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THE SOCIETY

The Health Informatics Society of Sri Lanka (HISSL) was launched on 15/11/1998. The inaugural meeting was held at the Auditorium of the Sri Lanka Medical Association. The founder President of the society was Dr. Shyam Fernando.

The HISSL has its origins in the Medical Informatics Committee of the Sri Lanka Medical Association (SLMA), which was formed in January 1997. Since the launch of HISSL in November 1998, the encouragement and support we received from many resulted in the successful organisation of three previous academic sessions in 1999, 2003 and 2004 and many other academic activities in between including joint sessions with the SLMA and the participation of our members at meetings of the Asia Pacific Association for Medical Informatics conferences.

The objectives of HISSL are:

1. To promote the use of computers and information technology in teaching, learning, research and delivery of care in the field of health.
2. To improve computer and information technology literacy of health care professionals.
3. To improve the access by health care professionals to computer hardware, software and information technology services.
4. To improve and facilitate continuing professional development of members.
5. To improve and facilitate research and development in health informatics.
6. To foster collaboration with national, regional and international medical, informatics and professional associations.
7. To foster fellowship among members.

Membership:

Membership in the society is open to doctors, dentists, teachers of medical faculties, paramedical professionals (e.g. nurses, pharmacists, physiotherapists, etc.), IT Professionals, IT Companies, Health related institutions/libraries, and students of Medical Faculties and all other paramedical teaching programmes.

President	Prof. Rezvi Sheriff
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FROM THE PRESIDENT



It gives me enormous pleasure as the fourth President of the Health Informatics Society of Sri Lanka to give this message to our Programme Book.

In HISSL we have an inclusive policy of Medical and IT personnel with the object of promoting the best outcome from this integrated professional approach. This field has developed to a high degree of finesse elsewhere and I am happy to inform you that the first MSc in Biomedical informatics is being arranged by the Postgraduate Institute of Medicine under my Directorship. This is being supported by the NOMA Grant from the Norwegian Centre for International Cooperation in Higher Education, and the University of Oslo, Norway. I must thank Dr Vajira H.W. Dissanayake our President Elect for his untiring efforts towards this.

This will complement the many other informatics initiatives undertaken at the PGIM which include the promotion of distance education in Family Medicine and General Dental Practice with funds from the Distance Education Modernisation Project (DEMP) grant; and the broadcasting of PGIM events to around 20 Outstation centres through the Worldspace Satellite Systems in France.

Thus Health Informatics has been getting a boost this year and I hope that the Scientific Sessions put together by the Organising Committee will be equally inspiring.

I wish to thank our Chief Guest Prof. Kshanika Sannasgala Hirimburegama, the Guest of Honour Prof. Sandeep Shay, and the guest lecturers for accepting our invitations; and the authors of papers, the sponsors, and the participants for their contribution to making the sessions a success.

Vidyajyothi Prof. Rezvi Sheriff
President - Health Informatics Society of Sri Lanka
26/7/08

FROM THE MINISTER OF SCIENCE & TECHNOLOGY



It gives me great pleasure as the Minister of Science & Technology to give this message to your souvenir at this occasion and to congratulate the organizers of the 3rd Scientific Session of HISSL, for taking the lead in applying ICT in the health field in Sri Lanka.

Informatics is in the forefront of Science & Technology and many advances have been made the world over.

Information Technology is fast replacing traditional classroom face-to-face lectures as e-learning is becoming common place. Robotic surgery is now invading the operation theatre as advancement in therapeutics. Informatics is therefore having an important role in medical education, diagnostics and therapeutics.

I wish your sessions all success, while regretting my inability to be present at the inauguration.

