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National Drug Information Sharing in the Thailand Health Care Supply Chain

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Our Inspiration
Material & Information Flows

Manufacturer

Logistics
Distributor

Healthcare Provider
(Hospital, Clinic, etc.)

Consumer
(Patient)

Material Flows

Information Flows

(Ref: GS1 Healthcare)

The Global Language of Business

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Traceability

(Tracking)

Manufacturer

Logistics Distributor

Healthcare Provider (Hospital, Clinic, etc.)

Consumer (Patient)
Healthcare Supply Chain Stakeholder

Initial substance manufacturers,
Semi-finished product (foreign)
- Active ingredient
- Additive ingredient
- Package material
  (Raw material)

Finished product (foreign)
Finished Good

Customs

Manufacturer/ Repacker
(in-house)

Thai Food and Drug Administration (FDA)

The Excise Department

Royal Thai Police

Importer

Marketing with suppliers

Marketing with suppliers

In-house marketing

In-house marketing

The Comptroller General's Department (CGD)

Hospitals

Clinics

Drug stores

Others e.g.
Department stores,
Convenient stores,
etc.

Public and private

Public and private

Patients

Customers

The Global Language of Business
# Current Situation

<table>
<thead>
<tr>
<th>Topic</th>
<th>AS-IS</th>
<th>Problem</th>
<th>Impact</th>
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<tbody>
<tr>
<td>Standardized Code</td>
<td>• Too many Standard Code</td>
<td>• No mean to communicate</td>
<td>• Unable to refer to the same entity</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Standardized Code Diagram" /></td>
<td></td>
<td>• No traceability</td>
</tr>
<tr>
<td>Standardized Data Exchange</td>
<td>• Fragmented Database</td>
<td>• No synchronized integrated data</td>
<td>• No quick response</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Fragmented Database Diagram" /></td>
<td>• High Operating Cost</td>
<td>• No traceability</td>
</tr>
<tr>
<td></td>
<td>• Communicate</td>
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1. Identify the uniqueness of drugs and medical materials to communicate through the supply chain.

2. Develop a single datapool to provide standard data which is usable to all players in the supply chain.
Foundation Need
Standard Drug Code (GTIN) & Data Pool (DRUGNET)

• GTIN is used as a primary key to access the drug information in Datapool (DRUGNET).

Hospital use GTIN as a primary key to access the drug information in Datapool.

Drug suppliers use GTIN to identify drugs and input drug information to Datapool.

• There is a collaboration with medical supplier to input their drug information to DRUGNET and attach barcode on their packaging. Since 2008, Hosted by Mahidol University and GS1 Thailand.
DrugNET National Drug Database

**Code**
- GTIN
- TMT
- Drug 24
- Registration Code

**Information**
1. General Information
2. Logistics Information
3. Clinical Information

Drug Information
Clinical Decision Support
Hospital – Supplier Purchasing Process
Reimbursement
Solution for Improving logistics in hospitals

Wards using the data

1. Datapool

2. Electronic Data Interchange (EDI) Portal
   - encrypt/decrypt data between senders and receivers

3. Traceability

Remarks
1. Developing National Database, healthcare information system and increasing patient safety in drug consumption (TRF-NRCT, 2011-2014)
2. Implementation of Electronic Data Interchange In Healthcare Supply Chain (TRF, 2013)
3. A Drug Traceability for Enhancing Healthcare Logistics and Supply Chain Management in Thailand (TRF-NRCT, 2013)
EDI Solution Using Datapool

**Current Practice**

- Hospital
  - EDI Message 1
  - Suppliers 1
  - EDI Message 2
  - Suppliers 2
  - EDI Message 3
  - Suppliers 3
  - EDI Message n
  - Suppliers n

**Solution**

- Hospital
  - EDI Portal
  - Standardization
  - Datapool
  - Suppliers 1
  - Suppliers 2
  - Suppliers 3
  - Suppliers n
Meeting between hospitals and suppliers to start EDI implementation on 2 Oct 2015
Project Stakeholders

- Mahidol University
- GS1 Thailand
- Ministry of Public Health
- Ministry of Information and Communication Technology
## Cost reduction (million baht)

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<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>Manufacturer</td>
<td>Importer</td>
</tr>
<tr>
<td>Medication Errors Cost</td>
<td>3.49 -22.29</td>
<td>817.95-5,271.23</td>
</tr>
<tr>
<td>Recall Handling Cost</td>
<td>4.65</td>
<td>90.88</td>
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<tr>
<td>Inventory Financing Cost</td>
<td>6.40</td>
<td>363.53-543.30</td>
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<tr>
<td>Inventory Management Cost</td>
<td>10.27-12.60</td>
<td>545.30-727.07</td>
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<tr>
<td>Obsolescence Cost</td>
<td>9.88</td>
<td>1,726.78-2,453.85</td>
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<tr>
<td>Data Management Cost</td>
<td>0.39 -0.97</td>
<td>90.88 -181.77</td>
</tr>
<tr>
<td>Cost reduction (million baht)</td>
<td>0.19-5.23</td>
<td>3,635.33-9,270.09</td>
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Our Roadmap

Business Intelligence / Big Data
Traceability
EDI – Standard Data Exchange (Pilot)
Datapool (Under Construction)
Harmonized Code

Global Standard
Mahidol University

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