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Health Informatics in the Philippines

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Abstract

The progress of biomedical informatics in the Philippines has been fraught with many highs and lows. Called 'health informatics' locally, the field has been in informal and formal development for the past ten years since the first professionals commenced investing time and energy to pursue the field as a distinct discipline. Although local efforts have been hampered with infrastructure issues, there have been many activities that have provided strategic foundation for the implementation of future activities. Foremost among these is the Master of Science in Health Infromatics offered by the University of the Philippines Manila. The program offers a unique approach to learning health informatics by putting emphasis on community-based and community-managed health information systems that are appropriate for resource constrained environments. It is also unique for its heavy adoption of the principles of primary health care (as manifested by the Declaration of Alma Ata) in its curriculum design and implementation.

Keywords:

Philippines, education, informatics, health

Introduction

As a science, biomedical informatics had been loosely practiced in the Philippines as early as the nineteen eighties. Residents in tertiary care facilities who had access to IBM compatible machines were already using word processors to store patient information. In other areas, anecdotal evidence of database management systems was used for storing patient information. Epidemiologists from the Department of Health who took the Field Epidemiology Training Program (DOH-FETP) used Epi-Info[1] extensively in their practice. In fact a professional association, the Philippine Association for Medical Informatics (PAMI) led by Dr. Benjamin Marte was formed with membership mostly composed of Department of Health staff. The PAMI was able to represent the country in initial meetings of the Asia Pacific Association for Medical Informatics and was the de facto representative for the country in APAMI for the years 1994 to 1995.

It was however during the late nineties when a more structured approach to 'medical informatics' (as it was called then) appeared. This was through the establishment of the Medical Informatics Unit in the University of the Philippines Manila. Preceding the MIU however were several important events. First there was the incorporation of a non-governmental organization called the Philippine Medical Informatics Society, Inc composed mostly of academicians from the University of the Philippines Manila (UPM). Then the PMIS initiated many of the scientific activities related to the field such as the First Symposium on Medical Informatics and Seminars on Telepathology (Dr. Paul Fontelo, Armed Forces Institute of Pathology), Medical Records Management (Dr. Michael Yang, OACIS), and Integrating Technology into Medical Education (Dr. Emmanuel Besa, Medical College of Pennsylvania). However, although these activities served to keep the interest and awareness in medical informatics, they were too far in between to actually to push the science forward in the country.

Academics

By 1998, faculty members from the UP College of Medicine began taking formal courses in medical informatics in different institutions around the world; in particular, at the University of Washington, the National Library of Medicine in Bethesda, Maryland, and University of Warwick in Coventry, England. These faculty members served as the core group of what will be the Medical Informatics Unit at UP Manila.

Research

Upon return, the faculty core group started working on health information systems projects and applied many of the principles they learned from their training. Most of these researches were conducted at the Medical Informatics Unit of the UP College of Medicine while others at the World Health Organization and the Department of Health. With the experience from these projects, faculty members were able to refine their techniques and protocols to address the growing informatics needs of the country. One such project was the Community Health Information Tracking System [2], a Linux, Apache, MySQL, PHP-based system released under the general public license (GPL). CHITS was named finalist at the Stockholm Challenge

1 Epi-Info. http://www.cdc.gov/epiinfo/

2006 and one of top three e-government projects in the Philippines by the Asia Pacific Economic Cooperation Digital Opportunity Center. Several other projects with the United States Agency for International Development and International Development Research of Canada provided the experience for the faculty and staff of the MIU to handle increasingly complex projects in medical informatics.

By 2003, the faculty members realized the need to generate new blood and to formulate a structured learning program for medical informatics. A proposal for a Master of Science in health informatics was crafted together with the College of Arts and Sciences (who had a program in bioinformatics). This combined program, now called Master of Science in Health Informatics (MSHI) was finally approved in 2004 and implemented in academic year 2005-2006.

