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A snapshot of medical Taiwan
Map of Medical Taiwan

Statistics:
- 36,000 Sq Kilometers
- 23,000,000 population
- 40% non-mountain areas
- 80% pop live in metros.
- Income per capita in 2011: 20,112 USD

Source:
Ministry of Health
Ministry of Economic Development
Ministry of Domestic Affairs
### Number of Hospital Beds in 2010

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>80 (15%)</td>
<td>450 (85%)</td>
<td>530 (100%)</td>
</tr>
<tr>
<td>Clinics</td>
<td>473 (2%)</td>
<td>18,909 (98%)</td>
<td>19,370 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>45,568 (30%)</td>
<td>105,060 (70%)</td>
<td>150,628 (100%)</td>
</tr>
</tbody>
</table>

92% of health care institutions contracted with the National Health Insurance (NHI)

source: 2010 Ministry of Health
<table>
<thead>
<tr>
<th>year</th>
<th>item</th>
<th>dr-WM</th>
<th>Dr-WM/10,000</th>
<th>dr-TCM</th>
<th>Dr-TCM/10,000</th>
<th>Dentist</th>
<th>Dentist/10,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>number</td>
<td>37,294</td>
<td>16.20</td>
<td>5,000</td>
<td>2.17</td>
<td>11,431</td>
<td>4.96</td>
</tr>
<tr>
<td></td>
<td>growth</td>
<td>2.66%</td>
<td>2.18%</td>
<td>2.56%</td>
<td>2.08%</td>
<td>3.13%</td>
<td>2.65%</td>
</tr>
<tr>
<td>2011</td>
<td>number</td>
<td>38,227</td>
<td>16.57</td>
<td>5,052</td>
<td>2.19</td>
<td>11,746</td>
<td>5.09</td>
</tr>
<tr>
<td></td>
<td>growth</td>
<td>2.50%</td>
<td>2.29%</td>
<td>1.04%</td>
<td>0.83%</td>
<td>2.76%</td>
<td>2.54%</td>
</tr>
</tbody>
</table>

Source: 2012 Ministry of Health
Distribution of Health Expenditures

(2010 Taiwan’s GDP=6.22%, or 541,400,000,000 NTD)
Changes of Payment Systems

1995: FFS (Case payment)
1998~2002: Global Budget
2001: Pay for performance
2004: RBRVS
2010: Tw--DRG
2011: Capitation

1998: dental service
2000: traditional Chinese Medicine
2001: clinics
2002: hospital services
Basic Principle for the Global Budget

\[ GB = q \sum P_i \times Q_i \]

Where:
- \( q \) is the monetary conversion factor
- \( P \) is the price of \( i^{th} \) service
- \( Q \) is the quantity of \( i^{th} \) service
- \( i \) is the item of a NHI service
## Utilization of the NHI

### 2007-2010 per person per year

<table>
<thead>
<tr>
<th>Opd time</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>WM</td>
<td>11.6</td>
<td>11.5</td>
<td>11.9</td>
<td>12.2</td>
</tr>
<tr>
<td>DS</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>TCM</td>
<td>1.5</td>
<td>1.6</td>
<td>1.7</td>
<td>1.6</td>
</tr>
<tr>
<td>total</td>
<td>14.4</td>
<td>14.4</td>
<td>14.9</td>
<td>15.1</td>
</tr>
</tbody>
</table>

**IPD(days)**

<table>
<thead>
<tr>
<th>WM: western medicine</th>
<th>DS: dental services</th>
<th>TCM: traditional Chinese medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.13 time (1.3day)</td>
<td>0.13 time (1.3day)</td>
<td>0.13 time (1.3day)</td>
</tr>
<tr>
<td>0.14 time (1.3day)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Equity of NHI

- Catastrophic Diseases p’t account for 3.4% total population, they consumed 26.9% total health expenditure.
- Elderly people account for 10.7% total population, they consumed 34.5% total health expenditure.

