



**Asia eHealth  
Information Network**

# Global Health Informatics Standards for National Health Information Systems: Thailand case

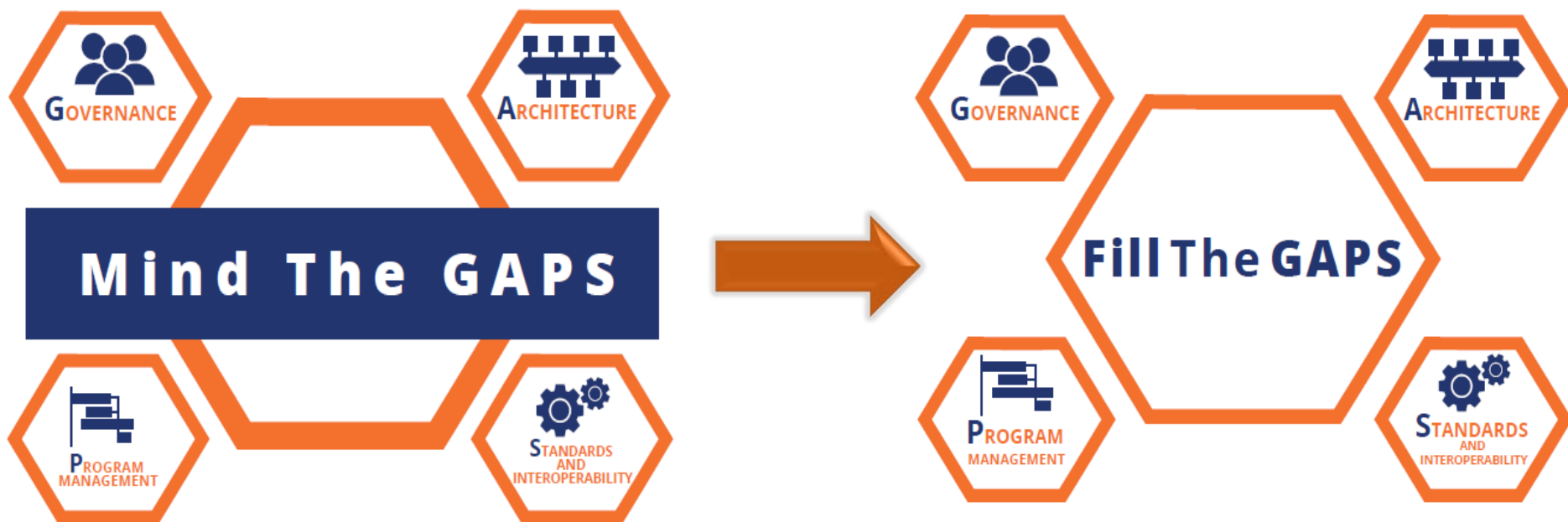
**Boonchai Kijsanayotin, Thailand  
AeHIN Chair**

**#GDHF17 Washington, DC 06 December 2017**

[www.aehin.org](http://www.aehin.org)

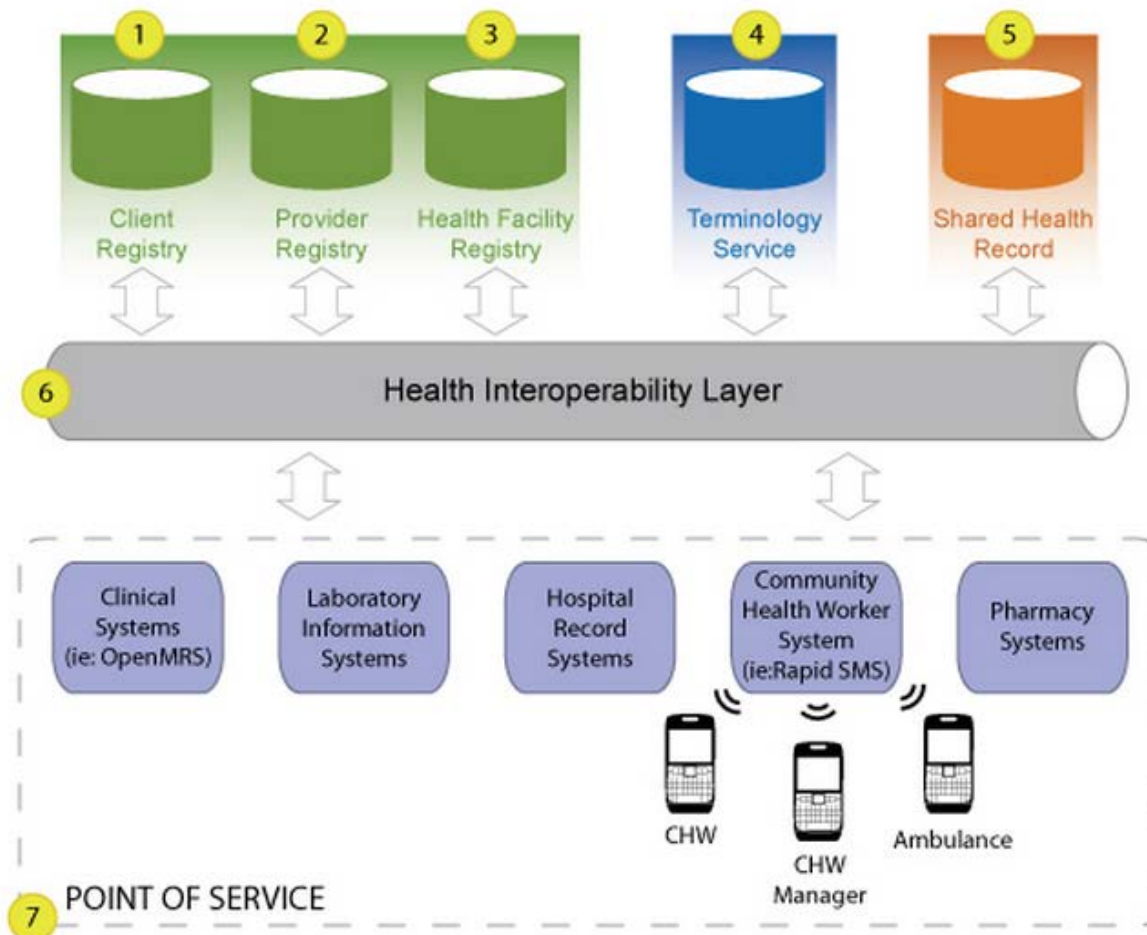
## IV. The GAPS Framework

To develop national healthcare ICT systems, countries need to work on 4 important fundamental topics.



