



CHAPTER

Characterization of Health by OHDSI AP chapter to identify Temporal Effect of the Pandemic

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Background

- The impact of COVID-19 on the healthcare system is substantial
- Resilience of healthcare system would vary across systems, regions, and countries.
- The COVID-19 pandemic can increase or decrease certain healthcare uses or conditions, but the effect would vary across time points.
- Systematic assessment of temporal pattern of healthcare use for diverse conditions is required.



Background: Previous OHDSI work

- CHARYBDIS: Characterizing Health Associated Risks, and Your Baseline Disease In SARS-COV-2
 - 1) Describe the baseline demographics, clinical characteristics, treatments, symptoms and outcomes of interest among individuals with COVID-19 overall and stratified by sex, age and specific comorbidities
 - 2) Describe characteristics and outcomes of influenza patients between September 2017 and April 2018 compared to the COVID-19 population

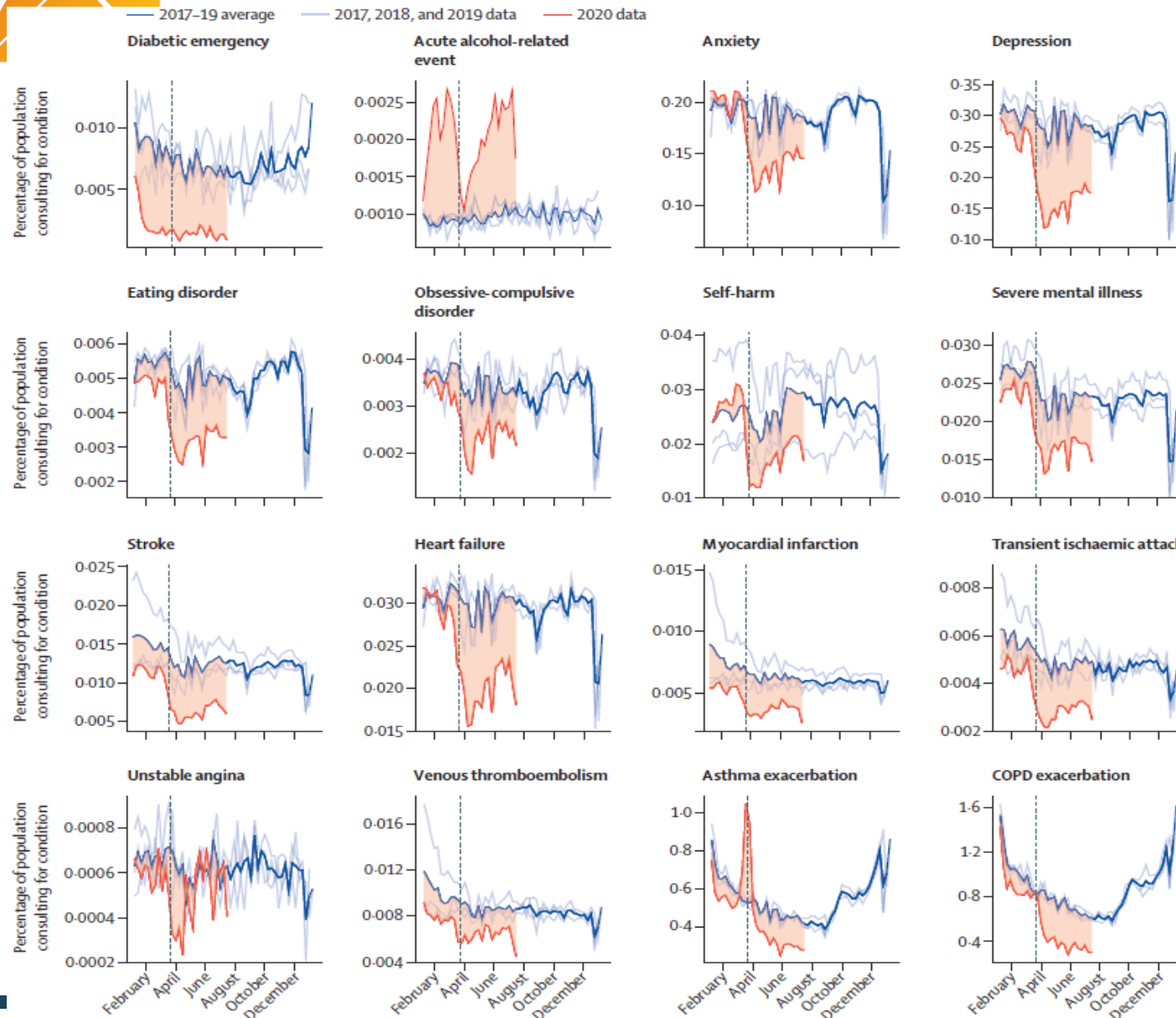


Aims

- Identification of the temporal change in healthcare use across the pre- and post-COVID-19 era including:
 - The incidence of certain conditions (e.g. hypertension)
 - The prevalence of certain conditions (e.g. hypertension)
 - Use of certain care/services (e.g. prescribing antihypertensive drugs)
- Identification of temporal causality between COVID-19 and epidemiological changes of target diseases
 - Does COVID-19 change the incidence, prevalence of certain conditions or treatment pattern of diseases?
 - If so, would it have an impact on future burden of healthcare system?



Benchmark research: Acute effect of COVID-19



- Data source: UK CPRD (13% of UK population)
- Method: Interrupted time-series analysis
- Target: Condition
 - Diabetic emergency
 - Mental health conditions
 - Acute respiratory events
 - Acute cardiovascular events
 - Acute alcohol-related event



