Thai Medical Informatics Association and medical informatics activity in Thailand

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Abstract

Thai Medical Informatics Association(TMI) had established in 1991. Until now it had devoted most of their efforts on many works to make Thailand fully implemented medical informatics sciences and technologies for enhance and promote health status of the Thai people. And to make the Thai medical alliance workers fully literate on medical informatics. During 2004-2006 Medical informatics activities in Thailand focused on standardization of health data, coding and classifications, Medical Imaging and PACS(Picture Archiving and Communication System) and open source applications in hospital information systems. In the near future, Thai Medical Informatics Association will expand their activity further into various activity like conduct short course training on some issues of medical informatics, research further on HL-7, SNOMED modification and implementation in Thailand. Enhancing organization structure by recruit full time staff, upgrade hardware and web server. Increase activity with the Asia Pacific Association of Medical Informatics(APAMI).

1. Introduction

Thai Medical Informatics Association(TMI), formerly known as Thai Medical informatics Society, was established in the year 1991. On vision of senior doctors of The Consortium of Medical Schools at that time when computer usage in medical facilities began in Thailand. Started with 300 members who work in medical fields and computer sciences like medical doctors, nurses, clinical coders, programmers, system analysis etc. Now the Thai Medical Informatics Association had more than 600 members. Main activities are Annual conference, Special Interest Groups seminars, affiliated with the Ministry of Public Health in promotion and implementation of standards, concepts and new technology of medical informatics in Thailand.

2. Brief History

When first established in 1991 most of the founder members came from existing medical schools(in that time there are twelve medical schools in Thailand. Main objectives of Thai Medical Informatics Society were 1. To be a center for coordination and distribution of medical informatics knowledge. 2.To develop models of administration, education and research in medical informatics. 3.To be a center for knowledge sharing in medical informatics. 4.To encourage continuous education, studying and practicing for medical informatics staffs. 5. To be a resource centers in medical informatics for the Health institutes both in public and privates sector. 6. Not to be involved in commercial and politician activities

During 1991 – 1999, Main activities of the society are annual conferences that was held in many provinces around Thailand. Those provinces are Khonkaen(1991), Songkhla(1992), Chiangmai(1993), Bangkok(1994), Petchburi(1995-1996), Bangkok(1998), Cholburi(1999). Which total attendants around 600- 1300 persons each year. Main theme of each conference was a current intererting issue or new technology of medical informatics in that year.

Since 2000, 4 Special interest groups were established in the society. New activities from special interest groups emerged including seminars, researches and small group meetings. Main annual conference were conducted in Khonkaen(2000), Bangkok(2001-2003), Pathumthani (2004), Chiangmai(2005). In 2005 the society was changed to Thai Medical Informatics Association.

During the same period medical informatics gain medium speed of acceptance in Thailand. Started for computer usage in medical records, upgraded to hospital accounting system until now most computer usage in hospital of Thailand are hospital informations system. Some hospitals can developed further to clinical information system, but most hospitals could not achieve that state.

Medical informatics were studying as a subject in 3-4 medical school. There was 1 course of medical informatics developed and conducted in Ramkhamhaeng University, but no additional course emerged from another university until now.

Researches on medical informatics in Thailand most happened in the Ministry of Public Health projects and some medical schools. Research topics included standardization of data, ICD-10-TM(Thai modification), Thai DRG(Diagnosis Related Groups), Telemedicine, Medical Imaging and PACS(Picture Archiving and Communication System), Open source applications in hospital information systems.

3. Situation Analysis

SWOT Analysis done by Thai Medical Informatics Society before changing to association revealed that Thai Medical Informatics Association has strengths on flexible organization structure, multiple stakeholders coordinations and teamwork, knowledge sharing

empowerment and acceptance from both public and private health sectors. But had weaknesses on inadequate full time staffs, organization planning and management, lack of long term funding and most central committees had another full time jobs so those key persons can not devoted much time on the association activities.

Opportunities for TMI are increasing demands on medical informatics knowledge and implementations, new young generations people interesting in the fields and coordinative works with the Asia Pacific Association of Medical Informatics(APAMI). Threats include deficiency of academic course and curriculums for medical informatics in Thailand, deficiency of resource persons in medical informatics and lack of new knowledge and innovations.

Overall Thailand situation of medical informatics activity could be separated into 2 groups of activities. Implementation of new technologies of medical informatics mostly occur in private healthcare sectors. But most of the research activities in medical informatics occur in the Ministry of Public Health and medical schools.

4. Recent and current activities

During 2004-2006 Medical informatics activities in Thailand focused on standardization of health data, coding and classifications, Medical Imaging and PACS(Picture Archiving and Communication System) and open source applications in hospital information systems. These activities would be discussed below.

