APAC Community Call

Regional Chapter Mid-Year Updates

June 15, 2023

Agenda

- OHDSI News
  - Collaborator Spotlight: Mengling 'Mornin' Feng
  - OHDSI India Webinar
  - Global Symposium Collaborator Showcase
- Regional Chapter Mid-Year Updates
  - Taiwan by Jason Hsu
  - China by Lei Liu
  - Australia by Nicole Pratt
  - Japan by Tatsuo Hiramatsu
  - Singapore by Mengling Feng
  - Korea by Rae Woong Park

Collaborator Spotlight: Mengling 'Mornin' Feng

Mengling ‘Mornin’ Feng is an Assistant Professor at the National University of Singapore and the Assistant Director of Research (Healthcare) at the Institute of Data Science. He has several research interests, including artificial intelligence solutions for healthcare challenges, causal inference for evidence-based medicine, and deep learning models for medical image analysis.

Mornin has been an OHDSI leader in helping to spread the community to the Asia-Pacific region. He is a co-chair of the Singapore Chapter, and recently helped develop a collaboration with the Singapore Ministry of Health that has led the Ministry to use the OMOP CDM as the main platform for research.

https://www.ohdsi.org/spotlight-mornin-feng/

OHDSI India Webinar

- OHDSI India hosted its first webinar – “Redefine Indian healthcare with real-world data and rea-world evidence”

- Recordings will be made available soon so if you missed the live event, keep an eye out on https://www.ohdsi-india.org/home!

Global Symposium Collaborator Showcase

- Submissions are due Saturday, June 17, 9 a.m. Korea time
- Instructions available at https://www.ohdsi.org/2023-collaborator-showcase/

Collaborator Showcase Information

OHDSI's achievements over the last decade would not be possible if not for the hard work of our community members around the world. Our annual Collaborator Showcase provides our collaborators the opportunity to share their tremendous work. Last year, we had a record number of both submissions and presentations for the Collaborator Showcase, and we are hoping to exceed those totals in 2023.

If you are interested in participating in the 2023 Collaborator Showcase, please click here to learn more about the event. To look at the research shared in the past, check out our recent showcases: 2022 | 2021 | 2020 | 2019

The 2023 brief report submission form is below. In order to access the form, you must have a Google account. Please see this link to create your Google account and then return to the form Create a Google Account – Google Account Help.

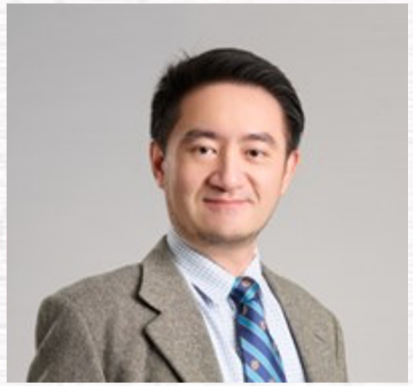
IMPORTANT DATES:

- All submissions are due no later than **8pm (EST) on Friday, June 16**
- All submissions will be peer-reviewed by the OHDSI Scientific Review Committee between **June 23-August 3**
- If you have been selected to present your work for the 2023 Symposium Collaborators Showcase, you will be notified via email by **Tuesday, August 15**

2023 Brief Report Submission Form

2023 Collaborator Showcase Details

Regional Update



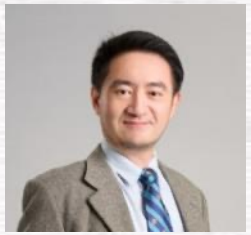
Jason C. Hsu

Taipei Medical University, Taiwan

June 15, 2023

Members in OHDSI Taiwan Society Office

Marc Hsu



Jason C. Hsu

Alex PA. Nguyen

Grace Huang

Benson Cheng

Phan Thanh Phuc

Yudha E. Saputra

Maz Solie

Whitney Burton

Rachel Quynh Nguyen

Dian Tri Wiyanti

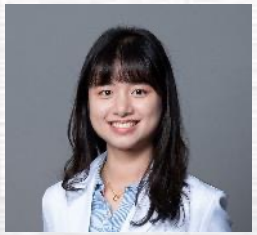
Septi Melisa

Christianus Heru Set

Daniel Chris

Natalie

Carrie



Nina

Sunny

OHDSI Taiwan Society

What we have done?	What we will do?
■ The 3rd board meeting will be held at Chiayi Christian Hospital on June 18th, in conjunction with the health big data seminar held there, to promote OHDSI. ■ We have promoted the OHDSI network in the industry (Taiwan AZ, Oracle), hospitals (Wanfang Hospital, Taiwan Adventist Hospital, Chang Gung Hospital), and other institutions (Taiwan National Institute of Health). ■ Jason Hsu invited Nicole Pratt and Mengling Feng to give a lecture on the experience of OHDSI international collaborative research virtually.	■ The 4th board meeting will be held in conjunction with other large-scale seminars at Tung's Metroharbor Hospital in Taichung City in November this year to promote OHDSI. ■ In the future, we will continue to promote the OHDSI network to other pharmaceutical companies, CRO companies, government agencies, local medical centers, financial and insurance institutions, etc. ■ We have planned to support the development of OHDSI in Vietnam and Indonesia through the relationship in Vietnam and Indonesia.

OHDSI Studies

What we have done?	What we will do?
■ Joined SOS Challenge: "Fluoroquinolone and Aortic aneurysm" lead by Nicole Pratt ■ Joined 2022 OHDSI APAC Studies: ➢ "Characterization of non-communicable disease across the pre- and post- COVID-19 era" lead by Chan ➢ "Real world safety of treatments for multiple sclerosis" lead by Nicole Pratt ➢ "Quality assessment of CDM databases across the OHDSI-AP network" lead by Chungsoo Kim	■ Present 4 abstracts for 2023 OHDSI APAC Symposium: ➢ T2DM_pathway ➢ Dementia prediction ➢ Female cancer onco-cardiology ➢ Predicting Hepatic Malignancy from Colorectal Cancer Patient ■ Based on the abstracts for 2023 OHDSI APAC Symposium, we will call for international collaborators to work together and complete the international joint study ■ Developed 2 abstracts for 2023 OHDSI Global Symposium

OHDSI Taiwan Website

www.OHDSI-Taiwan.com

Thanks for your listening!

OHDSI China Chapter

WG Leader: **Lei Liu**, Hui Lv, Yi Zhou, Hua Xu

- Objective 1: Promote OHDSI strategy and methodology in China
- Objective 2: Create collaboration activities that encourage collaborative research among healthcare institutions in China

