

# Medical Informatics: Challenges for the Asia Pacific

**K. C. Lun**

President, International Medical Informatics Association,  
Professor & Vice Dean, School of Biological Sciences  
Nanyang Technological University  
Republic of Singapore

Email: [kclun@ntu.edu.sg](mailto:kclun@ntu.edu.sg)



# APAMI & CJKMI-KOSMI Conference 2003

Ubiquitous Computing in Health Care - From wired to wireless

Oct. 20 ▶ 22, 2003

Hotel Inter-Burgo, Daegu, Korea

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## APAMI & CJKMI-KOSMI Conference 2003

Ubiquitous Computing in Health Care  
- From wired to wireless

Date: Oct. 20 - 22, 2003

Venue: Hotel Inter-Burgo, Daegu, Korea

### \* Notice

[MORE](#)

1. The early registration is by **September 30, 2003**
2. The 4th HL7 International Affiliates Meeting is accompanied right before APAMI, **Oct. 16-17** at the same venue.

APAMI  
PROGRAM

등록신청서

Registration Form

[\\* Family Site](#)

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Tel: 82-2-566-6067 Fax: 82-2-566-6087 E-mail: [apami2003@people-x.com](mailto:apami2003@people-x.com) <http://www.apami.info>

# 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



# apami.net

## ASIA PACIFIC ASSOCIATION FOR MEDICAL INFORMATICS

Moving health providers into the informatics age.

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

### APAMI INFORMATION

#### APAMI MAILING LIST

Herman Tolentino Jul-07-2003 4:55 AM

Instructions for joining the APAMI Mailing List

[READ MORE](#)

#### MEMBER COUNTRIES

Herman Tolentino Jun-05-2003 2:31 PM

Read about APAMI member countries

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#### APAMI STATUTES

Administrator System Jun-05-2003 1:19 PM

[APAMI Statutes](#)

### ANNOUNCEMENTS

#### MEDINFO 2004 THE TRIENNIAL CONGRESS OF THE INTERNATIONAL MEDICAL INFORMATICS

Herman Tolentino posted Jun-05-2003 5:38 AM

Washington, DC, April 16, 2003 - the Call for Participation for Medinfo 2004 - the 11th World Congress on Medical Informatics is now available at [www.medinfo2004.org](http://www.medinfo2004.org).

You are using a private computing facility. Site use is monitored. Type login name and password and click on Login button.

Login Name

Password

Login

MEDINFO 2004  
Thu Jun-05-2003 9:00AM  
Call for participation and reviewers for MEDINFO 2004. Details at the web site. See WEB LINKS.

