



REVOLUTIONIZING HEALTH CARE
with INFORMATICS:
FROM RESEARCH to PRACTICE

FINAL PROGRAM

February 19 – 22, 2009

Inn at Laurel Point,

Victoria, BC Canada

An international conference addressing Information
Technology and Communications in Health (ITCH)
presented by the School of Health Information Science,
University of Victoria, Canada



We would like to thank the following sponsors

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GENERAL INFORMATION

The language of the conference is English. The conference sessions will take place at the Inn at Laurel Point, 680 Montreal Street, Victoria, BC Canada. There is no smoking allowed inside any public buildings in Victoria. The following two locations are designated smoking areas at the hotel: east side of the Terrace next to the pool and north of the lobby doors next to the bench. Ashtrays are located in both areas.

Business Centre

The Inn at Laurel Point Business Centre is located in the Marble Lobby across from the Boutique. Guests will find 2 PCs, a laser printer and a USB port/memory card reader. Guests may access the computers at a cost of \$0.49 per minute or print documents at a cost of \$0.50 per page. Payment can be made with most major credit cards or guests may purchase \$5 and \$10 access cards from the Front Desk. Please contact the Concierge or Front Desk for assistance with other business services such as FAX, photocopy, and courier services.

Conference Badges

Please wear your name badge at all times to ensure admittance to the conference sessions, the Friday night reception at the Royal British Columbia Museum and the Gala dinner.

Proceedings

A copy of the proceedings on CD-ROM is in your delegate bag. A hardbound volume of the formally submitted manuscripts, entitled "Advances in Information Technology and Communication in Health," can be purchased at the Registration Desk for \$30.00. This is volume 143 in the Studies in Health Technology and Information series published by IOS Press and indexed by Medline.

Student Posters

Judging of the student posters will take place between 4:00 – 5:00 pm Thursday, February 19, 2009, in the Terrace Room of the Inn at Laurel Point. The winners will be announced that evening and again before the James Coward Lecture on February 20th.

Conference Registration and Information Desk

Registration Desk staff are available to assist you with information and to sell bound proceedings of the conference and West Coast Gala Dinner tickets. They can also answer your questions about Victoria and its environs. The Registration Desk will be open throughout the conference.

Opening Reception

The opening wine and cheese reception will take place in the Terrace Room between 5:00 – 7:00 pm after the student poster judging. At this time delegates are encouraged to view the student posters and the exhibitor displays. The Opening Reception is sponsored by MicroStrategy Canada.

Vendor Exhibits

Vendor exhibits will be on display throughout the conference in the Terrace Room. The exhibit hours are:

Thursday, February 19	5:00 pm – 7:00 pm
Friday, February 20	8:00 am – 5:00 pm
Saturday, February 21	8:00 am – 1:30 pm

Exhibitors:

Canadian Institute for Health Information (CIHI)
BC Ministry of Health Services
Physician Information Technology Office
MDIT Innovations
Excelleris Technologies Inc.
School of Health Information Science

Friday Night Reception at the Royal British Columbia Museum

You are invited to join us for a casual private reception at the world-renowned Royal British Columbia Museum starting at 6:30 pm, February 20th. Admission is by ticket only which is included with your ITCH conference badge. We have reserved the Modern History Gallery on the third floor that, among other displays, includes a replica of the stern section of Captain George Vancouver's ship HMS Discovery as it may have appeared during its stay in Nootka Sound. Stroll back through time to when European explorers began the fur trade with coast First Nations. There is a no-host bar and "grazing" stations, which showcase the exhibits with cuisine to complement each area.

West Coast Gala Dinner

Join us for a relaxing evening starting with cocktails at 6:30 pm followed at 7:00 pm by a bountiful gourmet West Coast buffet to tantalize your taste buds. There is a no-host bar. Tickets are required. If your registration included the West Coast Gala Dinner, a dinner ticket and a drink ticket are included with your nametag. There are sign-up sheets for dinner seating at the conference Registration Desk.

West Coast Gala Tickets

If your registration includes a ticket for the West Coast Gala, it is included with your nametag. If you do not wish to use your ticket, please return it to the Registration Desk so we may give it to one of our volunteers.

Currency

If you need to exchange currency, please check with the Registration Desk for the nearest bank.

Job Posting Board

Delegates are welcome to post job advertisements on the job posting board located near the Registration Desk. These advertisements may not be printed on anything larger than letter paper.

Contact Numbers

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Transportation

Shuttle to the Victoria International Airport

The Airporter shuttle bus services all downtown hotels. You must make reservations. Check with your hotel registration desk. You can arrange for this service even though you may not be staying at a hotel. The shuttle leaves every hour and costs approximately \$18.00. The Airporter telephone number is (250) 386-2525. A taxicab, which can carry up to four people, costs approximately 60.00.

Bus Transportation to Vancouver International Airport/Downtown Vancouver

Pacific Coach Lines has routes between downtown Victoria, Vancouver airport and downtown Vancouver. The buses have priority loading on the ferries and travel time is approximately 3.5 hours. The cost from downtown Victoria to the Vancouver airport is \$43.50 and the cost to downtown Vancouver is \$38.00. For information call Victoria (250) 385-4411.

Ferries to Vancouver

BC Ferries, which have a sailing time of 1 hour and 35 minutes, travel between Tsawwassen (39 Km south of Vancouver) and Swartz Bay (32 Km north of Victoria). This is the recommended route for those travelling to and from Victoria by car. Daily sailings in February are between 7:00 am and 9:00 pm, on the odd hour. The fare is \$13.00 for each driver or adult passenger. A car costs \$43.00. For information call (250) 386-3431.

