

GOSSCON 2011

**Overview of Open Source Software in
Healthcare**

by Dr Molly Cheah

What is stalling the use of open source software (OSS) in healthcare in Malaysia?

Factors Stalling Adopting OSS

- Bureaucracy and Politics - The question for any open source project becomes, do you fight from the bottom-up or from the top-down? Seek support from small groups with small bureaucracies, or work to create standards everyone will follow?
- Proprietary dominance, advantage and Politics - Few companies in the OSS movement are big enough to support large bureaucracies, which means proprietary vendors continue to rule the day.
- Cost and Road Maps – Lack of clear developmental road map with defined cost outline are open to piece-meal implementations, sub-standard deployments and unaccountable cost over-runs.
- Mind set – Failure to have open minds, refusal to accept evidence of success and reluctance to educate oneself may be the most crucial factor of all.

Bureaucracy - Top-Down

Example

Connect

What is CONNECT?

- An open source software solution that enables health information exchange in the U.S. healthcare system, both locally and at the national level.
- Was developed by >20 federal agencies starting in 2007 to support their health-related missions.
- Enables secure electronic health data exchange among healthcare providers, insurers, government agencies and consumer services.
- Employs Nationwide Health Information Network's nationally-recognized interoperability standards and services to ensure that health information exchanges are compatible with other exchanges throughout the country.

Current Status of CONNECT

CONNECT was released as an open source software for use throughout the industry within a year of its development by the federal agencies.

Today, the CONNECT open source community comprises of more than 2,000 organizations – including federal agencies, states, healthcare providers, insurers, health IT vendors – all working together to improve the CONNECT solution.

The solution has received many awards for innovation, including the *Wall Street Journal's* Technology Innovation Award for Healthcare in September 2010.

CONNECT and Open Source

**CONNECT Code is Released Under
the New BSD License**

Release as Open Source April 2009

**CONNECT Open Source Community Announcement
June 2009**

CONNECT Community Events

CONNECT Training Seminars/Webinars

CONNECT Code-A-Thons

CONNECT Community Focus

Getting organizations into production exchanging health
information

NHIN Exchange based production

Non-NHIN Exchange based production

<http://www.connectopensource.org>



NHIN Exchange and CONNECT



The Nationwide Health Information Network (NHIN) is a set of standards, services, and policies that enable secure health information exchange over the internet.

NHIN Exchange connects a diverse set of federal agencies and private organizations to securely exchange electronic health information using the NHIN services. (For example: SSA – MedVirginia, DoD, VA and KP)



•CONNECT is a federally funded and developed open source reference implementation of the NHIN Exchange standards and services.

•CONNECT is using an effective public – private collaboration to create a secure, standard platform for health information exchange

•NHIN Exchange participants save resources by using CONNECT instead of developing their own implementation of the NHIN Exchange standards and services

<http://www.connectopensource.org>

CONNECT Wins Awards

- 2010 GOSCON Individual Contributor Award*
- 2010 GOSCON Open Source in Government Award for Best Intergovernmental Collaboration
- Wall Street Journal 2010 Technology Innovation Award for Health IT
- GCN Award 2010
- CMIO Innovation Award*
- 2010 Nextgov Award*
- Finalist for the 2010 Excellence.gov Award
- Recipient of the 2010 Intergovernmental Solutions Award
- Federal Computer Week Fed 100*
- Federal Computer Week Rising Star*
- AFFIRM Special Leadership Award*
- InformationWeek Government Innovation Award
- LISTA National Latino Technology Achievers Award*
- Linux Medical News Freedom Award
- InfoWorld Top 100 IT Projects of 2009

Bureaucracy - Bottom-Up

Examples

SIPPS

PCDOM PrimaCare

Sistem Informasi Program Pap Smear

A Pilot Project for a Call-Recall System for National Population-based Cervical Cancer Control Programme.

General Objective:

To study the feasibility of a population strategy – its organisation, acceptability to the public and effectiveness in terms of improving coverage for Pap Smear for target women as a response to calls and reminders sent from the system.

Pilot Areas: Mersing district, Johor

Klang district, Selangor

Timeline: 2008 – 2011

Target group: Women, 20 - 65 years

SIPPS Project Design

SIPPS manages a web-based Call-Recall System and the Pap Smear Registry – system sends invitations to the women in the districts to do their pap smears, response and actions are then tracked.