Welcome To APAMI!  
Thu Jun-05-2003 12:43PM

SITE STATS

Intranet Users 4

IDOC3 Documents 0

# 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:

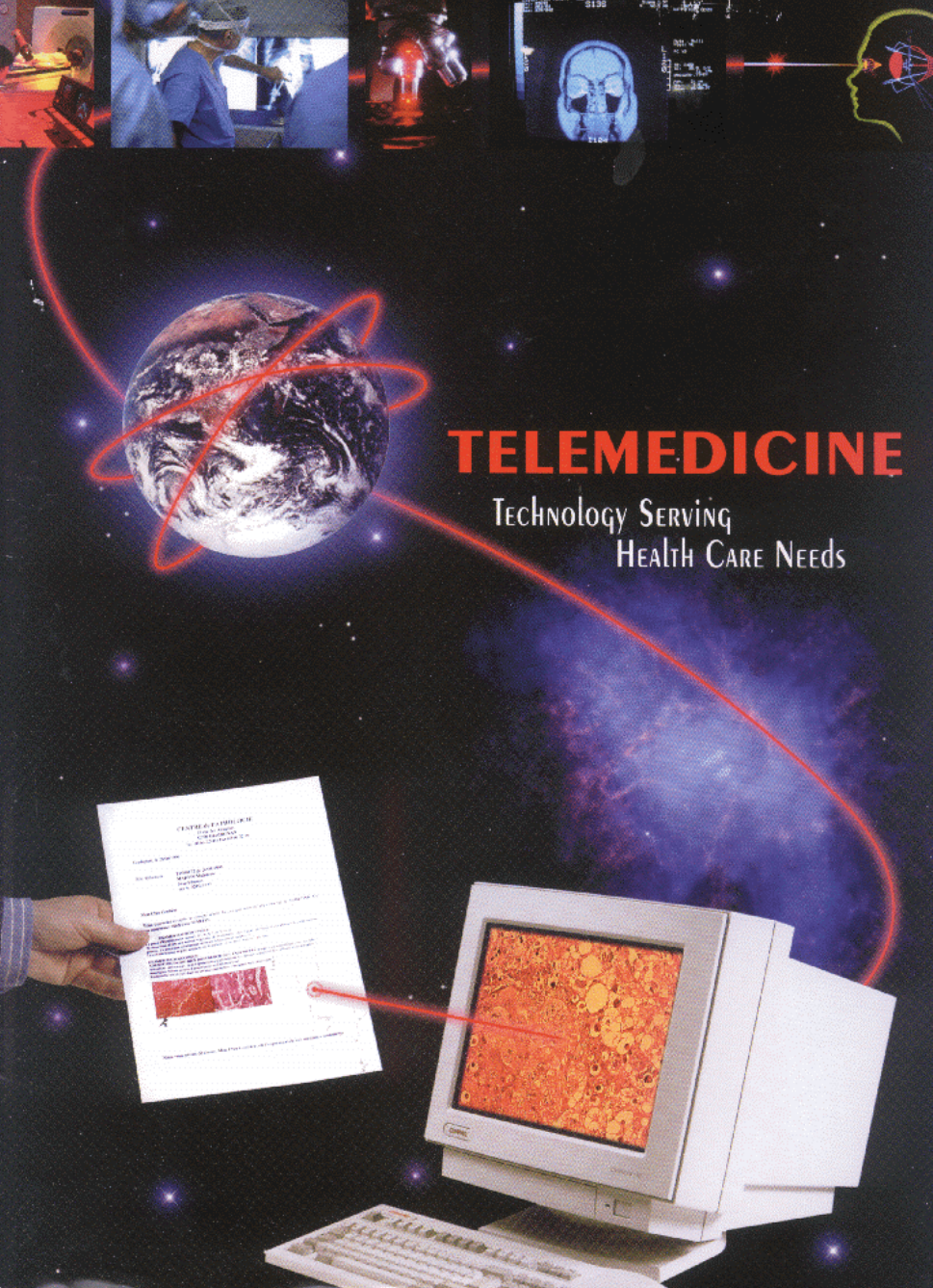
- Telemedicine
- Bioinformatics
- Public Health Informatics

# TELEMEDICINE



In recent years, many Asia Pacific countries have ventured into telemedicine to help them jumpstart medical informatics

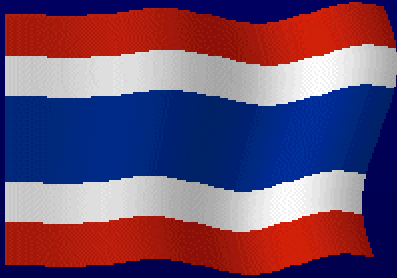




# Asia Pacific - a major player in telemedicine

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



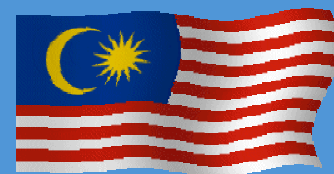
- Approval by Thai government in 1994 as a pilot project
- Current system launched in Jan 1998
- Aim is to provide telemedicine support to remote, underserved populations in Thailand
- System links MOPH and 19 hospitals with about 60 district hospitals



Ministry of Health Malaysia



Multimedia Super Corridor



Telehealth Service  
Provider



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What is Telehealth?