Service

A key component of the MSHI was service as well as research. As designed, students of the MSHI are expected to implement the principles and concepts of health information systems development within an existing environment relevant to their practice. As seen with the first batch of students, most of these projects are for databases for their professional organizations or specialty affiliations.

Context

A unique spin in medical informatics in the Philippines is the bias of pioneering faculty on community health informatics. This is due to the fact that most of the initial efforts began at the UP College of Medicine where a community-oriented curriculum serves as the central recurring theme in all institutional activities. This community-orientation permeates the design and delivery of the MSHI, and in the program students are asked to immerse themselves and to integrate with local health facilities to understand the issues in health information management at the grassroots level. This is very different from the approach of first world counties who expose their students to complex, sophisticated, and resource-intensive health facilities, many of them at the secondary or tertiary level. In fact, the MSHI program is unique in that it revolves around patient level data within a public health system infrastructure forming the staging are for the development of public health informatics in the future.

A clear manifestation of this philosophy is the staunch advocacy of the UPM for the use and promotion of free and open source software (FOSS). In fact, the National Telehealth Center (an institutional product of the MIU) has been named as UNDP Regional Center of Excellence for Free and Open Source Software and node of the International Open Source Network[3] for ASEAN+3.

Issues

Despite the many developments in health informatics in the Philippines, the nation still suffers from several issues that impede progress. Foremost is the lack of health human resource interested in the field. Most of the initial enthusiasts were clinician specialists who were engaged in health informatics more as a novelty rather than as a profession. When the pull of economic and professional constraints are felt, priorities shift towards clinical responsibilities to the detriment of the health informatics discipline.

A second problem is the network infrastructure (which also involves IT human resource). While connectivity is an important component of a health information systems, the availability of affordable IT human resource and their retention in the age of globalization remains an issue.

Third, the benefits of information technology have not yet dawned to many decision-makers in the health sector. The huge capital outlay for a health information system remains a stumbling block to the integration of IT in health operations.

Opportunities

An exciting development in the country is the rapidly maturing wireless cellular network with value-added services. The Philippines is the texting capital of the world and is home to 300 million messages a day. It is also a large laboratory for SMS based applications that range from games to banking. Definitely, with a wide penetration nearing fifty percent[4], SMS is a protocol waiting for a health informatics application.

A joint cooperation of the Department of Health, Department of Science and Technology, the University of the Philippines Manila, and the Philippine Health Insurance Corporation to formulate standard secure health messaging across health facilities is opening up a lot of business opportunities both for health informatics practitioners and for IT vendors as well. Called the Philippine National Health Information Infrastructure (PNHII), it will form the

2 Tolentino H, Marcelo A, Marcelo P, Maramba I. Linking primary care information systems and public health information networks: lessons from the Philippines. Stud Health Technol Inform. 2005;116:955-60.

3 International Open Source Network. http://new.iosn.net

4 Lucas D. Cell phone penetration rate seen to peak at 50%. http://news.inq7.net/infotech/index.php?index=1&story_id=78818

framework for the automation of many health transactions and may eventually pave the way for the justification of IT investments in health.

The BuddyWorks Telehealth project of the National Telehealth Center, an e-government project, is nearing completion and offers the possibility of managing electronic patient records needs of the government health bureaucracy. BuddyWorks is based on open source and is flexible enough to plug into any system that will be chosen by DOH. It can also serve as the reference implementation of the Philippine National health Information Infrastructure.

Next Steps

At center stage in health informatics in the Philippines is the Master of Science in Health Informatics program. Designed to produce the leaders who will push for the needed organizational and technological changes in the health sector, the MSHI program aims to participate actively in the efforts of the PNHII and of BuddyWorks. The cellular infrastructure will play a major role in the delivery of health messages because of its wide coverage in the country.

The Philippines will continue to focus its informatics to the real needs of the Filipino people, especially those who are marginalized and underserved.

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