

electronic patient records in sri lanka



hospital health information management system

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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

ICD 10 daggers and asterisks

CERTAIN INFECTIOUS AND PARASITIC DISEASES

- 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*)

daggers and asterisks explained

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

snomed – a work in progress

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 returnedhome)
- 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

simplicity



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iPhone access

out patient registration



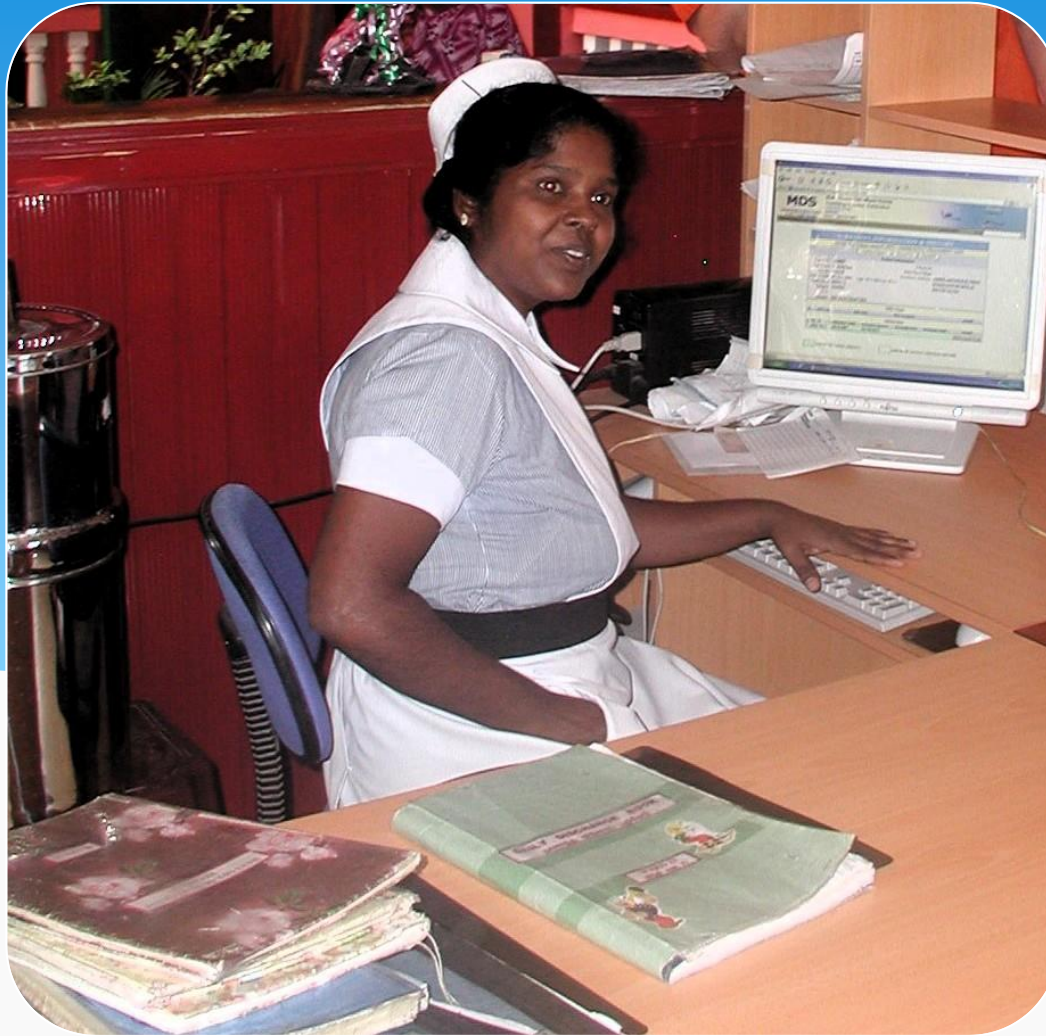
new patients are first registered before seeing the doctor

