



SNOMED CT in iPesakit

Dr Bee Nah Chew

Medical Officer

University Malaya Medical Centre

Malaysia

chewbn@ummc.edu.my





Journey of SNOMED CT

1996 UK

- NHS Working Experience

2000 UK

- NHS EMR Working Experience :
- White paper QOF(Quality of Framework) in General Practice / Primary Care
- 3rd highest achievement in North Hampshire region.

**2014
Malaysia**

- My main duty was to introduce/implement high quality EMR system similar to those used by the NHS United Kingdom.



- History : Officially opened in 1968.
- Location : Petaling Jaya(PJ) South West of Kuala Lumpur.
- Tertiary university hospital
- Population: Just over 5300 staff





Department & Unit :	Clinical		30
	Clinical Support		6
	Nonclinical		16
Service Types :	Inpatient	Outpatient	Day Care
Bed Numbers :	1,300		
Outpatient Consultation /year :	> 1 million		
Total admission / year :	55,000		

*i*Pesakit

- WHY: Part of ICT strategic plan 2006
- WHO : Information Technology / Medical Record/ Clinicians/ Lab & Radiology/ Nursing.
- WHEN : 2012 → HIS
2014 → EMR
- WHERE : RUKA (OP Primary Care Medicine)
- HOW : Module by Module(Notes/ Lab/ Pharmacy)



Design: SNOMED CT & EMR

- Master Template :
- Specialist Template :
- Template Content :
- Clinical Terminology :
- Prescribing : MIMS
- Diagnosis : SNOMED CT / ICD 10
- Discharge Summary:

Implementation : Pilot Study : Training & Method

4 doctors in a batch :

- (1) SNOMED CT & Free- text
- (2) Local codes or specially specific codes
- (3) A variety of data sets each designed to meet the requirement.

SNOMED CT Implementation Stages



For clinician at USER INTERFACE :

For **acute** cases: The commonest used terms under chief complaint from A to Z. (abscess- Z0000) then by systems.

For **chronic** disease review or follow up: Only a few codes to use.

Annual review code which is nearer to their birthday

Monitoring code is in between if the result/observation is below or above the normal range.

Initial Findings :

Total of 500 consultations. Each consultation was 20-30min.

From Chief Complaint, SNOMED term was automated mapped to ICD-10 under diagnosis. (This is mandatory for statistic report to Ministry of Health, Malaysia.)

The remaining SNOMED terms was mapping by coder after consultation.

<u>Term</u>	<u>SNOMED</u>	<u>ICD-10</u>
Sore throat	Acute pharyngitis	Acute pharyngitis
Eczema	Eczema	Dermatitis unspecified
OA of knee	OA of knee	OA of patellofemoral joint
Stye of eyelid	Hordelum	Hordelum/Meibomian
URTI	Upper respiratory tract infection.	



Pilot project at RUKA (Primary Care Medicine) July- November 2014.

	Chief Complaint		Diagnosis		Past Medical Hist		Past Surgical Hist		Social Hist
	SNOMED-CT	ICD-10	SNOMED-CT	SNOMED-CT	SNOMED-CT	SNOMED-CT	SNOMED-CT	SNOMED-CT	
	coded	free text	coded	free text	coded	free text	coded	free text	coded
July	323	60	397	88	464	21	111	26	262
August	178	216	234	264	258	57	64	54	120
September	547	368	519	398	349	69	68	29	121
October	1521	865	1728	1004	1087	248	199	133	429
15th Novemebr	1253	811	1372	803	798	239	134	111	239

Showed **62 %** of the common SNOMED codes were frequently used in chief complaint; followed by **82 %** and **68%** were SNOMED CT coded in Past History of Medical and Surgery respectively.



Progress and Outcome :

- July 2014 : Outpatient clinic : clinical notes
- 2015 : Outpatient clinic : clinical notes
- 2016 : Out patient clinic : e-prescribing
- 2017 : Inpatient ward : clinical notes
- 2018 : In patient : e-prescribing and Med admin
- 2019 : Disease / Registry/
Pharmacy Closed Loop System
/ BIG DATA



Current Ongoing Projects :

- Registry : Disease : Nephrology
Cancer : Breast
- Closed Loop Pharmacy System
- Surgical Procedures in OT :
- Medical Certificate of Death :



Success :

- ✓ Hierarchies that been used : Clinical finding/ Diagnosis/Sigs & Symptoms/Procedure/Observable/Pharmaceutical products/ Body Structure/ Causative organism.
- ✓ A significant STEP FORWARD : manual format to digital.
- ✓ Capture real time consultation and enable for retrieve of information and sharing with other specialties. (No more missing folder/ waiting for notes).
- ✓ Significant of reduction of errors : prescribing / no illegible hand writing.
- ✓ Data for reporting & analysis : Audit and Research
- ✓ Storage:



SNOMED CT had been used as :		
A code system	To store clinical information	✓
An interface terminology	To capture and display clinical information	✓
An indexing system	To retrived clinical information	✓
A common terminology	To communicate in a meaningful way	✓
A dictionary	To query, analyse and report	✓
	To link to knowledge resources	✓
Extensible foundation	To represent new types of clinical data	✓



Lessons learnt : **TEAM WORK**

- ❖ User onboard : customization of requirement & support (Listen and understand the needs)
- ❖ User Training : A dedicated training team.
- ❖ Consistence information structure : efficient user friendly templates.
- ❖ Feedback and support from key stake holders.

Issues & Challenges :

- ❑ Resources : Human/ hard and software
- ❑ Knowledge and Skill:
- ❑ Support & Maintenance : Sufficient resources to continue and maintain the system and terminology over the time.
- ❑ Lack of Awareness/ Interest : as long as I provided good quality of care / see my own notes
- ❑ Developed features only base on user requests : but need to aim for BIG PICTURE – BIG DATA.





Change Management in Electronic Health Records



Source: Dennis Muntslag, The Art of Implementation, 2001



Thank you

Happy & Safe Journey

Contact detail :

[chewbn @ummc.edu.my](mailto:chewbn@ummc.edu.my)