Benchmark research: Trends in the treatments for COVID-19

RESEARCH

 OPEN ACCESS

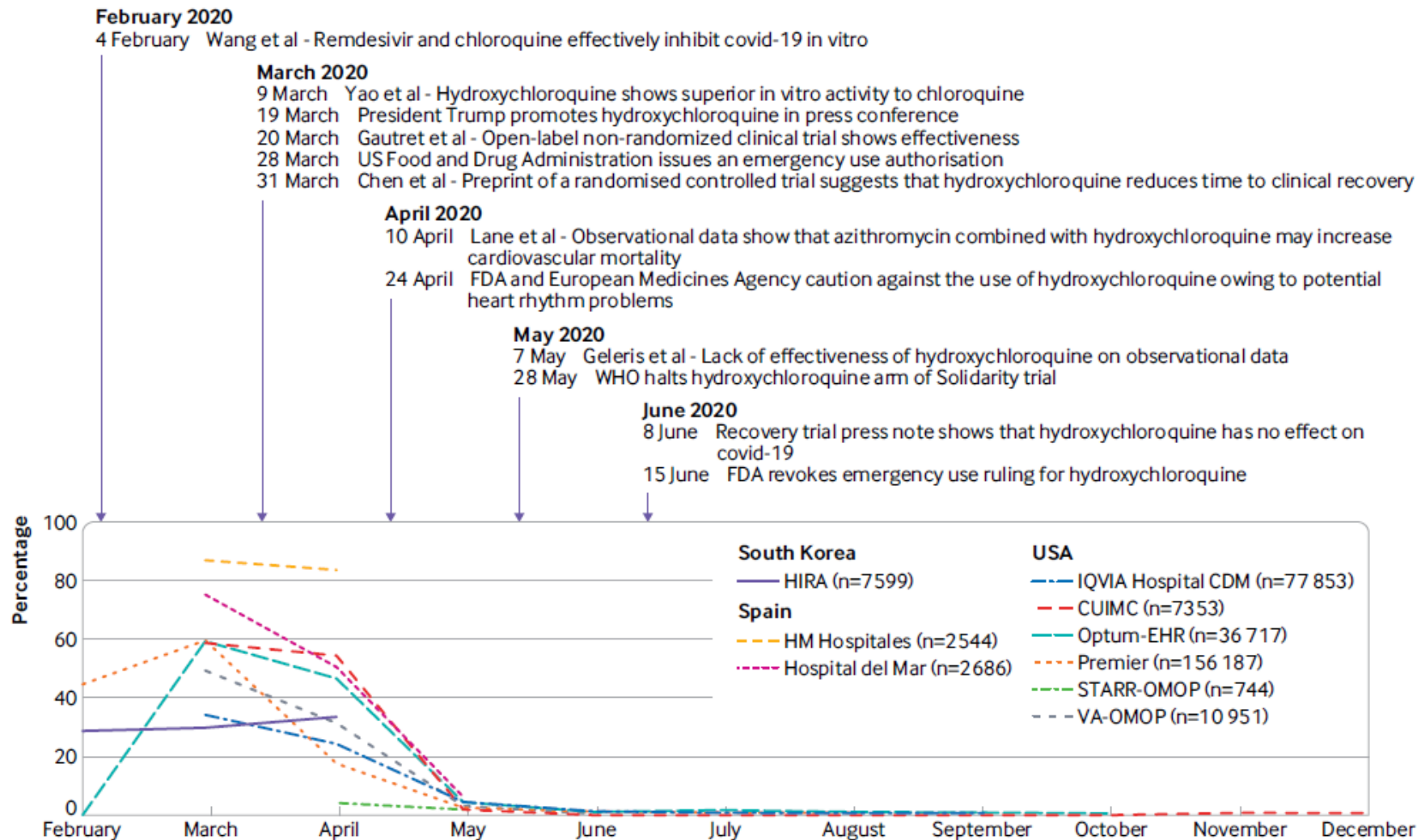


Use of repurposed and adjuvant drugs in hospital patients with covid-19: multinational network cohort study

Albert Prats-Urbe,¹ Anthony G Sena,^{2,3} Lana Yin Hui Lai,⁴ Waheed-Ul-Rahman Ahmed,^{5,6} Heba Alghoul,⁷ Osaid Alser,⁸ Thamir M Alshammari,⁹ Carlos Areia,¹⁰ William Carter,¹¹ Paula Casajust,¹² Dalia Dawoud,^{13,14} Asieh Golozar,^{15,16} Jitendra Jonnagaddala,¹⁷ Paras P Mehta,¹⁸ Mengchun Gong,¹⁹ Daniel R Morales,^{20,21} Fredrik Nyberg,²² Jose D Posada,²³ Martina Recalde,^{24,25} Elena Roel,^{24,25} Karishma Shah,⁵ Nigam H Shah,²³ Lisa M Schilling,¹¹ Vignesh Subbian,²⁶ David Vizcaya,²⁷ Lin Zhang,^{28,29} Ying Zhang,¹⁹ Hong Zhu,³⁰ Li Liu,³⁰ Jaehyeong Cho,³¹ Kristine E Lynch,³² Michael E Matheny,^{33,34} Seng Chan You,³⁵ Peter R Rijnbeek,³ George Hripcsak,³⁶ Jennifer CE Lane,⁵ Edward Burn,^{1,24} Christian Reich,³⁷ Marc A Suchard,³⁸ Talita Duarte-Salles,²⁴ Kristin Kostka,^{37,39} Patrick B Ryan,^{2,40} Daniel Prieto-Alhambra¹



Benchmark research: Trends in the treatments for COVID-19



- Data source: OHDSI network
- Method: Calculating numbers
- Target: treatments for COVID-19 including hydroxychloroquine



Analytic Plan

- The number of incidence, prevalence, and the counts will be aggregated for digital phenotypes (aka. Cohort) monthly before and after COVID-19
- Later, the temporal pattern can be analyzed by using statistical methods such as interrupted times series regression



(hidden?) Aims

- Bring more researchers to OHDSI (esp. those in APAC region)
- Let them lead OHDSI studies