The system has published API to enable external applications to submit data directly from their applications and via web forms.

Redhat Enterprise Linux

Apache web server v2

PHP language v5

CodeIgniter MVC framework

PostgreSQL RDBMS v8

Facilities Connecting to SIPPS

MOH Health Clinics

Mersing – 6, Klang – 9

Labs

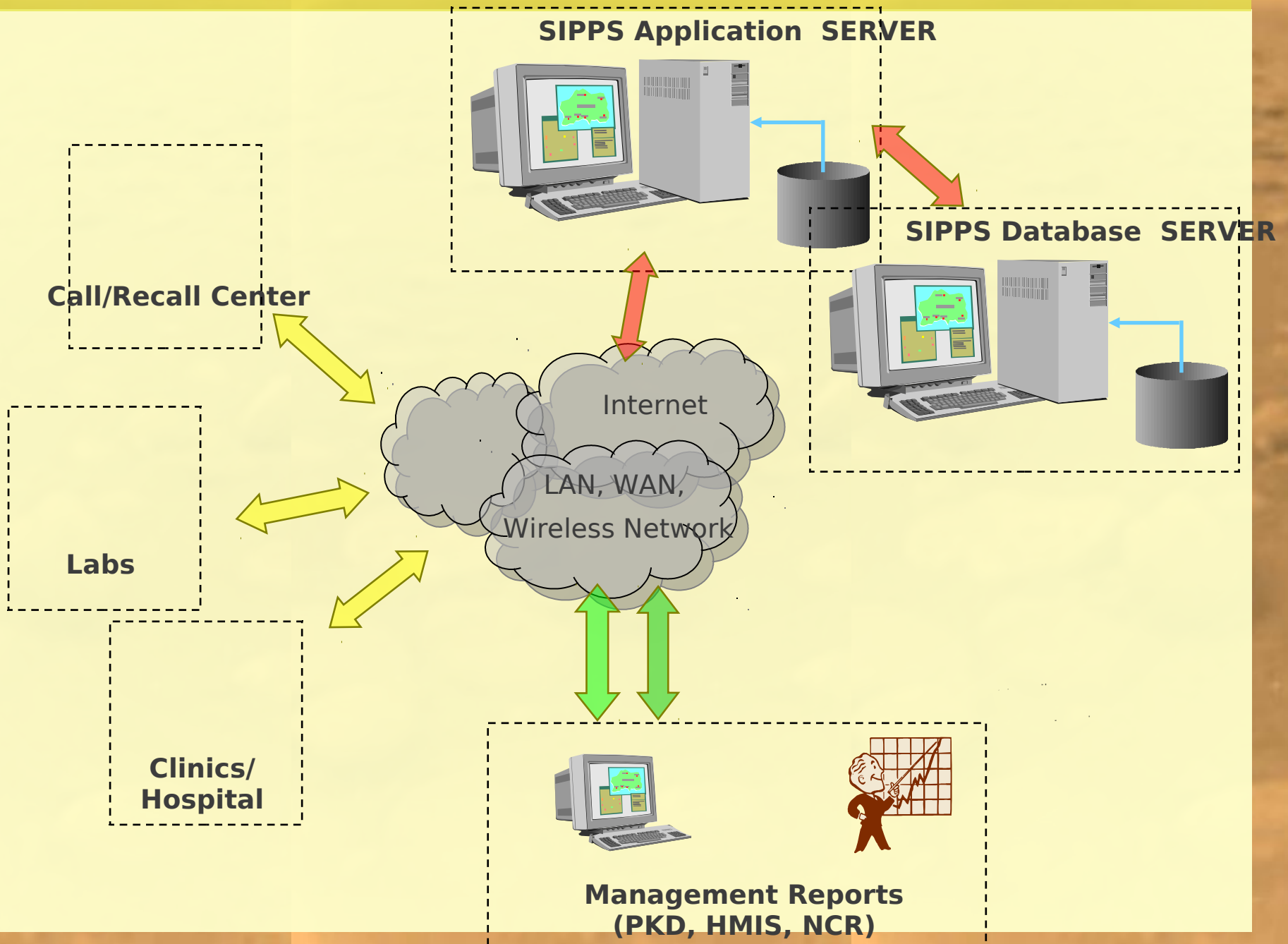
Makmal Kesihatan Awam Sg Buloh

Makmal Kesihatan Awam JB

Private Clinics

Mersing – 1 , Kelang - 63

SIPPS Network



SIPPS Project

SIPPS version 1.0.8 Build 219



SIPPS

Please Login to Proceed :