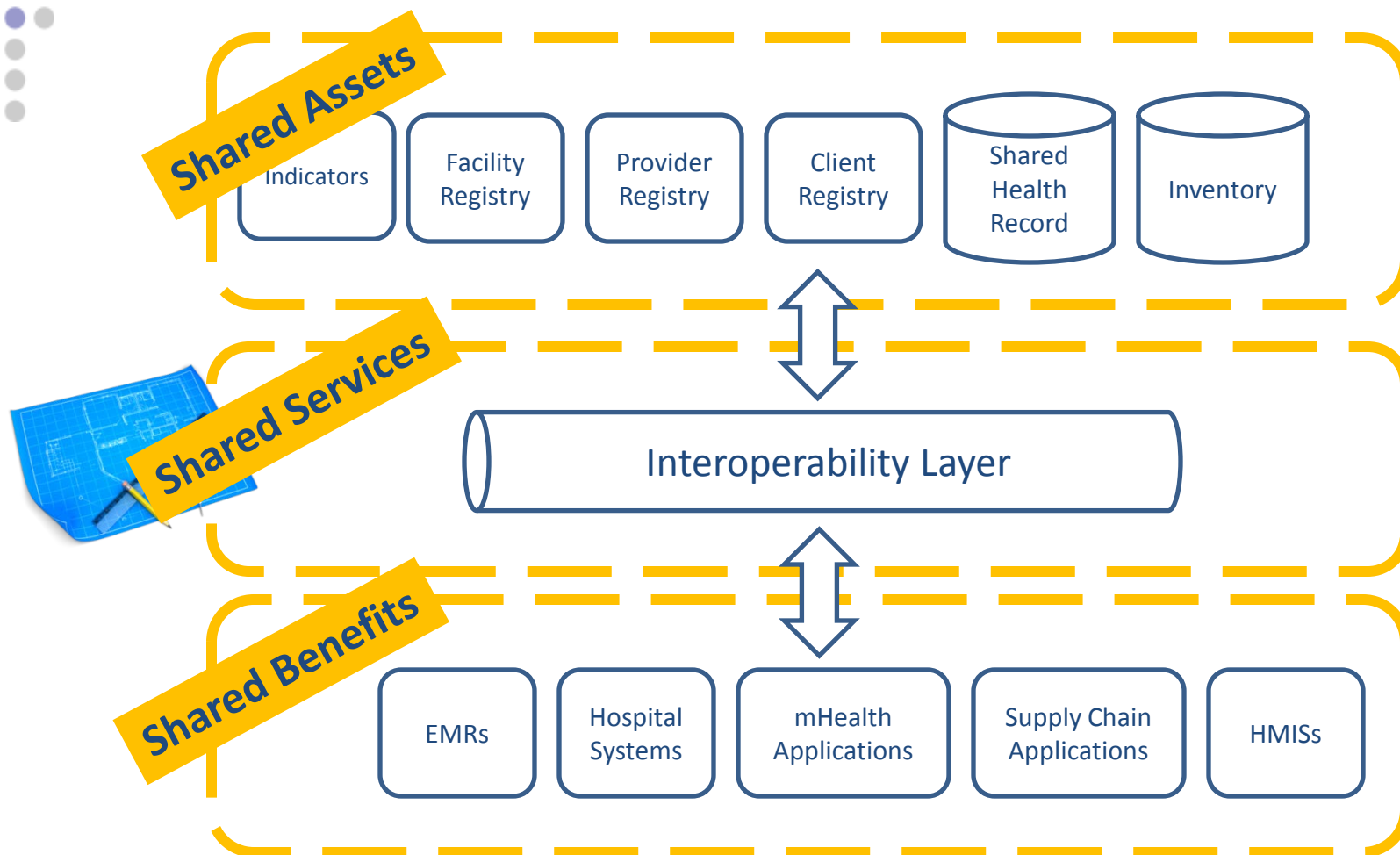
# National Health Information Systems Blueprint (the Architecture)

A Health Information Exchange (HIE) makes the sharing of health data across information systems possible



- 1) who received health services
- 2) who provided those services,
- 3) where did they receive the services
- 4) what specific care did they receive.

From: <http://ohie.org/architecture/>



# Level of Interoperability

Process/Service Interoperability	<ul style="list-style-type: none"><li>• Harmonized business models</li></ul>
Semantic Interoperability	<ul style="list-style-type: none"><li>• Same meaning, ontology-based terminology</li></ul>
Syntactic Interoperability	<ul style="list-style-type: none"><li>• harmonised messaging and document exchange</li></ul>
Structure Interoperability	<ul style="list-style-type: none"><li>• based on the exchange of agreed data.(Data set)</li></ul>
Technical Interoperability	<ul style="list-style-type: none"><li>• harmonised at the plug and play, signal and protocol level</li></ul>

