Free and/or Open Source Software

in

Health

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Outline

- What is FOSS?
- What are the four freedoms?
- What is the spectrum of FOSS?
- Issues in health information management
- How can FOSS address these issues?
- Case studies

What is FOSS?

- FOSS may be seen from several perspectives/levels
    - as a software product
    - as a methodology
    - as a philosophy

FOSS as Software

- at the most obvious level, and to many people, FOSS is about software that complies with the four freedoms as defined by the Free Software Foundation

- By 'freedom' it refers to
  - 'free speech' (liberty)
  - not 'free beer' (free product or service)

Freedom 0

- The freedom to run the program, for any purpose.

Freedom 1

- The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.

Freedom 2

- The freedom to redistribute copies so you can help your neighbor.

Freedom 3

- The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

FOSS as a Methodology

- Inherent in achieving the four freedoms are processes which define the development of open source software
  - community building
  - sharing of knowledge
  - participation
  - consensus building

FOSS as a Philosophy

- Underneath all the technical aspects of software and the methodology are guiding principles
  - Freedom of choice
  - Critical thinking
  - Man's ability to understand his world and to transform it for his own good and for his community's good
  - Total human liberation

FOSS is Many Things to Many People

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Spectrum of FOSS

- Based on these definitions, we may then draw the spectrum of FOSS to include
  - open standards
  - open software
  - open content
- This talk is not about the rest of the spectrum but the audience is encouraged to read more about them. For now we will focus on software and how it relates to the health sector.

Health Information Management

- Health is one of the most important sectors of society.

- All citizens, by their very existence, interact with the health sector.

- Health is an information intensive industry, yet it is one of the slowest sectors to adopt information technology for improving its operations.

Why Slow?

- Health information is complex. Unlike banking, it is difficult to capture the artifacts of a health encounter in a way that is easy and non-disruptive.

- Health professionals are not trained with information technology as much as the other professionals. There is a steep learning curve for them in imbibing IT in their practice.

Why Slow?

- There is no standard interface. One electronic patient record will have a different look-and-feel compared to another. This makes shifting from one EPR to another difficult.

- There is no standard terminology. A 'pneumonia' in one hospital may be called 'pnumonitis' in another and computers cannot predict these syntactic and semantic variations in a reliable manner.

Why Slow?

- Most current electronic health information systems are proprietary and expensive. Small clinic practices cannot afford it.

- Senior doctors, the leaders of the health sector, are often reluctant to use new systems for documentation, especially if they are going to be expensive for the facility.

Some Benefits of IT in Health

- Portable records – patient need not undergo repeat procedures when transferring health facilities

- Improved security – computerized systems can track who access electronic records; paper records cannot.

- Statistics – electronic data lends to easier data consolidation and analysis than paper records

FOSS for Health: Build Capacity at a Low Price

- The usual problem is cost : should I pay for an expensive health information system and eventually risk failure because of the steep learning curve?

- Solution: use a FOSS-based electronic health information system while your staff goes through the learning process

  – invest your scarce resources to developing staff capacity rather than buying proprietary software

FOSS for Health: Own your Code

- Most of the problems with proprietary software is that they usually will still require customization to fit your facility's needs

- These customizations come with a steep price tag.

- By the time, they're done with the customization, you will still be at square one because you still need to train your staff.

FOSS for Health: Own your Code

- With proprietary software, the source code is owned by the software company. You will need to rely on their existence to continue using their system. You may need to pay annual licenses to keep your system running. You are dependent on them.

- With FOSS, you own your source code so you can hire anyone you wish to maintain your HIS. You have more choices.

FOSS for Health: Security

- Proprietary systems employ their own type of security which you have to assume is actually secure.

- FOSS systems can demonstrate how they actually implement security by showing you the source code.

FOSS for Health: Dynamic and Flexible

- Being free and within your control, FOSS systems can adjust to any changes in the environment without necessarily burdening you with unpredictable expenses.

- If the government adds a new reportorial regulation, it is just a matter of getting inside your FOSS system and pulling it out. For proprietary systems, you are dependent on the company providing service before you can do the same.

Case Studies

Integrated Surgical Information System

University of the Philippines Manila

Philippine General Hospital

Contact: melalapitan@gmail.com

THE DEPARTMENT OF SURGERY ELECTRONIC PATIENT REGISTRY

Home   **Login**   **Credits**

LOGIN

LOGIN NAME

PASSWORD
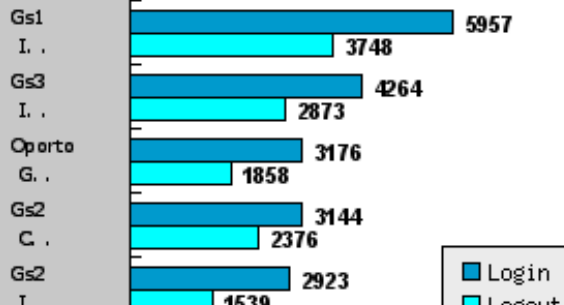
SUBMIT   CLEAR

ISIS User Guides

- Use your own username and password. Do not share.

- Always logout after using ISIS.