Login ID:

Login Password:

Login



Copyright @ 2008 - Ministry of Health Malaysia

SIPPS Dashboard

Call Dashboard

[Contract All](#) | [Expand All](#)

Total Call Summary For All Districts ↓

Items	Year To Date	Overall
Total Names In Database		160784
Letters Sent	13800	130993
Call Response	1351(List)	17255
Responded & Pap Smear Taken	1191(List)	12075
First Reminders Sent	12758	97631
Second Reminders Sent	569	6720
Third Reminders Sent	964	1405

Summary By District ↓

Klang	
Letters Sent	: 120000
Responded	: 15887
First Reminder	: 94828
Second Reminder	: 5134
Third Reminder	: 0

Mersing	
Letters Sent	: 10993
Responded	: 1368
First Reminder	: 2803
Second Reminder	: 1586
Third Reminder	: 1405

PCDOM PrimaCare

Electronic Health Records System with Clinic Management System
Web-based application
Runs on any device with Javascript capable web browser, e.g.

Desktop

Laptop

Tablets

Smartphones

<http://www.primacare.org.my/>

PrimaCare Technologies

POSIX compliant operating system, e.g. Linux

Apache web server v2

PHP language v5

CodeIgniter MVC framework

PostgreSQL RDBMS v8

Jquery Javascript framework

Clinical Codes and Classification

ICD-10

(<http://apps.who.int/classifications/icd10/browse/2010/en>)

ICPC-2

(only available if user pays a license to WONCA)

LOINC – Logical Observation Identifiers Names and Codes
(<http://loinc.org>)

ATC – Anatomical Therapeutic Chemical
(http://www.whocc.no/atc_ddd_index/)

MDC - Malaysian Drug Code

National Health Data Dictionary – MOH Malaysia

PCDOM PrimaCare Wins Award

PCDOM PrimaCare won the Open Source Software Award at the fifth annual ICT Excellence Awards, given out by the Energy, Water and Communications Ministry, the Malaysian National Computer Confederation (MNCC) and telecoms carrier Maxis Bhd.

<http://star-techcentral.com/tech/story.asp?file=/2004/9/4/technology/8827293&sec=technology>

Login Screen



Welcome to PCDOM PrimaCare

Login

Username

Password

Location

PrimaCare © 2001-2008. All rights reserved.

Main Page



primary care the way to family health

Dr. Molly Cheah - Head Office - ICPC-2 [logout]

version 4.0.10 build 3625 [about] [contact] [bugs] [help]

Modules [-]

- Main Page
- System Administration
- Patient Management
- Clinic Management
- Pharmacy Management
- Asset & Supply Management
- Schedule Management
- Billing Management
- Financial Management
- Medical Resources

Today's Patient Queue

Time	Patient Name	Consultant	Priority	Remarks	External Ref.
10:02	Ang Mei Leng, Janet (06-11-2003)	MC	Regular	High fever	
10:15	Adibah Hayati binti Bakar (12-08-1986)	MC	Regular		
10:30	Aminah bte Abdullah (04-04-1974)	MC	Appointmt.		
13:00	Tee Chee Khoo (29-06-1961)	MC	Regular		1286

Post-consultation Queue

Time Ended	Patient Name	Note to Staff	Consultant
<i>No post-consultation queues at the moment.</i>			

Pending Lab Results

Date	Patient	Lab Package	Rcv.
<i>No pending lab results.</i>			

Pending Imaging Results

Date	Patient	Imaging
<i>No pending imaging results.</i>		

Pending Procedure Results

Date	Patient	Procedure
<i>No pending procedure results.</i>		

To Do List

Due Date	Priority	Description
<i>No todo available.</i>		

PrimaCare Copyright © 2001-2008 PCDOM. All rights reserved.

