
Centre for Health Evidence

YEAR 2004-2005

Annual Report

April 1, 2004 to March 31, 2005



Message from the Director

“A Strategic Plan to Advance Health Information Research in Alberta” was released in 1998, the year the Centre for Health Evidence (CHE) got its start. The plan, developed with the support of the Alberta Heritage Foundation for Medical Research, highlighted 7 recommendations for maximizing the promise of health informatics in Alberta: capacity building, consumer focused seed initiatives, advance evaluation methodology, build evidence-based information systems, inventory synergistic research, and build an effective communication and coordination network. Of these, investment in evidence-based informatics at the University of Alberta and scholarly telematics at the University of Calgary have yielded dividends way beyond the planners’ expectations.

Other recommendations have proved harder to address. Coordination of informatics activities among Universities, health regions, and other stakeholders, for example, has deferred to the protagonists’ need for focus while building capacity. For CHE, the focus has been finding practical ways to connect evidence with action. For the health regions, the focus has been building and deploying advanced health information systems. Both have been wonderfully productive. Indeed, the thrill of 2005 is that we have both stellar decision support systems and state-of-the science health record systems. Now the fun really begins!

Through its many projects and collaborations, CHE has lived the promise of “embedded evidence.” In 2005, we will live our guiding dream: evidence seamlessly integrated into the informational fabric of health care. With clinical decision support joining hand-in-hand with clinical information systems, we look forward to discovering how better information really can support better health.



Vision & Mission Statements

Vision

Centre for Health Evidence (CHE) will lead the way for health service providers toward unparalleled excellence in knowledge transfer, learning enhancement, practice-based evidence, and innovative research.

Mission

The Centre for Health Evidence (CHE) is a multi-disciplinary initiative that brings universities, health organizations and professional associations together to learn how best evidence can support best practices. CHE uses innovation, instruction, and investigation to put information to work, improving decision-maker capacity to:



Know what to do...because quality knowledge resources are assembled, integrated and packaged using simple, user-specific, Internet desktops;
Do what is known...because on-line aids help users recognize problems, formulate questions, select resources and acquire, appraise and apply knowledge;
Understand what is done...because information use is monitored and managed.

CHE works with professional organizations, educational institutions, and other key stakeholders in the health sector. We are based at the University of Alberta in Edmonton, Alberta, Canada, and we manage projects globally.

Our primary activity is to create information tools and deliver them via Internet “desktops.” These tools can be used from nearly any computer with Internet access and enable users to find high quality information at the point of need. We also train users to put that information to its best use. We strive to decrease information burden while facilitating communication and participation in virtual communities.

Ethical Standards of Practice

CHE adheres to ethical standards of practice. Desktop users are asked to review a privacy and confidentiality statement that outlines how data being collected is used and shared. Sensitive information is encrypted. CHE is proactive in training staff members to make correct, ethical decisions not to view data unless necessary, and if data must be accessed, it is considered confidential whether or not it seems to be private. All CHE staff members annually review the Health Information Act training documentation.

A Bit of History

CHE's initial preoccupation was with building infostructure models that could support evidence-based decision-making. CHE facilitated the creation of "informatics-rich" zones where information access was relevant, simple and reliable.

Continued analysis of information transactions revealed that the remaining barriers to evidence-based decision-making had more to do with knowledge, skills, and attitudes than information access. Accordingly, CHE shifted its focus to the development and study of educational interventions to support improvements in evidence-based decision-making.

What we do...

The Centre for Health Evidence promotes evidence-based health care by presenting knowledge-based resources to health professionals in ways that facilitate their optimum use. The starting point is the information needs of decision-makers.

Infostructure objectives include:

- Identifying, installing, packaging and disseminating health knowledge resources in ways that meet the unique decision-making needs of users,
- Building and deploying health knowledge repositories,
- Expanding the provision of decision support tools to people in all areas of the healthcare sector.

Instruction objectives include:

- Helping users understand health evidence and the types of knowledge appropriate to different health care problems,
- Facilitating on-line training about effective use of best internal and external evidence,
- Designing just-in-time learning interventions, experiential teaching methods and continuing professional development-as-you-work.

Investigation objectives include:

- Capturing subjective and objective data about how information resources are used,
- Monitoring the effects of information behaviours on health decisions,
- Facilitating research on the effects of alternative knowledge packaging and dissemination strategies.

How we do it...

The Centre for Health Evidence (CHE) works collaboratively with project partners to build and support virtual learning, practice and research communities. Although we use a wide range of Internet technologies, VIVIDESK™ Internet desktops are the core enabling technology. Authorized users of a CHE desktop have access to a customized package of resources developed to help them work with information of many types, from many sources, using multiple technologies, in a "best of breed" integrated suite.