- Clinical abstracts must be accomplished within 24 hours of admission.

- Do not send home patients without an ISIS-generated discharge summary and a printed ISIS-generated Philhealth Patient Record form in the chart.

- Use sheets with the Department of Surgery and PGH logos for clinical abstracts and discharge summaries. Sheets are available at the Uro office.

- Report data editing in the Report Bug module, not in the Post Message.
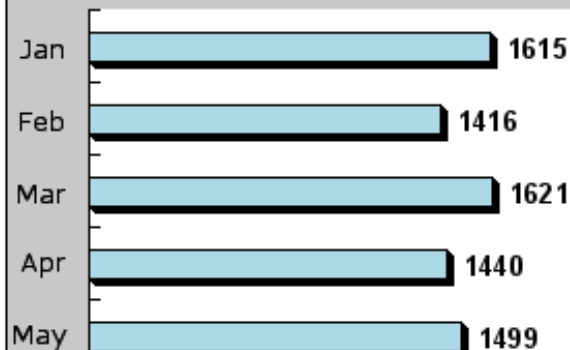
ISIS User Login/Logout Top 10 Loggers
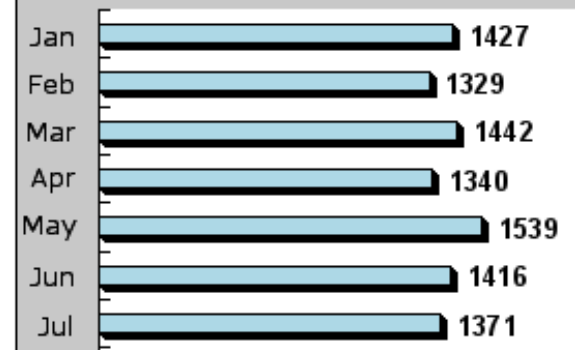From January 2006 Onwards

Gs1	5957
I. .	3748
Gs3	4264
I. .	2873
Oporto	3176
G. .	1858
Gs2	3144
C. .	2376
Gs2	2923
I.	1539

Login / Logout

ISIS Monthly Records for Year 2007
Total Record Count 11775

Month	Count
Jan	1615
Feb	1416
Mar	1621
Apr	1440
May	1499

ISIS Monthly Records for Year 2006
Total Record Count 16675

Month	Count
Jan	1427
Feb	1329
Mar	1442
Apr	1340
May	1539
Jun	1416
Jul	1371

Done

zotero

Applications   Places   System

Tue Aug 28, 10:02 AM

ISIS

- Linux server operating system
- Apache webserver
- MySQL database
- PHP programming language
- Most of expenses went to programmers and equipment purchases.

Community Health Information Tracking System (CHITS)

National Telehealth Center

UP Manila

www.chits.info

community **health information tracking system**
an open source for health development initiative

SIGN OUT

Admin User 1
[admin] from
Lagrosa logged in
from
165.220.24.121.
Please do not forget
to sign off.

[Sign Out]

MAIN MENU

PATIENTS
CONSULTS
LIBRARIES
SUPPORT
CONTENT
REPORTS

MENU :: CONSULTS

Today's Patients
Appointments
Laboratory
MC Follow-ups
NTP Followup
Consult Modules

STATS

Users 18
Modules 41
Terms 565

CONSULTS TODAY

HIGHLIGHTED NAMES OR THOSE MARKED WITH * WILL SEE PHYSICIAN.

██████, Judy [1] *   De Even, ▓▓▓▓▓▓▓ [1]

OLD PATIENT

Note: Use this form for patients who
have visited the center already.

FIRST NAME

LAST NAME

[Search]

NEW PATIENT

NOTE: This form is for new patients.

FIRST NAME

MIDDLE NAME

LAST NAME

MOTHER'S NAME

BIRTH DATE

Use format MM/DD/YYYY.

GENDER

Male ▼

[Add Patient]

Done

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CHITS

- EMR for village health centers in the Philippines
- seed funding by International Development Research Centre of Canada
- running for three years now with minimal technical support
- Linux desktops
- Apache, MySQL, PHP

Care2X

www.care2x.org

Care2x

- developed in Europe
- multiple, international set of developers
- Multi-facility
  - hospital information system
  - practice management
  - central data server
  - Health Data Xchange Protocol

WorldVista

www.worldvista.org

WorldVista

- based on the Department of Veteran Affairs EMR called Vista

- uses the original MUMPS programming and database language

- unlike the Vista which is public domain, WorldVista is released on a general public license (open source)

OpenVista

http://medsphere.com/products

OpenVista

- based on Vista

- uses the Java programming language as platform

Open Health

www.openhealth.org

OpenHealth X-chart

- employs XML or extensible markup language

- XML is independent of any platform and is deemed more flexible and open

- Since it is text-based, it is 'future-proof'

Moving Forward with FOSS

- Understand your needs and issues
- Try out the various FOSS health solutions
- Focus on capacity building – it is the most crucial component in any HIS project – the software is only secondary (albeit the most expensive) component
- FOSS can help in developing capacity at low-cost. Staff can learn about electronic systems without undue payments for proprietary systems.