Monthly Lectures

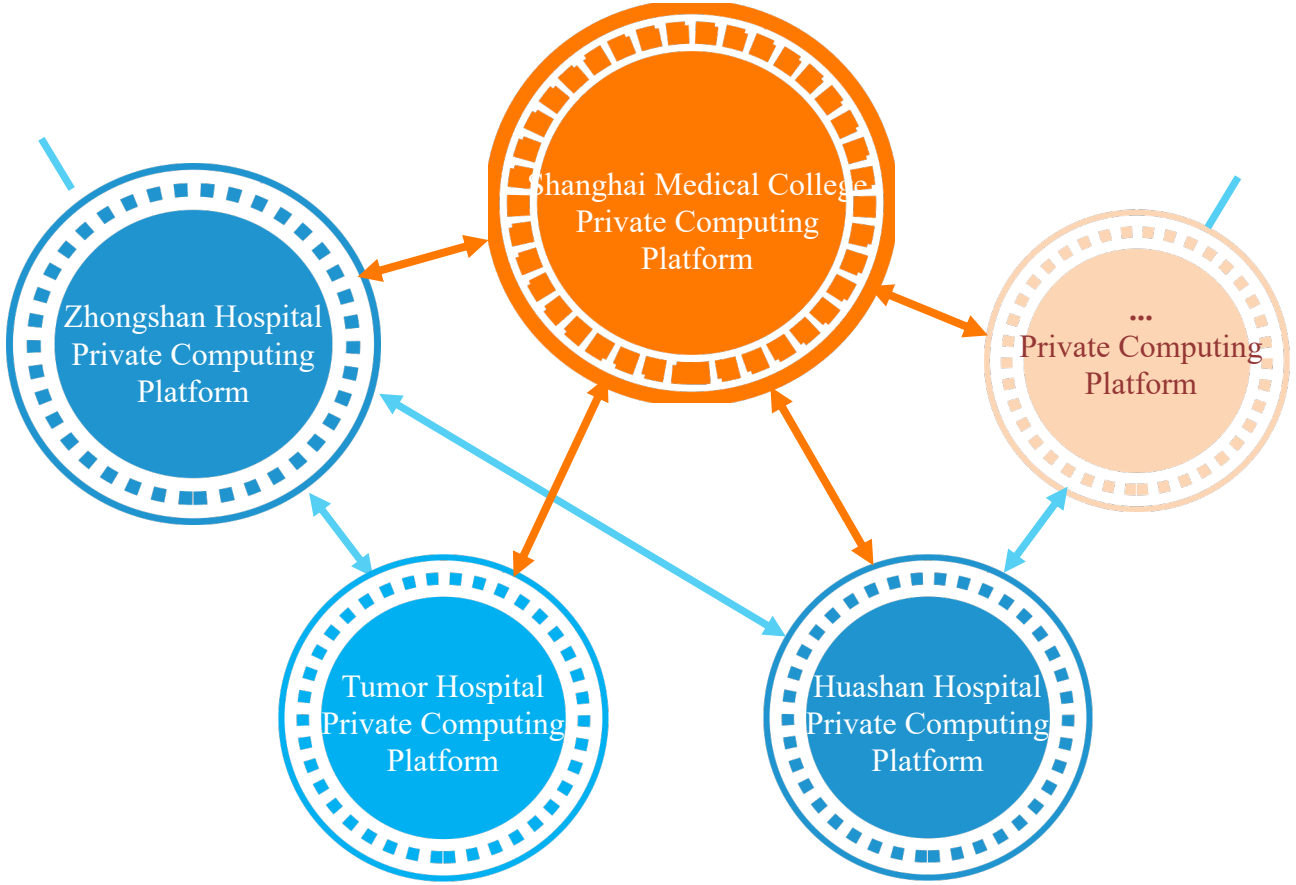
- 2/18 Mengling Feng, NUS, When Healthcare Meets AI and Data Standardization
- 3/11 Hua Xu, Yale, Representing and Utilizing Clinical Textual Data for RWS: An OHDSI Approach
- 4/15 Biyun Qian, Shanghai Hospital Development Center, Construction and Practice of Shanghai Digitalized Platform for Clinical Research
- 5/20 Shan Nan, University of Hunan, Rapid Construction of a Clinical Decision Support System based on OpenEHR
- 6/24 Yonghui Wu, University of Florida, Large GPT Models in Medicine

Fudan University Clinical Research Data Network Based on Private Computing and OHDSI Framework

1. Construct Private Computing Platform in Each Hospital
    - Data collection and cleaning of specific diseases

2. Form Data Network and Data Sharing
    - Policy for authorized data sharing

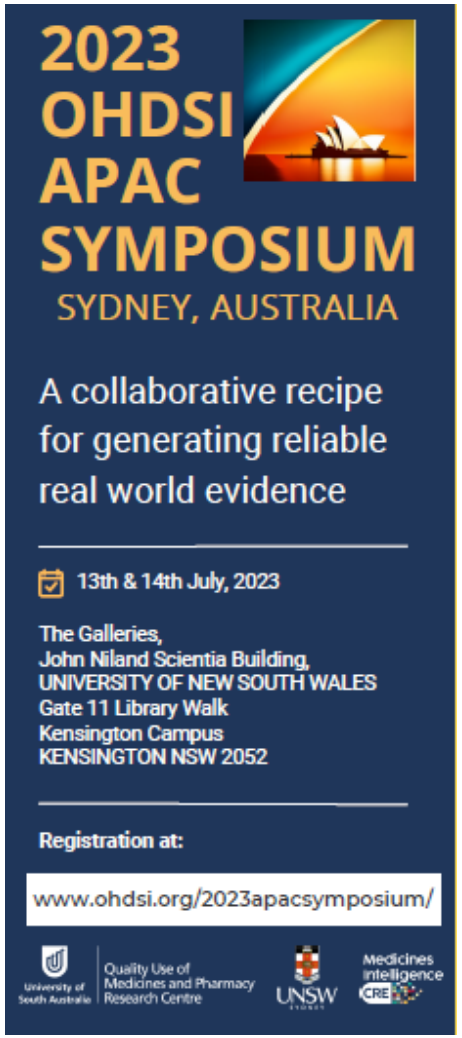
3. Form Clinical Research Network for Specific Diseases
    - Liver cancer clinical research network
    - Cardiovascular clinical research network
    - …



OHDSI Australia Chapter
2023 Q2 Report

www.ohdsi-australia.org

Host Country - 2023 OHDSI APAC Symposium



- **Two-day in-person event**
  - **13th-14th July 2023**
  - University of New South Wales, Kensington Campus, Sydney, AUSTRALIA

- **Symposium Day 1: Main Conference**
  - 12 presentations including 7 lightning talks
  - 2 panel discussions
  - 35 poster presentations

- **Symposium Day 2: Tutorials + Oncology Workgroup discussions**

2023 OHDSI APAC Symposium – Day 1

- **Session 1: OHDSI, an artisanal approach to crafting real-world evidence**
  - **Key note: Engineering an open science system that builds trust, confidence and addresses the needs of decision makers, clinicians and consumers (Patrick Ryan)**
  - Transforming health: what do regulators, clinicians and consumers really want to know about healthcare and how can OHDSI help (mission collaborative better health care) **(Asieh Golozar)**
- **Session 2: A step-by-step recipe for RWE - the OHDSI Save-Our-Sisyphus Challenge**
  - Research Study presentation - Fluroquinolones antibiotics and the risk of aortic aneurysm and dissection - A study of 12 million patients **(Jack Janetzki, Uni SA)**
  - Panel discussion regulators, clinicians, consumers (response from stakeholders)

2023 OHDSI APAC Symposium – Day 1

- **Session 3: Too many cooks is never enough: collaborative data harmonisation to improve patient care**
  - OMOP/FHIR - challenges of each model and how the collaboration can resolve those challenges **(Grahame Grieve)**

  - OMOP Oncology: Paving the Way for Patient-Centric Cancer Care **(Kim Carter, Georgina Kennedy)**

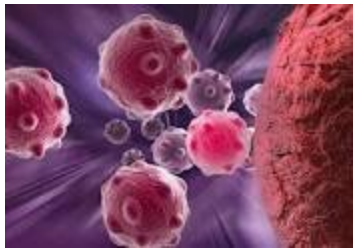
- **Session 4**
  - Lightning talks: 7 presentations from across the Asia-Pacific region
  - Panel discussion: APAC Regional Chapter Leaders

2023 OHDSI APAC Symposium – Day 2 Tutorials

- **Session 1**
  - ETL & mapping session using PBS data from scratch **(Mui & others)**
- **Session 2**
  - Using OHDSI Tools to generate evidence (the Fluroquinolone SOS Challenge study) **(Patrick Ryan & Seng Chan You)**
- **Session 3**
  - Research study in depth (design and execution) **(Martijn Schuemie & Jing Li)**
- **Session 4**
  - Research study in depth (interpretation) (**Nicole Pratt, Marc Suchard & Jack Janetzki**)

2023 OHDSI APAC Symposium – Day 2 Oncology Work Group

- **Oncology Workgroup Breakout Discussion**
  - Current state & progress in OMOP Oncology for cancer research
  - Challenges & initiatives in undertaking oncology research
  - Developing a roadmap to shape the future of OMOP Oncology



2023 OHDSI APAC Symposium

- Register at:
  - https://www.ohdsi.org/2023apacsymposium/

- Registrations close:
  - Thursday 6th July 2023

Korean-Australian Collaboration in OHDSI SOS Network Study Challenge

OHDSI SOS Challenge 2023

Is fluoroquinolone use associated with the development of aortic aneurysms and aortic dissections? An international network study

Chief investigators:

