Medical Informatics: Challenges for the Asia Pacific

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Congratulations!
Asia Pacific Association for Medical Informatics (APAMI)

• Launched as an IMIA regional group in 1994
• Currently has 15 national members and 2 corresponding members
• Conferences:
  - Singapore, 1994
  - Sydney, 1997
  - Hong Kong, 2000
  - Daegu, Korea 2003
APAMI Leadership Roles

Hosting the 9th World Congress on Medical Informatics in Seoul, Aug 18-22 1998

Spawned national health informatics associations in Malaysia, Indonesia, Sri Lanka, India and the Philippines

Promoted cross-country scientific interaction at national health informatics meetings of Singapore, Japan, Korea, Thailand, Malaysia, Sri Lanka, the Philippines and Taiwan

Generated health informatics awareness in India, Pakistan, Sri Lanka, Vietnam and Fiji
September 21, 2003, Sunday 11:45 AM

NEWS

APAMI 2003 CONFERENCE: KOREA
Herman Tolentino Jun-05-2003 6:55 PM
Read about the APAMI 2003 Conference in Korea.
▷ READ MORE

INTRANET HELP

Welcome to the Asia-Pacific Association for Medical Informatics Intranet. If you forgot your password, click here. If you wish to have an account, please contact the Intranet Administrator.

QUOTES

First we thought the PC was a calculator. Then we found out how to turn numbers into letters with ASCII and we thought it was a typewriter. Then we discovered graphics, and we thought it was a television. With the World Wide Web, we've realized it's a brochure.

--Douglas Adams

ANNOUNCEMENTS

MEDINFO 2004 THE TRIENNIAL CONGRESS OF THE INTERNATIONAL MEDICAL INFORMATICS
Herman Tolentino posted Jun-05-2003 3:38 AM
Report Card on APAMI – after almost 10 years

- Triennial APAMI Conference doing well
- International profile very good – MEDINFO, NI2006, IMIA leadership positions on Board and Working Groups
- Within the region, medical informatics development and level of expertise still very disparate
- Need for APAMI to be more focused in regional activities
Regional Activities for APAMI

Medical Informatics activities that APAMI can actively promote:

– Telemedicine
– Bioinformatics
– Public Health Informatics
In recent years, many Asia Pacific countries have ventured into telemedicine to help them jumpstart medical informatics.
Asia Pacific - a major player in telemedicine

Factors contributing to need:
- large sized countries
- low specialist:population ratio
- technology and telecommunication costs increasingly affordable
- helps developing countries jumpstart medical informatics
- High penetration rate for equitable distribution of healthcare services
National Telemedicine Initiative of the Thai Ministry of Public Health

- Approval by Thai government in 1994 as a pilot project
- Current system launched in Jan 1998
- Aim is to provide telemedicine support to remote, underserved populations in Thailand
- System links MOPH and 19 hospitals with about 60 district hospitals

(source: N Kasitipradith)
Bureau of National Health Insurance in Taiwan introduces 22 million Sun-powered health cards

Santa Clara 05 September 2002 Sun Microsystems has successfully deployed the Java Card technology and Sun network solutions by the Bureau of National Health Insurance of Taiwan (BNHI). The BNHI has started to roll out 22 million Java Card technology-powered Integrated Circuit (IC) health cards to Taiwan citizens in July, replacing its original paper-based system. This new smart card will bring substantive time and cost savings to the BNHI.

The IC health card rollout marks a major milestone in the technology advancement of health services in Taiwan. There are multiple stages in this project such as ongoing infrastructure upgrades, public education and acceptance of the new card system. "We will employ the latest technology to ensure a smooth transition and operation for both health professionals and card users", stated Louis Liu, General Manager of Department of Planning and Evaluation of BNHI. "To this end we are working closely with the public and health care providers to anticipate the future needs of card users and to respond quickly to different user scenarios", added Mr. Liu.

TECO Electric & Machinery Co. Ltd. (TECO), a smart card system integrator in Taiwan, implemented the USC115.
Japanese experience of telemedicine in oncology

Network of 14 Cancer Centers throughout Japan
130 teleconferences per year with 16,000 participants
High-resolution image transfers – 2000 x 2000 pixels

(source: H Mizushima)
Other Asia-Pacific countries with active telemedicine projects

- China
- Korea
- Australia
- India
- Bhutan
- Singapore
- Indonesia
- Hong Kong, SAR
- New Zealand
Special Issue:
Telemedicine in the Asia Pacific

May 2001 edition:
International Journal of Medical Informatics
(Vol 61, Issues 22–23)

Guest Editor:
Dr K C Lun

Useful next step:
Website linked to the APAMI web to showcase telemedicine activities in member countries.
New Challenges for the Asia Pacific
New Challenge from Bioinformatics

- Surge in clinical bioinformatics activities after HGP announcement on 26 June 2000
- Given health care objectives behind much of the current life sciences research, inevitable for convergence between bioinformatics and medical informatics
Concept of Clinical bioinformatics

molecular/genetic information

+ clinical observations

clinical correlations
Concept of Clinical bioinformatics

clinical correlations

biological processes/pathway knowledge

clinical mechanisms → drug discovery
Concept of Clinical Bioinformatics

- Essence is in linking genomic information with clinical information
- IT mechanisms involved will leverage on bioinformatics (genomic sequence databases/microarray databases) with medical informatics (clinical patient records, clinical decision systems, image/signals analysis)
Example

- Identified genes expressed in patients with DLBCL
- 2 distinct groups:
  - die within a few years (~50%)
  - survive for long periods or are cured
- Examine patterns of gene expression that correspond to how patients respond to cancer treatment
- Treatment tailored to disease

Researchers have predicted the likelihood of patients surviving or succumbing to a type of cancer. The technique could be modified to predict the outcomes of other cancers.

