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.
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?
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
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)

• 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
Cohort definitions of SubStudies

- DM (Singapore; Yizhi and Mornin)
- Hematologic disease (Japan; Eri)
- CVD (Korea; Chan)
- Allergy / Asthma in children (Korea; Subin)
- Residential Nursing home care (Australia)
Progress until now

• Target databases
  – Korean nationwide DB: HIRA (applied)

• Environment
  – Docker image was built

• Study Package
  – Still under the hood

https://github.com/dr-you-group/chapter/tree/develop
Thank You
for your time