MCPHIE

CME

LHP

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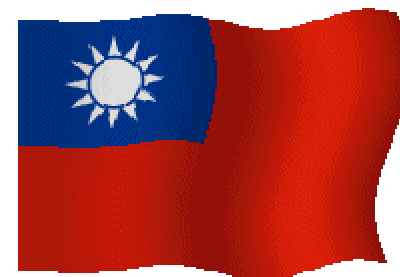


Prime Mover For  
Integrated Telemedicine  
Solution And Services



Internet





## 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.*

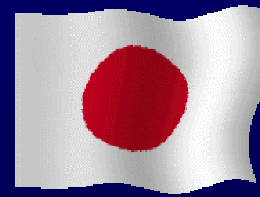
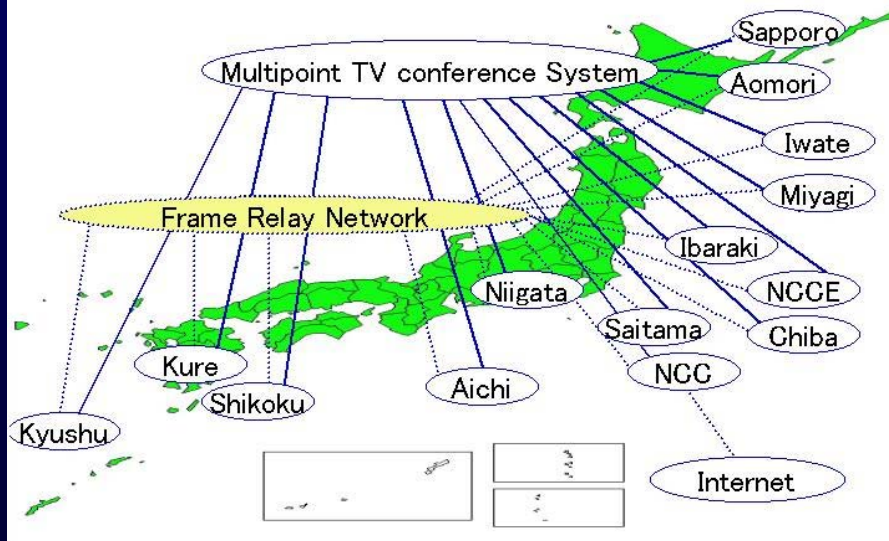
The IC health card rollout marks a major milestone in the technology advancement of health services in Taiwan. There are multiple stages in this project such as ongoing infrastructure upgrades, public education and acceptance of the new card system. "We will employ the latest technology to ensure a smooth 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



National Health Insurance IC Card

## Cancer Center Network



# 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



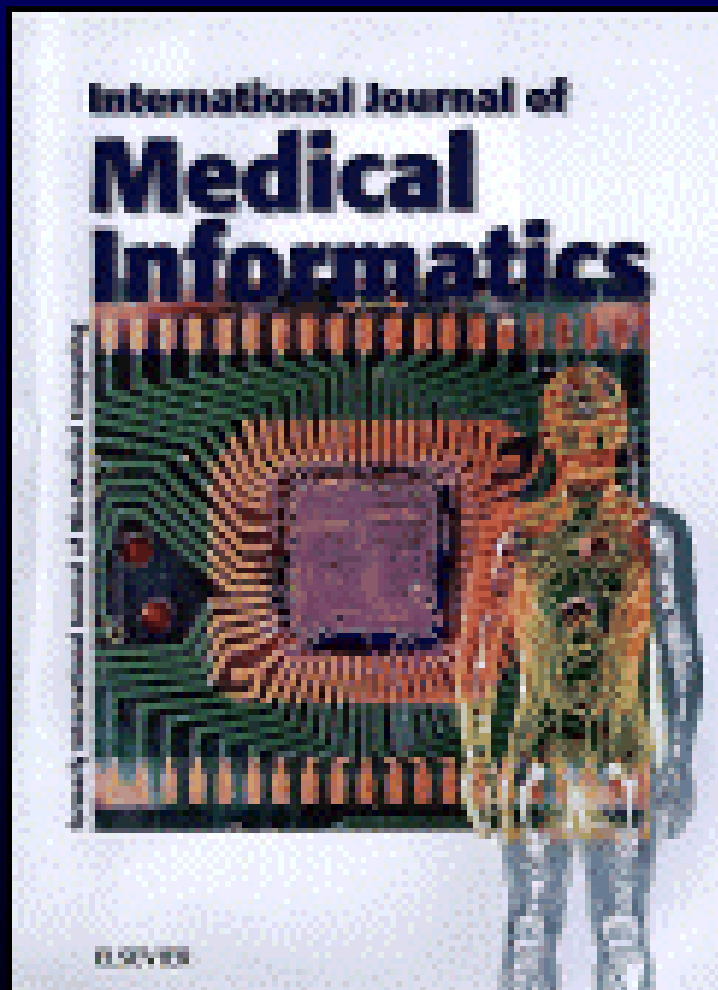
(source: H Mizushima)