Chapter	Leader	Topic
Australia	Nicole	Residential care/Nursing home care: Visit categories
Japan	Eri Matsuki; Prof Hiramatsu	Hematologic disease
Korea	Chan; Yongjae Lee	Cardiovascular disease
Singapore	Yizhi, Mornin	Diabetes
US	Asieh	Cancer
Korea	Jaehwa Jung	Allergic disease in children



Dedicated ATLAS for this study on GCP

ATLAS

Home

Data Sources

Search

Concept Sets

Cohort Definitions

Characterizations

Cohort Pathways

Incidence Rates

Profiles

Estimation

Prediction

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Configuration

Feedback

Apache 2.0
open source software

provided by
OHDSI

Column visibilityCopyCSVShow 15 entries

New Cohort

Filter:

Previous 1 2 3

Showing 1 to 15 of 43 entries

	Id	Name	Created	Updated	Author
▼ Last Modified					
2+ Weeks Ago (25)	49	COPY OF: Patient with T2DM (2)	05/16/2022 2:21 PM	05/16/2022 2:21 PM	anonymous
Last Week (18)	48	Persons with t2dm	05/16/2022 1:38 PM	05/16/2022 1:39 PM	anonymous
▼ Author					
(43)	47	Persons in 2018 with 365d prior observation and no prior t2dm	05/16/2022 1:36 PM	05/16/2022 1:37 PM	anonymous
	46	Incidence of t2dm among persons in 2018 with 365d prior observation	05/16/2022 1:08 PM	05/16/2022 1:12 PM	anonymous
	45	Prevalence of t2dm among persons in 2018 with 365d prior observation	05/16/2022 1:08 PM	05/16/2022 1:08 PM	anonymous
	44	COPY OF: Patient with T2DM (1)	05/16/2022 1:03 PM	05/16/2022 1:04 PM	anonymous
	43	[TROY]_prasugrel (TRITON-TIMI 38)	05/16/2022 9:02 AM	05/16/2022 9:02 AM	anonymous
	42	[TROY]_ticagrelor (TRITON-TIMI 38)	05/16/2022 8:57 AM	05/16/2022 9:01 AM	anonymous
	41	[TROY]_clopidogrel (PLATO)	05/16/2022 8:54 AM	05/16/2022 9:01 AM	anonymous
	40	[APAC]_Persons with multiple sclerosis	05/13/2022 4:52 PM	05/13/2022 4:52 PM	anonymous
	39	[APAC]_Incidence of multiple sclerosis in persons in 2018 with 365d prior observation	05/13/2022 4:50 PM	05/13/2022 4:50 PM	anonymous
	37	[APAC]_Persons in 2018 with 365d prior observation and no prior multiple sclerosis	05/13/2022 4:48 PM	05/13/2022 4:48 PM	anonymous
	38	[APAC]_Prevalence of multiple sclerosis among persons in 2018 with 365d prior observation	05/13/2022 4:48 PM	05/13/2022 4:48 PM	anonymous
	6	[PhenotypePhebruary]_Persons with new type 2 diabetes mellitus at first dx rx or lab	04/12/2022 8:09 PM	05/13/2022 2:39 PM	anonymous
	4	[PhenotypePhebruary]_Persons with new type 2 diabetes mellitus at first diagnosis	04/12/2022 6:17 PM	05/13/2022 2:38 PM	anonymous