Professor Tissa Vitarana
Minister of Science & Technology

SCIENTIFIC PROGRAMME

08.30 **REGISTRATION – Venue PGIM Auditorium**

08.45 - 10.30 **INAUGURATION**

08.45 - 08.50

Lighting of the oil lamp/ National Anthem

08.50 - 09.20

Welcome address by President HISSL

Prof. Rezvi Sheriff

09.20 - 09.30

Address by the Chief Guest

Prof. Kshanika Sannasgala Hirimburegama

Vice Chancellor, University of Colombo

09.30 - 10.00

Keynote Address by the Guest of Honour

**Reforms in Health Management Information
Systems: A Case from India**

Prof. Sandeep Shahy

Professor of Informatics, University of Oslo, Norway

Advisor to the Government of India, New Delhi

10.00 - 10.05

Vote of thanks by President Elect HISSL

Dr. Vajira H. W. Dissanayake

10.05 - 10.30 **TEA & FELLOWSHIP**

10.30 - 11.30 **GUEST LECTURES – Plenary Session**
Co Chairpersons: Prof MTN Jiffry
Dr. Jayantha Weerasinghe

**Health Information Systems Program (HISP)
India**

John Lewis
Vice President, HISP India, and
PhD Candidate, University of Oslo, Norway

**Getting more bang for the buck with technology
enhanced learning.**

Dr. Ruwan Weerasinghe
Director, University of Colombo School of
Computing

11.30 - 12.30 **SYMPOSIUM**

The Subspecialty of Biomedical Informatics

Co Chairpersons: Prof. Rezvi Sheriff
Dr. Ruwan Weerasinghe

Computers in the Consultation Room

Prof. Rezvi Sheriff
Director, PGIM

Health Informatics Initiatives in Sri Lanka

Dr. Sarath Samarage
Deputy Director General Planning
Ministry of Healthcare and Nutrition, Sri Lanka

**NPfIT - The National IT Programme in the UK;
The story so far & what lessons can we learn from
it for Sri Lanka?**

Dr. Bernard Fernando
Honorary Fellow, General Practice Section
Division of Community Health Sciences,
The University of Edinburgh, UK

The MSc Biomedical Informatics Course of the PGIM

Dr. Vajira H. W. Dissanayake
Secretary, Curriculum Development Subcommittee,
MSc Biomedical Informatics Course, PGIM

12.30 - 13.15 **LUNCH
and Video Conference with Ritumeikan Asia
Pacific University, Japan.**

13.15 - 13.45 **INTERACTIVE PRESENTATIONS**
Co Chairpersons: Dr Senaka Rajapakse
Dr Joel Fernando

World Space: The PGIM Experience

Dr. Rikaz Sheriff
Senior Medical Officer, Western Infirmary, Colombo

**Computerising MCQ Banks: The PGIM
Experience**

K.G.K. Palitha
Systems Analyst/Programmer, PGIM

**TeleGenetics – Remote Genetic Counseling Using
the Internet**

Dr. Vajira H. W. Dissanayake
Senior Lecturer, Human Genetics Unit, Faculty of
Medicine, University of Colombo

**Emergency Radio Communication System for
Efficient Patient Care Services in the Gamapaha
Region**

Dr. Hemantha Gamage
General Hospital,
Gampaha

13.45 - 14.45

FREE PAPER SESSION I

Co Chairpersons: Prof. Shyam Fernando
Dr Dennis Aloysius

Free Paper – 1

Development and Evaluation of a Computer Based Patient Record System for Teaching Hospital Peradeniya

Free Paper - 2

A preliminary study to evaluate the use of information and communication technology (ICT) in Sri Lankan primary care practice

Free Paper - 3

A computer application to estimate the required medical resources for a hospital in a disaster situation

Free Paper - 4

A Study on Awareness and Opinions about Information Technology and Medical Informatics in Peradeniya Medical Faculty

14.45 - 15.00

TEA

15.00 - 16.00

FREE PAPER SESSION II

Co Chairpersons: Dr Gamini Nanda Gunawardena
Dr Roshan Hewapathirana

Free Paper – 5

Patient information system for Antenatal Clinic

Free Paper - 6

The Sri Lankan Genome Variation Database

Free Paper - 7

**Adverse drug reaction database (ADR database)
for Info_Vig**

Free Paper - 8

**Interactive Compact Disks on “Diagnostic
Ultrasonography in Obstetrics”**

16.00

Closing Ceremony and Award Presentation

**Vidyajyothi Professor Rezvi Sheriff Award for
The Best Free Paper**

ABSTRACTS

Free Paper 1

Development and Evaluation of a Computer Based Patient Record System for Teaching Hospital Peradeniya