Overview Sheet


primary care the way to family health

User: Dr. Molly Cheah
Overview Sheet
[help] [close]

Patient



Ang Mei Leng, Janet
06-11-2003 [Female]

Consultation [-]

Start/Continue

Biodata [-]

- Overview Sheet
- Problem List
- Demographic Info
- Family Relationship
- Billing Info
- Upload Portrait

OTC Prescr./Disp. [-]

Start/Continue

History [-]

- Past Consultations
- Past Vitals
- Past Procedures
- Medical History
- Medication History
- Psychiatric History
- Menstrual History
- Drug Allergies
- Other Allergies
- Immunisations
- Family History
- Social History
- Special Modules

Others [-]

- Medical Certs
- Referrals
- Doctor's Remarks
- Disable Patient
- Close This File

 More choices on the left panel. Click on *Start Consultation* to launch a new window to start a new consultation session or to continue unfinished session.

Personal Information		Appointment		
Age	8 years 16 days	Date	Time	Doctor
NHFA No.		22-11-2011	10:02	Dr. Molly Cheah
IC No.	031106-10-2841			
Marital Status				
Occupation				

Current Medication			Allergies	
Date Started	Date Stopping	Drug	Generic Drug	Reaction
No current medication.			No drug allergies recorded.	
			Allergen	Reaction
			No non-drug allergies recorded.	

Problem List			Past Medication		
Date	Problem		Date Started	Date Stopped	Drug
22-04-2010	Feverx2d Diarhoeax2d-5ep Vomitingx1-7-8ep A/W Gidiness & Lethargy		No past medication recorded.		

Medical History			Recent Vitals		
Date of Onset	Condition	Status	No previous vitals recorded.		
No medical history available.					

Social History			Immunisations Given	
No social history available.			Date	Immunisation
			07-01-2004	Poliomyelitis
			07-01-2004	Diphtheria, Pertusis, Tetanus
			07-01-2004	Haemophilus influenza type b
			07-12-2003	Hepatitis B
			10-11-2003	BCG
			08-11-2003	Hepatitis B

Doctor's Remarks		Family History		
Date	By	Date of Discovery	Relationship	Problem
No doctor's remarks available.		06-01-2008	Daughter	Disease;lyme
		06-01-2008	Daughter	Dengue

Lab Package			Imaging		
Date	Package	Result	Date	Imaging	Result
24-03-2008	Urine Test	alb neg	24-03-2008	Views	normal

24

Consultation Episode

Ang Siew Lin, Linda
(1990-08-06) 21.3 years : Female

PCDOM PrimaCare

General
Outpatient
drcheah



- PROGRESS
- Complaints
- Vital Signs
- Physical Exam
- Lab Orders
- Imaging Orders
- Procedure
- Pre-diagnosis
- Diagnosis
 - Categorised
 - Searchable
- Prescription
 - Categorised
 - Searchable
 - Packages
- Immunisation
- Procedures
- Referral
- Upload Files
- Modules
- Med Certificate
- Notify Auth.
- ANTENATAL
- Antenatal Info

CONSULTATION - PROGRESS

CURRENT PREGNANCY

Gravida	LMP	Gestation	EDD (LMP)	Termination	Outcome	Remarks
2	2011-05-03	29.1 weeks	2012-02-07			

ANTENATAL CHECKUPS

None recorded

POSTPARTUM CARE

None recorded

COMPLAINTS

Code	Title	Duration	Notes
A03	FEVER	2 days	High fever.

VITAL SIGNS

Temperature	38.6	°C	Pulse Rate	beats/min
BP systolic	132	mm Hg	Height	cm
BP diastolic	92	mm Hg	Weight	kg

PHYSICAL EXAMINATION

None recorded

LAB ORDERS

None recorded

IMAGING ORDERS

None recorded

DIAGNOSIS

Code	Title	Type	Notes
A90.	Dengue fever [classical dengue]	Primary	Suspected dengue

PRESCRIPTIONS

Generic Name	Dose	Frequency	Instruction	Duration	Quantity
Paracetamol	500 mg Tablet				
Indication : Fever					
Caution : None recorded					
2.00 tablet(s) qid (four times a day) after food for days 20.00 tablet(s)					

MODULES

No.	Code	Form	Submodule Name	Description
-----	------	------	----------------	-------------

REFERRAL

None recorded

Date started yyyy-mm-dd
 Time started hh:mm
 Date ended yyyy-mm-dd
 Time ended hh:mm

Additional Notes to Consultation

External Reference

Please ensure that all information are correct. You will not be able to return to this page after clicking the [End Consultation] button.

Patient Consultation

primacare
primary care the way to family health

Consultant: **Dr. Molly Cheah**
Patient Consultation [help](#)



Ang Mei Leng, Janet
06-11-2003 [Female]
Medical History

To complete this session, complete the Notes and select [End Consultation]. This will bring up the Billing page.

