



HEALTH INFORMATION SYSTEM

ICD10 learning experiences in Cambodia.

Department of Planning and Health Information

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Background

- DPHI/MoH restructured HIS in 1992 and was officially approved in 1993.
 - – Standard
 - – Integration
 - – Simplify
 - – Reliable
- The HIS implementation started in March 1994 and became nationwide in 1995.
- **It was a paper-based HIS at all levels at that time!**
- HIS was then reviewed and revised in 1996, 1999, 2003 , 2009 and 2013 according to health sector reform and information requirements.

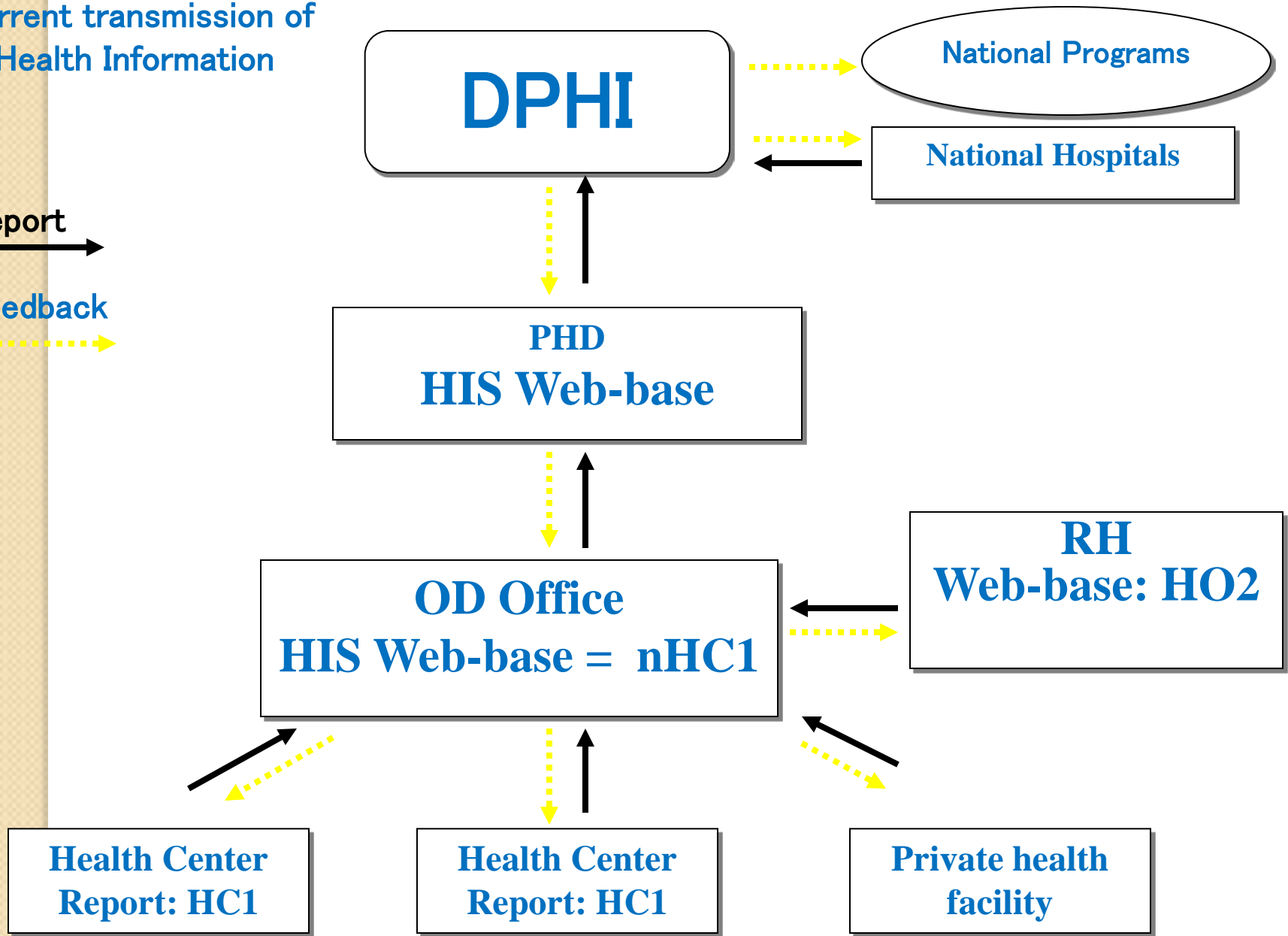
- Computerized HIS using Microsoft Access was introduced in 1996 only in central HIS office and expand to provincial health department 2 year later.
- It was then expanded to all ODs from 2000 until 2009.
- In 2010, HIS Web-base was launched and currently use for data entry at ODs, all RHs, some health centers (HCs) and certain private health facilities.