Heritage of Phenotype Phebruary

28 Days, 28 Phenotypes

**Phenotype
Phebruary**
forums.ohdsi.org

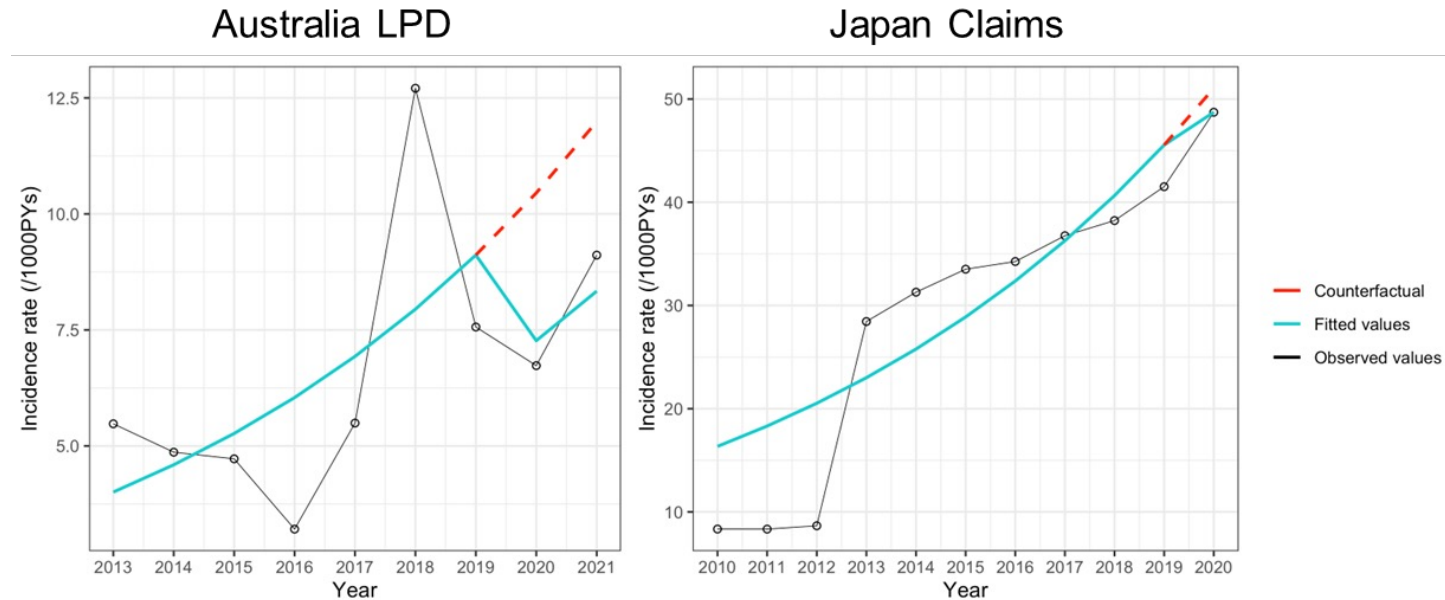
Join The Conversations!

- Feb. 1 • [Type 2 Diabetes Mellitus](#)
- Feb. 2 • [Type 1 Diabetes Mellitus](#)
- Feb. 3 • [Atrial Fibrillation](#)
- Feb. 4 • [Multiple Myeloma](#)
- Feb. 5 • [Alzheimer's Disease](#)
- Feb. 6 • [Hemorrhagic Events](#)
- Feb. 7 • [Neutropenia](#)
- Feb. 8 • [Kidney Stones](#)
- Feb. 9 • [Delirium](#)
- Feb. 10 • [Systemic Lupus Erythematosus](#)
- Feb. 11 • [Suicide Attempts](#)
- Feb. 12 • [Parkinson's Disease and Parkinsonism](#)
- Feb. 13 • [Attention Deficit Hyperactivity Disorder](#)
- Feb. 14 • [Hypertension](#) ([Video Description](#))
- Feb. 15 • [Acute Myocardial Infarction](#)
- Feb. 16 • [Heart Failure](#)
- Feb. 17 • [Cardiomyopathy](#)
- Feb. 18 • [Multiple Sclerosis](#)
- Feb. 19 • [Triple Negative Breast Cancer](#)
- Feb. 20 • [Pulmonary Hypertension](#)
- Feb. 21 • [Prostate Cancer](#)
- Feb. 22 • [HIV](#)
- Feb. 23 • [Hidradenitis Suppurativa](#)
- Feb. 24 • [Anaphylaxis](#)
- Feb. 25 • [Depression](#)
- Feb. 26 • [Non-Small-Cell Lung Cancer](#)
- Feb. 27 • [Drug-Induced Liver Injury](#)
- Feb. 28 • [Severe Visual Impairment And Blindness](#)
- Bonus • [Acute Kidney Injury](#)



