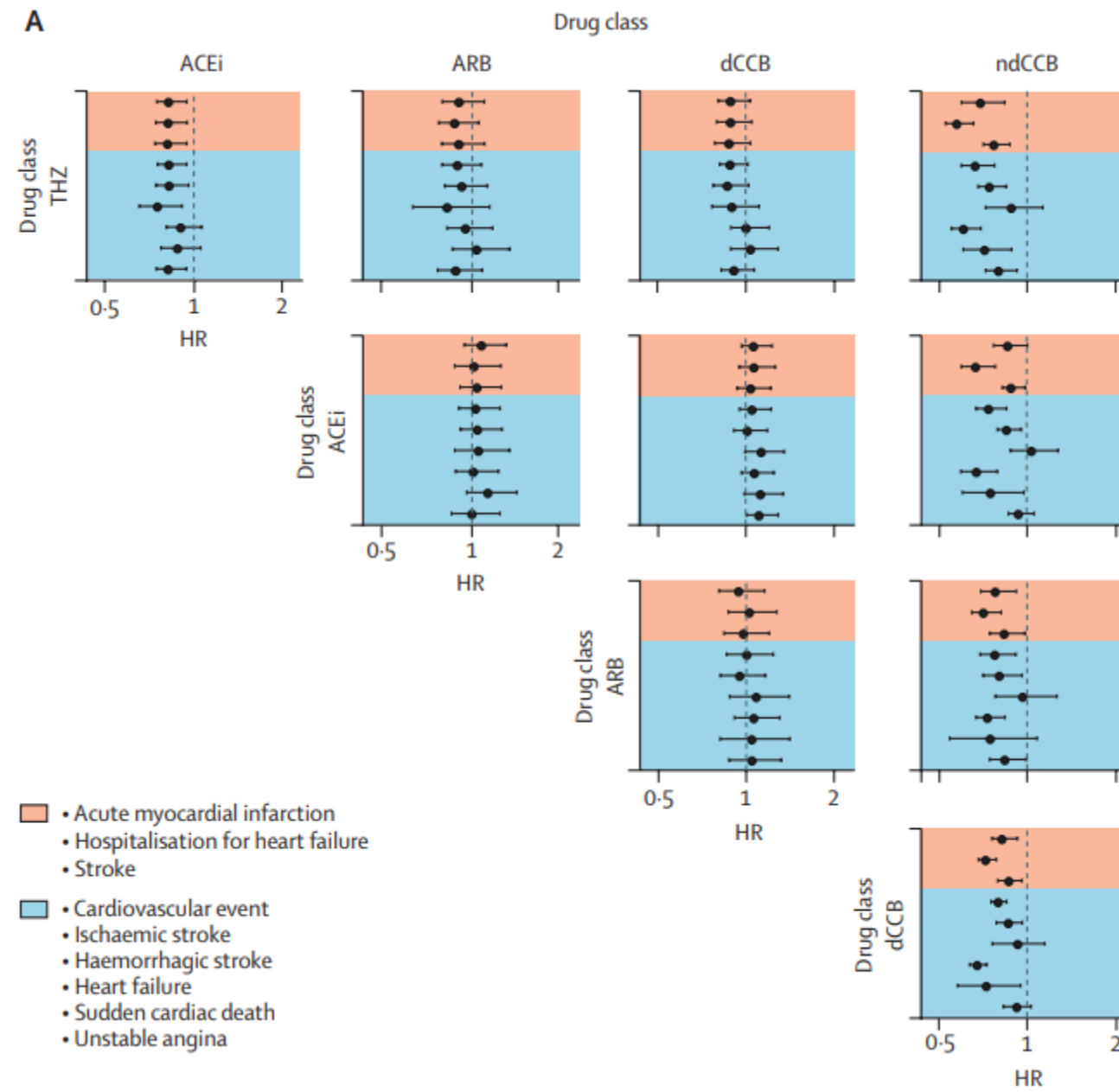
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See Online/Comment  
[https://doi.org/10.1016/S0140-6736\(19\)32461-4](https://doi.org/10.1016/S0140-6736(19)32461-4)

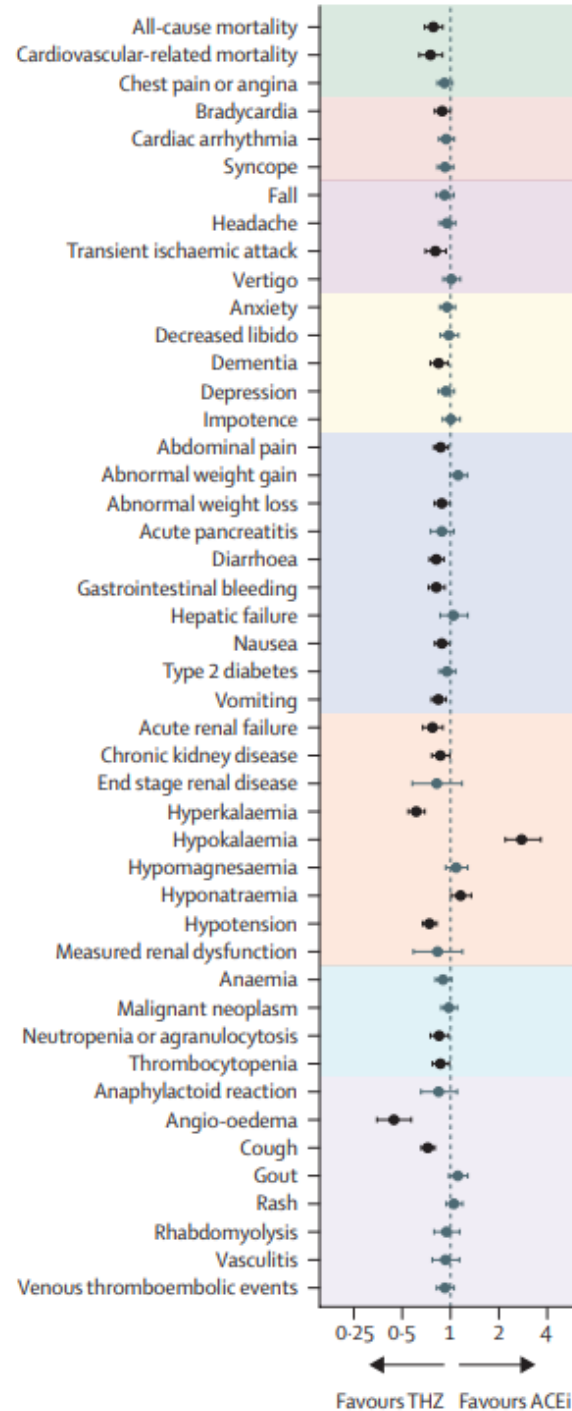
**Methods** We developed a comprehensive framework for real-world evidence that enables comparative effectiveness...





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# Tutorial infrastructure

- Atlas : <http://tutorial.ap-northeast-1.elasticbeanstalk.com>
- Jupyter: <http://jupyter.tutorial.ap-northeast-1.elasticbeanstalk.com>
- RStudio: <http://rstudio.tutorial.ap-northeast-1.elasticbeanstalk.com>

There are 170 RStudio user accounts: 'user1' - 'user170'. The password is 'Password1'

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