FINAL CONFERENCE PROGRAM

Thursday, February 19, 2009

(Note: Abstracts for workshops begin on page 20)

8:30 am	Registration for workshops	Main lobby
9:00 am	Concurrent Workshops	
	<i>Revolutionizing Healthcare with Business Intelligence</i> Patrick Hulsen, (CEO Daintel), Copenhagen, Denmark	Salon A/B
	<i>The University of Victoria Interdisciplinary Electronic Health Record Educational Portal: Integrating Electronic Health Records into Health Professional Education and Practice</i> Elizabeth Borycki, University of Victoria, Victoria, BC Canada Andre Kushniruk, University of Victoria, Victoria, BC Canada Brian Armstrong, EHRchitect Solutions, Victoria, BC Canada	Oceanside Room
	<i>Assessing Factors for Successful Widespread Adoption of Physician EMRs</i> Brian Forster, OntarioMD, Toronto, ON Canada	Salon C/D
10:15 am	Break	Main lobby
10:30 am	Workshops (cont'd)	
Noon - 1:00 pm	Free time Note that the Aura Restaurant, in the Inn at Laurel Point, is open for lunch and there are other restaurants and coffee shops within walking distance of the hotel.	

1:00 pm	Concurrent Workshops <i>Methods for User Driven Innovation and Participatory Design from a Scandinavian Approach</i> Christian Nøhr, Aalborg University, Denmark Pernille Bertelsen, Aalborg University, Denmark Soren Vingtoft, Capital Region, Denmark	Oceanside Room
	<i>Evaluating the Costs and Benefits of ICT-based Applications in Healthcare Across Multiple Levels</i> Vivian Vimarlund, Linkopings Universitet, Sweden Eric Eisenstein, Duke University Medial Centre, Durham, NC USA Andre Kushniruk, University of Victoria, Victoria, BC Canada	Salon A/B
	<i>How an EMR Impacts Physician Workflow</i> Mel Petreman, Physician Information Technology Office, Vancouver, BC Canada Shelly McNeil, Physician Information Technology Office, Vancouver, BC Canada	Salon C/D
2:30 pm	Break	Main lobby
2:45 pm	Workshops (cont'd)	
4:00 pm	Student Poster Judging	Closed to public
5:00 pm	Registration Opening Reception sponsored MicroStrategy Canada	Terrace Room (exhibition area)

Friday, February 20, 2009

8:00 am	Registration and continental breakfast	Main lobby
8:30 am	Winner of student poster contest announced Carolyn Bell, Executive Director, Business Management Office and eDrug Project, BC Ministry of Health Services, to bring greetings from the BC Ministry of Health	Ballroom
8:45 am	James Coward Lecture Introduction of keynote speaker by Andre Kushnriuk, University of Victoria Speaker: Mike Bainbridge , NHS Connecting for Health, UK “21 st Century Healthcare and Global Standards- This might hurt a little”	Ballroom
9:45 am	Break and view exhibits	Main lobby / Terrace Room
10:15 am	Concurrent Sessions	
Telemedicine and Telehealth	<i>Innovation in the North: Are Health Service Providers Ready for the Uptake of an Internet-based Chronic Disease Management Platform?</i> Sherri Tillotson: University of Northern British Columbia, Vancouver, BC, Canada <i>Telematics in Acute Trauma Care</i> Christian Juhra: University hospital Münster, Department of Trauma-, Hand- and Reconstructive Surgery, Waldeyerstr. 1, D-48149 Münster, Germany <i>Telehealth-based Framework for Supporting the Treatment of Obstructive Sleep Apnea</i> Mila Kwiatkowska: Department of Computing Science, Thompson Rivers University, Canada <i>How an Innovative Technology Can Improve the Quality of Community Care</i> Jan Carter: TELUS, Vancouver, BC, Canada <i>Remote Agents Triage Pilot: Evaluation of a New Service Delivery Model</i> Shaunne Letourneau: Alberta Health Services – Health Link Alberta, Edmonton, AB Canada	Salon A and B Friday, February 20 10:15 - 12:15 pm
Electronic Health Records	<i>Information Management Framework; a Model for Clinical Departments</i> Reza Shahpori: Department of Critical Care Medicine, Calgary Health Region, Calgary, AB, Canada <i>Clinical Support in Primary and Ambulatory Care: Canadian Lessons to be Learned from the UK Patient Summary Care Record (SCR) Initiative</i> Shannon Malovec: Courtyard Group, Toronto, ON, Canada <i>Technical and Architectural Issues in Deploying Electronic Health Records (EHRs) over the WWW</i> Brian Armstrong: EHRchitect Solutions, Victoria, BC, Canada	Salon C and D Friday, February 20 10:15 - 12:15 pm

Cont'd on next page

An EHR-Based Paradigm Shift in the Operation of Mental Health and Addiction Services

Kenneth Moselle: Vancouver Island Health Authority, Victoria, BC, Canada

Software Assurance and Usability

Scenario-based Testing of Health Information Systems (HIS) in Electronic and Hybrid Environments

Elizabeth Borycki: School of Health Information Science, University of Victoria, Victoria, BC, Canada

Breakout A, B and C
Friday, February 20
10:15 - 12:15 pm

Using Heuristic Evaluations To Assess the Safety of Health Information Systems

Chris Carvalho: Courtyard Group, Edmonton, AB, Canada

Tevaluation and Usability Assessment of the Human-Machine Interface for a Novel Adaptive Health Knowledge Translation System

John Copen: Department of Psychiatry, University of Calgary, Calgary, AB, Canada
Northern Ontario School of Medicine, ON, Canada

Architectural and Usability Considerations in the Development of a Web 2.0-based EHR

Yalini Senathirajah: Department of Biomedical Informatics, Columbia University, New York, NY, USA

Terminology, Classification and Standards

A Standard Operating Protocol (SOP) and Minimum Data Set (MDS) for Nursing and Medical Handover: Considerations for Flexible Standardization in Developing Electronic Tools

Paul Turner: eHealth Services Research Group, Department of Computer and Information Science, University of Tasmania, Hobart, Tasmania, Australia