The results from the pilot study: CHAPTER-DM

led by Singaporean team (Yizhi Dong, Mornin Feng Mengling)

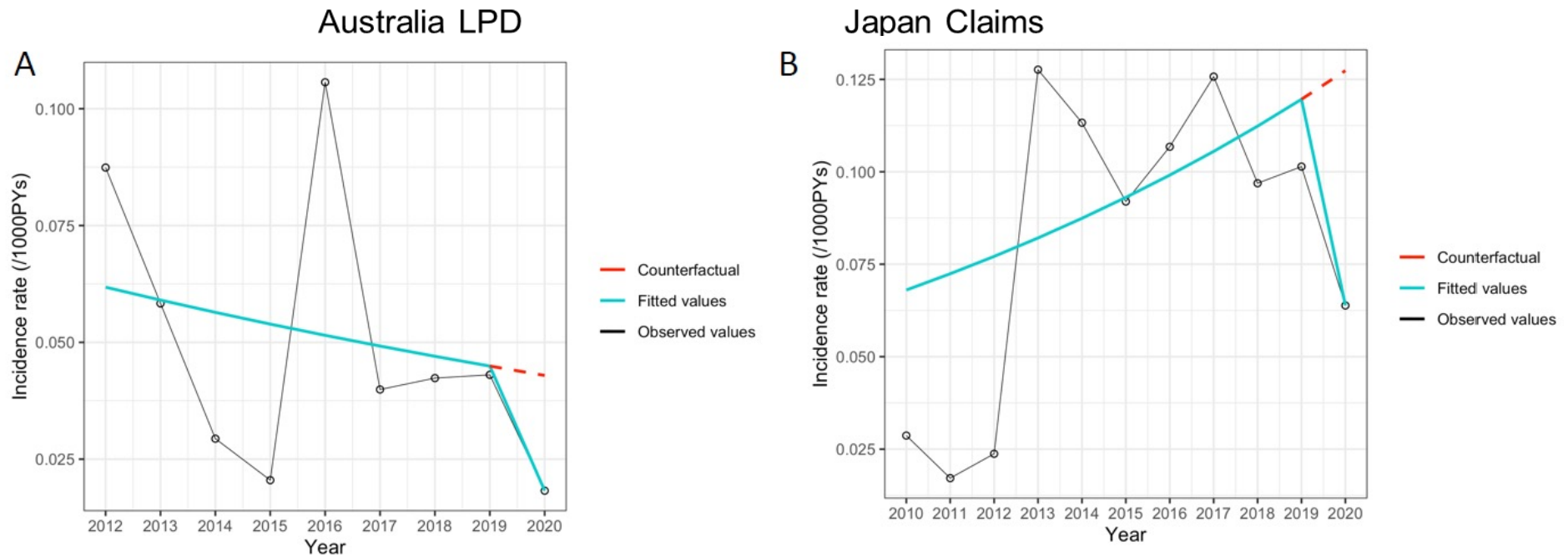


- Sharp decline in the incidence of **DM** in the Australia LPD in 2020
 - Less evident in the Japan claims
- Rebound of **DM** incidence in 2021 in the Australia LPD



The results from the pilot study: CHAPTER-Hematology

led by Japanese team (Eri Matsuki)



- Sharp decline in the incidence of **multiple myeloma** in both Australia and Japan