# Level of Interoperability & Standards

## Process/Service Interoperability

- Clinical Practice Guideline, Similar Claim Rules (DRG), HIPAA

## Semantic Interoperability

- Citizen ID, ICD 10, TMT, LOINC, SNOMED-CT

## Syntactic Interoperability

- HL7 message, HL7 CDA, DICOM

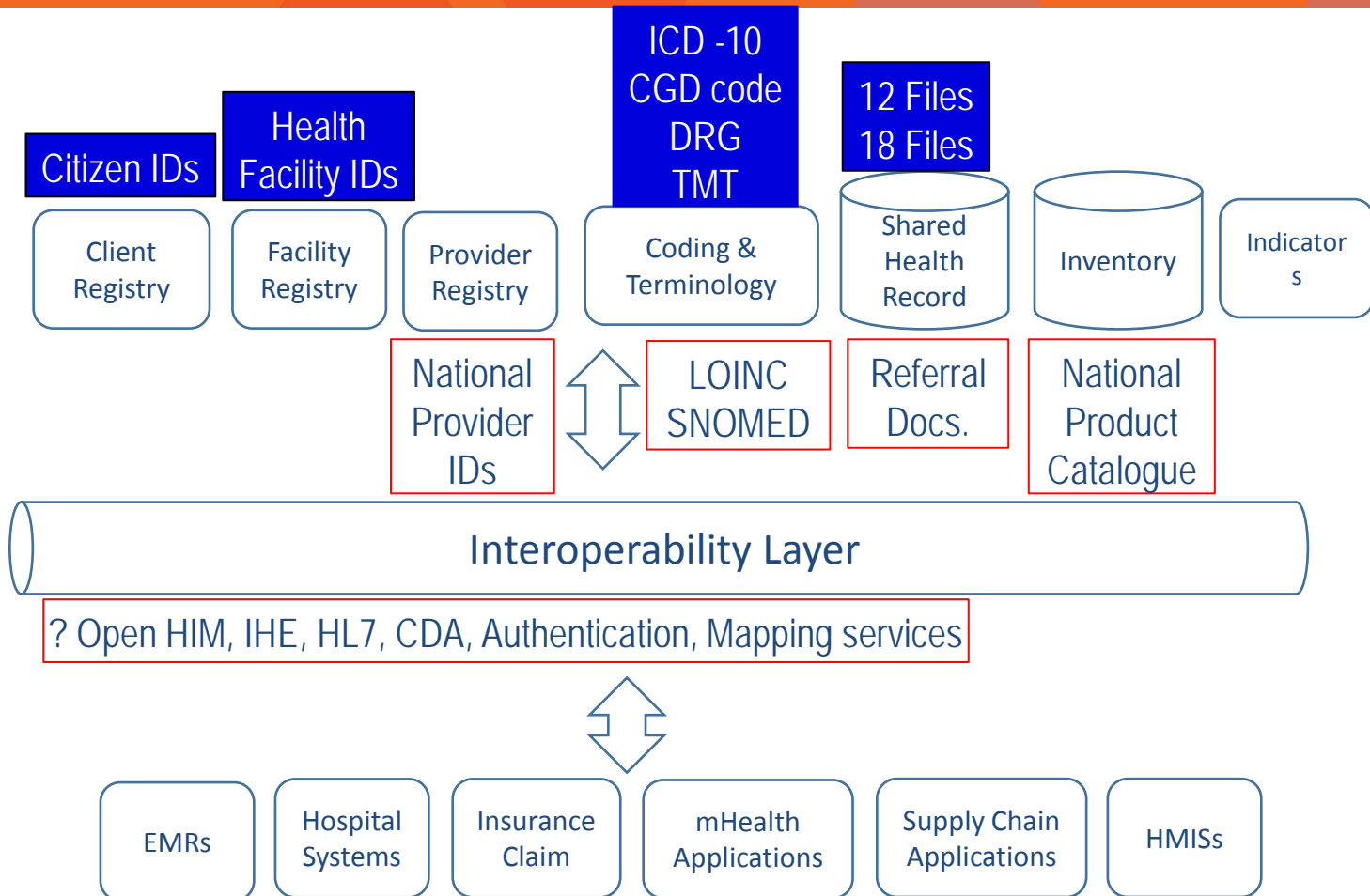
## Structure Interoperability

- Standards Dataset : Discharge Summary, Prescription

## Technical Interoperability

- XML, PKI, SSL , Web Service

# HIS/eHealth Training and Study Tour- Thailand



CGD = Comptroller General Department, TMT = Thai Medicines Terminology, DRG = Diagnosis Related Group, IHE = Integrating the Healthcare Enterprise