Seng Chan You, Seonji Kim, Jung Ho Kim, Jung Ah Lee - Yonsei University

Jack Janetzki, Nicole Pratt - University of South Australia

YONSEI UNIVERSITY

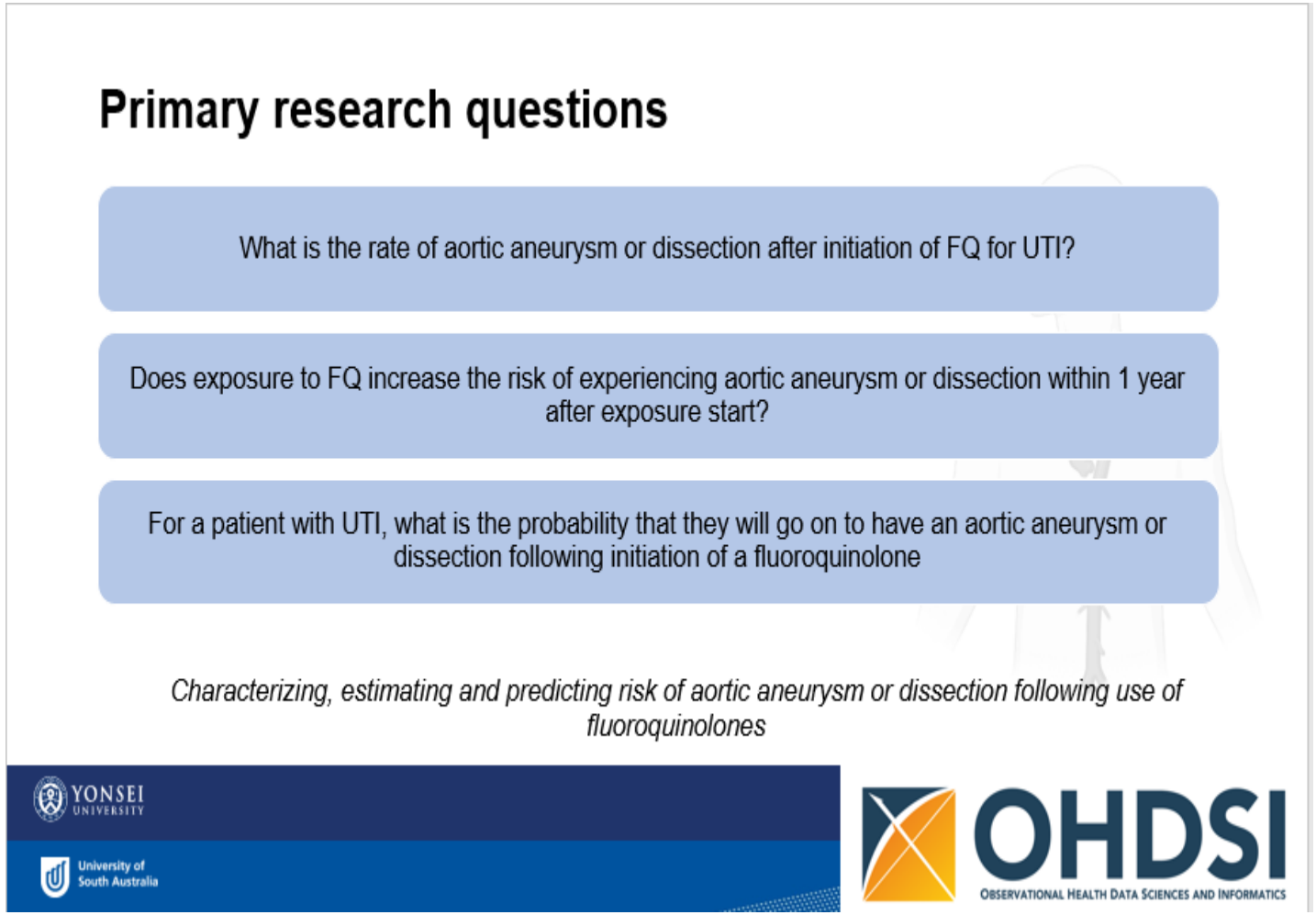
University of South Australia

OHDSI

OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

More information: https://www.ohdsi.org/sos-challenge/

Korean-Australian Collaboration in OHDSI SOS Network Study Challenge



- **Data contributors to date:**
  - 9 data partners
    - 12 million patients so far with UTI
    - 4.3 million with FQ and UTI
    - 858,000 “AA or AD” outcomes
  - Another ~ 11 data partners to contribute

Presentation to OHDSI APAC India Chapter

About OHDSI India chapter:

The Observational Health Data Sciences and Informatics (OHDSI) is an open source, open science, multi-stakeholder and interdisciplinary collaboration to bring out the value of health data through large-scale analytics. OHDSI India Chapter aims to work collaboratively with hospitals, medical universities, researchers and healthcare professionals to promote the value of structured real-world data and evidence-based treatment regime by conducting observational studies.

Key Takeaways

- Become a part of the Global Research Community
- Benefits of Structured Healthcare data
- Data Standardization and Anonymization as per International Standards
- Access to 6B Patient Data to Perform Network Studies
- Improving public health using health data analytics

Agenda and Topic

- Introduction by Lakshmi K
- Potential of Health Data in Research and Treatment by Dr. Vikram Patil
- The OHDSI Journey from Data to reliable Evidence by Professor Nicole Pratt
- OHDSI India Chapter in RWD/RWE Journey by Mr. Parthiban Sulur
- Q&A

2023
The 4th Conference on
Big Data Research in Healthcare
6/18
08:30 - 17:00
Ditmanson Medical Foundation Chia-Yi Christian Hospital,
Ditmanson International Convention Center
Registration
08:50 - 09:00
Welcome and Opening Remarks
The New Vision of Healthcare by Connecting Big Data
09:00 - 09:40
Special Lecture:
The New Era of Big Data Development with
Transnational Data and Cross-Disciplinary Collaboration
Darren Toh
Session 1.Connecting Big Data for Healthcare Monitoring
09:50 - 10:30
A Common Data Model Across Multiple Institutions:
Introduction to OHDSI
Nicole Pratt
10:30 - 11:10
How to Build a Top-Performing Big Data Research Team
Yao-Hsu Yang

www.ohdsi-australia.org

APAC community call

June 15, 2023.

Mid-year Update
Japan Region

The new association
as a practical body
that expands OMOP network
in Japan

Background: OMOP/OHDSI in Japan also needs a practical body

FedAna.jp

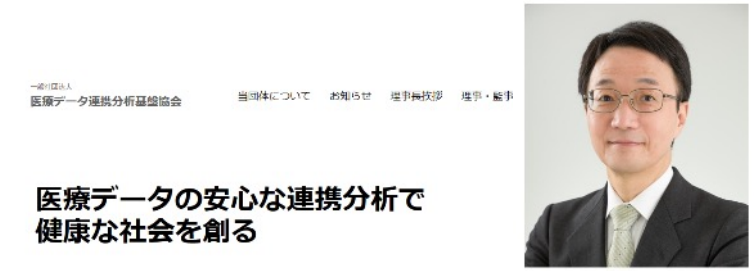
一般社団法人 医療データ連携分析基盤協会
Association for Federated Medical Data Analysis Platform

Est. March 2023

■Objective of the Association

To promote the use of medical data more widely and contribute to a society that aims to improve health by examining the use of medical data, especially the mechanisms that contribute to various studies and practices conducted by federated data from multiple sites, and by standardizing the mechanisms through international common standards for medical data.

OMOP CDM



- Directors
  - Tatsuo Hiramatsu (Representative)
    (Professor, International University of Medical Welfare)
  - Shigemi Matsumoto (Professor, Kyoto University)
  - Eizen Kimura (Professor, Ehime University)
  - Yoshiaki Aoki (IUHW)
- Auditor
  - Takahide Kohro (Professor, Jichi Medical University)

Members of the association

- Companies: sponsoring the association and carrying out their business using our OMOP-based common infrastructure.
- Academic directors.

Activities of the association

(1) Investigation of federated analysis methods and structures based on OMOP CDM.

(2) Designing our OMOP-based common infrastructure to deploy in hospitals.
- Establishment of the specification.
- Deployment of infrastructure with association member companies.
- Supporting OMOP implementation conducted by the association member companies.
- Maintain vocabulary mapping.

