Path to Universal Health Coverage: 
Taiwan’s experience in NHI and its reform 

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Demographics of Taiwan’s Population

- **Area**
  - 36,193 km² (136th)

- **Population**
  - 23,539,816 as of Dec. 2016 (56th)
  - Density 660/km² (16th)

- **Ethnicity**
  - 98% Han Chinese
    - 70% Hokkien
    - 14% Hakka
    - 14% Waishengren
  - 2% Aborigines
Demographics of Taiwan’s Population

(II)

- Distribution
  - Urban population 78% (2011)

- GDP (nominal) 2016 estimate
  - Total $523.01 billion (22nd)
  - Per capita $22,592 (36th)

- Religion
  - Buddhism 35.1%, Taoism 33%, Christianity 3.9%, Yiguandao 3.5% (2009 census)

- Unemployment rate
  - 3.79% (May, 2017)
What is in UHC?

The Three Dimensions of UHC

Health care System in Taiwan (I)

- National Healthcare Expenses as 6.34% of GDP (2017)
- 22,330 medical institutions, including 485 hospitals and 21,845 primary care clinics (93% contracted with NHI) in June 2016
- 44,006 physicians, 6,928 doctors of Chinese medicine and 13,502 dentists in 2015
- 27.14 physicians, 119.41 medical personnel and 69 hospital beds per 10,000 populations in 2015
Ten leading causes of death in 2016

- Malignant neoplasms
- Heart disease
- Pneumonia
- Cerebrovascular disease
- Diabetes
- Accidents and adverse effects
- Chronic lower respiratory disease
- Hypertensive disease
- Nephritis, nephrotic syndrome and nephrosis.
- Chronic liver disease and cirrhosis
Health care System in Taiwan (III)

- National Health Insurance
  - Social insurance plan
  - Compulsory program
  - Single payer
  - Started since 1995
  - Coverage rate 99.6% population in 2016
  - 20,759 contracted providers, including 483 hospitals and 20,276 primary care clinics in June 2016
- Funding
  - Premium from insured & group insurance applicants
  - Government subsidies
- Low co-payment
NHI— from 1st generation to 2nd generation

NHI was implemented since 1995.3. Under the basis of social insurance, the NHI provides health care for all and prevents the deprivation of right to health due to poverty.

2000–2005 To increase financial responsibility of the government, to link the income and expenditure of premium, and to collect premium from a variety basis, revolution of NHI to 2nd generation was proposed.

2006–2011 The legislative procedures were complete.

2013.1 The 2nd generation NHI was implemented.
Key points of upgrading NHI to 2\textsuperscript{nd} generation (I)

- Reduce waste of medical resources
- Increase financial responsibility of the government
- The income and expenditure should be linked under the supervision of NHI committee
Key points of upgrading NHI to 2\textsuperscript{nd} generation (II)

- Supplementary premium is claimed from a variety basis to strengthen the financial structure and lowering the burden of the employed population
- Diversified payment system
- Increase transparency and citizen engagement
Key points of upgrading NHI to 2\textsuperscript{nd} generation (III)

- Protect the right of health care of the vulnerable with subsidy
- Returned overseas to join NHI with stricter requirements
- Prisoners in jail are enrolled in NHI
Ratio of NHE (national health expenditure) to GDP (Gross Domestic Product)
Global budgets of the years

The annual growth rate of Global Budget is 4% in average.

Dental medicine: 32.18 Billion
Traditional Chinese Medicine: 17.79 Billion
Primary health care: 90.69 Billion
Hospital: 276.9 Billion
Other department: 7.94 Billion
Total: 425.5 Billion

Dental medicine: 41.88 Billion
Traditional Chinese Medicine: 23.93 Billion
Primary health care: 128.57 Billion
Hospital: 448.89 Billion
Other department: 11.26 Billion
Total: 654.51 Billion
The income and expenditure of NHI

1995–2016 average annual growth rate
Income: 5.4%
Expenditure: 6.6%

Since 2013.1.1 the supplementary premium is collected and premium rate is decreased from 5.19% to 4.91%

2002 Rate Change 4.25% → 4.55%
2010 Rate Change 4.55% → 5.17%

Resources: NHIA
Six aims to the implementation of NHI

Reference: six aims for improving health care quality, IOM
Public satisfaction of NHI

Reasons for high satisfaction
- Easy Access (48.2%)
- Reasonable charge (28.4%)
- Low financial burden as a patient (22.7%)

Highest Satisfied Rate

Mild increase of premium rate and copayment

Implementation of NHI 2.0
Electronic information system

- Upgrading NHI card
- The Pharmacloud system
- Electronic referral system
- My health bank
The NHI card is what the patient need when seeking medical attention.

NHI card has been upgraded to include the following data:
1. Personal ID
2. Health insurance profiles: disease category, catastrophic illness registration, preventive healthcare records
3. Health care information: prescription, diagnosis, lab tests, allergy record
4. Administrative profile: organ donation, palliative care, vaccine injection
Since 2013, based on cloud technology, the NHI established the PharmaCloud System to include individual patients’ personal pharmacy records. In 2016, it is upgraded to integrate most medical records of the patients, wherever he or she visited the doctors. The information could be shared under certain safety procedure and be reviewed instantly during treatment so to avoid duplication of prescription. It saves time and transportation costs, avoid waste due to duplication, and improved healthcare quality and results.
To check the PharmaCloud System, both patient’s NHI card and the physician’s profession card are needed for security reasons. To logon the system through VPN, another set of ID and password is needed.

Within 15 seconds, 11 medical information are provided for instant enquiry, such as prescription, lab results, operation records, drug allergy, discharge note, dental tx, etc. The images of CT and MRI could be downloaded as well for reviewing.
When a patient needs to be referred to a specialist, the primary care doctor could write referral notes on the web, so staffs in hospital could instantly receive the message and prepare for the follow-up session. After counselling and management in the hospital, the specialist should write the note to respond to the primary care doctor on the platform so for the continuous care of the patient.