# Citizen Identification Card



1969-1986 Typing machine  
ID card



1987 – 1996 Computer  
Printout ID card

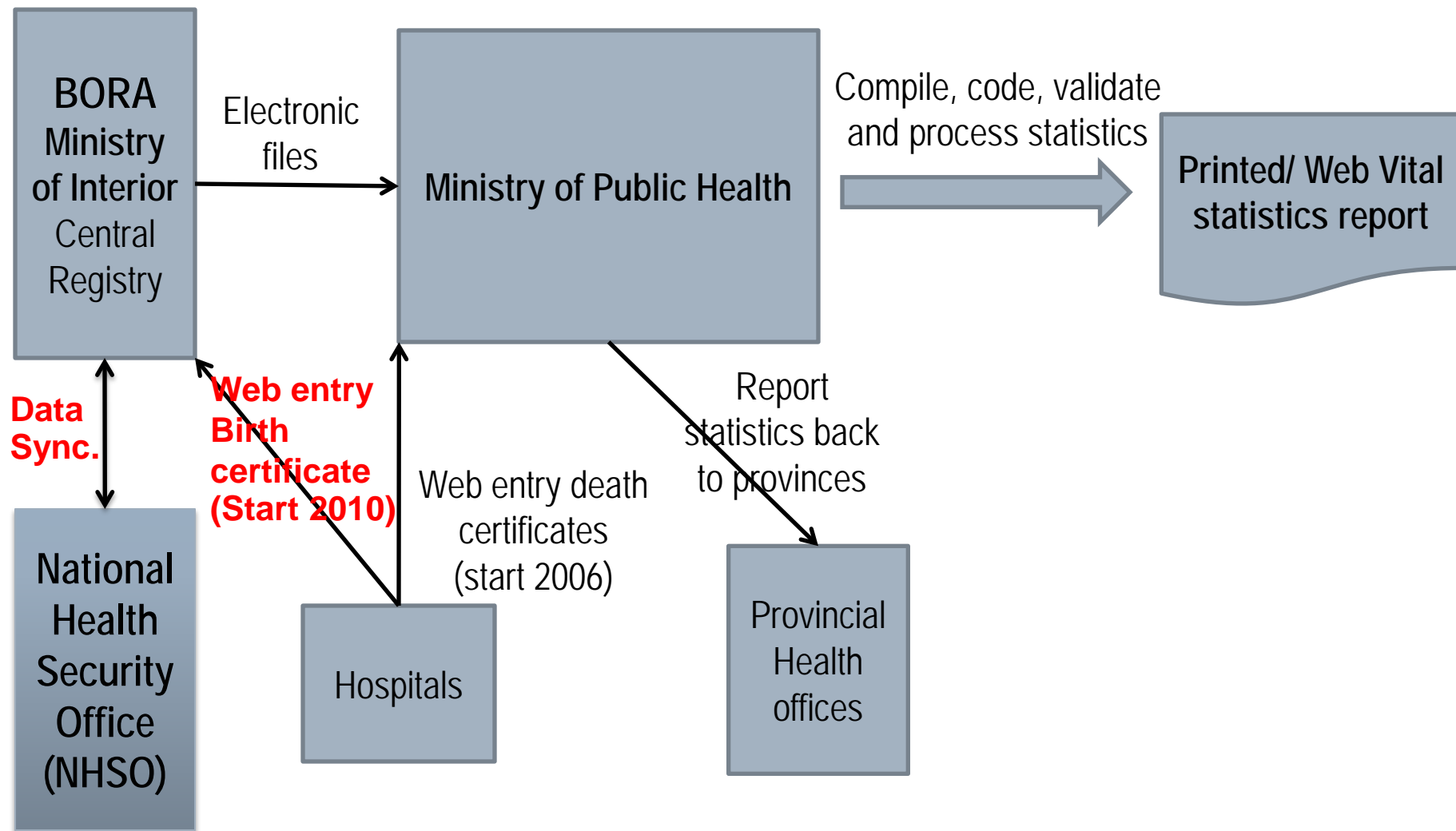


Current Smart card type  
ID card

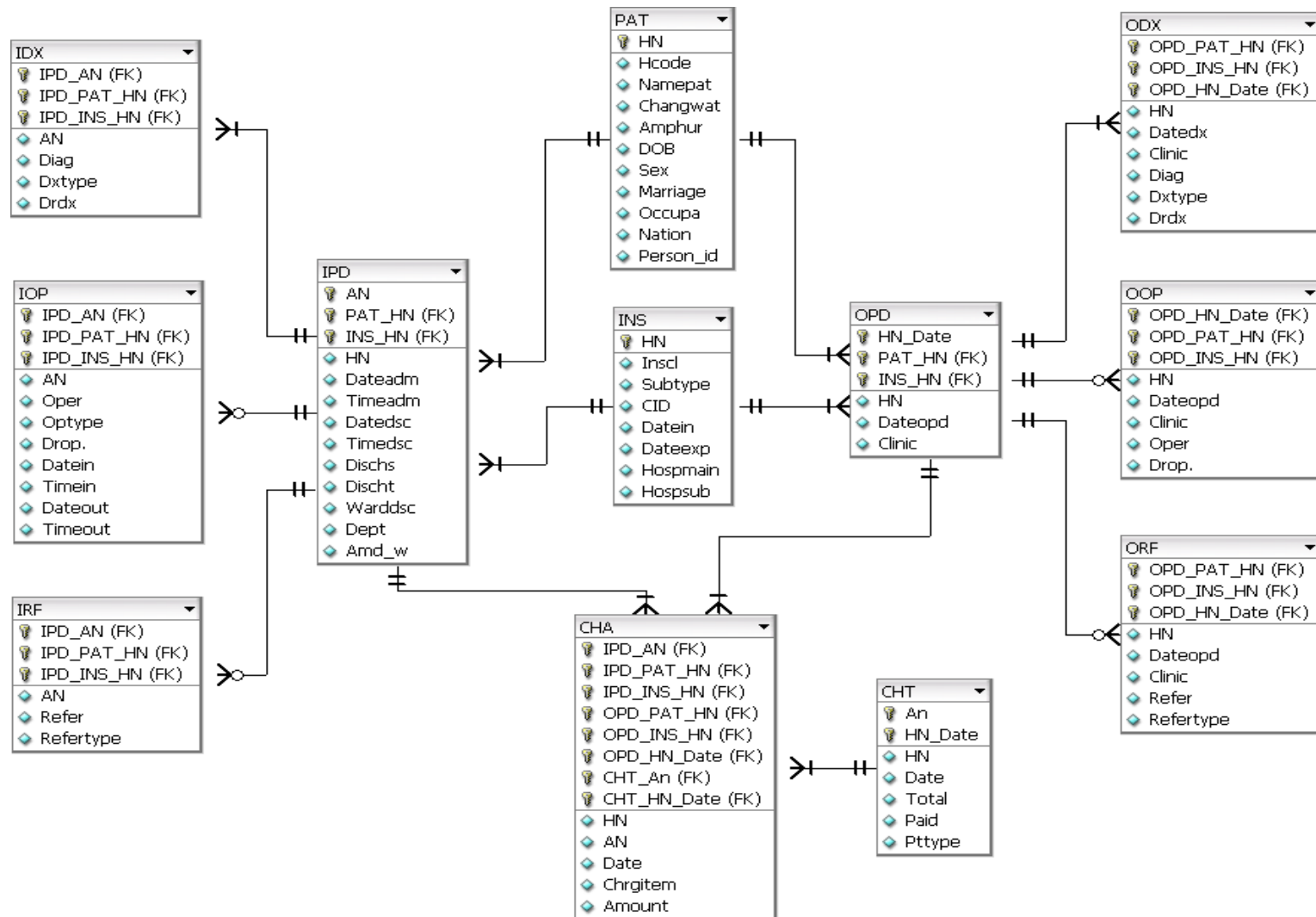




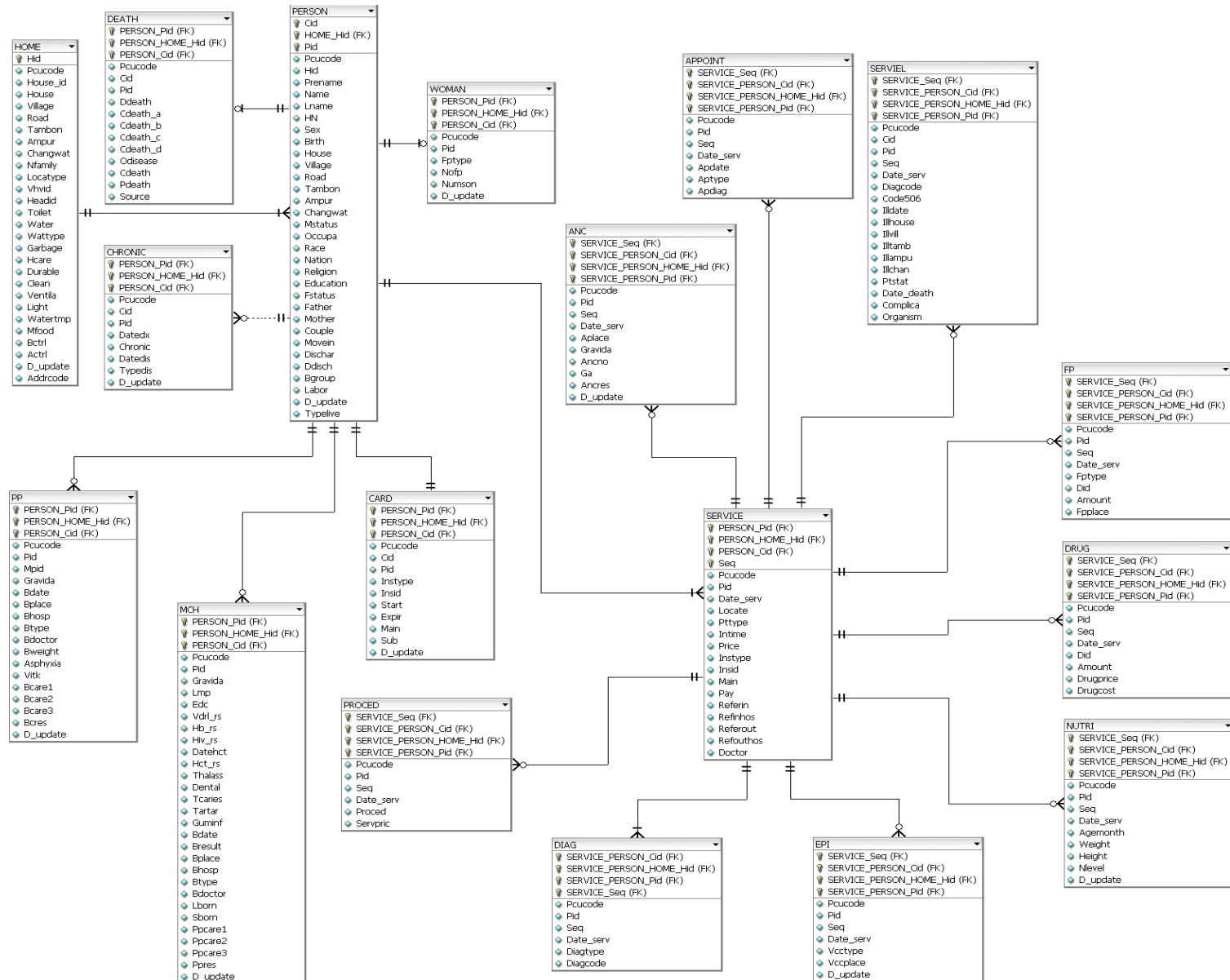
