Japan data
and
OHDSI Japan
Types of clinical databases in Japan

- **EHR**
  - Detailed record incl. lab data
  - Semi Real-time

- **Clinics**
  - Register (by hand or automatic)

- **Pharmacies**

- **Hospitals**
  - DPC data (Quarterly, Anonymized)

- **Claims**
  - (Monthly)

- **Claims-DB**
  - All data by patient (Cross hospital)

- **MHLW**
  - Anonymized Claims Data

- **Registries**
  - DPC data (Quarterly, Anonymized)

- **National-DB**
  - All patients data
### Hospital-based

<table>
<thead>
<tr>
<th>DB name</th>
<th>admin</th>
<th># uniq ID</th>
<th>Data Source</th>
<th>Note</th>
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</thead>
<tbody>
<tr>
<td>MID-NET</td>
<td>PMDA</td>
<td>&gt;5M</td>
<td>SS-MIX2, DPC, Claims</td>
<td>High Quality</td>
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<tr>
<td>EBM Provider</td>
<td>MDV Co.,Ltd.</td>
<td>30M</td>
<td>DPC, Claims, Lab, others</td>
<td>Major in HB</td>
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<td>RWD-DB</td>
<td>RWD Co.,Ltd.</td>
<td>20M</td>
<td>DPC, Claims, EMR, Lab</td>
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<td>MIA</td>
<td>NHO</td>
<td>20M</td>
<td>DPC, Claims</td>
<td>1 stop service</td>
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<tr>
<td>NCD</td>
<td>NCD</td>
<td>12M</td>
<td>Surgery information</td>
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<tr>
<td>JMDC C. DB</td>
<td>JMDC</td>
<td>8.8M</td>
<td>DPC, Claims</td>
<td></td>
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<tr>
<td>NCDA</td>
<td>NHO</td>
<td>1.9M</td>
<td>SS-MIX2, Lab, etc.</td>
<td>1 stop service</td>
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</table>

Reference:
## Insurance-based

<table>
<thead>
<tr>
<th>DB name</th>
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<th>Data Source</th>
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<tbody>
<tr>
<td>NDB</td>
<td>MHLW</td>
<td>All Patients</td>
<td>Claims</td>
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<td>JMDC C. DB</td>
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<td>7.4M</td>
<td>Claims</td>
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<td>6.3M</td>
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<tr>
<td>Medi-Scope</td>
<td>Kyowa Kikaku</td>
<td>6.6M</td>
<td>Claims, others</td>
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</table>

Reference:
### Pharmacy-based

<table>
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<th>Data Source</th>
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<tr>
<td>IQVIA NPA</td>
<td>IQVIA Sol. JP</td>
<td>32M</td>
<td>Pharmacy Claims</td>
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<tr>
<td>JMIRI</td>
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<td>39M</td>
<td>Pharmacy Claims</td>
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<tr>
<td>Medi-Trend</td>
<td>Kyowa Kikaku</td>
<td>6.5M</td>
<td>Pharmacy Claims</td>
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<td>NihonChouzai</td>
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<tr>
<td>PFR</td>
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<td>8.2M</td>
<td>Pharmacy Claims</td>
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Reference:
Passing PHI to third parties is highly restricted.

- Individual agreement $\rightarrow$ OK
- Gov’s execution under a low $\rightarrow$ OK (without individual agreement)
- Opt-out permission $\rightarrow$ forbidden for PHI
- Usual anonymized data $\rightarrow$ Virtually impossible
  (Most anonymized data are possible to identify individuals by matching with some additional information)

Instead, "TOKUMIEI KAKOU" (anonymous processing) is provided in the PIP low.

- By following specific procedures and rules, anonymized data can be passed.
- Identifying individuals is banned.
"Next Generation Medical Infrastructure Act"

- It partially overwrites the PIP act.
- Certified corporations can collect non-anonymized PHI from hospitals with the “careful opt-out” permission.
- These corporations are allowed to merge the data using personal identifiers and pass the extracted TOKUMEI KAKOU data to third parties.
- The first operator is finally certified in Dec. 2019.
OHDSI Japan
OHDSI Japan
Established in Nov. 2019

1st Meeting
June 20th, 2019

2nd Meeting
Sep 5th - 6th, 2019

Mini-meet #1
Oct 29, 2019

3rd Meeting
Nov 19th, 2019

Mini-meet #2
Dec 17, 2019

Mini-meet #3
Jan 21, 2020

Main attendee affiliations:
University hospitals, Pharmaceutical companies, IT vendors, Data vendors
Multi-stage OMOPize method with useful intermediate stage data.

JOMOPie -> gradual vocab approach

Many in-house local codes

Claims
SS-MIX2
Lab csv
others...

Data Source

Japanese standard codes for domestic use

One hospital, one mapping

Mapping can be shared with other projects.
Keeping multiple mappings by each hospital is almost impossible. Even one is hard.

JOMOPie
OMOP -- + ext

Extract by SQL

Data set for domestic analysis

Compatible granularity with other databases in Japan.

One mapping for all Japan OMOP

Add Full Concepts using Athena

OMOP

Can be used various OHDSI Software/tools

Standard vocab concepts

One in-house local codes

OMOP
JOMOPie – features

1. Field expansion in clinical data tables for multiple Japanese standard codes, which is not for global use but is for domestic use where compatibility with other Japanese databases is important. Vocab tables are intact.
   ※ *_source_value fields are for original local codes/names.

2. *concept_id fields whose corresponding extended fields have values can be left as empty (or zero) for domestic use.
   ※ Therefore, SNOMED issues can be set aside. Japan is not SNOMED member.
   ->Data holders in Japan are easy to participate

3. Empty *concept_id fields can be filled anytime when/where possible. Mapping from representative Japanese standards to OHDSI standards will be in Athena so that everyone can use it.
   ※ In fact, mapping except to SNOMED can be done from the beginning.
   ->Coexist with global OMOP

4. Limitation: Standard tools such as Atlas cannot be used without filling required *concept_id fields.
A free ETL tool in Japan

Prof Hiramatsu has developed a tool that can easily perform ETL using Oracle VirtualBox virtual machine.

※ JV is the previous version of JOMOPie. We are going to reconstruct the tool.
An Example of usage in Japan

OMOP-JV

Phenotyping

Prog.

Aggregate results

Lab CSV

Claims

T Univ.

OMOP-JV

Phenotyping

Prog.

Aggregate results

Lab CSV

Claims

Q Univ.

OMOP-JV

Phenotyping

Prog.

Aggregate results

Lab CSV

Claims

O Univ.

OMOP-JV

Phenotyping

Prog.

Aggregate results

Lab CSV

Claims

J Univ.

OMOP-JV

Phenotyping

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OMOP-JV

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No PHI exchange
Going forward

As OHDSI JAPAN, we would like to realize the spread of OMOP in Japan by promoting activities such as…

- Translating “The book of OHDSI”
- Conducting various seminars
- Promoting implementation with Real data holders

…etc

We really look forward to make new evidence with global healthcare data together with you!

Asia-Pasific Symposium 2020
Dec. 2020, Shanghai