Components of HIS

- Monthly Routine Reports :
 - HC1 (Health center)
 - HO2 (Referral hospital, Provincial hospital, **National hospital**)
 - **DO3 (HO2 + nHC1)**
 - **PRO4 (nDO3)**
- Weekly Reports (Early warning system):
Cholera, Dengue fever, and Acute flaccid paralysis (AFP), ARI, Measles, Neo-natal tetanus, Maternal Death Surveillance.
- Quarterly reports: Tuberculosis and Leprosy

Current transmission of Health Information

Report
Feedback



HC1: Health center form, HO2: Hospital,



Move forward to ICD10 Implementation

Morbidity Assessment

Conducted July 2012

Objectives of the assessment

- To identify most common and top frequency of the morbidity at hospital level
- In order to unpack other diseases in HMIS monthly report.

Methods

- Collect morbidity data in hospital using Patient Medical Record System (PMRS) with disease IDC10 coding.
- Assessor team: 6 Graduated medical doctor students. Assessors reviewed patient files from Jan to March 2012.
 - ICD 10 coding for readable diagnosis.
 - Typo in other box if diagnosis can not read or unclear
 - Enter data in PMRS

Results–Data collection

Display Diagnosis	Patient files	Percentage
Clear (readable)	5250	95%
Not Clear (not readable)	227	4%
Missing (no written)	72	1%
Total patient file reviewed	5549	

Sample-Top diseases in Cambodia

No	ICD10 Description	Code	Frequency (N-5809)	
			#	%
677 Diagnosis Diseases				
1	Acute pharyngitis	J02	247	4.25%
2	Acute naso pharyngitis [common cold]	J00	191	3.29%
3	Gastric ulcer	K25	185	3.18%
4	Acute appendicitis	K35	150	2.58%
5	Pneumonia (acute) (double) (migratory) (purulent) (septic) (unresolved)	J18.9	135	2.32%
6	Admission (for) delivery, full-term, uncomplicated O80	O80	131	2.26%
7	Encephalopathy (acute) hypoglycemic	E16.2	120	2.07%
8	Unspecified multiple injuries	T07	116	2.00%
9	Essential (primary) hypertension	I10	89	1.53%
10	Typhoid fever	A01.0	88	1.51%
11	Gastritis, unspecified	K29.7	83	1.43%
12	Dyspnea	R06.0	77	1.33%
13	Traffic accident of specified type but victim's mode of transport unknown	V87	71	1.22%
14	Unspecified malaria	B54	65	1.12%
15	Intracranial injury	S06	64	1.10%
16	Other and unspecified abdominal pain	R10.4	59	1.02%
17	Diarrhea and gastroenteritis of presumed infectious origin	A09	58	1.00%
18	Traumatic cerebral oedema	S06.1	55	0.95%
19	Fetal death of unspecified cause	P95	55	0.95%
20	Other acute gastritis	K29.1	55	0.95%

Putting ICD10 in HMIS forms (Pre coding)

Workshop in Dec 2013

Attended by Senior Clinicians

Doctors review and update the list of disease with ICD10 coding and written diagnosis, resulted from the morbidity assessment . (Almost 300 diseases).