Medical History

Date of Onset	Condition	Status	Summary
No medical history available.			

List of Reason for Encounter

Complaint	Duration	Notes	CPG
FEVER	2 day(s)	High fever.	[Physical Examination] [Investigation]

Vitals

Temperature (C)	38.5
Pulse Rate	85
BP Systolic	
BP Diastolic	
Respiration Rate	
Weight (kg)	21.5
Height (cm)	140
BMI	11
Head Circumference (cm)	
Waist Circumference (cm)	
Vision	Left: Right:

List of Diagnosis

Diagnosis	Diagnosis Type	Remark	CPG
Dengue	Primary	Suspected dengue. Red spots...	infectious Notify!

Consultation: Summary

[Save Summary Notes](#)

Additional Notes to Consultation

Notes to Staff

Date Started * 02 | July | 2008

Date Ended * 22 | November | 2011

Time Started * 11 | 29

Time Ended * 22 | 51

External Reference

Transfer ALL diagnoses to Medical History and Family History.

[End Consultation](#)

Warning: Please ensure that all information are correct. You will not be able to return to this page after clicking the [End Consultation] button.

Consultation

- Reason for Encounter
- Vitals
- Physical Examination
- Lab Test
- Imaging
- Other Service
- Diagnosis
- Prescription
- Drug Package
- Special Modules
- End Consultation / Note

Related Items

- Medical Leave
- Referral Letter
- Infectious Disease Notification
- Miscellaneous

General Checklist

- General Checklist Form

Women's Health

- Cervical Cancer
- Antenatal Info
- Antenatal Followup
- Antenatal Delivery Info

Immunisation

- Dispense Immunisation
- Prescribe Immunisation
- Past Immunisation

Diagnosis

Ang Siew Lin, Linda
(1990-08-06) 21.3 years : Female

PCDOM PrimaCare

General
Outpatient
drcheah



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- Notify Auth.
- ANTENATAL
- Antenatal Info

CONSULTATION - DIAGNOSIS

Code	Title	Type	Notes
None recorded			

Search term must be at least 3 characters long.

Search

Searched diagnosis codes for **dengue**. Found 2.

Diagnosis

Diagnosis *

Please select one

Type *

Primary

Further Elaboration
on Diagnosis *

The Diagnosis Notes field is required.

Enter Diagnosis

Proprietary Dominance & Politics

Example

VistA – VA & DoD

Derailing VistA

In an article, titled “Wisconsin reps try to derail VA/Defense open source health records system”

http://www.nextgov.com/nextgov/ng_20110322_3673.php

- attempt to torpedo the open source strategy by the VA
- 5 Wisconsin's congressional members wrote a letter to the VA and DoD requesting the VA to dump VistA in preference to a single commercial system for their new electronic health records.

VA's CIO, Roger Baker refused and replied that the

- “VA has a long and very successful history in developing and using EHR systems,” and
- “we have been a leader in the creation and adoption of these systems nationwide,” and
- “VistA itself has won many awards.” as a result.

VistA Wins Innovations Award

VA Wins Harvard's Prestigious Innovations Award - "This Award is sponsored by the Ash Institute for Democratic Governance and Innovation at Harvard University's Kennedy School of Government and is administered in partnership with the Council for Excellence in Government."

<http://www.va.gov/opa/pressrel/pressrelease.cfm?id=1152>

Cost & Road Map

Example

IMSS-VistA - Mexico

HHIMS (MDSFoss) - Sri Lanka

OSS in Healthcare – Mexico

Instituto Mexicano del Seguro Social

- In 2004, VistA software was obtained from the VA. It was translated into Spanish and modified to meet local needs.
- By May 2005, installation done in 12 hospitals, as part of an ongoing \$100 million information-technology development program within IMSS.
- By 2007 installation in 56 hospitals of between 50-800 beds of modified IMSS-VistA version.
- The IMSS operates 270 hospitals and more than 35,000 clinics that provide healthcare services to 40 million people in Mexico.

HHIMS to MDSFoss – Sri Lanka

- Proprietary system that was developed by the Red Cross in tsunami-affected areas in 2006 was installed in 29 provincial hospitals
- The high cost of scaling the proprietary software up for all hospitals led to the commissioning by the Government for a free and open-source version
- MDSFoss installed in 5 hospitals in Sabaragamuwa Province with several in the North-West and Western Provinces. Five more are planned near Anuradhapura and there are proposals for up to 100 more over the next two years.