Oceanside Room
Friday, February 20
10:15 - 12:15 pm

Managing Terminology Assets in Electronic Health Records

Rita Scichilone: American Health Information Management Association, IL, USA
Kelly Abrams, CHIM, and Sue Schneider, CHIM

Normalization of Reported Lab Results

Ray Simkus: Brookwood Family Practice, Langley, BC, Canada

Optimizing Standard Patient Management through Order Sets – Impact on Care (Blood Cultures)

Tom Rosenal: Calgary Health Region, Calgary, AB, Canada
University of Calgary, Calgary, AB, Canada

Medical Text Analytics Tools for Search and Classification

Jimmy Huang: Institute for Clinical Evaluative Sciences, York University, Toronto, ON, Canada

12:15 pm

Lunch and view exhibit
Lunch is sponsored by Healthcare Information Management & Communications Canadas

Main lobby /
Terrace Room

1:15 pm

Concurrent Sessions

Electronic Health Records

Failure of Electronic Medical Records in Canada: A Failure of Policy or a Failure of Technology?

Karim Keshavjee: InfoClin Inc, Toronto, ON, Canada

Salon C and D
Friday, February 20
1:15 - 2:45 pm

Out with the EMR! A Novel Approach to Computer-based Medical Record Keeping

Karim Keshavjee: InfoClin Inc, Toronto, ON, Canada

Ontario's Province-wide Paediatric Electronic Health Record

Andrew Szende: Electronic Child Health Network (eCHN), Toronto, ON, Canada

Strategies to Increase Familiarization and Acceptance of Electronic Health Records Among Health Professionals and Consumers

Cynthia Burdyny: Courtyard Group, Edmonton, AB, Canada

Software Assurance and Usability

Comparative Study of Heuristic Evaluation and Usability Testing Methods

Titus Schleyer: Center for Dental Informatics, School of Dental Medicine, University of Pittsburgh, PA, USA

Breakout A, B and C
Friday, February 20
1:15 - 2:45 pm

The User-centered Approach in the Development of a Complex Hospital-at-home Intervention

Joe Cafazzo: Centre for Global eHealth Innovation, University Health Network, University of Toronto, ON Canada
Health Policy, Management and Evaluation, University of Toronto, ON Canada
Institute of Biomaterial and Biomedical Engineering, University of Toronto, ON, Canada

Applying a Human Factors Engineering Approach to Healthcare IT Applications: Example of a Medication CPOE Project

Marie-Catherine Beuscart-Zephir: Evalab, INSERM CIC-IT 807, Faculté de Médecine – CHU de Lille, France

Assessing Software Impact on Clinical Workflow and Resource Utilization

Kevin Murphy: Clinical Informatics Service, BC Cancer Agency/Fraser Valley Centre, Department of Medicine, University of British Columbia, BC, Canada

Terminology, Classification and Standards

Boundary Objects in the Multidisciplinary Care Management of Chronic Conditions: Multiple Chemical Sensitivity

Mike Shepherd: Faculty of Computer Science, Dalhousie University, NS, Canada

Oceanside Room
Friday, February 20
1:15 - 2:45 pm

Use of Case Mix Tools for Utilization Management and Planning

Sherri Perry: Canadian Institute for Health Information, Ottawa, ON, Canada

Evaluating the Effectiveness of Modeling Principles for Data Models

Miguel Torres-Urquidy: Department of Biomedical Informatics, University of Pittsburgh, PA, USA
Center for Dental Informatics, University of Pittsburgh, PA, USA

POND4Kids: A Web-based Architecture for Collaborative International Oncology Protocols

Yuri Quintana: International Outreach Program, St. Jude Children's Research Hospital, Memphis, TN, USA

3:00 pm

Break and view exhibits

Main lobby

3:15 pm

Concurrent Sessions

Software Selection and Evaluation

Getting to 100%: A Framework to Define and Reach Target Order Entry Rates

Tom Rosenal: Calgary Health Region, Calgary, AB, Canada
University of Calgary, Calgary, AB, Canada

Salon C and D
Friday, February 20
3:15 - 4:45 pm

“Physicians’ Adoption Score” Physicians are not a Homogenous Group
Mitra Sajedi: School of Health Information Science, University of Victoria, BC, Canada

The Development of a Risk Identification Screening Framework for Healthcare Information Systems

Liz Keay: School of Health Information Science, University of Victoria, BC, Canada

Application of House of Quality (HOQ) to Health Care Management

Mu-Hsing Kuo: School of Health Information Science, University of Victoria, BC, Canada

Software Assurance and Usability

Preventing Technology-Induced Errors in Healthcare: The Role of Simulation

Andre Kushniruk: School of Health Information Science, University of Victoria, BC, Canada

Breakout A, B and C
Friday, February 20
3:15 - 4:45 pm

Exploring the Relationship Between Training and Usability: A Study of the Impact of Usability Testing On Improving Training and System Deployment

Andre Kushniruk: School of Health Information Science, University of Victoria, BC, Canada

Security Evaluation and Assurance of Electronic Health Records

Jens Weber-Janke: Department of Computer Science and School of Health Information Science, University of Victoria, Victoria, BC, Canada

Assessing the Secure Usability of a Public Health Surveillance Web Application Using Modified Heuristic Inspection (“Cognitive Walkabout”) and Cognitive Walkthrough Methods

Sean Lake: Public Health Agency of Canada, Ottawa, ON, Canada

Research and Development Initiatives

Genotypic Approaches to Therapy in Children (GATC): Using Information Technology to Improve Drug Safety

Elaine Wong: Children’s Hospital of Eastern Ontario, Ottawa, ON, Canada

Oceanside Room
Friday, February 20
3:15 - 4:45 pm

Overcoming the Absence of Tone and Non-Verbal Elements of Communication in Text-Based Cybercounselling

Lawrence Murphy: Worldwide Therapy Online Inc., Guelph, ON, Canada

A Randomized Clinical Trial of Clinical Decision Support in a Rural Community Health Network Serving Lower Income Individuals: Study Design and Baseline Characteristics

Eric Eisenstein: Duke Clinical Research Institute, Durham, NC, USA
Division of Clinical Informatics, Department of Community and Family Medicine, Duke University Medical Center, Durham, NC, USA

6:30 p.m.