4.1 ICD-10-TM(Thai Modification)

ICD-10(International classification of Diseases and related health problems, 10th Revision) was implemented as a tool for encoding morbidity and mortality data in Thailand since 1994. After 1997 it was used extensively in all hospital and health facilities across the country both in public and private health sectors. Users of ICD-10 found that the classification comprehensively include all codes for the diseases occur in the western country, but lack some codes for tropical area for example, ICD-10 had no code for necrotizing fasciitis, dengue shock syndrome, wheezing associated respiratory illness, cobra and green pit viper snake bite etc. So it was apparently known that if a country need to collect data on diseases frequently occur in this area but no specific code found in ICD-10, that country should add some more codes under original framework of ICD-10 to match their requirement of code. This phenomenon had occurred in several countries around the world like USA(ICD-10-CM), Australia(ICD-10-AM), Canada(ICD-10-CA).

In the year 2000, working groups were formed in the ICD-10-TM research project conducted by Bureau of Policy and Planning in Health, Ministry of Public Health. Also affiliated by 13 specialist Royal colleges(groups of medicine experts ie. internal medicine, surgery, OB-Gyn, pediatrics etc.), Thai medical council, 4 Association of medical specialist in oncology, dermatology, family medicine, emergency medicines, modification of codes was finished in the year 2003. About 1,500 new codes were add to original 14,200 codes of ICD-10. These working groups also developed new procedural coding system to be use as a doctor fee coding schema.

Pilot study for implementation of codes was conducted in 25 hospitals across the country. The results show that new codes were used in 5-10% of all codes in morbidity data. Preliminary research on cost analysis for diseases also found that new code can be used to discriminated high cost diseases and result in better reimbursement to both the hospital and the universal coverage agency.

In the year 2005, the World Health Organization revised original ICD-10 to be ICD-10 2nd edition. New codes from ICD-10 2nd edition also were added into ICD-10-TM. Now it became ICD-10-TM 2nd edition.

4.2 Thai DRG(Diagnosis Related Groups)

Universal coverage in health care system were studied by health system researchers since 1990. From that time, a working group on casemix system studied various casemix system in the world and conducted several researches to find suitable model to be used in reimbursement process under universal coverage schema. That model was known as Thai DRG version 1 with 500 patient groups developed in the model.

In the year 2001, new government leaded by Thairakthai party fully implemented the universal coverage in the public healthcare sectors(the 30 bahts for every disease campaign). The old Thai DRG model was developed further including about 1,000 groups into the system. That became Thai DRG version 2. It was used extensively as a tool for calculate the reimbursement rate for every hospital provided healthcare under the universal coverage system.

2 years later after trial and error period, errors were reported on some grouping logic. Working group then developed Thai DRG further into version 3 and 3.5 until now the Thai DRG included about 1,400 groups and be used as a major tool in reimbursement process of the universal coverage health care system.

4.3 Picture Archiving and Communication System (PACS)

Picture archiving and Communication System(PACS) implementation in hospital computer system Thailand in the past were increasing at slow speed. The major challenge was high costs of the system both hardware and software. Main activity now are studying of the way to implement PACS at low cost but achieving it's effectiveness and efficiency.

Special interest group on PACS was formed in the year 2000 with 2 subgroups. The first group was studying the storage, networking, retrieving and display

technology to find the most cost effective technology that should be implemented in Thailand. The second group was studying open source freeware and shareware on PACS/DICOM servers and clients, tools, libraries.

Now the first group can implement low cost PACS system in one of the medical school as a pilot model. The low cost PACS pilot model was implemented at the Ramathibodi hospital, Bangkok, Thailand since 2002. While the second working group developed open source PACS/DICOM libraries software, named ***dcm4che***.

4.3 Open source applications in hospital information systems

Hospital information system in Thailand development in Thailand began around the year 1991 start from electronic medical records module. In that beginning periods most of programming processes were performed by a group of medical doctors who devoted their efforts to created hospital information systems to be used in their hospital. Some doctors share their program to other hospital to be use free of charge.

Commercial hospital information systems came around the year 1995, mostly implemented in the private hospitals and acquired popularity not so rapidly. Until now both open source application and commercial hospital information system gain equal popularity. Most of the public hospital in the Ministry of Health implement open source applications, while most of the private hospital used commercial hospital information systems.

Special interest group on open source applications in hospital information systems was formed in 2000. The group developed their open source hospital information system named ***HospitalOS.*** The second group appeared in 2003, developed another open source hospital information system called ***HospitalXP.*** Both groups distributed their software across the country to be used in more than 100 hospitals now.

5. Future Plan

In the near future, Thai Medical Informatics Association will expand their activity further into various activity like conduct short course training on some issues of medical informatics, research further on HL-7, SNOMED modification and implementation in Thailand. Enhancing organization structure by recruit full time staff, upgrade hardware and web server. Increase activity with the Asia Pacific Association of Medical Informatics(APAMI).

The Thai Medical Informatics Association also have a plan to enhance implementation of medical informatics sciences in Thailand , plan to co-ordinate with universities to developed curriculum and course on medical informatics study in various degree of educations.

6. Conclusion

While we had done our works and activities for 15 years, the Thai Medical Informatics Association have a long way to go to accomplished our final goal. That is to make Thailand fully implemented medical informatics sciences and technologies for enhance and promote health status of the Thai people. And to make the Thai medical alliance workers fully literate on medical informatics.

7. References

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