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NHIS & HIRA ICT System

Case Study

References in Social Insurance

LG CNS NHIS and Social Insurance System Portfolio

National Health Insurance Service

- Korean Medical Insurance Corporation Information System (1999)
- National Health Insurance Information System (2001)
- Next Generation's National Health Insurance Information System (2006)

Health Insurance Review & Assessment Services

- Health Insurance Review & Assessment Information System (2000)
- Korea Pharmaceutical Information Service System(2007)
- HIRA Information System Upgrade (2008, 2004)
- Country "B" NHIIS System (2017~)

Others

- Work-net System (2011, 2001)
- Integrated Collection System for Social Insurances (2009.11 ~ 2011.6)

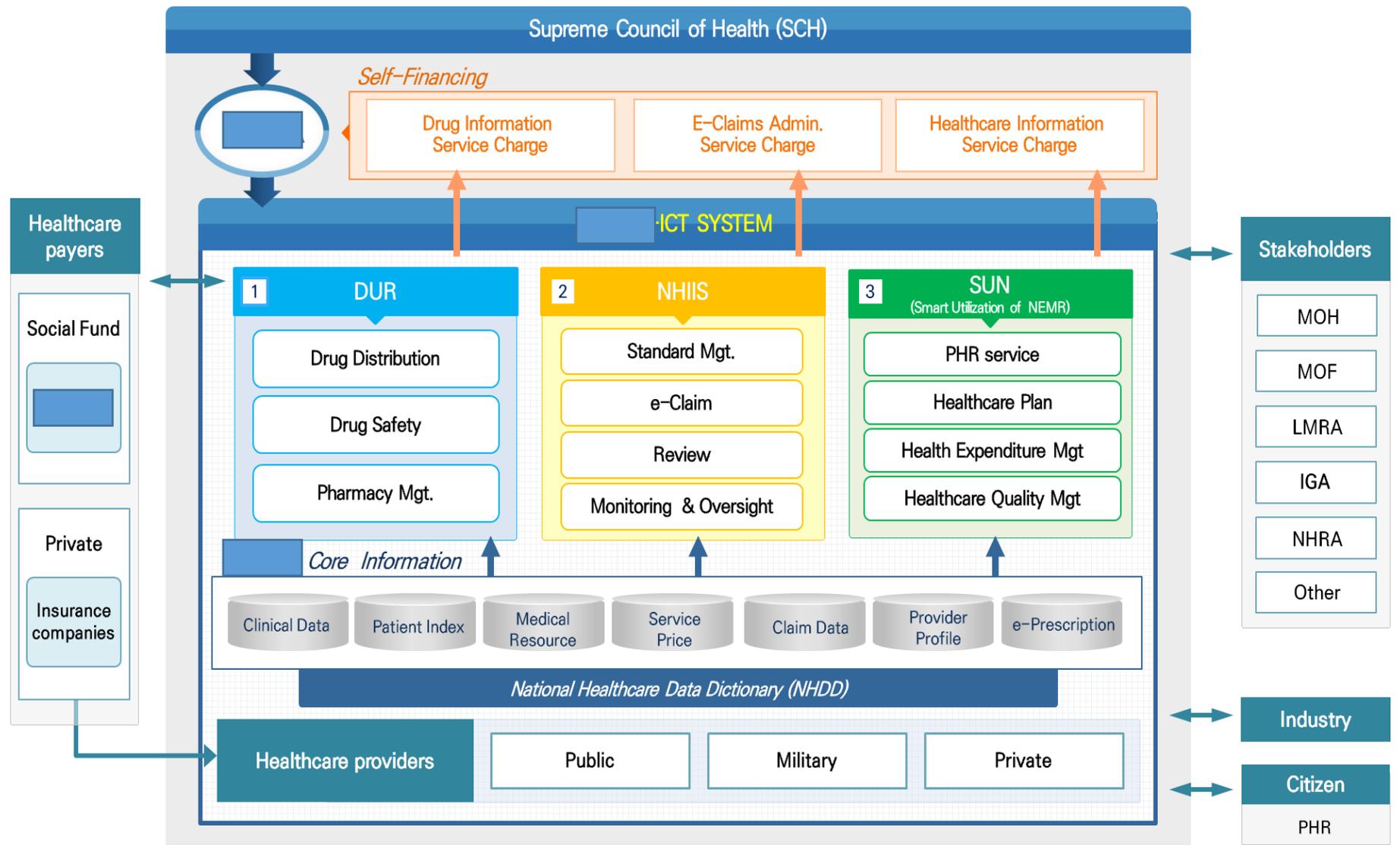
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█ “B” Country’s status