Reception at the Royal BC Museum

Modern History Gallery

Saturday, February 21, 2009

8:00 am	Registration – continental breakfast	Main lobby
8:30 am	Opening remarks and introduction of keynote speaker by Steven Huesing, Executive Director of the International Medical Informatics Association (IMIA)	Ballroom
8:45 am	Plenary Session Speaker: Jennifer Zelmer , International Health Terminology Standards Development Organisation, (IHTSDO), Denmark “ <i>Revolutionizing Health Informatics: The Role of Standards</i> ”	Ballroom
9:45 am	Break and view exhibits	Main lobby / Terrace Room
10:15 am	Concurrent Sessions	
Service Administration, Management and Self-management	<i>Patient Self-management and Chronic Illness: Evaluating Outcomes and Impacts of Information Technology</i> Liz Cummings: eHealth Services Research Group, CIS, University of Tasmania, Hobart, Tasmania, Australia	Salon A and B Saturday, February 21 10:15 - 12:15 pm
	<i>Potential Return on Investment (RoI) on web-based Diabetes Education in UK</i> Abdul Roudsari: Centre for Health Informatics, City University, London, UK	
	<i>Breaking Barriers to Self-Management of Chronic Diseases – The MaXi Project</i> Christian Nøhr: Department of Development and Planning, Aalborg University, Denmark	
	<i>Toyota A3 Report: A Tool for Process Improvement in Healthcare</i> Te-Shu Lee: School of Health Information Science, University of Victoria, BC, Canada	
	<i>Mobile ICT Support for the Continuum of Care</i> Masako Miyazaki: University of Alberta, Edmonton, AB, Canada	
Software Selection and Evaluation	<i>Selecting Electronic Health Record Systems: Development of a Framework for Testing Candidate Systems</i> Andre Kushniruk: School of Health Information Science, University of Victoria, BC, Canada	Salon C and D Saturday, February 21 10:15 - 12:15 pm
	<i>Extending the Infoway Benefits Evaluation Framework for Health Information Systems</i> Francis Lau: School of Health Information Science, University of Victoria, BC, Canada	
	<i>eDoc Evaluation – At Eighteen Months into the Challenge</i> Linda Yetman: Healthtech Consultants, Toronto, ON, Canada	Cont'd on next page

Evolution of a National Approach to Evaluating the Benefits of the Electronic Health Record

Simon Hagens: Canada Health Infoway, Toronto, ON, Canada

The DaVinci Project – An Evaluation of a Patient-Centered Information Technology Tool for the Management of Chronic Diseases by Primary Care Interdisciplinary Teams

Marie-Therese Lussier: Université de Montréal and Équipe de recherche en soins de première ligne Centre de santé et de services sociaux de Laval, PQ, Canada

Nation-wide Canadian Initiatives

How Can We Know Whether Short Term Trends in a Hospital's HSMR are Significant?

Larry Frisch: Vancouver Island Health Authority, Victoria, BC, Canada

Breakout A, B and C
Saturday, February 21
10:15 - 12:15 pm

Capturing Pan-Canadian Primary Health Care Indicator Data Using Multiple Approaches for Data Collection

Patricia Sullivan-Taylor: Canadian Institute for Health Information, Toronto, ON
Canada

Development of Electronic Medical Record Content Standards to Collect Pan-Canadian Primary Health Care Indicator Data

Patricia Sullivan-Taylor: Canadian Institute for Health Information, Toronto, ON,
Canada

An Embarrassment of Data: How e Assessments Are Supporting Front Line Clinical Decisions and Quality Management Across Canada and around the World

Nancy White: Home and Continuing Care Development, Canadian Institute for Health Information, Ottawa, ON, Canada

Jeff Poss, University of Waterloo, Waterloo, ON

Developing a Chronic Disease Surveillance Network in Canada: Health Informatics Challenges and Proposed Solutions

Karim Keshavjee: InfoClin Inc, Toronto, ON, Canada

Ethics, Policy and Government

Is It Appropriate, or Ethical, To Use Health Data Collected for the Purpose of Direct Patient Care To Develop Computerized Predictive Decision Support Tools?

Wilfred Bonney: Health Level Seven, Inc. (HL7), Halifax, NS Canada

Oceanside Room
Saturday, February 21
10:15 - 12:15 pm

National Health Information Management/Information Technology Strategies in Hong Kong, Taiwan and Singapore

Julia Zhu: School of Health Information Science, University of Victoria, Victoria,
BC, Canada

Trade Missions: A Framework for Initiating Multinational Collaboration in Health Informatics

Shirley Fenton: Waterloo Institute for Health Informatics Research, University of Waterloo, Waterloo, ON, Canada

12:15 pm

Lunch and view exhibits

Main lobby /
Terrace Room

1:15 pm

Concurrent Sessions

Decision Support, Artificial Intelligence and Modelling

Information Assessment Method (IAM): Content Validity of the Cognitive Checklist

Pierre Pluye: Department of Family Medicine, McGill University, Montreal, PQ, Canada

Salon A and B
Saturday, February 21
1:15 - 2:45 pm

Analysis of Acuity Trends Using Resource Intensity Weights Via the CIHI Portal

Lisa Gordon: Portal Services, Canadian Institute for Health Information, Ottawa, ON, Canada

Integrating Evidence-Based Interventions into Client Care Plans

Jennifer Carryer: Lawrence S. Bloomberg Faculty of Nursing, University of Toronto, ON, Canada

Toward Automatic Detection and Prevention of Adverse Drug Events

Marie-Catherine Beuscart-Zephir: Evalab, INSERM CIC-IT 807, Faculté de Médecine – CHU de Lille, France