PHGJ Pushpakumara¹, WAJC Chandrakumara¹

¹Faculty of Medicine, University of Peradeniya

Computer based patient record systems are being increasingly used in hospitals, especially in the developed countries. There are some attempts to use them in Sri Lankan hospitals also. These systems have the advantages of less cost and easy reproducibility over the standard paper based system. This paper discusses how we developed a computer based patient record system for Teaching Hospital Peradeniya, which is being currently used successfully in the Medical Clinic of the hospital.

One of the most important aspects was to develop a user interface that is easy to use for the busy clinicians, yet provided good functionality. This system uses a Microsoft Access database to store patient records. Automated prescription writing is also facilitated which is faster and accurate. A special module for diabetes is also been integrated to the system. We hope to introduce new modules, which will deal with allergies and drug interactions in the future.

Development of this software went through a number of iteration of user interaction and change, until the users (the doctors) were satisfied with it. We evaluated the usability of this system using USE questionnaire, which gave encouraging results.

Free Paper 2

A preliminary study to evaluate the use of information and communication technology (ICT) in Sri Lankan primary care practice

S Edirippulige¹, RB Marasinghe², HMSP Bandara², MTM Jiffry².

¹ Centre for Online Health, Faculty of Health Sciences, University of Queensland, Australia, ²Department of Medical Education and Health Sciences, University of Sri Jayewardenepura, Sri Lanka.

Background: Benefits of information and communication technology (ICT) in medical and health practices have been recognised. In Sri Lanka, primary care has a potential to include ICT. However, actual ICT usage data in primary care are still limited.

Objectives: (1) to examine the current level of ICT usage in primary care practices. (2) to investigate the perceptions and expectations of general practitioners in using digital technologies.

Methods: A questionnaire was administered to all general practitioners (cluster sample, n=70) working in two suburban provinces near the capital Colombo in 2007. Questions were designed to gather demographic information, current level of ICT use, areas of ICT use, main applications and the perceptions/expectations.

Results: The response rate was 74% (52/70). Overall computer use at practicing centres was low (17%). About 58% doctors used electronic health records and a similar number used computers for communication. Accessing information on the Internet and online education were also popular areas (42%). In real-time communication, both land phones (88%) and mobile phones (86%) were equally popular devices. However, former was limited to administration purposes (70%) but latter expanded to communicating with patients. In store-and-forward applications, email (33%) and SMS messaging (30%) were low. Emails were mainly used for communicating with colleagues while SMS use includes communicating with patients. Over 80% of participants indicated that the use of ICT in their practice was useful and keen to expand the use while lack of education and training (8%) and limited access (14%) were identified as obstacles to ICT use.

Conclusions: The use of ICT in general practice is relatively low. However, it appears that both real-time and store-and-forward applications are equally in use. Although, the Internet and email use is low, mobile computing (mobile phone/SMS) is becoming popular. The users appreciated that the usefulness of ICT to improve the quality of care.

Free Paper 3

A computer application to estimate the required medical resources for a hospital in a disaster situation

ID Weerasinghe¹, LAPD Karunaratne²

¹Department of Physics, Faculty of Science, ²Department of Psychiatry, Faculty of Medicine, University of Peradeniya

Introduction: Managing casualties in a hospital after a disaster is a major concern. The current practice is to focus all possible personnel and material resources for the management of patients. Since there are no protocols to define the quantities of resources required for the management, deficiencies of crucial commodities or waste of resources is commonly observed.

Objective: To calculate the medical resources required for a specific hospital/unit to provide optimum medical care, given the number of patients.

Methodology: Once the patients are classified in `Triage Sieve` of the Advanced Trauma Life Support, the computer application calculates the medical resources required, according to the number of patients in each category. It starts with a pre-estimated number of resources and readjusts its calculations for the next use according to the actual number of resources spent previously. Requirements can also be added or removed. By updating a database for already existing resources, it identifies the resources lacking in the unit.

