electronic patient records
in sri lanka

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subjects covered

- overview of health care in sri lanka
- early attempts at ePR
- initiatives from the private sector
- problems faced by the red cross
- how did snomed solve them
- issues remaining in snomed – ct
health care in sri lanka

- state health care for 60%
- 230 state hospitals with beds
- out-patients ++
- private curative services for 40%
- 45 private hospitals with beds
- family practitioners ++
early attempts at ePR

- in south asia **ePR** is in its infancy
- even **manual record-keeping** is rudimentary
- **WHO advocates** for improved records
- 2003 – several **MOH initiatives** started
- 2005 – WHO uses **tsunami mandate** to install ePR systems
- none of these systems had **long-term success**
early attempts at ePR

2003 MOH: polonnaruwa, kurunegala, anuradhapura
2005 WHO: karapitiya, matara, ampara, trincomalee, batticaloa
why early systems failed

- databases too complex
- resistance from clinical staff
- infrastructural and environmental problems
private sector initiatives

- austrian / swiss / norwegian red cross – proprietary software
  - currently 26 hospitals running

- sri lanka government (ICTA) – open-source software
  - 5 hospitals running, 6 more in planning
recent developments

2006-9: austrian / swiss / norwegian red cross (27 hospitals in east)

ICTA: 5 pilot hospitals in sabaragamuwa province
problem faced by red cross

- clinical staff refused to use ICD to code diagnoses
- health ministry insisted on ICD for statistics
- free-text input not a viable alternative
## Certain Infectious and Parasitic Diseases

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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| A18.2 | **Tuberculous peripheral lymphadenopathy**  
Tuberculous adenitis  
*Excludes:* tuberculosis of lymph nodes:  
- intrathoracic (A15.4, A16.3)  
- mesenteric and retroperitoneal (A18.3)  
  tuberculous tracheobronchial adenopathy (A15.4, A16.3) |
| A18.3 | **Tuberculosis of intestines, peritoneum and mesenteric glands**  
Tuberculosis (of):  
- anus and rectum† (K93.0*)  
- intestine (large)(small)† (K93.0*)  
- retroperitoneal (lymph nodes)  
Tuberculous:  
- ascites  
- enteritis† (K93.0*)  
- peritonitis† (K67.3*) |
| A18.4 | **Tuberculosis of skin and subcutaneous tissue**  
Erythema induratum, tuberculous  
Lupus:  
- exedens  
- vulgaris:  
  - NOS  
  - of eyelid† (H03.1*) |
Why are some diagnoses coded with two codes (dagger and asterisk system)?

ICD-9 introduced a system, continued in ICD-10, whereby there are two codes for diagnostic statements containing information about both an underlying generalized disease and a manifestation in a particular organ or site which is a clinical problem in its own right.

E.g. in rubella encephalitis, rubella is the underlying generalized disease and encephalitis is the manifestation of this disease in the brain. The underlying disease is coded with B06.0+ (rubella with neurological complications) and G05.1* (encephalitis, myelitis and encephalomyelitis in viral diseases classified elsewhere). If dual coding is not used, the dagger code is given preference and rubella encephalitis is coded with B06.0. The use of the dagger does not make sense in this case.

There is an important change in the dagger and asterisk system from ICD-9 to ICD-10. In ICD-9 only codes that were marked with a dagger in the Tabular List could be used as dagger codes. However, in ICD-10 all codes without an asterisk can become dagger codes if dual coding makes sense. This can easily be seen from "glaucoma in aniridia" for which the Alphabetical Index provides following codes: Q13.1+ H42.8*. Q13.1 carries no dagger in the Tabular List. On the other hand it is not possible to add an asterisk to codes which do not carry an asterisk in the Tabular List.
how did snomed solve it

- concept groups allowed appropriate terms to be selected – event, findings, disorder, procedure
- synonyms user-friendly for staff whose mother-tongue was not English
- cross mapping to ICD 10 codes satisfied official requirements
Findings:
138108008 (Accommodation dependency [& housing]) or (housing dependency scale)
138117008 (Living in hostel) or (in sheltered accommodation)
138172005 (Home problems) or (unhappy childhood)
138231003 (Business: [worries] or [ceased: [financial] or [personal] or (partnership problems) or (work worries)
138232005 (Medical problems at work) or (excess sick leave)
147156003 (Apgar at 10 minutes = 1) or (bonding problems)
152302000 (Patient registration - ghosts) or (moved away)
158127006 [D]Hallucinations
160494003 (Separated (& [from cohabitee]) or (left home: [husband] or [wife] or [cohabitee]))
160694007 (Transport problems) or (no car)
160794002 ((Marital: [conflict] or [disharmony]) (& [row with wife]))
160795001 (Spouse: [unsympathetic] or [inattentive]) or (maladjustment to married life)
160796000 (Marital reconciliation) or (cohabitee returned) or (spouse returned home)
160834007 (Domestic: [stress] or [problems] or [unsettled]) or (tower block syndrome) or (wife unable to cope)
160844009 (Ran away) or (eloped)
160950003 (Relative - mental handicap) or ([Downs] or [Mongol] child in family)
conclusions

- individual patient care
- care of populations – epidemiology
- cost – effectiveness
portable/mobile solutions

iPhone access

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new patients are first registered before seeing the doctor
paperless registration desk

registering a patient

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admission desk

nurse admits the registered patient
paperless OPD – large hospital

some doctors’ tables are paperless
paperless dispensaries

some dispensaries are also paperless
paperless OPD – small hospitals

smaller hospitals benefit from improved documentation
paperless wards

some wards are also paperless
paperless wards

smaller hospitals benefit from improved documentation
admission desk

new patients are first registered before seeing the doctor

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manual records

before ePR
thank you

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