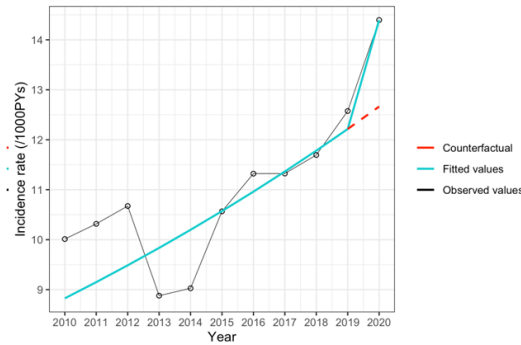
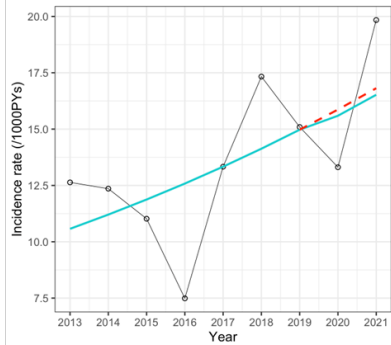
The results from the pilot study: CHAPTER-CVD

led by Korean team (Seng Chan You)

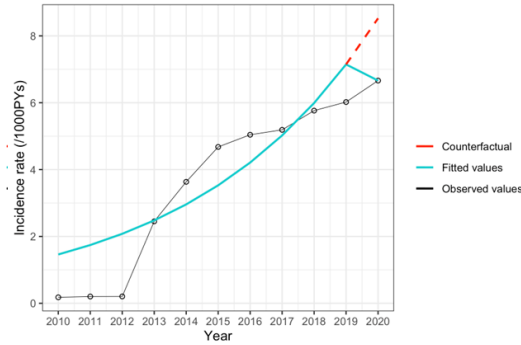
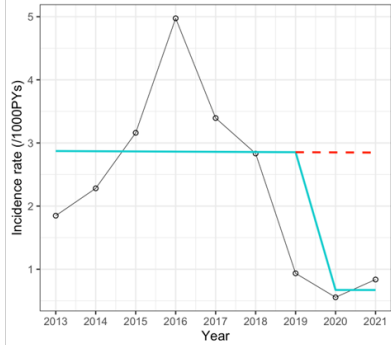
Australia LPD

Japan Claims

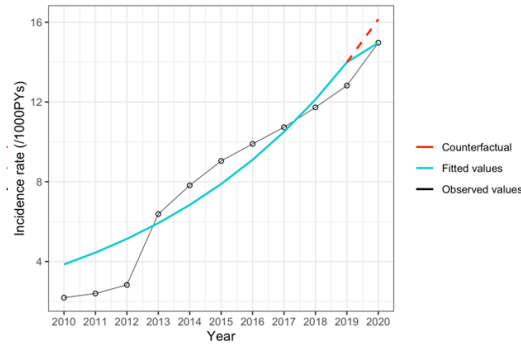
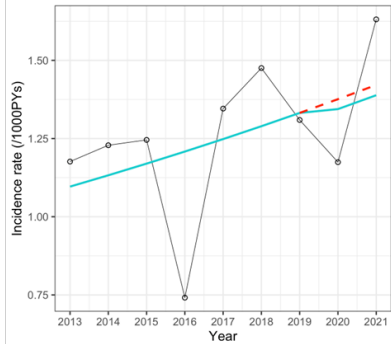
Hypertension



Acute myocardial Infarction



Heart failure



- Sharp decline in the incidence of **hypertension, AMI, and HF** in the Australia LPD in 2020
 - This trend is less evident in the Japan claims
- Rebound of incidence of cardiovascular diseases in 2021 in the Australia LPD



Plans

- Create the skeleton package for CHAPTER study
 - Based on CohortIncidence Package
 - <https://github.com/OHDSI/CohortIncidence>
 - Need to modify the package to calculate monthly incidence
- Bring more researchers and let them create more cohorts of interest
- Call for data partners
- Thanks to the OHDSI and IQVIA team for coordinating this project



*Thank
You*
for your time