# 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:**

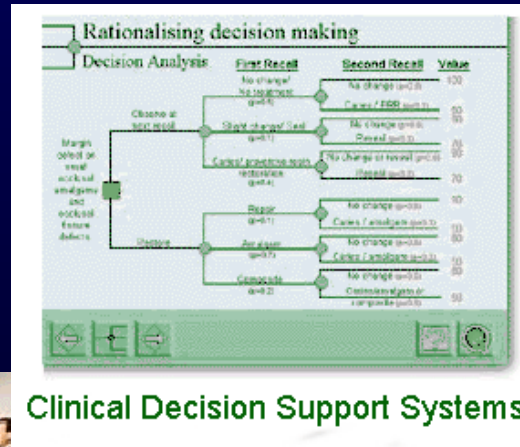
Dr K C Lun

# Useful next ste

# Website linked to the APAMI web to showcase telemedicine



Laboratory Information Systems



Clinical Decision Support Systems

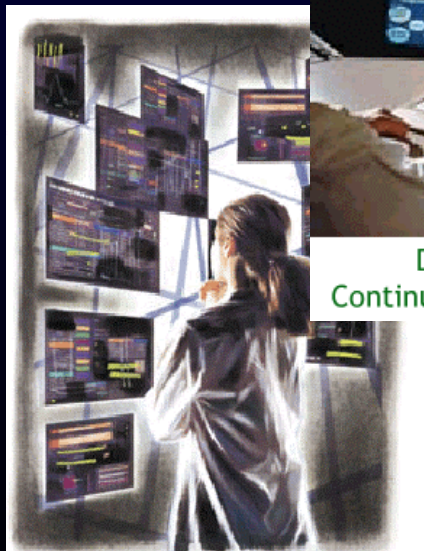


Distance Learning for Continuing Professional Education

Medical Image and

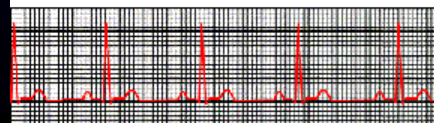


Signals Processing



Electronic Medical Records

# 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



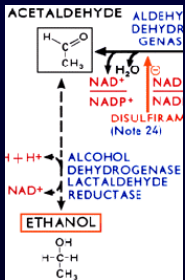
clinical correlations



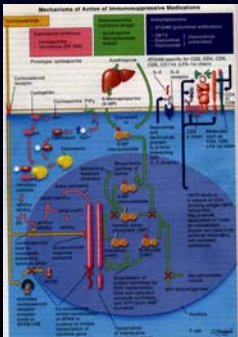
# Concept of Clinical bioinformatics



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

... HOW MUCH MORE? ...

updated at midnight GMT today is monday, december 31

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**Prediction is better for cure**

Gene screen could offer cancer patients tailor-made treatments.

24 December 2001

**TOM CLARKE**

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

**related stories**

- Breast cancer screens scrutinised  
19 October 2001
- Cancer outwits us again  
22 June 2001
- Browsing the cancer catalogue  
30 May 2001
- Cold calls cancer into question  
22 November 2000
- Whose genes can stomach cancer?  
23 March 2000

**more news**

- Fuels clean up  
31 December 2001
- Squeak first  
31 December 2001
- Perch affects birds' pitch  
28 December 2001
- Sperm cycle early  
28 December 2001

- 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

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)



the • asia pacific bioinformatics network

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*"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](#) |  
MoU 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](#) |
- APBioNet now a regional affiliate of the  
International Society for Computational Biology [ISCB](#).  
Press Release May 10, 2002 | [Text](#) | [HTML](#) | [Doc](#) | [PDF](#) |
- Latest Calls for Feedback/Approval: [Current papers](#)
- Latest Event Announcements: [March-December 2003](#)