Software Design and Development

Structured Data System for a Breast Cancer Medical Record

Samir Haq: Saba University School of Medicine, Saba, Netherlands-Antilles

Salon C and D
Saturday, February 21
1:15 - 2:45 pm

The eFOSTR PROJECT: Design, Implementation and Evaluation of a Web-based Personal Health Record to Support Health Professionals and Families of Children Undergoing Transplants

James Popkin: Medical Sciences, University of Victoria, Victoria, BC, Canada

Designing Technology To Support End of Life Decision Making

Pin Sym Foong: National University of Singapore, Singapore

Educational Initiatives and Professional Development

The University of Victoria Interdisciplinary Electronic Health Record Educational Portal

Elizabeth Borycki: School of Health Information Science, University of Victoria, Victoria, BC, Canada

Breakout A, B and C
Saturday, February 21
1:15 - 2:45 pm

Incorporation of Medical Informatics and Information Technology as Core Components of Undergraduate Medical Education – Time for Change!

Anthony Otto: School of Health Information Science, University of Victoria, Victoria, BC, Canada

Learning by Doing: Expanding the Reach of Health Education through the Use of Technology

Kerry Hodgins: Canadian Institute for Health Information, Ottawa, ON, Canada

Technology Adoption and Evaluation

Improving the Efficiency and Accuracy of a Tablet PC Interface for Computerized Provider Order Entry Through Usability Evaluation and Provision of Data Entry Strategies

John Dawson: School of Health Information Science, University of Victoria, Victoria, BC, Canada

Oceanside Room
Saturday, February 21
1:15 - 2:45 pm

Mobile Phones As Mediators of Health Behavior Change in Cardiovascular Disease in Developing Countries

Connie Chan: Department of Biomedical Informatics, Columbia University, New York, NY, USA

Cont'd on next page

Ongoing Evaluation of Ease-of-use and Usefulness of Wireless Tablet Computers Within an Ambulatory Care Unit

Kevin Murphy: Clinical Inform. Serv., BC Cancer Agency/Fraser Valley Centre, Surrey, BC, Canada
Dept. of Medical Oncology, University of British Columbia, Vancouver, BC, Canada

Challenges in the Realization of Effective Patient Portals

Dominic Covvey: Waterloo Institute for Health Informatics Research, University of Waterloo, Waterloo, ON, Canada

3:00 pm

Break

Main lobby

3:15 pm

Concurrent Sessions

Decision Support, Artificial Intelligence and Modelling

Anemia Analyzer: Algorithm and Reflex Testing in Clinical Practice Leading to Efficiency and Cost Savings

Samir Haq: Saba University School of Medicine, Saba, Netherlands-Antilles

Salon A and B
Saturday, February 21
3:15 - 4:45 pm

Process Data: a Means to Measure Operational Performance and Implement Advanced Analytical Models

Vincent Chow: British Columbia Cancer Agency, Vancouver, BC, Canada

Software Design and Development

Adopting and Introducing New Technology To Improve Patient Care: A Wedding of Clinicians and Informatics Specialists

Jeff Barnett: BC Cancer Agency, Victoria, BC, Canada

Salon C and D
Saturday, February 21
3:15 - 4:45 pm

A Comprehensive Infectious Disease Management System

Alex Marcu: MDIT Innovations Incorporated, Vancouver, BC, Canada

Educational Initiatives and Professional Development

Integrating Point-of-care Technology into the Midwifery Curricula

Rachel Smith: Faculty of Nursing, Midwifery and Health, University of Technology, Sydney, NSW, Australia

Breakout A, B and C
Saturday, February 21
3:15 - 4:45 pm

Summer Institute in Health Informatics (SIHI): An Educational Initiative for Faculty Development in Medical Education

Grace Paterson: Medical Informatics, Division of Medical Education, Faculty of Medicine, Dalhousie University, Halifax, NS, Canada

The Engineering 4 Health Challenge – An Interdisciplinary and Intercultural Initiative to Foster Student Engagement in B.C. and Improve Health Care for Children in Under-served Communities

Jens Weber-Janke: Department of Computer Science and School of Health Information Science, University of Victoria, Victoria, BC, Canada

An Innovative Learning Experience for Entry to eHealth Careers

Dominic Covvey, : Waterloo Institute for Health Informatics Research, University of Waterloo, Waterloo, ON, Canada
Shirley Fenton, University of Waterloo. Waterloo, ON Canada

**Technology
Adoption and
Evaluation**

Effective Solutions in Introducing Server-Based Computing into a Hospital Information System
Shigeki Kuwata: Division of Medical Informatics, Tottori University Hospital,
Tottori, Japan

Oceanside Room
Saturday, February 21
3:15 - 4:45 pm

Applying Natural Language Processing Toolkits to Electronic Health Records – An Experience Report
Neil Barrett: Department of Computer Science, University of Victoria, Victoria, BC,
Canada

IT for Advanced Life Support in Hospitals
Birgitte Pedersen: IT University of Copenhagen, Copenhagen, Denmark
Corporate IT, The Capital Region of Denmark, Denmark

Availability and usage of ICT applications among European primary care physicians
Ingo Meyer: empirica Communication & Technology Research, Bonn, Germany

6:30 pm

Gala pre-dinner reception

Main lobby

7:00

West Coast Gala Dinner

Terrace Room

The after dinner speaker will be Grad Conn, Senior Director,
Global Consumer Health Strategy, Health Solutions Group,
Microsoft Corporation.