Margaret Shipp at the Dana-Farber Cancer Institute in Boston, Massachusetts and colleagues identified genes that are switched on in tumours from people with diffuse large B-cell lymphoma (DLBCL). They then pinpointed patterns of gene expression that correspond to how patients respond to cancer treatment. Marrying the two

Published: December 31, 2001
Challenges facing clinical bioinformatics

- Co-operation between biologists + clinicians, bioinformaticians + medical informaticians
- New architectures for CPRs needed to link genomic information with clinical information. CPRs not universally available
- If available, issues on confidentiality, security and sharing are formidable but not insurmountable
- Standardization issues, already challenging in health informatics, will have to be extended to cover bioinformatics
Promoting Biomedical Informatics

- Facilitating research and training cooperation between biologists and clinicians locally – BioMed Grid Project
- Facilitating cooperation between bioinformatics and medical informatics groups
  - Regionally - APAMI/APBioNet
  - Internationally – IMIA/ISCB
- Cross-programming of activities at national, regional and international conferences
- Journals to promote clinical bioinformatics
Meeting the Bioinformatics Challenge within APAMI

• Many countries in the APAMI region are actively promoting bioinformatics eg China (including HK), Japan, Korea, Singapore, India, Malaysia, Thailand and the Philippines

• APAMI can play a key role in
  – recognizing the bioinformatics challenge
  – facilitating and advancing cooperation within APAMI member countries in this field

• E.g. Singapore: AIMS (Association for Informatics in Medicine, Singapore -> AMBIS (Association for Medical and Bio Informatics, Singapore)
Collaborating with APBioNet

"Fostering the Growth of Bioinformatics and allied disciplines in the Asia Pacific"

News Releases

- InCoB 2003 scheduled for 8-10 September 2003 in Penang, Malaysia announces call for participation CFP Apr 10, 2003 | Word | PDF |

- APBioNet receiving CAD 44.8K from the International Development Research Centre's Pan Asia Networking Programme Press Release Jan 29, 2003 | HTML |

- APBioNet signs umbrella MoU with the State Government of Andhra Pradesh (India) to collaborate on research and training in Bioinformatics. Joint Press Release Dec 27, 2002. | PDF | HTML |

- APBioNet Vice President Shoba Ranganathan is elected to the ISCB Board of Directors for the 2002-2005 term Press Release Aug 6, 2002. | HTML |

- Cray Inc., LION Bioscience, KOOPrime and APBioNet engineers provide a recipe for bioinformatics: Working towards an integrated data-compute-workflow platform. June 20, 2002
  - Press Release | HTML |

- APBioNet achieves rough consensus to endorse and adopt the InCoB 2002 resolutions as the "APBioNet Bangkok Resolutions". May 20, 2002
  - Resolution | HTML |
  - Press Release | HTML |


- Latest Calls for Feedback/Approval: Current papers
- Latest Event Announcements: March-December 2003

Introducing APBioNet
New Challenge from Public Health Informatics

• Threat from bioterrorism after Sept 11, 2001 in the USA, London and Iraq (?) has highlighted need for new approach to disease surveillance
• Outbreak of SARS in Asia in March 2003 has further reinforced the need for a new approach to public health informatics
• Opportunity for APAMI to take on this new challenge
Problem with existing disease surveillance systems

- Existing method relies on positive diagnoses of specific diseases
- Problem: Incubation period between exposure and onset of illnesses
- Will not work against biological attacks or acute disease outbreaks such as SARS which require immediate response

Source: World Health Organization
New Trend: Syndromic-Based Reporting

- Signs and symptoms as possible early warning alerts (e.g., SARS – high fever, breathlessness)
- Requires nation-wide network of HIS as sentinel stations
- Key lies in real-time reporting of prodromal (warning) symptoms associated with serious infectious diseases
Many countries in the APAMI region are actively working on SARS especially China, Hong Kong, Singapore and Taiwan.

APAMI can play a key role in:

- Developing a public health informatics consortium among these and other interested APAMI member countries.
- Consortium addresses informatics R&D being done to tackle acute disease outbreaks such as SARS e.g. informatics deployed in contact tracing, epidemiological reporting and monitoring.
APAMI needs more proactive role

- No working groups within APAMI
- Suggestion: Leverage on the many Working Groups and SIG on Nursing Informatics within IMIA
- Approach: APAMI sub-group within IMIA Working Group
- E.g. SIG-NI – APAMI sub-group can be formed by active NI groups such as KOSMI-NI SIG, HISA and JAMI
- APAMI sub-group can give interesting Asia Pacific perspectives to IMIA NI SIG
IMIA Working Groups & Special Interest Group on Nursing

Special Interest Group 1: Nursing
WG1 Health and Medical Informatics Education
WG2 Consumer Health Informatics
WG3 Intelligent Data Analysis and Data Mining
WG4 Data Protection in Health Information Systems
WG5 Primary Health Care Informatics
WG6 Medical Concept Representation
WG7 Biomedical Pattern Recognition
WG8 Mental Health Informatics
WG9 Health Informatics for Development
WG10 HIS and Health Profession Workstations
WG11 Dental Informatics
WG13 Organization and Dental Issues
WG15 Tech Assessment & Quality Developn in Hlth Info
WG16 Standards in Health Care Informatics
WG17 Computerized Patient Records
WG18 Telematics in Healthcare
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Thank you

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