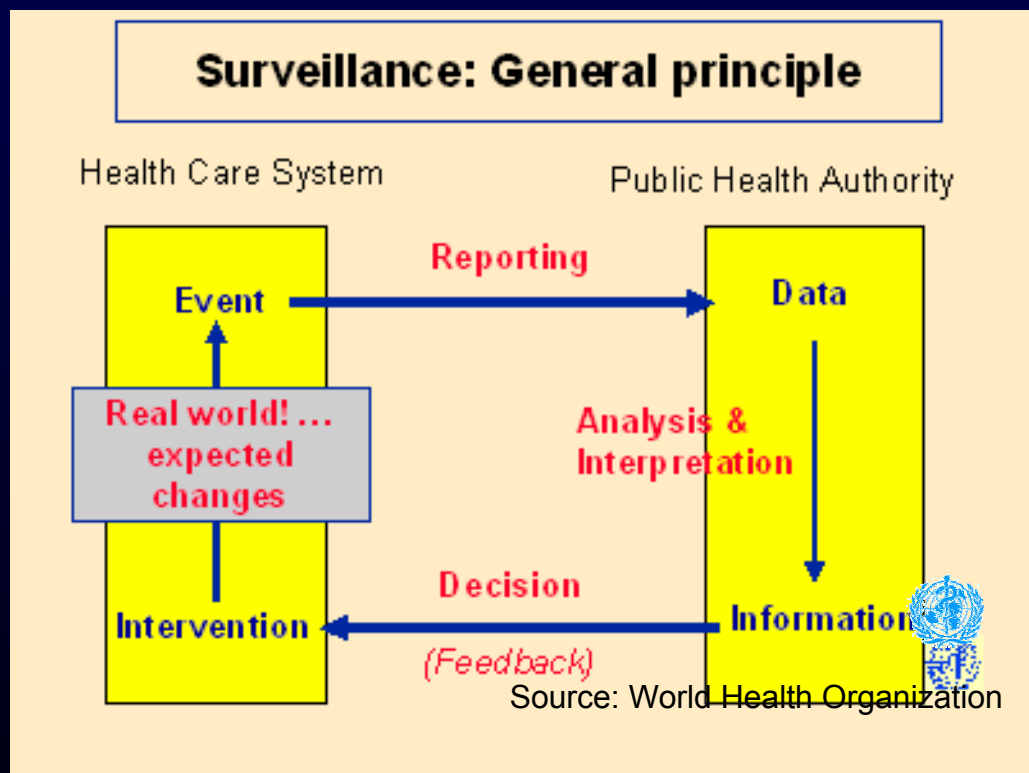
*Introducing APBioNet*



# New Challenge from Public Health Informatics

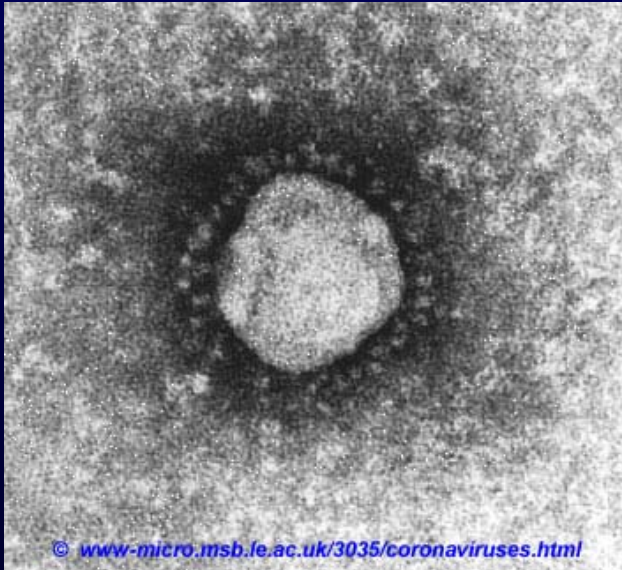
- Threat from bioterrorism after Sept 11, 2001 in the USA, London and Iraq (?) has highlighted need for new approach to disease surveillance
- Outbreak of SARS in Asia in March 2003 has further reinforced the need for a new approach to public health informatics
- Opportunity for APAMI to take on this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

# New Trend: Syndromic-Based Reporting



- Signs and symptoms as possible early warning alerts (eg 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







# Meeting the Public Health Informatics Challenge within APAMI

- 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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analysis, management, and use of information and technology in health care.

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A photograph of the Merlion statue in Singapore, spouting water into the sea. In the background, the Esplanade - Theatres on the Bay and other city buildings are visible under a cloudy sky.

# Thank you

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