paperless registration desk



registering a patient

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



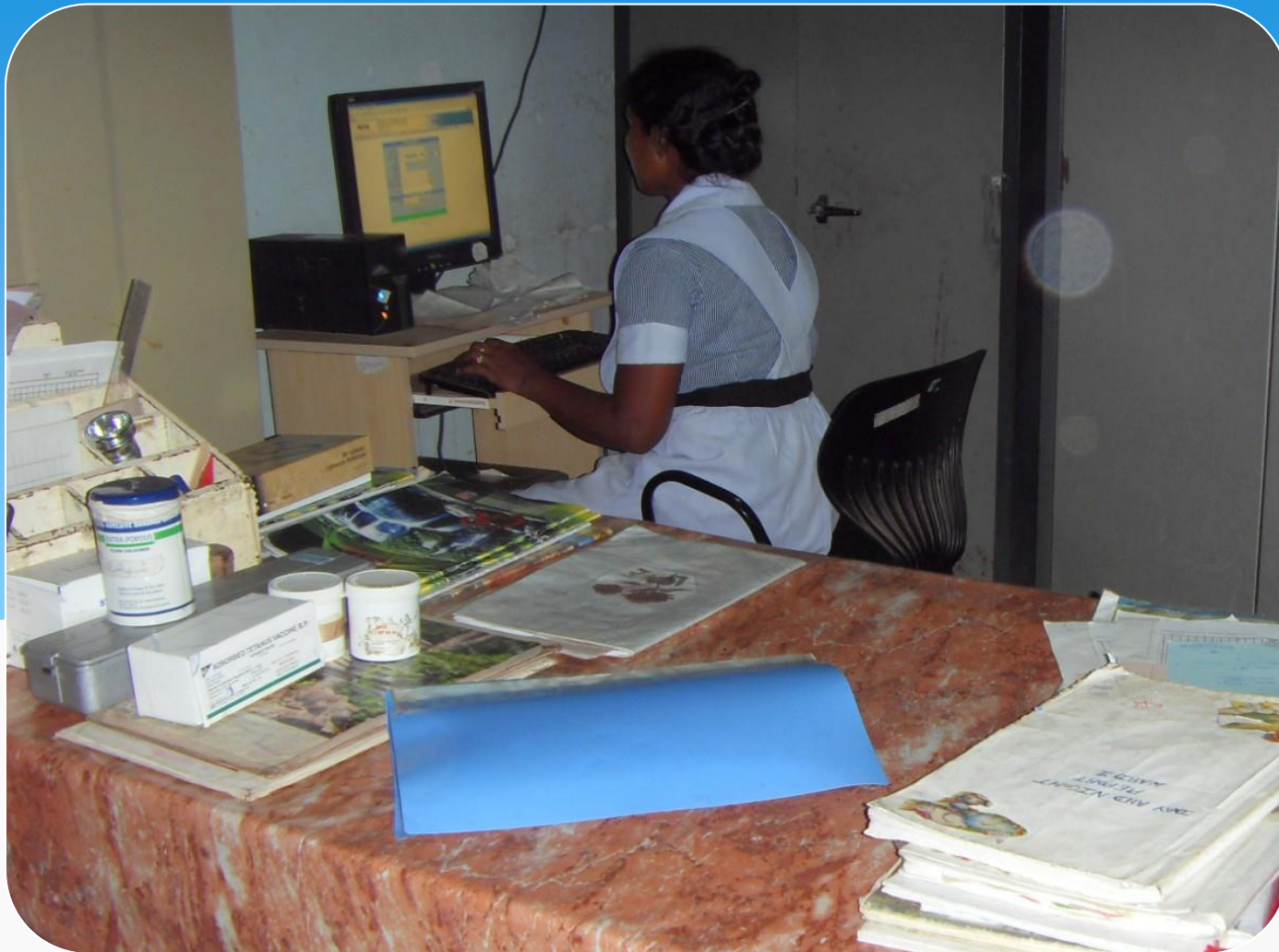
smaller hospitals benefit from improved documentation

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

OPD



paperless

OPD



paperless

OPD



paperless

OPD



paperless

manual records



before ePR

thank you



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lunar technologies

sri lanka