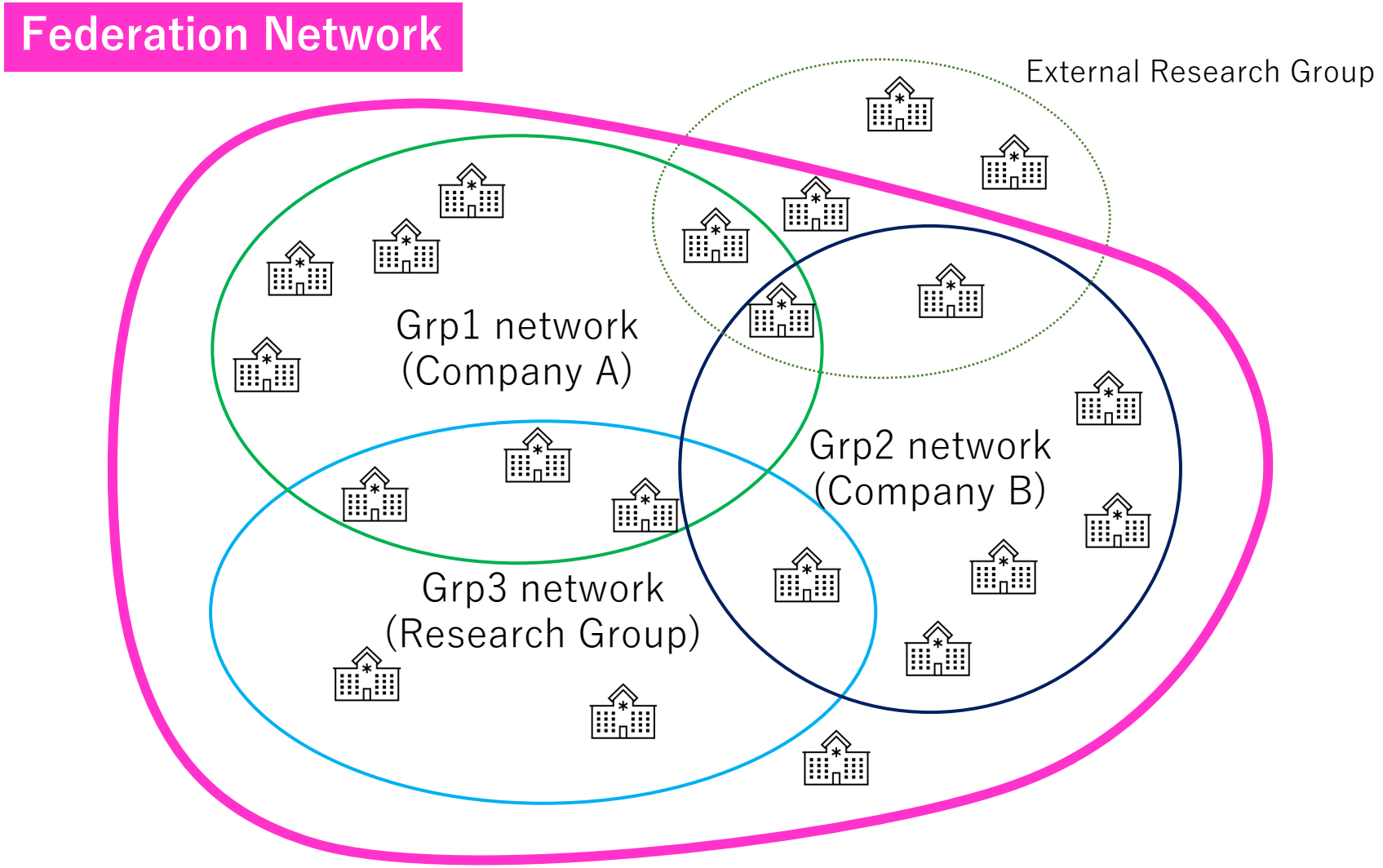
(3) Promote activities for academic purposes using OMOP CDM
- Support for OHDSI Japan.
- Collaboration with research organizations.
- Small research grant programs for researchers in Japan.

(4) Information exchange among members.
- E.g. holding symposiums, etc.

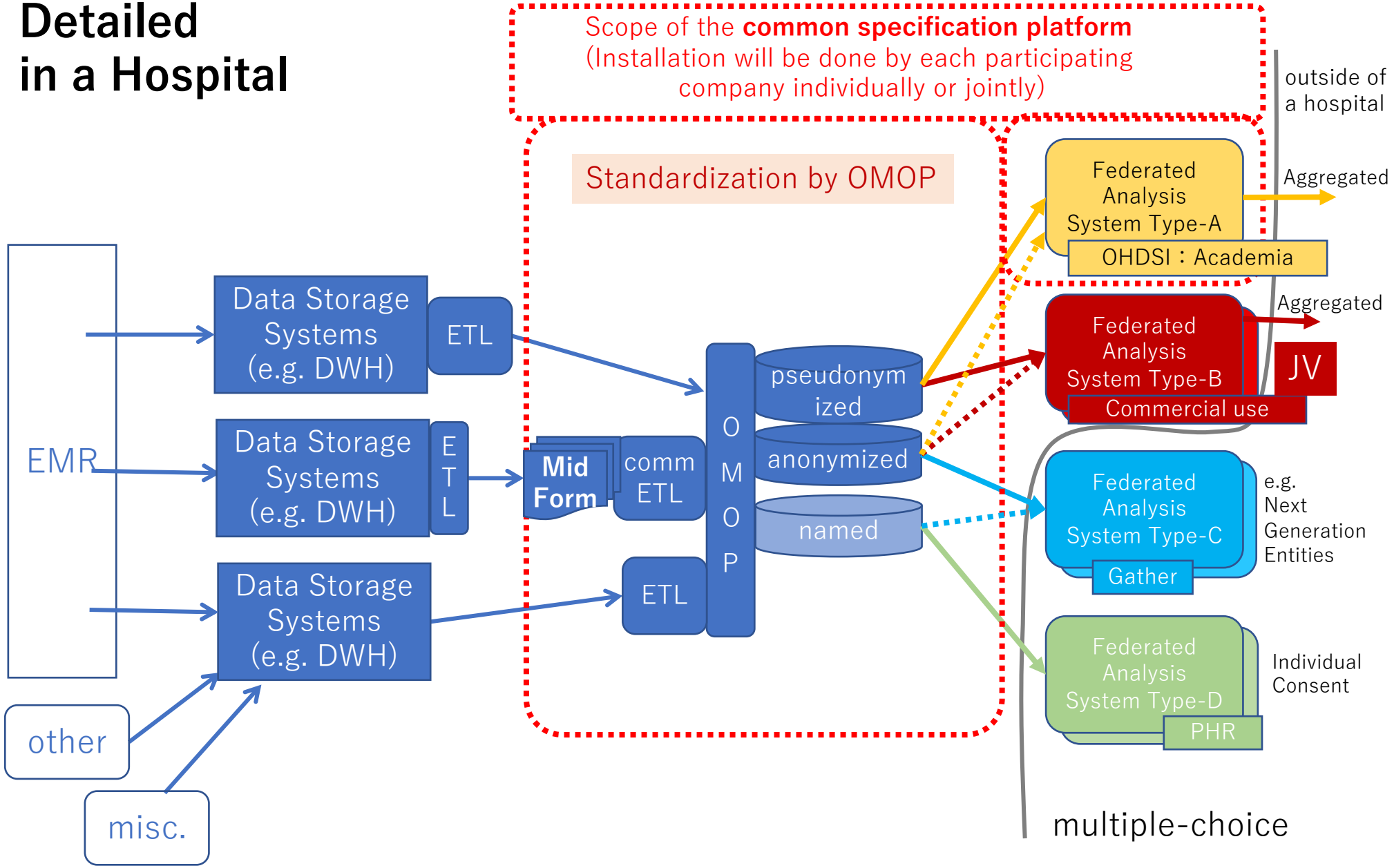
(5) Human resource development related to federated analysis.
- E.g. holding seminars.

(6) Consideration of ecological systems associated with federated analysis.
- E.g. joint venture.

Image of federation by the association



Detailed in a Hospital



OHDSI Singapore

Co-Chairs:

Dr. Mengling 'Mornin' Feng
Senior Assistant Director, National University Health System
Assistant Professor, National University of Singapore
ephfm@nus.edu.sg

Dr. Kee Yuan Ngiam
Group Chief Technology Officer
National University Health System

Growing of Younger Talents

Dong Yizhi
National University of Singapore

Potential temporal change in the diagnosis of **Type 2 Diabetes Mellitus** after **COVID-19 pandemic** occurrence in the Asia Pacific.

The temporal effect of the pandemic may reveal the the pattern of identification and treatment given to patients with diabetes during the pandemic.