# Thai Vital Statistics after 1996



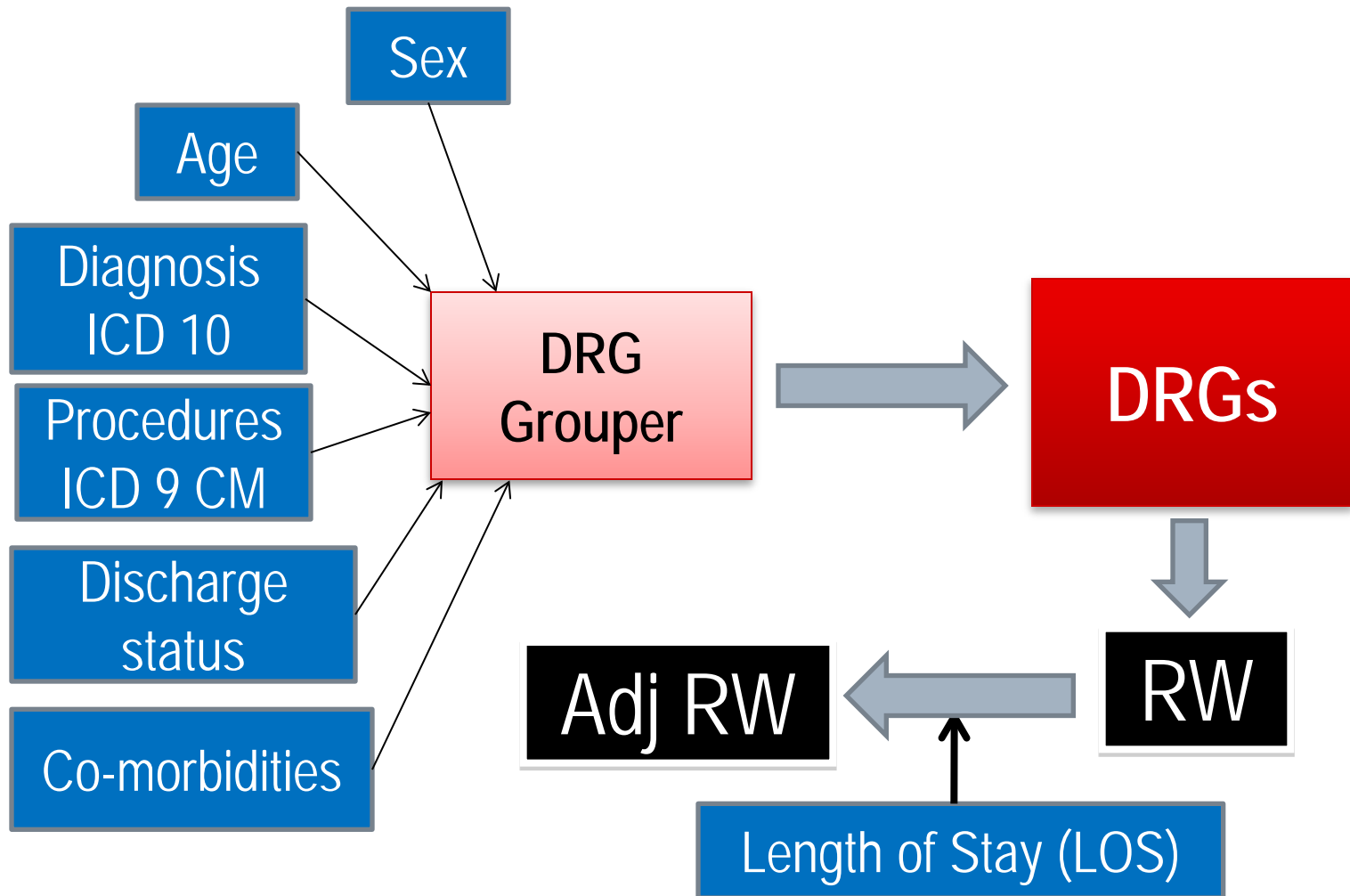
# Standard Data set for health insurance (12 files) 1996



Health Center standard data set (18 files) 2002



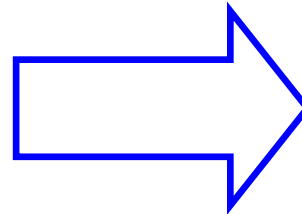
# How DRGs are calculated?