Sunday, February 21, 2009

8:00 am	Registration – continental breakfast	Main lobby
8:30 am	Opening remarks and introduction of keynote speaker by Andre Kushniruk, University of Victoria	Ballroom
8:45 am	Plenary Session Speaker: Donald Juzwishin , Juzwishin Consulting Inc. “ <i>Health 2.0, Medicine 2.0 and Web 2.0: Enabling technologies for practice, policy and systems</i> ”	Ballroom
9:45 am	Break	Main lobby / Terrace Room
10:15 am	Concurrent Sessions and Panels	
Nursing Informatics	<p><i>Health Information Systems Design to Support a Nursing Model of Care: Opportunities and Challenges</i> Craig Kuziemsy: Telfer School of Management, University of Ottawa, ON, Canada</p> <p><i>Practical Considerations for the Implementation of Health Outcome Measures</i> Robin Carriere: HOBIC Program, Ontario Ministry of Health and Long-Term Care, Ottawa, ON, Canada</p> <p><i>Where is Nursing in the Electronic Health Care Record?</i> Marjorie McIntyre: School of Nursing, University of Victoria, Victoria, BC, Canada</p> <p><i>Implementing an Interdisciplinary Electronic Documentation System at Two Pilot Units within an Acute Care Setting</i> Rena van der Wal: Vancouver Coastal Health Authority, Vancouver, BC, Canada</p>	Salon A and B Sunday, February 22 10:15 - 12:15 pm
Health Information Systems and Their Status	<p><i>Understanding the Impact on Intensive Care Staff Workflow Due to the Introduction of a Critical Care Information System: A Mixed Methods Research Methodology</i> Sally Ho: Department of Medicine, Faculty of Medicine & Dentistry, University of Alberta, Edmonton, AB, Canada</p> <p><i>Pharmacy Information Systems in Canada</i> Jeff Barnett: BC Cancer Agency, Victoria, BC, Canada</p> <p><i>Findings from Evaluations of the Benefits of Diagnostic Imaging Systems</i> Simon Hagens: Canada Health Infoway, Toronto, ON, Canada</p>	Salon C and D Sunday, February 22 10:15 - 12:15 pm

Panel A

Maxing the Educational Experience: Panel on Undergraduate HI Education in Canada

Breakout A, B and C
Sunday, February 22
10:15 - 12:15 pm

This panel addresses the nature and issues of undergraduate HI education (UHIE) in Canada.

The three UHIE programs in Canada are the Bachelor of Applied Health Sciences in HI Management at Conestoga College, the Dalhousie University Bachelors of Informatics, and the University of Victoria Bachelors of Health Information Science. The panel will be challenged to identify and comment on the issues associated with UHIE in Canada. Issues will include: the importance of UHIE, the need for content and quality guidelines, program objectives in terms of potential roles, the challenge of attracting and retaining students, the immense variation in MSc programs if built on undergrad or not, and the competence of teachers.

Questions placed to the panelists will include: (1) What does your program focus on producing in terms of graduates? (2) What do you do particularly well, i.e., that differentiates your program from others? (3) What are the major challenges you face? (4) What do you see your program doing to address the HI capacity problem? (5) What are the impacts of your program on HI education at the Masters and PhD levels? (6) What are your views about standards/guidelines for UHIE programs?

Each of the 3 program representatives will give brief presentations on their programs and respond to the questions above (15 minutes each). The panelists will then have a total of 10 minutes to comment on what they learned about each other or heard overall.

The remainder of the session will be dedicated to questions and comments from the audience.

Panel Members:

Y. Kagalovsky, Conestoga College
A. Kushniruk, University of Victoria
M. Shepherd, Dalhousie University

Moderator:

D. Covvey, University of Waterloo

12:15 pm

Lunch

Terrace Room

1:15 pm Concurrent Session and Panel

Decision Support, Artificial Intelligence and Modelling

Benefits and Challenges of Health Information Systems for Operations Research: An Illustrative Example to Improve Surgical Scheduling
Vincent Chow: British Columbia Cancer Agency, Vancouver, BC, Canada

Oceanside
Sunday, February 22
1:15 - 2:45 pm

Modeling Knowledge Resource Selection in Expert Librarian Search
David Kaufman: Department of Biomedical Informatics, Columbia University, New York, NY, USA

A Morphological Approach for the Fovea Location in Color Fundus Images
Paul Fisher: Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil

Panel B

Comparing and Contrasting Three Different Qualitative Approaches for Evaluating Health Information Systems: Identifying the “Best” Approach for Use in Research and Evaluation

Breakout A B and C
Sunday, February 22
1:15 - 2:45 pm

The purpose of this panel will be to review and discuss four different approaches to evaluating health care information systems, namely: (a) grounded theory, (b) ethnography, (c) case study research and (d) usability engineering. Each of these approaches will be defined and described by a panel of health informatics researchers experienced in each of the methodologies. More importantly, the approaches will be compared and contrasted in terms of their effectiveness and usefulness in addressing practical issues of evaluation of health information systems throughout the software development process and through to software implementation and evaluation of software maintenance in organizational settings. The system development life cycle (SDLC) as outlined by Kushniruk (2002) will be used as the guiding framework for the discussion. It has been said the SDLC offers key points for identifying, initiating and conducting evaluations. Over the past several years, several differing types of approaches to evaluation have been employed and utilized in health information systems evaluation and consideration of the SDLC has been used to guide their use (Kushniruk, 2002). The panel members will provide insights from their experiences and describe use of these varying yet differing approaches within the context of the SDLC. Each evaluation approach will be described in terms of its strengths and weaknesses. More importantly, each attendee will learn about the context of use of each different approach in real-world application.

Panel Members:

- E. Borycki, University of Victoria
- C. Kuziemy, Telfer School of Management, University of Ottawa
- A. Kushniruk, University of Victoria

Moderator:

To be determined.

2:45 pm

Closing Remarks

Ballroom

WORKSHOP ABSTRACTS

REVOLUTIONIZING HEALTHCARE WITH BUSINESS INTELLIGENCE

Patrick Hulsen, CEO Daintel, Daintel ApS, Rued Langgaardsvej 7, Ste DK-2300 Copenhagen S, Denmark

The era of Business Intelligence (BI) in the healthcare sector is taking a new turn. Analyzing accurate and detailed data provides unforeseen levels of valuable information to help improve the overall use of resources, patient safety and quality of care. Direct results are: decisions based on facts rather than intuition, focus areas identified earlier and monitored live, continuous implementation of new procedures derived from evidence based results.