HHIMS Wins Award

HHIMS will be released as MDSFoss has just won the e-Swabhimani Award for the best health software produced in Sri Lanka.

<http://www.hhims.org>

MDS Foss in Sri Lanka – Login Screen

User Name Password

Licensed to:



What is MDS Foss?

MDS Foss from NetCom Technologies is a patient record system that is easy to use in hospitals or by private doctors. Adapted from a WHO-designed database now running in 28 hospitals in Sri Lanka, it is equally at home in the out-patient clinic, the ward, the pharmacy and the laboratory as it is when producing public health reports and statistics.

Partners:



Visit www.mdsfoss.org for more details..

Fast

From a single-user laptop in a doctor's practice to a multi-user network in a large hospital, you can enter patient data faster than you can write, and show it on the screen quicker than you can find the patient's old card.

User friendly

The secret of the system is simplicity. After the half-day training course, even new computer users are able to enter patient information, and choosing from lists such as diseases, drugs or villages takes the guesswork out of data entry.

Affordable

The software license is free. The only costs are for hardware, installation and training. An optional annual fee provides hot-line support and keeps your system up-to-date with the latest developments.

Partnership

The development of MDSFoss was commissioned by the Office of the Regional Director of Health Services – Kegalle. Financial support was provided by the ICTA, Colombo.

Recording an OPD Visit

PID: 9990 Name: Pgegikn Gender: Male Status: Single Age: 20yrs 5mths Village: Kanniya

ID	<input type="text"/>
Date and time of visit	2011-04-17 11:35:35
Onset Date	2011-04-17
* Doctor	Dr. Denham Pole
* Complaints / Injury	<input type="text"/>
ICD	<input type="text"/>
Remarks	<input type="text"/>

Data Created On : 2011-04-17 11:35:35 By : Denham Pole

Annotations:

- click to edit the date by opening a calendar (points to Onset Date field)
- click to open a list of common complaints (points to * Complaints / Injury field)
- click to open a list from the ICD-10 (points to ICD field)
- Fields with these corner marks can be made larger by grab-and-pull (points to the corner handles of the * Complaints / Injury and ICD fields)
- Save first then prescribe drugs or order lab-tests (points to the Save button)

Admitting a Patient

Edit admission

Mr. A B Babu / Male / ~35yrs 10mths 4dys / Married

PID: KEGDRGPDH27

DOB: ~1976-0

Date and time of admission

2011-09-30 14:37:38

*Onset Date

0000-00-00

*Bed Head No

2011/34/34

*Doctor

Dr. Pole Denham ▼

*Complaints / Injury

Fever > 7days

*Ward

ETU ▼

Remarks

past history of appendicectomy

Date created :

2011-09-30 14:39:10

Demo User Demo User

Data accessed on :

2011-09-30 14:47:00

Demo User Demo User

Save

Cancel

Prescribing Treatment

OPD Prescription

Hospital :	Demo Hospital	Prescription ID :	66
Prescribed By:	Pole Denham	Prescribed On :	2011-11-20 11:50:36
Patient:	Mr. SAMAN Gunapala (40)	Gender/Age :	Male / 25yrs 10mths
Complaints / Injuries:	Cough and wheeze	Doctor :	Dr.Pole Denham

# Drug	Dosage	Frequency	Period
Aluminium Hydroxide 500mg (Stock:1262)	1	bd	For 1 day
Amitriptalin tabs 25mg (Stock:192)	1/2	nocte	For 2 days
Amoxicillin 125mg (Stock:1036)	1/3	Once a day	For 3 days
Amoxicillin 125 mg in 5 ml Syrup (Stock:58)	1/4	qds	For 4 days
Amoxicillin 250 mg Caps (Stock:9500)	2	tds	For 5 days
Ascorbic acid (Stock:2963)	2/3		For 1 week
Aspirin tabs 300 mg (Stock:130)			For 2 weeks
B.B CREAM (Stock:986)			For 3 weeks
Bisacodyl - Dulcolax 5 mg Tabs (Stock:131)			For 1 month