Progress 2004/05

The CHE Business Plan defines goals that are used to measure our progress. For the purpose of this report, we have condensed these goal statements into 6 categories of activity. This section spotlights selected accomplishments and progress towards CHE goals.

Evidence-Based Practice

- Taught Critical Appraisal of the Health Sciences Literature (a Master's level online course) for the third year at the University of Alberta and for the first time at the University of Victoria.
- Collaborated with multiple partners (U of A Faculty of Nursing, Capital Health region, SEARCH Program) to offer the BetterCare Workshop Series, an educational initiative geared to increasing organizational and individual competency for informed decision-making. Advanced practice nurses – a new audience for CHE – are the target group.
- Developed new, interactive, evidence-based practice curricula in the following subject areas: emergency medicine, nutrition sciences, cardiovascular sciences.
- Piloted continuing education courses in evidence-based practice with the Dietitians of Canada (Evidence-based Decision-Making Online Course) and the College of Family Physicians of Canada (ePearls initiative).
- Developed *Evidence-Based Nursing: A Guide to Clinical Practice* CD-ROM in collaboration with a nursing author group and Elsevier publishing.
- Launched the online version of the EBM Teaching Tips series. Published by CMAJ, this series facilitates the development of evidence-based practice teaching skills.

"The well-known expertise and experience of the Centre for Health Evidence in designing and managing Virtual Learning Communities, and the energy and passion of its staff and scientists combine well to provide the essential knowledge, skills and tools in health information and knowledge management for EXTRA learners over the course of the two year fellowship".

Nina Stipich, Senior Program Officer,
Executive Training for Research Application (EXTRA),
Canadian Health Services Research Foundation (CHSRF)

Information Integration and Decision Support

- Conducted an environmental scan for the Physician Office System Program (POSP) and Alberta Health & Wellness in the area of clinical decision support. Findings from this report will be used by the province in future strategic planning.
- Continued to work closely with the U of A Department of Medicine and its divisions to enhance the decision support environment for physicians.
- Developed a “proof of concept” desktop that showed how a major health region could provide integrated services using clinical and knowledge resources that already exist in the region. The presentation included a real-time demonstration of how single sign-on and simple context management could be implemented to support a wide range of clinicians.
- Formalized a relationship with the University of Victoria’s School of Health Information Science by agreeing to teach a Clinical Decision Support course in 2006.



“We have utilized the Centre for Health Evidence and their VIVIDESK Desktop system in connection with teaching and educational research activities for the last 4 years. We have found this group extraordinarily attentive to our objectives and ideas in the course of developing innovative resources. We view them as collaborators with respect to our most important initiatives.”

Peter Wyer MD, Project Director
Evidence-Based Emergency Medicine Working Group
New York Academy of Medicine, New York

Infrastructure

To address the demanding business of technology and to stay ahead of the industry, CHE enhanced its desktop programming and structure with VIVIDESK™ 5.5. Most changes incorporated in this release were done server side. While not always visible to users, these changes improve the overall desktop security and performance. Key new features include:

- **Speed:** combining server calls results in faster server response times, as well as more secure and scalable transactions.
- **Security:** all transmissions are securely encrypted between the client and the server.
- **Integration:** enhanced context management features provide users with a more seamless experience.
- **Advanced scripting:** new scripting capabilities allow customized logout procedures.

All these changes add up to a more robust and scalable solution for current and future desktop clients!

In order to support VIVIDESK technologies and services, a number of key network upgrades and changes were initiated:

- **Ubiquitous access:** to provide complete VIVIDESK services for all users, a new system was developed for desktop access via Macintosh computers. This upgrade allows Macintosh users to perform tasks and access multimedia materials that were previously not available.
- **Network efficiency and scalability:** to provide new development options and tools as well as enhanced network services, the CHE server farm started a migration process towards a Windows 2003 platform.
- **Network security:** new security technologies were deployed on the core devices to support Advanced Encryption Security (AES). These technologies ensure that all communications and authentication to the CHE environment are secure.
- **Virus protection:** CHE deployed an advanced anti-virus software suite to provide us with enhanced protection.

These changes provide us with an even more secure and efficient work environment – they also benefit our desktop users as CHE servers finished the year with a remarkable 99.963% of uptime!