When using BI in healthcare getting answers to any kind of question can be made possible with just a few clicks. Exchange of information can be facilitated among clinical staff, management, quality insurance organizations, patient safety organizations, research staff and not the least between physicians and patients, and takes on a whole new dimension.

The corner stone of a successful BI integration depends not so much on finding tools to analyze the data but getting software that is capable of collecting accurate and detailed data at point of care.

Patrick Hulsen* who is CEO of Daintel will discuss BI in healthcare using as an example a solution, which is becoming the most widely used software in Denmark for collecting data at point of care in ICUs. The solution CIS (Critical Information System) is a working station at the center of each ICU unit. It displays information about the patient's data, drugs and physiological parameters. It ensures the continuous registration of diagnosis and procedure codes (ICD10 and SNOMED) as well as mortality and morbidity scores, all of which can then be exported and analyzed in greater detail.

This workshop will illustrate how successful registration of patient data at point of care can provide the right type of information for clinical staff, management and research.

Questions discussed in the workshop will include: What are the key issues to be aware of and what are the pitfalls to avoid when implementing a data collection strategy? How should data collection be integrated in the clinical information flow? How should data be compiled between departments? And how should data be analyzed? How will Snomed CT contribute to an even greater level of data quality and what are the precautions that need to be taken?

Registration and entry of patient data does not need to be tedious to be accurate provided the software has been designed to serve the purpose of registering. Examples of CIS reports and tools will be shown together with a quick overview of the software's major features.

() Patrick Hulsen is a French/British national and has lived in Copenhagen Denmark for the past 16 years. Founder of Daintel (Data-INTElligence) he is the architect of CIS (Critical Information System) since 2004. Patrick Hulsen is today 39 years old and was honored with the Edison Prize in 2007 as one of the most promising Danish IT companies.*

THE UNIVERSITY OF VICTORIA INTERDISCIPLINARY ELECTRONIC HEALTH RECORD EDUCATIONAL PORTAL: INTEGRATING ELECTRONIC HEALTH RECORDS INTO HEALTH PROFESSIONAL EDUCATION AND PRACTICE

Elizabeth Borycki, University of Victoria, Victoria, BC
Andre Kushniruk., University of Victoria, Victoria, BC
Brian Armstrong, EHRchitect Solutions, Victoria, BC

Electronic health record (EHR) use is increasing globally. However, adoption rates of health information systems (HIS) continue to remain poor. In order to improve adoption rates there is a need to provide health professionals and health/biomedical informaticians with opportunities to work with differing HIS during their undergraduate and graduate education. A recent review of the health professional educational curricula (i.e. medicine, nursing, allied health and health/biomedical informatics) reveals exposure to EHRs and their components is limited.

In response to this educational need, the authors developed the University of Victoria Interdisciplinary Electronic Health Record Educational Portal (UVicIED-EHR Portal). This unique, web-based portal is designed to allow users (i.e. health professional students and practicing professionals) to directly access and interact with a range of representative EHR HIS solutions remotely over the WWW (from anywhere, anytime). The portal houses several EMR's, EPR's and PHR's. The portal has been used by several health professional educational programs (i.e. medicine, nursing and health informatics). The portal also provides practicing health and health/biomedical informatics professionals (e.g. managers, directors) with EHR component access and review opportunities. Through the portal, in conjunction with classroom education users obtain hands-on experience and opportunities to learn about and question HIS use in classroom, laboratory and distance education/practice settings.

In this workshop you will get hands-on exposure to EHRs on the portal and also see how such systems can be widely integrated into health professional education and practice to increase adoption. We will demonstrate a number of records on the portal, including the Veteran's Affairs OpenVista system. Both technical and educational issues will be discussed for improving adoption of this important technology.

ASSESSING FACTORS FOR SUCCESSFUL WIDESPREAD ADOPTION OF PHYSICIAN EMRS

Brian Forster (OntarioMD)

Motivating practice-based physicians to replace their patients' paper records with an Electronic Medical Record (EMR) is key to achieving an eHealth environment that improves patient safety, continuity of care and overall system efficiency.

Ontario's Physician IT Program has succeeded in getting over 3,000 family practitioners to adopt an EMR over the past four years. This workshop will use experience from the program:

- To discuss the factors that we have found need to be included in a comprehensive program to successfully promote the wide-spread adoption of EMRs by practice-based physicians. These factors include funding and incentives, the use of EMR standards and comprehensive change management support, e.g., process re-engineering.
- To get an in depth look at and discuss the results of an independent EMR Adoption Assessment survey of over 1,400 physicians in 260 practices, who report the following:
 1. Patient safety improved for 68%.
 2. Quality of care delivered improved for 57%.
 3. Continuity of care improved for 64%.

4. 91% using their EMR to write and renew prescriptions.
 5. 82% using their EMR to manage lab results.
 6. 62% using their EMR to identify and follow-up with patients for necessary or overdue preventative care and / or chronic disease management interventions.
 7. All patient encounter notes being entered only into the EMR for 91%.
- To discuss how the program's change management support was modified over that period in order to improve implementation success.
 - To discuss how EMR specifications need to be quickly and progressively developed, and how and why various standards need to be incorporated, within the context of an evolving external eHealth environment.
 - To discuss the new challenges that are ahead and new interventions that can be applied to get over 14,000 remaining practice-based physicians to adopt EMRs by 2015.
 - To communicate and get feedback on a number of important messages regarding our experience over the last four years.

The workshop will provide a stimulating opportunity to understand what we have done, what has worked and what had to be changed, and to brainstorm how the this type of program can be further improved.