Organization	No dedicated organization for health insurance service
Law/System	None
Network	Wired/Wireless, national coverage
System	Hospital Information System exists, not interfaced
Financing	Government pays all the healthcare expenses (public hospital)

1. "B" Country's system overview



* DUR (Drug Utilization Review) NHIIS (National Health Insurance Information System) SUN (Smart Utilization of NEMR) NEMR (National Electronic Medical Record/Repository)



Law/System(1/2)

<u>Area</u>	<u>Details</u>	<u>System</u>
National ID	<ul style="list-style-type: none">• National ID system should be ready• Civil registration and vital statistics shall be linked with NID	NHIS
Standards	<ul style="list-style-type: none">• Define national unique identifier for standard information (procedure, drug, medical supplies), healthcare resource (facility, workforce, equipment), communication and disease	NHIS
Benefit package	<ul style="list-style-type: none">• Differential benefit package coverage for residents/non-residents• Benefit standard (covered/uncovered services) system• Standards in case of differential co-payment depending on specific condition (by eligibility, types of provider, inpatient/outpatient, etc.)	NHIS



Law/System(2/2)

<u>Area</u>	<u>Details</u>	<u>System</u>
Review standard	<ul style="list-style-type: none">• Review method standard (ex. Close review)• Electronic checkup (review) standard<ul style="list-style-type: none">- Claim return standard- Select checkup items- Standard to calculate reimbursement	NHIS
Relevant statutory provisions (Drug safety check)	Related laws and regulations that make it mandatory for suppliers to comply with drug safety checks when prescribing or dispensing drugs	DUR
Information publication rule	Guideline for healthcare information publication including personal information protection standard	SUN



Business Process

<u>Area</u>	<u>Details</u>	<u>System</u>
Healthcare resource information standard	<ul style="list-style-type: none">• Scope and item for business process computerization regarding healthcare resources<ul style="list-style-type: none">- Facility Address of hospitals and pharmacies; Number of hospital rooms, medical professionals, and beds; name of the owner, etc.- Workforce Name of doctor or pharmacist, license number, medical specialty, work start date, work end date, etc.- Equipment Purchase date, expiry date, price of CT, MRI, X-Ray, etc	NHIIS
DRG Standard	<ul style="list-style-type: none">• Cost calculation standard of DRG by groupers• DRG application standard (ex. Specific designation) disease	NHIIS



Organization

<u>Area</u>	<u>Details</u>	<u>System</u>
Drug distribution information management organization	An organization to monitor and manage drug distribution information on importation, supply, and warehousing reported by stakeholders	DUR
National Health Insurance Service	An organization that will take charge of NHIS's functions and roles - Define service charge regulations for self-financing management	NHIS



Information on System

<u>Area</u>	<u>Details</u>	<u>System</u>
Information linkage guideline	Technical issues regarding information linkage with government agencies will be controlled by e-Government dedicated team	Common
NEMR collection (EMR Data)	EMR data collection and accumulation(Establish National EMR)	NHIIS
HIS modification for DUR	Modification of existing HIS system of I** hospital, A** hospital, H** hospital for drug safety check, drug inventory information linkage	DUR
HIS Modification for NHIIS	Modification of existing HIS system of I** hospital, A** hospital, H** hospital for data generation according to claims forms, receiving review results, etc.	NHIIS