Scan QR link to github repository

Ruan Yucheng
National Universit of Singapore

OHDSI
OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

Comparison of mortality, morbidities & healthcare resources utilisation between patients with and without a diagnosis of Covid-19

Version: 1.1

OMOP-CDM in Asia-Pacific regions and Lessons for Data Quality Assessment

Sujin Gan, RN[1], Chungsoo Kim, PharmD[1], Seongwon Lee, PhD[2], Jing Li[3], Jiawei Qian[3], Gyeol Song[3], Clair Blacketer[4], Anthony Molinaro[4], Dinuja Willigoda Liyanage[5], Zhang jingyi [6], Li Chao[6], Roger Ward[7], Mengling Feng[8], PhD, Mui Van Zandt[3], Rae Woong Park, MD, PhD[1,2]

[1]Department of Biomedical Sciences, Ajou University Graduate School of Medicine, Suwon, Korea; [2]Department of Biomedical Informatics, Ajou University School of Medicine, Suwon, Korea; [3]IQVIA, NC, United States; [4]Janssen Research and Development, NJ, United States; [5]University of South Australia, Australia; [6]Wonders Information Co.Ltd, Shanghai, China; [7]The University of Melbourne, Australia; [8]Saw Swee Hock School of Public Health, National University of Singapore, Singapore

Introduction

The Observational Medical Outcome Partnership-Common Data Model (OMOP–CDM), an open community data standard, is being implemented globally, but data quality control for CDM adoption is challenging. The data quality assessment tools including the Achilles Heel[1] and Data Quality Dashboard[2] have been performed only individually at each institution. Therefore, European Health Data and Evidence Network (EHDEN) has developed the CDM Inspection report, which writes a report on data statistics, mapping, and quality checks, to provide insight into the completeness, transparency, and quality of the data.

Mukkesh Kumar

Dr Mukkesh Kumar is the Head of Data Management Platform at A*STAR, leading the Clinical Data Management, Clinical Data Curation & Data Stewardship, Clinical Data Analytics & Reporting, CDMS/EDC Administration and Healthcare Software Development teams. Dr Mukkesh Kumar is a PhD alumnus of the NUS Saw Swee Hock School of Public Health, he has developed a predictive care framework for diabetes & maternal health, combining coalitional game theory concepts with machine learning. Working in close partnership with Singapore's Ministry of Health (MOH), Dr Mukkesh Kumar is developing the core OMOP data curation team at A*STAR to support MOH-TRUST Strategic Research Data Contributors.

Cindy Ho

Ms Cindy Ho is a Statistician at A*STAR, leading the data curation and data stewardship of population health studies. Ms Cindy Ho's abstract on 'GUSTO Data Vault: Working Towards OMOP Data Standardization' was showcased at OHDSI APAC Symposium 2022 in Taiwan. She has pioneered the OMOP data curation efforts for Growing Up in Singapore Towards healthy Outcomes (GUSTO) cohort study and is developing the OMOP Data Catalogue module to be integrated within GUSTO Data Vault platform for OMOP-based research. Ms Cindy Ho graduated with a major in Statistics from the NUS Department of Statistics, with domain expertise in cardiometabolic diseases.

Agency for Science, Technology and Research
SINGAPORE

A*STAR DATA VAULT: A RESEARCH PLATFORM FOR THE SINGAPORE ECOSYSTEM AND BEYOND

Mukkesh Kumar, Cindy Ho

Singapore

18th May 2023

GUSTO Data Vault: Laying the foundations for an open science system with OMOP Data Catalogue

Cindy Ho[1,2], Li Ting Ang[1,2], Maisie Ng[1,2], Hang Png[1,2], Shuen Lin Tan[1,2], Estella Ye[1,2], Sunil Kumar Raja[1], Mengling Feng[3,4], Johan G Eriksson[1,5,6,7], Mukkesh Kumar[1,2,3]

Institution(s) of origin:

[1] Singapore Institute for Clinical Sciences, Agency for Science Technology and Research, Singapore
[2] Bioinformatics Institute, Agency for Science Technology and Research, Singapore
[3] Saw Swee Hock School of Public Health, National University of Singapore, National University Health System, Singapore
[4] Institute of Data Science, National University of Singapore, Singapore
[5] Department of Obstetrics and Gynaecology and Human Potential Translational Research Programme, Yong Loo Lin School of Medicine, National University of Singapore, Singapore
[6] Department of General Practice and Primary Health Care, University of Helsinki, Helsinki, Finland
[7] Folkhälsan Research Center, Helsinki, Finland

Mapping Updates

- All-of-Singapore mapping efforts underway since 2021
- Deep mapping of demographics, diagnosis, medications almost completed
- Simultaneous harmonization within tables underway
- Complete mapping due Q2 2024
- Mapping script to be made available in TRUST platform to enable whole of country data harmonisation

Singapore's Healthcare System

From hospital...

Primary Care

The foundation of our healthcare system and the first line of care in the community is provided through a network of outpatient polyclinics and clinics run by private general practitioners (GPs) island-wide.

Polyclinics
Provide subsidised primary care which includes medical treatment, preventive healthcare and health education.

GPs
Provide preventive, acute and chronic care.

Family Medicine Clinics
Provide medical care with support services for chronic disease management.

Community Health Centres
Work with GPs to support patients with chronic illnesses within the community.

Hospital Care

Singapore has eleven public hospitals comprising nine general hospitals, a women's and children's hospital, and a mental health hospital as well as nine speciality centres.

General Hospitals
Provide multi-disciplinary inpatient and specialist outpatient services, with 24-hour accident and emergency departments.

Specialised Hospitals
Provide specialised care for maternal and child health (KK Women's and Children's Hospital) and mental health (Institute of Mental Health).

Specialty Centres
Provide treatment for cancer, cardiac, eye, skin, neuroscience and dental issues.

Community Hospitals
Provide care for patients who require a period of recuperation, usually after discharge from a general hospital.

Mapping Updates

- All-of-Singapore mapping efforts underway since 2021
- Deep mapping of demographics, diagnosis, medications almost completed
- Simultaneous harmonization among tables/institutes underway
- Complete mapping due Q2 2024
- Mapping script to be made available in TRUST platform to enable whole of country data harmonisation

Mapping Updates

- Multiple large research groups undertaking mapping efforts of their research datasets
  - Precise - SG100K
  - ATTracT
  - Singcloud
  - Projects to be on-boarded to TRUST
- OMOP Genomics workgroup
  - Collation of local genomic data definitions and fields
  - Alignment of data definitions to international vocabularies
  - Definitions to be finalized this 2024

OMOP Mapping Curriculum

APAC Symposium 2024

Hopes for Next Year

- Hope to see you all at APAC Symposiums in 2024 in Singapore!
- The major ETL processes will be completed
- Singapore institutes to participate in more and more APAC and global studies.

OHDSI Korea

Rae Woong Park, MD, PhD
Ajou University School of Medicine
Dept. of Biomedical Informatics

Contents

- FeederNet in Korea
- Research boarder-Free Zone
- Realtime CDM updates
- PHAROS: Application of CDM on Infectious Disease Surveillance
- Deidentification of Clinical notes
- Federated learning system on FeederNet

CDM network in Feb. 2016

기업 정부기관

병원

의료기관외부
기업, 정부기관의
개발자, 연구자, 일반인

의료기관 내부/외부
임상의사

주요 테이블	건수 (2015.4월)
환자 기본정보 테이블	261만 4569건
외래 내역 테이블	2079만 829건
입원 내역 테이블	220만 8852건
환자 진단 내역 테이블	2471만 8757건
검사 결과 내역 테이블	2억 8660만 2345건
약 처방 테이블	1억 3484만 3408건

아주대학교의료원 Ajou University Medical Center

변환완료, 서비스 중

가천대길병원 Gachon University Gil Hospital

변환완료

Only 2 hospitals had CDMs

Korean national projects for CDM network from 2018~2022

CDM Projects in Korea

1st Project (`18~`20)

- **Purpose**
  - Establishment of Nation-wide CDM data network
  - Development of Distributed medical data analysis platform (FeederNet)
- **Budget** : 8.92million
- **Period** : 2018~2020 (3 years)
- **Participating institutions** : 30 institutions (23 hospitals / 7 companies)

2nd Project (`19~`22)