Brian Forster is CEO of OntarioMD. OntarioMD is a wholly owned subsidiary of the Ontario Medical Association. It was established to manage the \$150 million Physician IT Program established by Ontario's Ministry of Health and Long-Term Care and the Ontario Medical Association.

METHODS FOR USER DRIVEN INNOVATION AND PARTICIPATORY DESIGN FROM A SCANDINAVIAN APPROACH

Christian Nøhr, Anne Marie Kanstrup, Pernille Bertelsen (Aalborg University, Denmark), Jesper Simonsen, Keld Bødker (Roskilde University, Denmark) Soren Vingtoft, Capital Region, Denmark

The development of IT systems for clinical health care has a long history. Clinicians from within the medical practice who were fascinated by computers, and had discovered how computers could help the medical research process developed the first systems. Later private enterprises and professional computer scientists have dominated the market. The system development has moved the development process away from the end user and created a gap between user demands (often unspoken) and final product leading to suboptimal use or even rejection by the clinicians.

Participatory methods for user driven innovation and design in health informatics is a diverse collection of principles and practices aimed at making IT systems and health care institutions more responsive to user needs. A central principle of participatory design methods is the direct involvement of the intended users and/or beneficiaries in the co-design of IT systems.

This workshop will present a number of practical exercises and give the participants a hands-on experience of practical methods for participatory design such as games, role-play and the use of cultural probes. The workshop will draw on the empirical experience from a number of research projects and in addition researchers from Denmark will present the theoretical and historical background for these methods.

EVALUATING THE COSTS AND BENEFITS OF ICT-BASED APPLICATIONS IN HEALTHCARE ACROSS MULTIPLE LEVELS (PROPOSAL FOR A 3 HOUR ITCH WORKSHOP)

Vivian Vimarlund, Linköpings Universitet, Linköping, Sweden

Eric L. Eisenstein, Duke University Medical Center, Durham, NC, USA

Andre Kushniruk, University of Victoria, Victoria, BC

Investments in ICT-based applications in healthcare are often based in part on expectations of improving inter-organizational networks, reducing costs, controlling resource allocation, and achieving a higher standard of quality of services promoting disease management and wellness. Stakeholders face, however, major challenges in meeting increasing demands for health care services with limited resources. A major impediment for investments in ICT applications has been a lack of evidence of their economic impacts on end-users, organizations, and society as a whole. While pilot studies indicate good efficacy of ICT-based applications at the intra-organizational level, less is known about the cost-effectiveness of such applications at a societal level.

Sometimes we talked of a ‘productivity paradox’, meaning the lack of proof that ICT investments provide value for money. Only recently has the general consensus become that ICT spending, correctly applied, is indeed profitable, at least in the long-term. However, it is necessary to accept that ICT’s profitability is often delayed due to the time required to make concomitant changes in processes, organization and competences; because most of the economic benefits from introducing ICT have in fact derived from ‘reengineering’ processes, but also because, many ICT investments have not been combined with the needed investments in (re)organization, and thus such investments are not always well timed with the introduction of new systems.

However, evaluation studies in healthcare often are limited either to prospective or retrospective to evaluate the impacts of the ICT- in the organization, often quantifying only the direct costs , rather than to perform analyses, of the potential value of ICT-based applications to the healthcare society. The majority of such economic evaluations provide therefore no conclusive answers about how to combine efficiency, effectiveness and business process benefits derived from ICT implementation.

Beginning in the 1990s, several standards have been proposed for the economic evaluation of medical technologies. These include standards developed by governmental entities as well as standards developed by medical journals and professional societies. While the use of these standards is accepted practice in the economic evaluation of pharmaceuticals and medical devices, they have infrequently been applied to the economic evaluation of health information technologies. In this workshop, we will present a standards-based framework for the economic evaluation of health information technologies. We will begin with a discussion of the principles of economic analysis as applied to the evaluation of medical technologies, addressing relationships between their costs and benefits. Using these principles as a guide, we will discuss different study designs and the types of information required for their associated analyses. This will include a review of study outcomes, resources, and cost types as well as the seven context factors that serve to define the environment of an economic analysis. A key element linking the elements within our framework will be the value proposition, an explicit statement of the expected mechanisms for change associated with the implementation of a health information technology in a specific environment along with its anticipated changes in costs and benefits. We will conclude with examples of how this framework has been applied to the economic evaluation of a clinical decision support system supporting a rural community health network.

We will also discuss the effectiveness of current models in use as well as the need for new multi-actor approaches that allow evaluating transformational benefits of organizations and its effects on cost reductions, productivity and effectiveness. The workshop will illustrate (using specific examples and

demonstrating a multi-actor approach) that effective evaluation of healthcare IT needs to take into account the varied levels of possible impact of systems, from the impact on individual health professionals, to its impact on workflow, to the organizational and societal levels. Examples of conducting evaluation of systems will be given that include case studies of conducting rapid and low-cost evaluative studies across multiple levels to develop more accurate estimates of impact of systems. Practical application of the approaches discussed for assessing the potential impact of systems to be procured and those to be deployed will be discussed, as will application of the approaches demonstrated to assessing the impact of systems already installed within healthcare organizations.

HOW AN EMR IMPACTS PHYSICIAN WORKFLOW

Presenters: Mel Petreman, (PITO) and Shelly McNeil (PITO)

The successful implementation and resultant acceptance and effective use of the EMR can be greatly increased by the thoughtful inclusion of how the physician's workflow will change. The EMR will impact every person's role in the physician office and these considerations need to be discussed early in the planning process.

Join Dr. Mel Petreman (PITO Local Physician Champion) and Shelly McNeil (PITO Local Relationship Manager) in a lively and interactive workshop to explore:

- The impact of the EMR on clinic roles in the office
- Clinic Evaluation & Methodology
- Factors impeding clinic workflow
- Conversions
- Partnering resources required to implement and sustain the transformation