2. Prerequisite and Consideration

Personal Information Protection (Korea Case)

EMR Certification

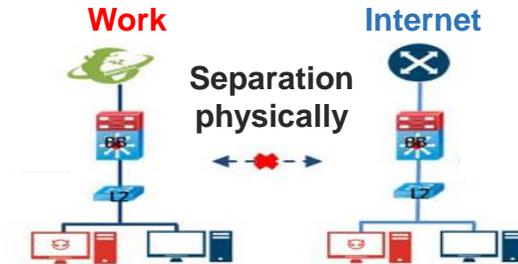
- ✓ Korea MOH will mandate all EMR to be certified



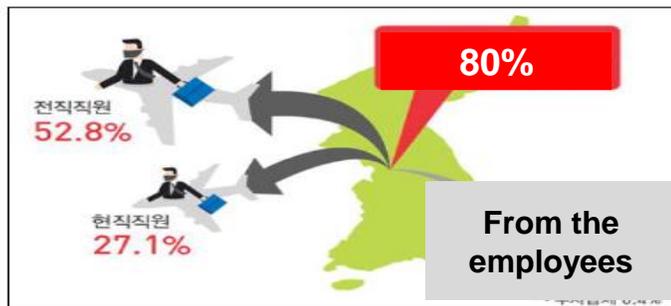
- ✓ Functionality
- ✓ Security
- ✓ Interoperability

Network Separation

- ✓ Medical network is separated



Monitor internal personal data breach



Guideline for de-identification

- ✓ In July 2016, the guideline was issued for the free use of de-identified personal data

주민등록번호	성별	입원년파	연령	병명
7****_1*****	남	2015/****	35	독감
8****_1*****	남	2015/****	35	독감
7****_2*****	여	2014/****	35	고혈압
7****_2*****	여	2014/****	35	고혈압
8****_1*****	남	2015/****	35	간염
8****_2*****	여	2015/****	35	간염

- ✓ Masking
-National ID
-Name...

Drug Usage Safety

- o Safe drug use environment establishment through drug safety check
- o Prevent misuse of medicines
- HIRA improved medical service through quality assessment. For instance, Antibiotic prescription rate for upper respiratory infection reduced from 73.3% in 2002 to 44.5% in 2013.