Discussion: After priming with 4-5 disaster data, the application was able to calculate the resources with an acceptable accuracy. The calculations were specific to the resources available in a particular hospital and areas to improve in the hospital infrastructure were easily identified. It was also useful to remark the resource in deficit to be fulfilled, before patients arrive.

Free Paper 4

A Study on Awareness and Opinions about Information Technology and Medical Informatics in Peradeniya Medical Faculty

WAJC Chandrakumara¹, MRUN Bandara¹, CD Huruggamuwa¹, RMPA Rathnayake¹, PHGJ Pushpakumara¹, ACM Gunasekare¹

¹Faculty of Medicine, University of Peradeniya

Introduction: Medical sciences are increasingly becoming integrated with Information Technology (IT) and Medical Informatics (MI) is emerging as a new discipline and IT is becoming an essential tool for undergraduate medical education. Peradeniya Medical Faculty has undergone a curriculum change in the recent past with training in IT being introduced with the new curriculum.

Objectives: 1. To assess the student awareness in IT and MI. 2. To assess the student opinions about IT and MI. 3. To compare differences between the batches following old and new curricula

Materials and Method: Information was gathered in a sample (n=482) of medical students using a questionnaire.

Results: Majority of students were able to (1) play media files(95%), (2) browse internet(92%) and (3) use office packages effectively(78) while most were unable to do basic computer aided statistical analysis(10%) and simple computer programming(22%). There was a significant increase in the proportion of students who were able to do tasks (2) and (4) among the new curriculum students. 77% of students believed computer education should be provided to all the doctors.

82% of students agreed to “computer literacy is a very useful factor for the MBBS course.” 53% of students were satisfied with their computer knowledge with regards to the MBBS course. 94% of students believed medicine is becoming integrated with IT. 35% of students knew that there exists a sub specialty known as “Medical Informatics”, 82% among them thought it will provide realistic career opportunities and 68% among them would consider it as a career pathway.

Free Paper 5

Patient information system for Antenatal Clinic

HSB Piyaratne¹, HWSN Karunaratne²

¹Medical Student, Faculty of Medicine, Colombo, ²Consultant Obstetrician and Gynaecologist, De Soyza Maternity Hospital.

Introduction: The health service is the most valuable asset of any country which must be managed effectively. Effective patient data management will result in improved and increased health outcomes, and a more sustainable health service.

General Objective: To develop software for data management of current system in antenatal clinic by enhancing the existing system.

Specific Objectives:

1. To recognize the current system of data management within the Antenatal Clinic. 2. To analyze and design the data management system for data handling of the clinic. 3. To construct software based on the above analysis.

Methodology: Developed the Pregnancy Record System software using Microsoft Visual Basic 6 and Microsoft Access database format. The structure was formulated by studying the data management and deficiencies of current system.

Results: Developed the software for Data management in antenatal clinic in order to handle thousands of patient records. This ensures the confidentiality of patient information, selective access and data handling restriction for different health care personals in clinic by using password protection.

Conclusion: Pregnancy Record System is proving to be a far better approach to documentation than conventional, paper-based systems. The primary advantages include increased efficiency, improved documentation, and improved quality of care, improved security and reduced documentation expenses. So the effective patient data management will result in improved and increased health outcomes, and a more sustainable health service.