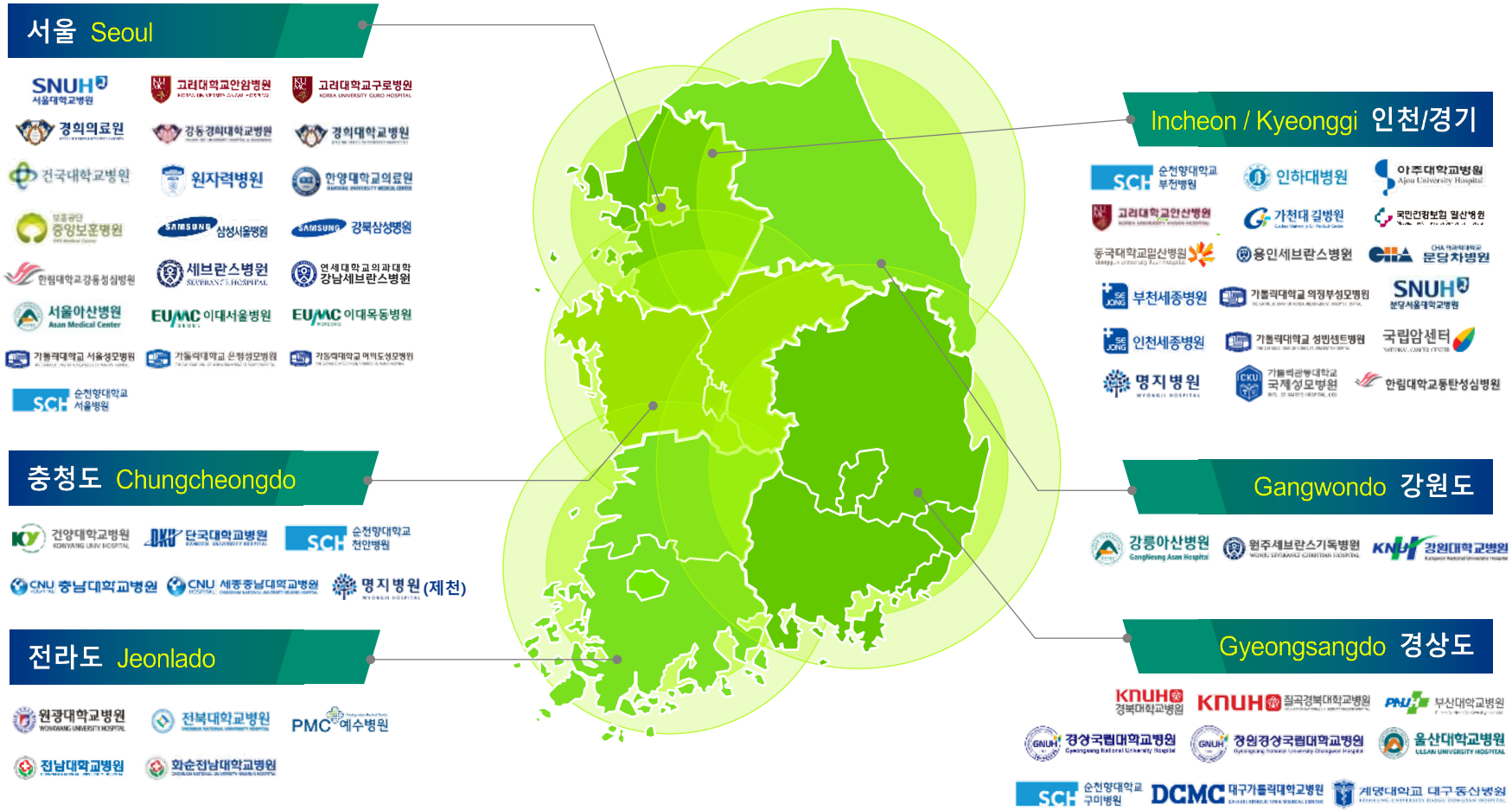
- **Purpose**
  - Expansion of CDM data network
  - Sophistication of CDM analytic process and platform
- **Budget** : 3.12million
- **Period** : 2019~2022 (4 years)
- **Participating institutions** : 15 institutions (13 hospitals / 2 companies)

CDM network in June 2023

CDM Data Network in Korea

Data Network of 62 Hospitals (76M patients), 3 National Claims

> 73% of Tertiary Teaching Hospitals



CDM Data Network in Korea

OHDSI KOREA OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

Data Network of 62 Hospitals (76M patients), 3 National Claims

No.	Name of Data Partner (Eng)	Type of Data	# Unique Patients
1	Gachon University Gil Medical Center	EHR	1,709,983
2	The Catholic University of Korea, Seoul ST. Mary's Hospital	EHR	3,212,915
3	The Catholic University of Korea, Yeouido ST. Mary's Hospital	EHR	2,279,292
4	The Catholic University of Korea, Uijeongbu ST. Mary's Hospital	EHR	961,049
5	The Catholic University of Korea, ST. Vincent's Hospital	EHR	1,102,630
6	Gangnam Severance Hospital	EHR	1,661,794
7	Kyung Hee University Hospital At Gangdong	EHR	810,031
8	Kangdong Sacred Heart Hospital	EHR	1,194,685
9	Kangbuk Samsung Hospital	EHR	1,472,253
10	Gangneung Asan Hospital	EHR	915,643
11	Kangwon National University Hospital	EHR	553,708
12	Konkuk University Medical Center	EHR	1,063,104
13	Konyang University Hospital	EHR	555,005
14	Kyungpook national university hospital	EHR	1,324,716
15	Gyeongsang National University Hospital	EHR	626,663
16	Kyung Hee University Medical Center	EHR	1,168,640
17	Korea University Guro Hospital	EHR	2,106,320
18	Korea University Ansan Hospital	EHR	1,537,665
19	Korea University Anam Hospital	EHR	1,891,753
20	National Cancer Center	EHR	103,573
21	National Health Insurance Service Ilsan Hospital	EHR	1,427,424
22	Catholic Kwandong University International ST. Mary's Hospital	EHR	403,989
23	Dankook University Hospital	EHR	1,153,345
24	Daegu Catholic University Medical Center	EHR	906,587
25	Dongguk University Medical Center	EHR	695,280
26	Myongji Hospital	EHR	882,646
27	Myongji Hospital (Jecheon)	EHR	219,574
28	Pusan National University Hospital	EHR	791,935
29	Bucheon Sejong Hospital	EHR	416,686
30	Seoul National University Bundang Hospital	EHR	2,006,000
31	Cha University Bundang Medical Center	EHR	2,363,386
32	samsungmedical Center	EHR	3,575,923
33	Seoul National University Hospital	EHR	3,240,850
34	Asan Medical Center	EHR	4,896,016
35	Chungnam National University Sejong Hospital	EHR	94,562
36	Soonchunghyang University Hospital (Gumi)	EHR	632,252
37	Soonchunghyang University Hospital (Bucheon)	EHR	1,301,117
38	Soonchunghyang University Hospital(Seoul)	EHR	1,098,041
39	Soonchunghyang University Hospital (Chonan)	EHR	987,701
40	Ajou University Hospital	EHR	2,873,443
41	Severance Hospital	EHR	3,605,088
42	Wonju Severance Christian Hospital	EHR	1,050,538
43	Yongin Severance Hospital	EHR	291,349
44	Ulsan University Hospital	EHR	400,609
45	Wonkwng University Hospital	EHR	837,461
46	Ewha Womans University Medical Center (Mokdong)	EHR	1,667,671
47	Ewha Womans University Medical Center (Seoul)	EHR	
48	Incheon Sejong Hospital	EHR	219,834
49	Inha University Hospital	EHR	1,978,186
50	Chonnan National University Hospital	EHR	1,802,241
51	Jeonbuk National University Hospital	EHR	1,466,713
52	Gyeongsang National University Changwon Hospital	EHR	286,642
53	Chungnam National University Hospital	EHR	645,922
54	Kyungpook National University Chilgok Hospital	EHR	642,572
55	Korea Institute of Radiological & Medical Sciences	EHR	487,965
56	Hanyang University Seoul Hospital	EHR	1,783,111
57	Chonnam National University Hwasun Hospital	EHR	504,073
58	The Catholic Univ. of Korea, Eunpyeong ST. Mary's Hospital	EHR	436,645
59	Keimyung University Daegu Dongsan Hospital	EHR	122,526
60	Keimyung University Dongsan Medical Center	EHR	491,805
61	SMG-SNU Boramae Medical Center	EHR	1,849,638
62	Presbyterian Medical Center (예수병원)	EHR	1,412,042
63	Health Insurance Review & Assessment Service	Claim	56,579,726
64	Health Insurance Review & Assessment Service	Claim	9,822,577
65	National Health Insurance Service	Claim	55,651,898

OHDSI Korea Leadership Meeting

- A total of **21 OHDSI Korea Leadership Meetings** have been held since 2017
- At this meeting, Issues, policies, and governance were discussed to establish CDM network and promote collaborative research

Research border-Free Zone (RFZ)

Purpose

Mutual Cooperation Agreement for Multi-center Collaborative Research using OMOP-CDM

Contents of Agreement

1. Reciprocal unlimited access to CDM of RFZ hospitals
2. Single IRB

RFZ Inauguration

Korea, Dec 13, 2019

Research border-Free Zone (RFZ)