# Contribution of National ID system, IT infrastructure, DRGs to Thailand UHC implementation

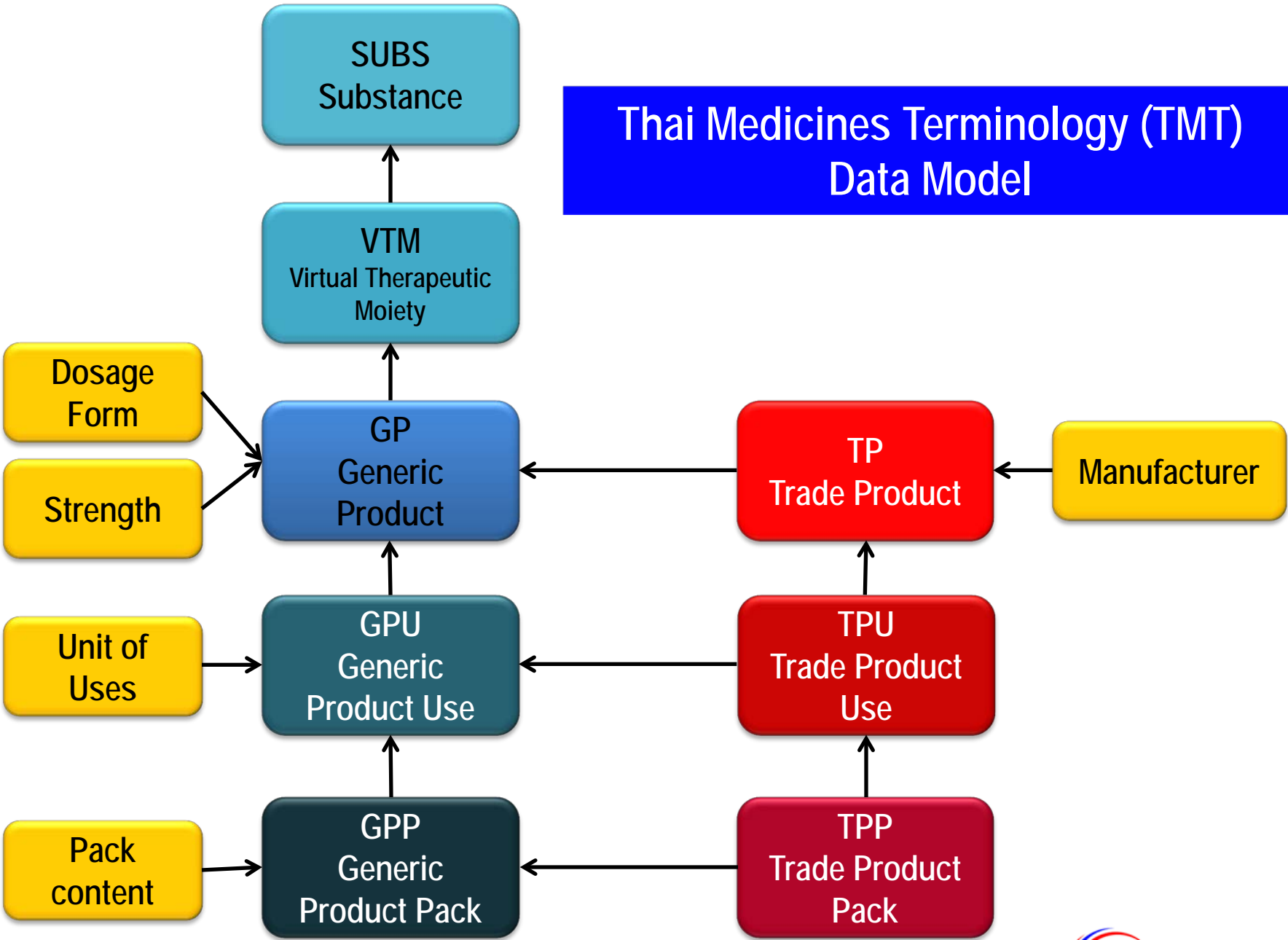
## HIS & HIT context

1. Computerized Civil Registration & Citizen IDs
2. Providers' ICT adoption & country's ICT infrastructure
3. Administrative data standards, coding standards & DRG technology



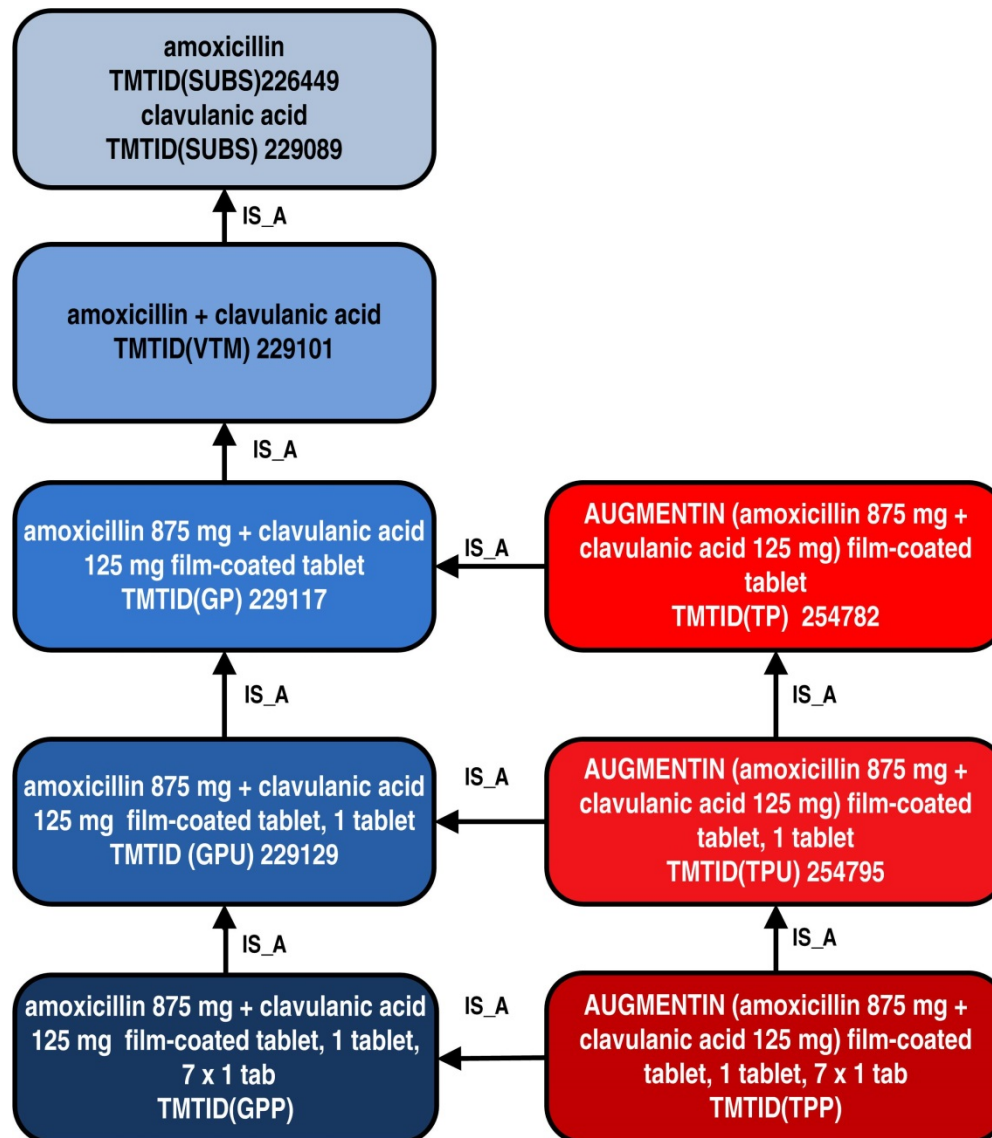
Universal  
Coverage  
Scheme  
Implementation