Free Paper 6

The Sri Lankan Genome Variation Database

PS Samarakoon¹, RW Jayasekara¹, VHW Dissanayake¹

¹Human Genetics Unit, Faculty of Medicine, University of Colombo, Sri Lanka

Sri Lankan Genome Variation Database (SLGVD) is a database of single nucleotide variations found in Sinhalese, Sri Lankan Tamils and Moors - the three major ethnic groups in the Sri Lankan population. Studies of variations in genes among different groups of individuals in the Sri Lankan population have grown rapidly during past few years. These studies generate large amounts of genetic data which is important to study the occurrences of diseases that differ across ethnic groups. There is therefore a need for a central repository of this data. The SLGVD was created to fulfil this void. The SLGVD offers web based access to genetic variation information of Sri Lankan people. It would be an important informatics tool for both research and clinical purposes to retrieve and deposit human variation data. The database was designed conforming to guidelines issued by the Human Genome Variation Society (HGVS). The variation data catalogued in SLGVD were derived from genetic research performed using the Sri Lankan population. In addition to variation data each variation links with the relevant entries of Online Mendelian Inheritance in Man (OMIM), SNP and Genbank databases at the National Centre for Biotechnology Information (NCBI). For each variation, genotype and allele frequencies of different ethnic groups are represented in numerical and graphical format. SLGVD can be publicly accessed from <http://www.hgucolombo.org/SLGVD.aspx>

Free Paper 7

Adverse drug reaction database (ADR database) for Info_Vig, Department of Pharmacology, Faculty of Medicine, Colombo

NP Liyana Arachchi¹, S Sri Ranganathan², R Fernandopulle²

¹Medical student, Faculty of Medicine Colombo, ²Info_Vig, Department of Pharmacology, Faculty of Medicine, Colombo

Introduction

Background: The national ADR monitoring centre (Info_Vig) in Sri Lanka was established in 1999 by the Department of Pharmacology, Faculty of Medicine, Colombo with the collaboration of the Ministry of Health. In 2000 Info_Vig was recognized as a member of the WHO programme for international drug monitoring. Documentation and collation of Adverse Drug Reaction (ADR) is the most important aspect of signal generation in the WHO international ADR programme. To facilitate this, WHO developed a software solution for national centres which was Internet based (Vigibase On-line). However it was not free, with a very high capital and annual subscription cost which limited its use in resource limited settings such as Sri Lanka.

Objective: The main objective was to create a user friendly, cost effective ADR database system for Info_Vig to feed ADR and quality failure reports with a comprehensive user guide.

Methodology: The database management system used was MS Access2003, which was user friendly and effective. After analyzing requirements and the data source, a conceptual schema and physical design was developed. Following this the security level was finalized and running and debugging was done.

Outcome: The database was developed and tested by feeding ADR reports of year 2006. Collated reports were generated to the satisfaction of the users. A comprehensive user manual was designed to facilitate effective use.

Conclusion: The final product satisfied the requirements of Info_Vig both in terms of cost and report generation.

Free Paper 8

Interactive Compact Disks on “Diagnostic Ultrasonography in Obstetrics”: First ever electronic publication of this regard in Sri Lanka.

SH Dodampahala¹, MSE Karunadasa¹

¹Department of Obstetrics and Gynaecology, Faculty of Medicine, University of Colombo.

Interactive Compact Disks on “Diagnostic Ultrasonography in obstetrics” Volume 01 and 02 was designed and directed by Dr. SH Dodampahala, compiled by Dr.M.S.E.Karunadasa and produced by Audio Visual Unit in collaboration with Department of Obstetrics and Gynaecology of Faculty of Medicine, University of Colombo and approved by the Faculty Board in March 2008.

“Diagnostic Ultrasonography in obstetrics” -Volume 01, Size-350MB
Contents:

- History and Overview of Ultrasonography
- Normal Biometry
- Normal Early Pregnancy (1st Trimester)
- Abnormal Conceptions
- Early Pregnancy Anomaly Screen
- Diagnostic Algorithms

“Diagnostic Ultrasonography in obstetrics” -Volume 02, Size-553MB
Contents:

- Standard Views/ Anomalies
- Doppler Scanning
- Multiple Pregnancies
- Placenta,Cord, Amniotic Fluid & Amniotic bands.

These educational CD series was developed to assist trainees and specialists in the field of Obstetrics. This was designed from Dr. SH Dodampahala’s personal experience and using his ultrasound image data base. The facts included were upto date with Fetal Medicine Foundation standard guidelines. This is very useful in learning obstetric ultrasonography with a simple, novel and thorough approach.