Make final list diseases with IDC10 pre coding by disease groups.

ICD-10 in HMIS, Cambodia

Cambodia MOH, HMIS Version 2.0 OPD and IPD with ICD-10

HO2

OPD Health Problems:
15 Categories
285 Health Problems

Cat.	Health Problems	#
I	General Medicine	41
II	Communicable Diseases	17
III	Tuberculosis	13
IV	Non-Communicable Diseases	18
V	Mental Health	7
VI	Gynecology	17
VII	Maternity	22
VIII	Respiratory Diseases	20
IX	Dermatology	15
X	Dental Diseases	8
XI	Ophthalmology	26
XII	ENT diseases	13
XIII	Surgery	29
XIV	Orthopedics	13
XV	Cancers	26
	Total	285

IPD Discharged Diagnosis:
15 Categories
296 Discharged Diagnoses

Cat.	Discharged Diagnoses	#
I	General Medicine	41
II	Communicable Diseases	17
III	Tuberculosis	13
IV	Non-Communicable Diseases	18
V	Mental Health	7
VI	Gynecology	17
VII	Maternity	33
VIII	Respiratory Diseases	20
IX	Dermatology	15
X	Dental Diseases	8
XI	Ophthalmology	26
XII	ENT diseases	13
XIII	Surgery	29
XIV	Orthopedics	13
XV	Cancers	26
	Total	296

Challenging ICD10

Few diseases in HMIS, do not match with ICD10

Example:

- Diarrhea with no dehydration (A09)
- Diarrhea with moderate dehydration (A09.1)
- Diarrhea with sever dehydration (A09.2)

Challenging ICD10

Example:

- **Dengue hemorrhage (A91)**
 - *Suspected dengue hemorrhage (A91.2)*
 - *Probably dengue hemorrhage (A91.3)*
- **Chikungunya (A92.0)**
 - *Suspect Chikungunya (A92.1)*
 - *Probably Chikungunya (A92.2)*

Challenging ICD10

Few diseases in HMIS, do not match with ICD10

Example:

- Injuries by weapon
- Injuries by mine

Challenging ICD10

- Limited knowledge on ICD10 among HIS and health staff
- ICD10 has not been trained **at both national** and operational levels
- Who should be the coders?
- Should ICD10-coding only at central level (Pre coding)? Or coding at health facility level?

Introduction of APN Simplified Version of ICD10

- 2 day workshop conducted on 27–28 April 2015 to introduce the Simplified version of ICD10, supported by WHO, APN and Futures Group.
- Participants: MDs, HIS staff at central PHDs ODs and HCs and other relevant stakeholders.

Consolidation from Group Discussions

Three priority questions:

- What are Strength and Weakness of Simplified ICD10 ?
- Who will code ICD10 ?
- What will be the challenge for implementation of Simplified Version of ICD10 ?

Strength and weaknesses of ICD-10 simplified version versus full-fledged ICD-10

- Strength:
 - Simpler and may be applicable
- Weakness:
 - Current version of APN Simplified Version ICD10 is suitable for OPD only, Can not be used in IPD (Can be applicable only at HCs)
 - Never been introduced to and implemented in other APN countries (except Thailand)?

WHO will do the ICD-10 coding for causes of death and morbidity?

- MoH HIS Technical Team
- Chief of medical wards
- Specialized physicians (Obstetrics, etc)
- Nurses, data entry staff etc

What will be the challenges to introduce ICD-10 simplified version or full-fledged version? What is needed regarding resources, training etc.?

- Resources:
 - Human Resources (Capacity, shortage of staff)
 - Infrastructure (ICD manual, ICT equipment, diagnostic tool etc)
 - Trainings;
- Benefit to use ICD? What for?

Future Plan

- Review Pre coding ICD10 the list of disease in HMIS monthly report forms in order to make it match to ICD10.
- Introduction the Medical Certified Cause of Death link to ICD10 mortality coding.
- Pilot in some HCs for implementation the Simplified Version ICD10 ?.

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- Thank You Very Much.