# Thai Medicines Terminology (TMT) Data Model





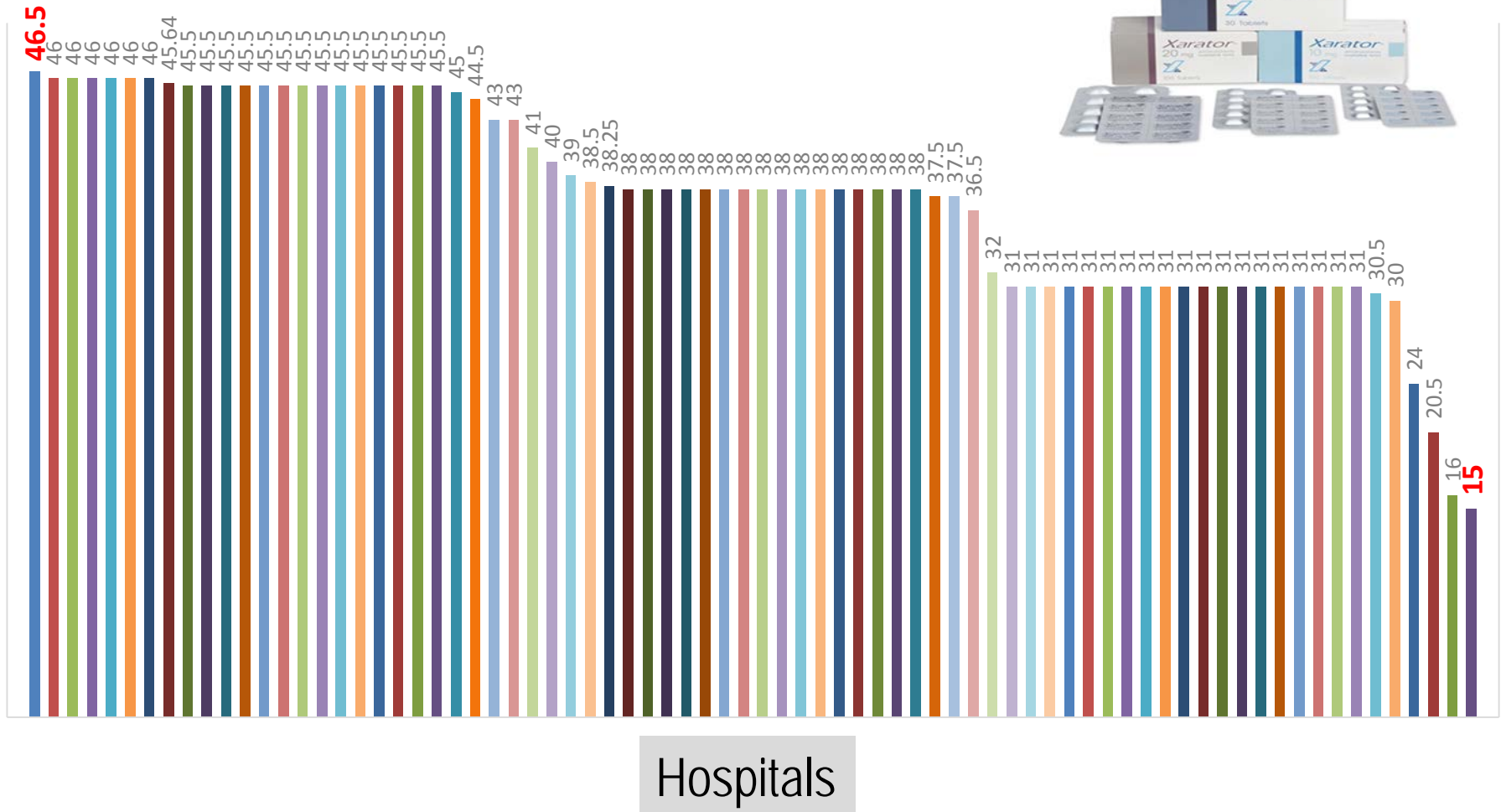
# TMT an Example



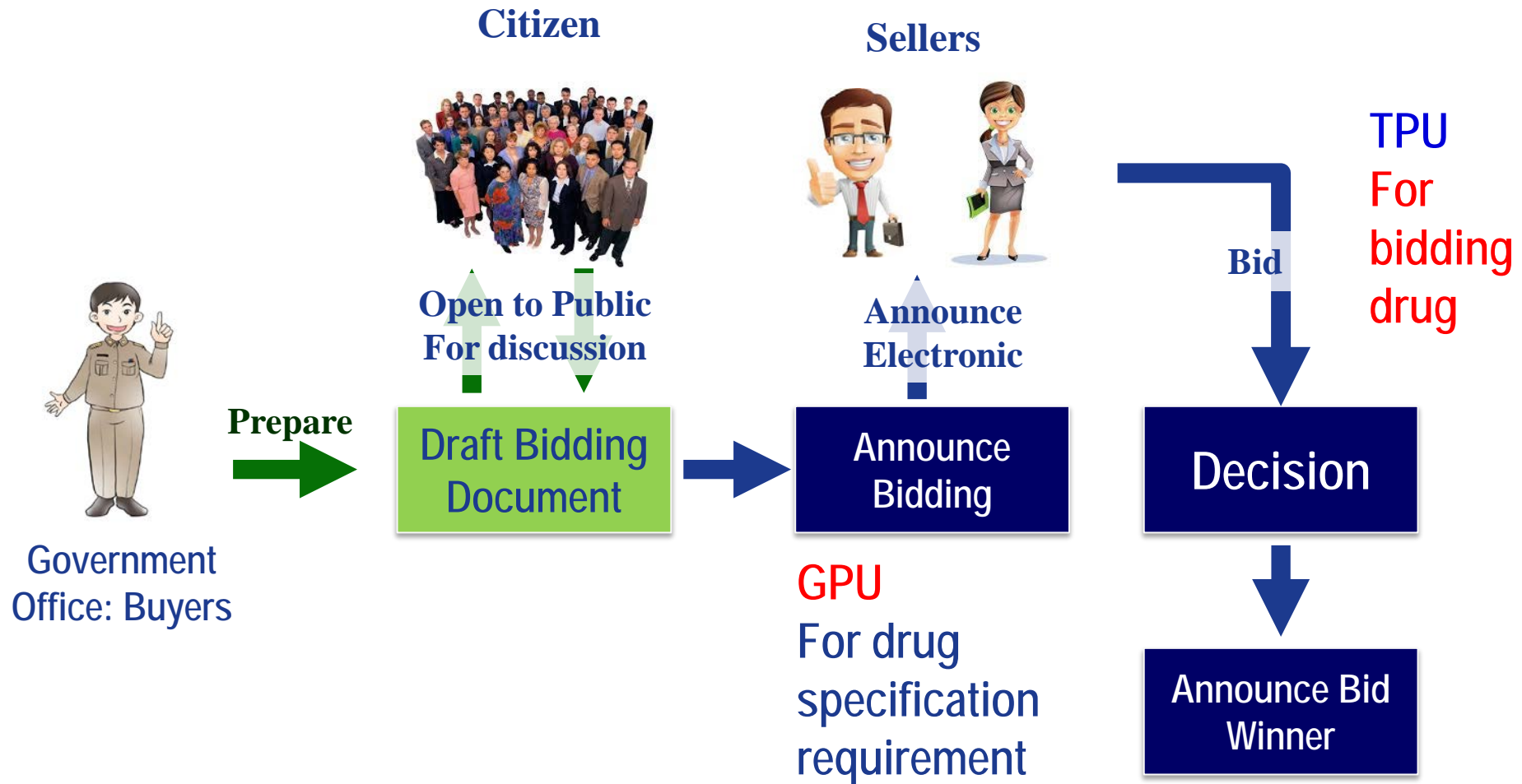
# Drug Price Hospitals Charged CSMBS:

TMTID(TPU) 114955 XARATOR (Atrovastatin 40 mg filmed-coated tablet)

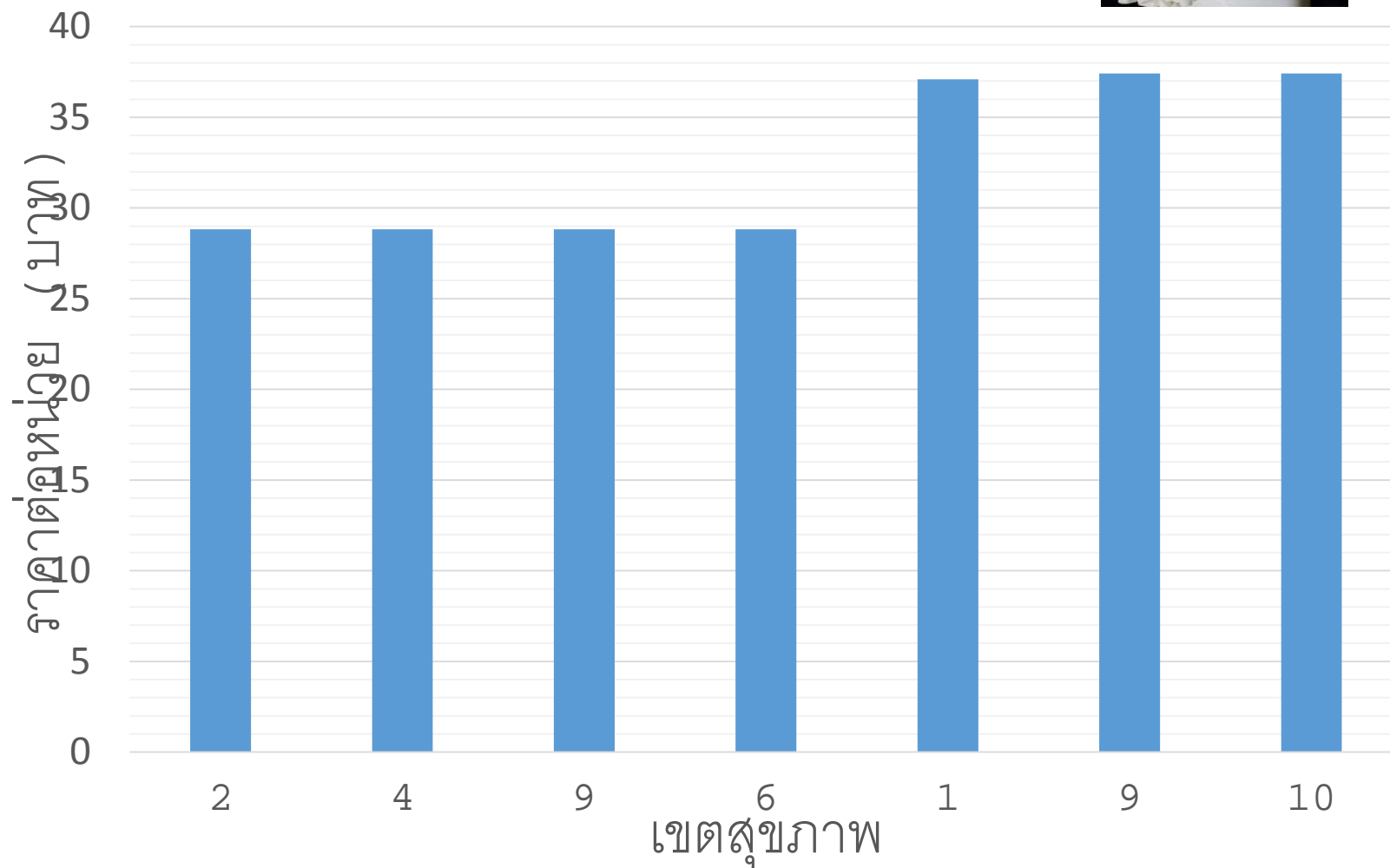
Baht/Tablet



# Centralized e-Government Procurement System (eGP) : e-Bidding



685136 ZETIA (SCHERING-PLOUGH, U.S.A.)  
(ezetimibe 10 mg) tablet, 1 tablet



<http://this.or.th/files/interopbook.pdf>





**Asia eHealth  
Information Network**

When we  
help friends,  
friends will  
help us.

**NEPAL, 26 July 2017**

[www.aehin.org](http://www.aehin.org)