Rewards would be given to the physicians who use the electronic referral system.

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My health bank

- My health bank is a cloud database for the storage of personal medical records.
- With the use of NHI card and card reader, everyone could have access to his healthcare information such as date of visit, prescription, lab results. The information could be downloaded to cell phone or any mobile storage devices to improve self-management of acute or chronic illness.
- The asymmetry in health care might be reduced with the diverse use of My Health Bank.
Measures to improve access

- Hierarchically integrated healthcare system
- Family physician integrated care plan
- Medical service plans for regions lacking medical resources
1. Increase capacity of PHC services

2. Advice patients to visit PHC doctors first with the adjustment of copayment under the referral system

3. Diverse the patient flow by the severity of illness. Increase payment for the hospital to treat emergent or catastrophic condition.

4. Strengthen the collaboration between hospitals and clinics so the patient will have continuous care.

5. Improve health literacy and self-care ability of patients

6. Regulation on the management of healthcare organization

Hierarchically integrated healthcare system (I)
Hierarchically integrated healthcare system (II)

1. Increase capacity of PHC services
   - Increase payment items in PCH
   - Approval of US$53M budget for family physician integrated care plan

2. Advice patients to visit PHC doctors first with the adjustment of copayment under the referral system
   - Increase copayment in hospital visits if no referral from PHC
   - Encourage the use of electronic referral system
   - Information for the patients to know which clinics remain open on holidays.
   - PHC doctors take turns to open their clinics on holidays to avoid unnecessary ER visit.

3. Diverse the patient flow by the severity of illness.
   - Increase $US 200M budget for the payment for the hospital to treat emergent or catastrophic condition.
   - Stable or minor ill patients should be referred to PHC for continuous care
4. Strengthen the collaboration between hospitals and clinics so the patient will have continuous care.
   - Electronic referral system
   - Budget for Family physician integrated care plan and other regional integrated care
   - Shared care clinic supported by doctors from both hospitals and community

5. Improve health literacy and self-care ability of patients
   - Join family physician integrated care plan
   - 24-hour consultation hotline
   - Promote the idea of primary care physician as gatekeeper

6. Regulation on the management of healthcare organization
   - Prohibit transportation of minor ill patient to hospitals’ outpatient clinic
   - Restriction for hospitals to extend their outpatient clinic to the community
Family Physician Integrated care plan through community health care groups (CHCG)

- 5~10 GPs, one fifth of which specialized in FM
- Recruit members from patients encountered
- Continuous and comprehensive care
  - 24-hr consultation
  - Health promotion
  - Disease prevention
  - Disease management
  - Patient referral
- Regular meeting and sharing experiences
**Red dots are CHCG clinics**

**Red cross are hospitals**

**Red circle is the imaginary line of the community**
Community Health Care Groups (CHCG) in Taiwan

- **Region 1**: Number of Clinic
  - 0
  - 1-29
  - 30-49
  - 50-99
  - Over 100

- **Region 2**: *Totally 526 CHCGs in 2017*

- **Region 3**: **Operation budget** US $ 52,670,000

- **Region 4**:  

- **Region 5**:  

- **Region 6**:  

*Note: The map and legend indicate the distribution and operation budget of CHCGs across different regions in Taiwan.*
Physicians and enrollees in the project

- **Clinics participated in CHCGs**
  - Around 4,063 (36.6% of total clinics)

- **Physicians participated in CHCGs**
  - Around 5,182 (33.7% of total physicians)

- **Enrollees**
  - Around 4,130,000 (17.95 % of total population)

Statistics from NHI, Taiwan, 2017
Medical service plans for regions lacking medical resources (I)

- 26 hospitals are in charge of 30 integrated care plans for 29 mountainous countries and 21 island countries.

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<th>in-charge hospital</th>
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<td>District hospital</td>
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Medical service plans for regions lacking medical resources (II)

- Budgeting for hospital doctors, PHC doctors, dentists, traditional Chinese medical doctors to practice in regions lacking medical resources.
- Subsides are provided for doctors to practice in those areas.
- 84 Primary care clinics and 32 hospitals practice in those areas in 2017.
- In areas without healthcare organization, we encourage physicians to have site visits at remote areas, so local residents have continuous access to quality medical care.
In regions lacking medical resources, 92% of the patients could reach the location of service in 10 minutes. Access to healthcare is satisfied.
Medical service plans for regions lacking medical resources (IX)

- Satisfaction survey was performed for patients in these areas (2017)
- The average satisfaction rate was above 90%

<table>
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<tr>
<th>Item</th>
<th>Taipei</th>
<th>Northern</th>
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<th>Southern</th>
<th>Kaoping</th>
<th>Eastern</th>
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<td>93.2%</td>
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## Life expectancy

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**Resource:** Department of Statistics
### Perinatal Death Rate

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**Resource**: Department of Statistics
Universal Health Coverage (UHC)
UHC service coverage index 2015

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<td>69.7</td>
<td>58.3</td>
<td>≥80</td>
<td>≥80</td>
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Universal health coverage (UHC) is now a global health priority with three dimensions: reducing cost sharing and fees, including more services, and expanding medical care coverage.

By 2016, 99.6% of the population was covered by NHI in Taiwan.

With the upgrade to 2nd generation, the NHI has improved access and continuous care through various use in electronic system.

NHI also introduced pay for performance over Non-communicable diseases including DM, CKD, Asthma, COPD and other preventive care, such as periodic health exam, vaccinations, cancer screenings.
感謝聆聽，敬請指教
Thank you for your attention.