30 Hospitals are participating in RFZ

No.	기관명	MOU 날짜	진행 현황
1	아주대병원	2019.12.13	완료
2	강원대병원	2019.12.13	완료
3	원광대병원	2019.12.13	완료
4	전북대병원	2019.12.13	완료
5	세종부천병원	2019.12.13	완료
6	메디플렉스세종병원	2019.12.13	완료
7	대구가톨릭대병원	2020.03.11	완료
8	부산인제백병원	2020.03.25	완료
9	강동경희대병원	2020.03.27	완료
10	강동성심병원	2020.04.08	완료
11	건양대학교병원	2020.06.23	완료
12	부산대학교병원	2020.09.15	완료
13	경희의료원	2021.07.05	완료
14	이화여대서울병원	2021.07.14	완료
15	명지병원	2021.07.16	완료

No.	기관명	MOU 날짜	진행 현황
16	이화여대목동병원	2021.07.29	완료
17	경상대학교국립병원	2022.02.15	완료
18	창원경상국립대학교병원	2022.02.23	완료
19	제천명지병원	2022.08.17	완료
20	순천향대학교서울병원	2022.12.01	완료
21	순천향대학교구미병원	2022.12.01	완료
22	순천향대학교부천병원	2022.12.01	완료
23	순천향대학교천안병원	2022.12.01	완료
24	충남대학교병원	2022.11.11	완료
25	세종충남대학교병원	2022.11.11	완료
26	한국원자력의학원	2022.04.21	완료
27	울산대학교병원	2022.04.03	완료
28	계명대학교 동산병원	2022.06	완료
29	대구동산병원	2022.06	완료
30	경주동산병원	2022.06	완료

Real-time CDM Updates

29 Hospitals are converting CDM daily/weekly/monthly/quarterly

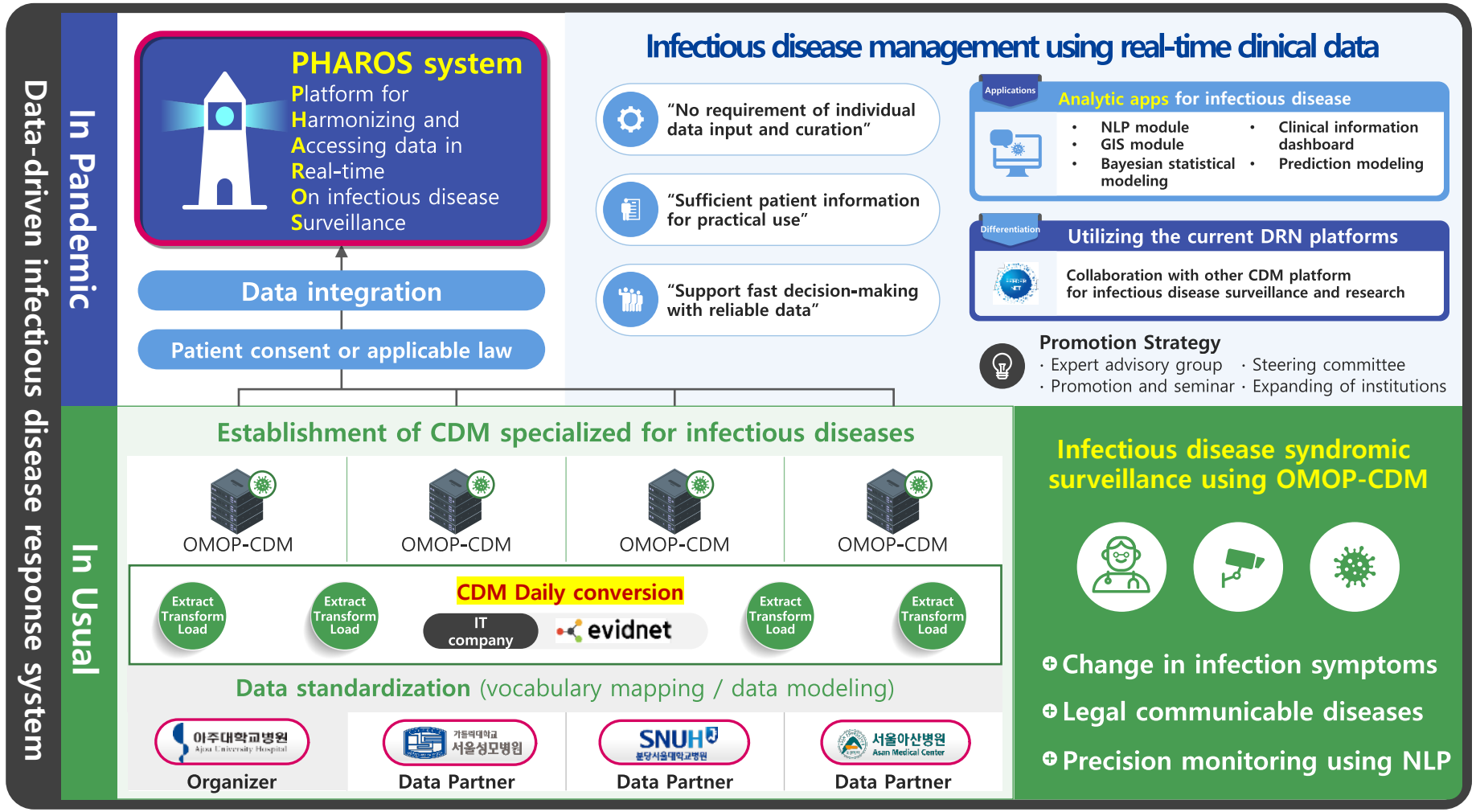
No.	기관명	변환주기
1	인천세종병원	Daily
2	부천세종병원	Daily
3	이화여대 목동병원	Weekly
4	이화여대 서울병원	Weekly
5	국민건강보험공단 일산병원	Weekly
6	원광대학교병원	Weekly
7	경북대학교병원	Weekly
8	칠곡경북대학교병원	Weekly
9	아주대학교병원	Weekly
10	대구가톨릭대학교병원	Weekly
11	가천대 길병원	Weekly
12	강릉 아산병원	Weekly
13	경상국립대학교병원	Weekly
14	강동성심병원	Monthly
15	강원대학교병원	Monthly
16	강동경희대학교병원	Monthly
17	원주세브란스기독병원	Monthly
18	단국대학교병원	Monthly

No.	기관명	변환주기
19	명지병원	Monthly
20	원자력병원	Monthly
21	강북삼성병원	Monthly
22	국제성모병원	Monthly
23	창원경상국립대학교병원	Monthly
24	제천명지병원	Monthly
25	동국대학교 일산병원	Quarterly
26	경희의료원	Monthly
27	계명대학교 대구동산병원	Weekly
28	계명대학교 동산병원	Weekly
29	예수병원	Monthly
30	분당차병원	In progress
31	순천향 서울병원	In progress
32	순천향 부천병원	In progress
33	순천향 천안병원	In progress
34	순천향 구미병원	In progress
35	전남대병원	In progress
36	화순전남대병원	In progress

PHAROS: Application of CDM on Infectious Disease Surveillance

PHAROS - Integrated infectious disease clinical information management system

Platform for Harmonizing and Accessing data in Real-time On infectious disease Surveillance



Deidentification of Clinical Notes

▪ Objective

This research aims to develop a tool for de-identifying PHI(protected health information) elements in CDM