Add

Discard Back

Funding Agencies Sponsored OSS

Examples

THIRRA

GEM

OpenMRS

What is THIRRA

- THIRRA stands for
“Portable System for Telehealth and Health Informatics for Rural & Remote Areas”
Test sites:
 - Perak, Malaysia
 - Kandy, Sri Lanka
 - Kathmandu, Nepal
 - Quezon, Philippines
- MPL licensed component of PrimaCare
- Research project with PANACeA

<http://thirra.primacare.org.my/>

GEM – Generic Engine for Modules

- GEM is a Toolkit to rapidly build EHR modules. It was a research project funded by IDRC
- To develop modules on Paediatrics, OB-GYN and Basic Epidemiology in PrimaCare
- Modules can be developed by domain experts, ie health care professionals without requiring programming
- GEM was released under MPL v1.1 license
<http://gem.primacare.org.my/>

THIRRA Login

PCDOM PrimaCare Version 4.9.12 Build 235
Firefox 3.5.16 Linux - Desktop Mode to Static Server
Client IP: 110.159.156.79

PCDOM PrimaCare

Username

Password

Location

Mode

Language

Login

A [PANACeA](#) project

THIRRA Main Page

General
Outpatient
drcheah
PCDOM PrimaCare

Home Patients Pharmacy Orders Queue Reports Utilities Admin Logout

EHR Dashboard

Today's Patient Queue

Time	Patient Name (DOB)	Ref. Consultant	Priority	Remarks	Room
11:53	Ang Siew Lin (1990-08-06)	006	Regular		Consultation1
11:56	Ananda Krishnan (2011-10-04)	455	Urgent	High fever	Consultation1

Pending Lab Orders

Sample Date	Patient Name	Ref.	Lab Package	Supplier	Summary Result

Incoming Referrals

Referred Date	Patient Name	[Sex]	Birth Date	To Refer To	Specialty	Referring Clinic	Referrer

Search for Patient

Search for patient by name. Partial strings will suffice.

Name
 NRIC
 Clinic Reference

Patients List

View FULL Patients List by Alphabet

[A](#) | [B](#) | [C](#) | [D](#) | [E](#) | [F](#) | [G](#) | [H](#) | [I](#) | [J](#) | [K](#) | [L](#) | [M](#) | [N](#) | [O](#) | [P](#) | [Q](#) | [R](#) | [S](#) | [T](#) | [U](#) | [V](#) | [W](#) | [X](#) | [Y](#) | [Z](#) | [All](#)

[FULL Patients List](#)

Open Sessions

Date	Time	Patient Name	External Ref. Summary

A PANACeA project. Copyright Reserved © 2009-2011, PCDOM and IDRC.

THIRRA Immunisation

Abdullah bin Bakar,
(2009-10-12) 2.1 years : Male

PCDOM PrimaCare

General
Outpatient
drcheah

- [portrait]
- PROGRESS
- Complaints
- Vital Signs
- Physical Exam
- Lab Orders
- Imaging Orders
- Procedure
- Pre-diagnosis
- Diagnosis
 - Categorised
 - Searchable
- Prescription
 - Categorised
 - Searchable
 - Packages
- Immunisation
- Procedures
- Referral
- Upload Files
- Modules
- Med Certificate
- Notify Auth.

CONSULTATION - PRESCRIBE IMMUNISATION

Generic Name Dose Frequency Indication

Vaccine	Month										
	0	1	2	3	4	5	6	12	18	24	
BCG	2009-10-12										
Hepatitis B	2009-10-12 1st Dose	2009-11-13 2nd Dose					Select 3rd Dose				
DPT			2009-12-12 1st Dose	2010-01-11 2nd Dose		Select 3rd Dose			Select 1st Booster		
Hib			2009-12-12 1st Dose	2010-01-11 2nd Dose		Select 3rd Dose			Select 1st Booster		
Poliomyelitis			2009-12-12 1st Dose	2010-01-11 2nd Dose		Select 3rd Dose			Select 1st Booster		
Measles							Select 1st Dose				
MMR								Select			

- Previously administered
- Current session
- Not administered
- Current selection

About OpenMRS

OpenMRS is a community-developed, open source, enterprise electronic medical record system platform. This is to respond specifically to those actively building and managing health systems in the developing world, where AIDS, tuberculosis, and malaria afflict the lives of millions.

“OpenMRS is used in 5 of the countries where we work to support clinical care, reporting and clinical research for HIV, MDR-TB and heart failure treatment.” - Partners In Health

<http://openmrs.org/>

Thank You

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