DUR,
the simplest and
effective ICT system

Drug Supply Management

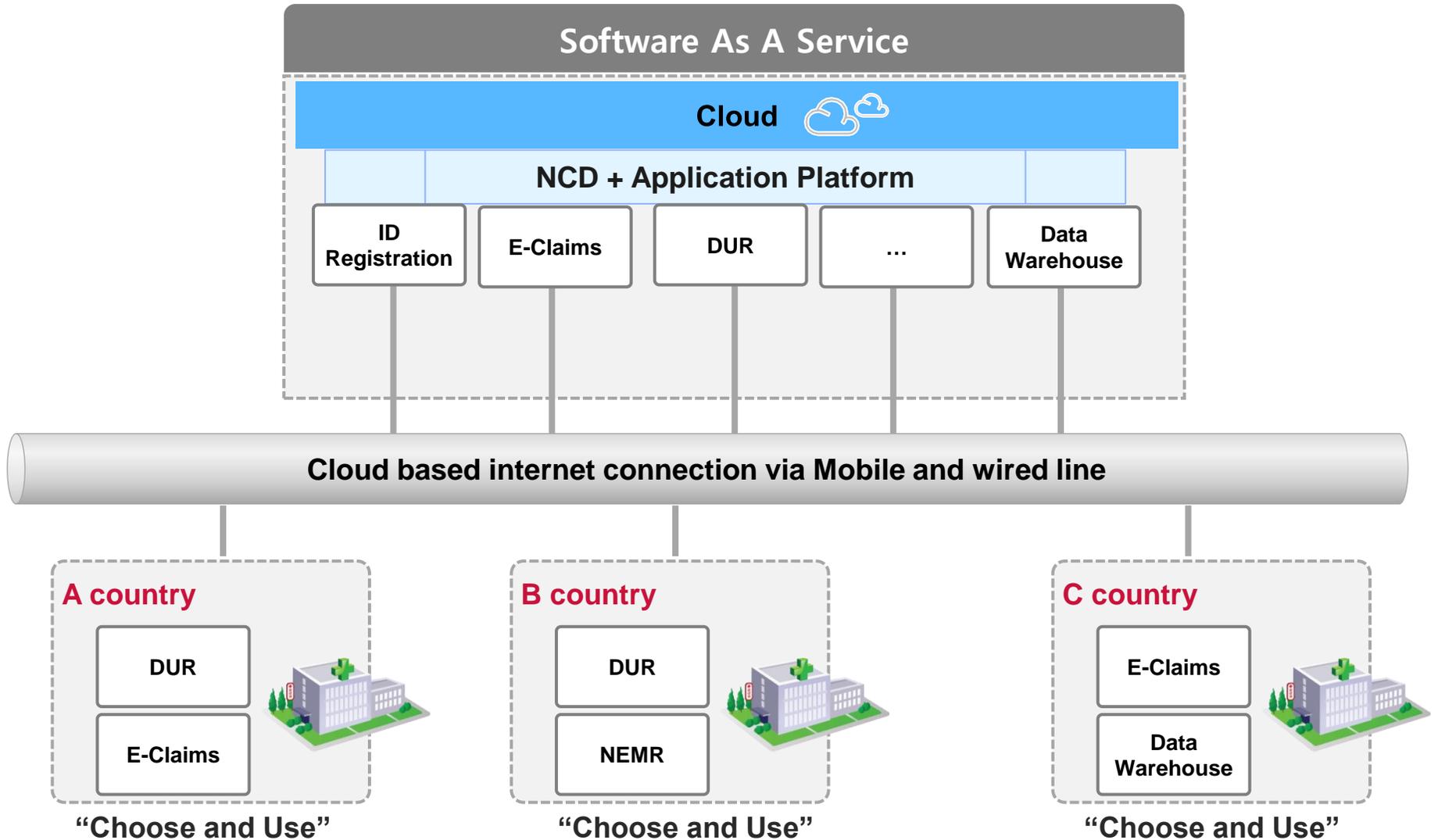
- o One-Stop Service for whole distribution process
- o Reduce work-load, Step towards paperless environment
- Korea recalls 59 more hypertension drugs for potential cancer risks in August 2018

Drug Inventory Management

- o National wide inventory management
- o Ability to keep the proper drug inventory
- 15 types of medicine supply shortage in country B in April 2018



3. Suggestion-Cloud



From Policy to ICT System

via Cooperation with Kor-Gov. Body(HIRA, NHIS)

Zero Human Error

via No Coding Development Platform

No initial investment for HW,SW

via Cloud

DUR (Drug Utilization Review) system first

the simplest and effective achievement

Potential PPP model

for the system of developing countries

Features of “No Coding Development” platform

The strengths of NCD Platform

✓ Ability to fast development

- The system operates once flowchart is drawn
- Instantly checks for operation

✓ Easy maintenance

- Easy to comprehend business using flowchart
- Changes in model will be reflected at once as it operates

✓ Improves productivity

- Reduction in project communication expenses
- Minimization of inefficiency caused by using multiple tools

✓ Improves quality

- Prevention of fundamental errors by removing java coding
- Prevention of defects through test driven development

✓ Basis of communication

- Ease of business communication through flowchart
- Rapid decision-making through fast screen development and review

✓ Outstanding flexibility

- Supports various DBMS and WAS products including OSS
- Able to use the UI tool that clients prefer