▪ Methodology

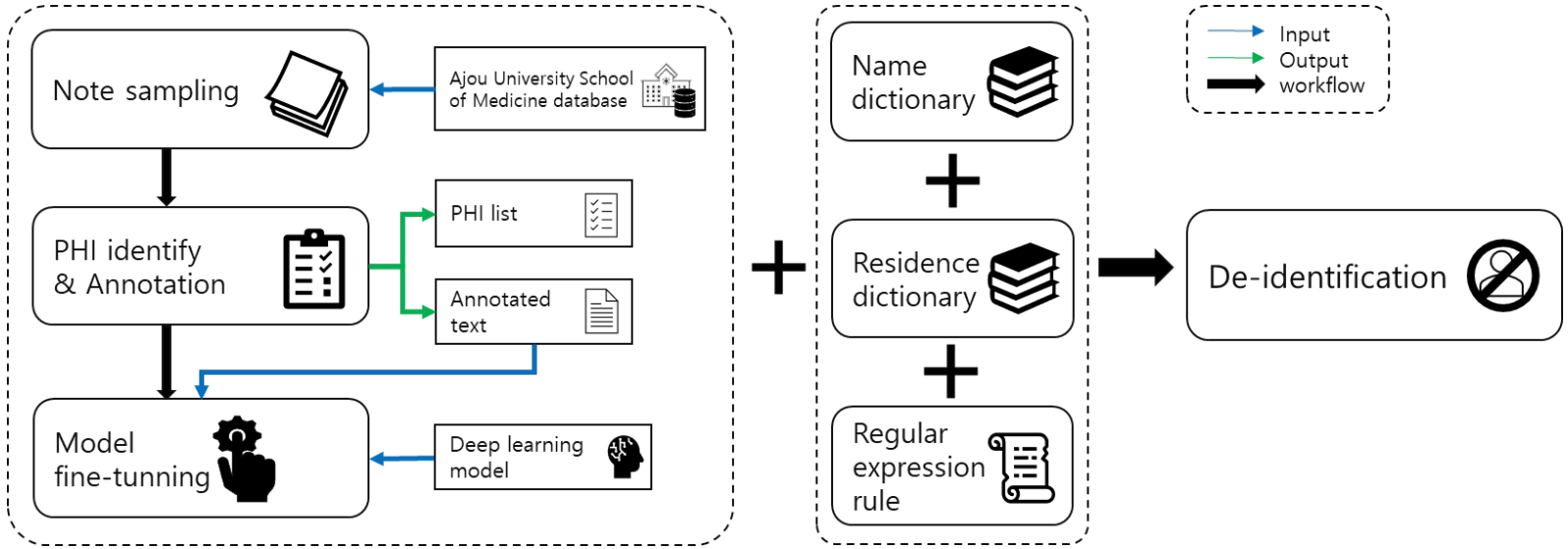
Data source

Ajou Univ. Hospital CDM (1994~2021)

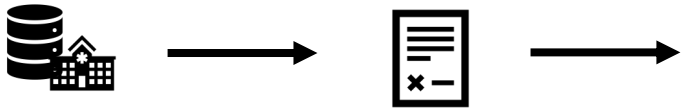
PHI Entities

(1) Name (clinician, patient),
(2) Contact number
(3) Residence (sub address of town/city and state)

Framework and workflow



Manual review and annotation



Ajou Univ. Hospital CDM

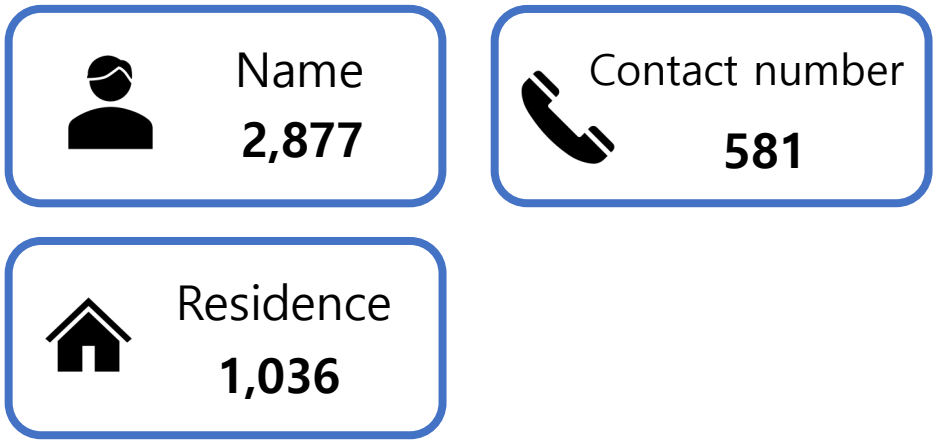
Extracted 3,000 randomly samples notes (from 10 types of notes)

Identified PHI entities and annotated sampled notes

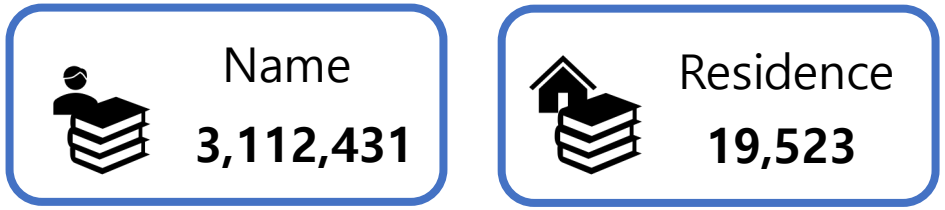
Deidentification of Clinical Notes

- **Results**

1. Annotated PHI entities



2. Conducted dictionaries



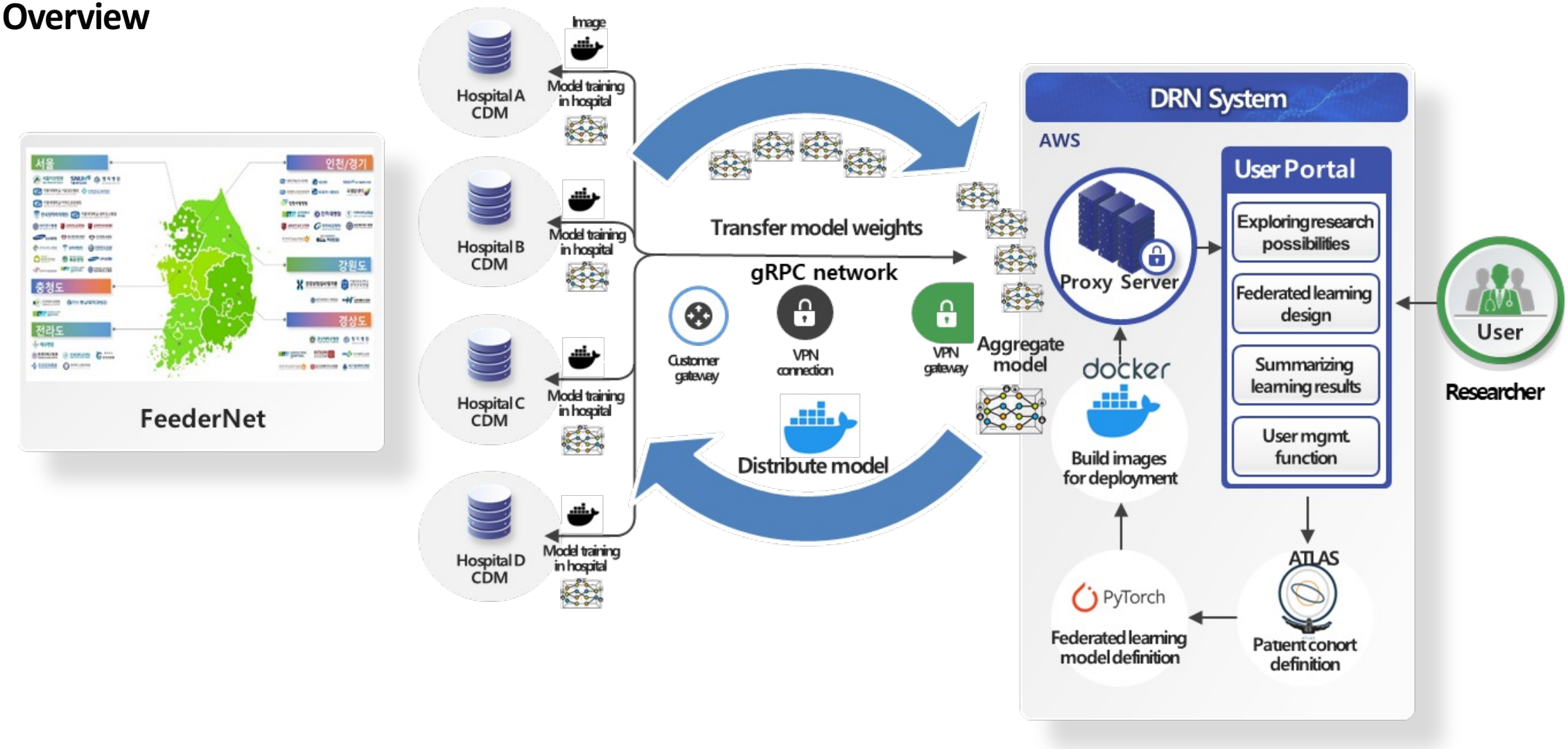
3. Evaluation results of the fine-tuned model

Model and Category	Relax		
	Precision	Recall	F1 score
BERT	**0.962**	**0.977**	**0.969**
Name	0.945	0.972	0.958
Residence	1.000	0.980	0.990
Contact	0.963	1.000	0.981
BERT +regex+dict	**0.961**	**0.985**	**0.973**
Name	0.946	0.984	0.965
Residence	0.981	1.000	0.990
Contact	1.000	0.980	0.990

Table 1. Evaluation results of the fine-tuned model

Federated learning system on FeederNet

- **Overview**



Q&A

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Thank you!