<table>
<thead>
<tr>
<th>items</th>
<th>Expenditure per capita</th>
<th>multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per capita</td>
<td>22,222</td>
<td>1.0</td>
</tr>
<tr>
<td>Poor- per capita</td>
<td>47.563</td>
<td>2.1</td>
</tr>
<tr>
<td>Elderly- per capita</td>
<td>71,485</td>
<td>3.2</td>
</tr>
<tr>
<td>Cancer- per capita</td>
<td>135,605</td>
<td>6.1</td>
</tr>
<tr>
<td>Dialysis- per capita</td>
<td>602,526</td>
<td>27.1</td>
</tr>
<tr>
<td>Ventilator - per capita</td>
<td>737,701</td>
<td>33.2</td>
</tr>
<tr>
<td>Leukemia- per capita</td>
<td>2,492,480</td>
<td>112.2</td>
</tr>
</tbody>
</table>

Unit: new Taiwan Dollar

Year: 2009
Satisfaction to the NHI (2001~2010)
Hospital operation from FFS to GB (fee-for-service to global budget)

cost down

efficiency
cost-effectiveness
value-based quality
How to provide best quality at an acceptable price/cost has become the “core” of hospital management.

Missions of Taiwanese Association for Hospital and Medical Sterile Supply (TAHMHSS)
Problems facing in the demand-side of hospital and medical sterile supply
Problems facing in the demand-side of hospital and medical sterile supply

- Demand of sterile services have increased rapidly.
- Medical technology has changed new supply philosophy (tracing is the master).
- New regulations and standards continuously integrate logistic functions of sterile and hospital & medical supply services.
- Cost containment and high demanded services quality push providers to find new management methods to survive.
Demand of sterile services have increased rapidly.

Demands used to be poorly linked, now are highly integrated due to cost containment and quality requirements.
Medical technology has changed new supply philosophy
Re-washable Blanket
Taiwan’s new CSSR model

- Equipment
- Textile
- Sterilization

Fix/repair, supplement, delivery

Financing/leasing

New CSSR
New regulations and standards continuously integrate logistic functions of sterile and hospital & medical supply services.

To sterilize (by other firm) or not to sterilize (by itself) that is a good question!

EN-ISO 11607

Packaging & tracking system

Sterile Barrier System

Protective Packaging
Cost containment and high quality-demanded CSSR services push providers to find new management methods to survive.

- Cost containment
- Computerize tracking
- Standardized package
- Specified items
- Management skills
- Specialization
- Computerization
- Standardization
- Specification
- Distribution

WHO?
Sterilization process

- Clean items
- Package items
- Load sterilizer
- Monitor
  - Physical (time/temp/pressure)
  - Chemical
  - Biological
Is there another way to do the same work more efficiently?

This question I ask myself everyday!
How to fix/repair surgical instruments?

- In the past, we fixed/repai red
- Last two decades, we started to use disposables as much as we could
- Today, we fix and repair.

Why? To preserve precious resources!

How to fix surgical instruments in a hospital can save more money than just dispose them!
7-layer flow design

Value flow
Management flow
Information flow
Money flow
Material flow
Service flow
Patient flow

Pursuing this
Integrate all the materials or tools into a truck and move in a hospital’s CSR
What is happening: a supply-side story
A 3,000 bed hospital will wash about 19 tons textile per day at about NTD 7.8/kg if the wash machines can sustain/depreciate for 10 years.

- What are the keys to maintain laundry machines to sustain for over ten years at the first place?

The average expense of a 3,000 bed hospital, its CSR related expenses is about NTD 11,020,448 per month (excl. personnel expenses).

- Can we further contain these expenses by integrating the contents of CSR?

30 NTD = 1 USD

The cost/expense is growing everyday!
What are the challenges

- **Standards**
  - Need to adopt new standards, e.g. ISO/EN,
  - Taiwan’s disinfection standards, accreditations, etc.

- **Regulations**
  - Center for Disease Control and Prevention (CDC) requirements
  - Hospital accreditation

- **Information technology**
  - RFID/QR/OCR applications
  - Trace-back skills

To contain cost, the best management is to integrate sources of CSSR functions through industry-wide standards (what, where, and how)
Insert a RFID (Radio Frequency Identification) into the first button of a dr’s white coat and install a RFID scanner before laundry machines can solve this problem.

However, the best management practice is to design a white coat using nano-technology which can prevent any infection from occurring.
Intern’l standards

archiving

all supplies

TAHMSS

NHI claim

comput-erization
Conclusions

Integration of CSSR functions is the future trend of Taiwan’s new CSSR business.

Can not wait new standards/protocols released by Taiwan’s governments, TAHMSS has to speed up our links with international CSSR society.

Searching for new management methods to integrate CSSR functions from the origin(users) till the suppliers are the keys for our missions as the only Taiwanese association for hospital and medical sterile supply.
THANK YOU FOR YOUR ATTENTION!

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