W7: SHARING REAL-WORLD DATA EXPERIENCES OF USING TAIWAN’S NATIONAL HEALTH INSURANCE RESEARCH DATABASE

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Disclosure

All speakers have no financial interest/arrangement or affiliation that could be perceived as an actual or potential conflict of interest in relation to this presentation.
Outline

• Introduction of the Taiwan National Health Insurance Research Database (NHIRD)

• Use of the database and application – Studies using NHIRD as a research data source

• Health outcomes research – An example to share research experience in a retrospective cohort study using NHIRD

• Health economic modeling – An example to demonstrate how NHIRD can be used in a budget impact analysis

• Summary; Q&A

Introduction of the Taiwan National Health Insurance Research Database (NHIRD)

Ming-Hui Tai, PhD
Lead Outcome Research Analyst
Pharmerit International
Taiwan National Health Insurance

- The national health insurance was established in 1995 to provide a universal coverage for about 23 million residents in Taiwan
  - A single-payer, government-run compulsory health insurance program
  - In 2010, the program covered 99.5% of residents
- Comprehensive and uniform benefit package
- Freedom of choice and accessibility
- Cost containment and affordability

What information in the NHIRD?

- Registry for Catastrophic Illness
- Rare Disease Data
- Special dataset
  - Registry for Catastrophic Illness
  - Registry for board-certified specialists
  - Registry for medical personnel

- Accreditation Profile Of Medical Facilities
- Health Services Utilization Of Medical Facilities
- Health Resources Of Medical Facilities
- Facility Registry for board-certified specialists
- Registry for medical personnel

- Oncology
  - Cancer Registry
  - Cancer screening/test
- Beneficiary information
  - Registry for Beneficiaries
  - Birth Certificate
  - Cause Of Death Data

- Socioeconomic info
  - Others/Socioeconomic survey (low-income family, disabled, family violence, single family, assault, national aboriginal population profile, smoking, educational attainment, youth under protection)

Data source: Taiwan Ministry of Health and Welfare, Department of Statistics
The uniqueness of the NHIRD

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Taiwan</th>
<th>Sweden</th>
<th>Korea</th>
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</thead>
<tbody>
<tr>
<td>Year started</td>
<td>1995</td>
<td>1995</td>
<td>1998</td>
</tr>
<tr>
<td>Sex, million</td>
<td>23</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Single payer</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>National health insurance data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurers</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Dentist</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Pharmacy data</td>
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<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Drug prescribing</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Chinese medicine</td>
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<td>No</td>
<td>Yes</td>
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<td>Clinician information</td>
<td>Yes</td>
<td>No</td>
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<td>Hospital information</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Linkage to other databases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registry</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Birth certificate</td>
<td>Yes</td>
<td>Yes</td>
<td>Partial (date of birth, no information on parent or place of birth)</td>
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<tr>
<td>Death certificate</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cancer</td>
<td>Yes</td>
<td>Yes</td>
<td>Partial (through case finding)</td>
</tr>
<tr>
<td>Immunization record</td>
<td>Yes</td>
<td>No</td>
<td>Partial (through case finding)</td>
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<tr>
<td>Infectious diseases</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Population-based mass screening program</td>
<td>Yes</td>
<td>No</td>
<td>Partial (if related to insurance)</td>
</tr>
<tr>
<td>Myocardial infarcture</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>School children in survey</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Adult preventive care services*</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Neonatal screening for congenital abnormalities</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Multiplication registry</td>
<td>Possible*</td>
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<tr>
<td>Birthplace</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Race</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</tbody>
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Universal Health Coverage:
- The Philippines, China, Thailand and Vietnam are all currently taking major steps towards universal coverage.

Biobank
- Undertaken by Academia Sinica at the behest of government, Taiwan biobank collects the DNA of a large group of people on the population base and track their health and lifestyle for at least 10 years.

How to access the dataset?

1. Submit application (citizen)
2. Waiver
   - Attachment: 1. Application
   - Attachment: 2. Data column selection
   - Attachment: 3. IRB waiver
3. Review the application by Dep. Of Statistics
   - Approval
     - Yes
6. Data Usage Fee
5. Complete/Draft
   - Data center processing: 2-4 weeks
   - Data analyst information reviewed

Data source: Taiwan Ministry of Health and Welfare, Department of Statistics
Data Validation


• Validation of the National Health Insurance Research Database with ischemic stroke cases in Taiwan. Pharmacoepidemiol Drug Saf. 2011 Mar;20(3):236-42.
  - Among these confirmed cases, 344 (94.51%) were assigned 'ischemic stroke' as the principal diagnosis in the NHIRD.

Thank you

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