Organizational Excellence

- With the continued growth of CHE, our comprehensive orientation package was fine-tuned and adapted to the needs of each new staff member. New staff members have appreciated the time and effort we put in our orientation.
- Our help desk supported approximately 3,000 users last year. Out of 635 help desk requests, approximately 80% were resolved in less than 30 minutes (often in just a few minutes) and approximately 95% were resolved in less than 1 hour. The majority of calls were instructional requests or calls related to user's local setup. Once users were up and running with the software, helpdesk calls were infrequent.
- With the addition of the Canadian Health Services Research Foundation (CHSRF) project called EXTRA, we now had users across Canada. CHE hired bilingual Technical and Information Specialists which allowed participants to gain access to services in either English or French.
- In preparation for the first EXTRA module in August 2004, over 20 organizations across Canada were approached to establish an IT relationship to optimize access to project technologies. Collaboration and rapport was developed which facilitated information sharing of IT infrastructure between organizations. Our Development and IT teams enhanced the VIVIDESK™ product to satisfy each organization's unique needs.

CHE celebrated its 5th anniversary on November 12, 2004. In honour of our increased growth and sustainability and in recognition of the value we place on contributing to our community, we agreed that time has come to give back to our community. Two staff members have provided volunteer time so far: Kelly Deis, Associate Director, and Igor Norsic, IT Architect, have offered their time to the Health Research Transfer Network of Alberta (RTNA), in planning "Water Cooler" videoconference sessions, recording them and rendering them to streaming media for the RTNA website. CHE is proud of these individuals and their efforts, and looks forward to reporting on many more volunteer activities in the future.



Virtual Employee!

CHE's technology allowed us the opportunity to facilitate a "virtual" employee. When Naomi moved to Toronto, we agreed to try out this innovative solution to keeping her as part of the team. This has turned out to be a positive experience for both Naomi and all the staff at CHE:

- A VPN connection allows access to all internal documentation required for project management.
- VIVIDESK technology allows Naomi to manage desktop projects from her laptop in Toronto.
- Conferencing technology facilitates attendance at meetings with the rest of our staff – she even chairs staff meetings.
- Technology enhancements can now be tested outside of the university environment before releasing upgrades to projects.
- Projects in Eastern Canada have access to a staff member in the same time zone.

Naomi is as actively involved in CHE's day to day operations as if she was in the "office next door".

Responding to Partner and Stakeholder Needs

- Worked closely with the College of Family Physicians of Canada (CFPC) in order to develop a new online model for evidence-based continuing professional development. This model includes three levels of continuing education credits that can be acquired by using the appropriate tools in a desktop: reflection exercises that guide clinicians through a decision-making framework (ePearls), learning units that provide formalized instruction, and credit for time spent using high quality evidence-based resources. This desktop program will be piloted to select Canadian family physicians in the fall of 2005.
- Expanded knowledge services by creating new repositories and custom collections for projects – areas include basic sciences for cardiovascular researchers, nutrition, cancer care information, patient safety and quality of care, grey literature, and resources for health business executives.
- In May 2004, CHE sponsored a training workshop on VIVIDESK™ technology. Representatives from 5 countries attended. Our knowledgeable staff taught sessions on server installations, context management, inventory development, desktop toolkits, VIVIDESK Surveyor, help desk operations, and user support. Participants returned home with new knowledge that enabled them to support VIVIDESK projects in their home countries.
- Addressed the bilingual needs of EXTRA, by implementing multi-language desktop features and providing support services in French and English. This development involved both personnel and technology changes. We hired bilingual staff to provide translation services, information management training, and technical support in both languages. We also enhanced the desktop software to include language-neutral iconography and multilingual data entry and display. The result is a single virtual classroom that provides full functionality and support in both of Canada's official languages.

“Using a platform like the Search desktop was a brand new experience to me when I joined Search. I have found it to be a wonderful tool that I use to get quick access to people and information. I have always found it user friendly but the frequent updates and changes continue to bring improvements I didn't even know were needed. It will continue to be an important professional tool for me, even when my formal Search training is complete.”

Judy Corcoran- SEARCH Participant

Strategic Alliances for Future Growth

CHE and AHFMR have had a long and successful collaboration with respect to the SEARCH program and other activities. On April 1, 2005 SEARCH will become a not-for-profit company called SEARCH Canada, with shared funding and governance by its organizational members, and an ambitious five-year plan for changing the landscape of the Alberta health system. CHE and SEARCH have long recognized that collaboration provides mutually beneficial opportunities and these opportunities to work together on shared extension projects was growing quickly.

In recognition of our commitment to ongoing collaboration, CHE has worked with SEARCH Canada to formalize a strategic alliance that identifies areas of shared interest where more can be achieved together than alone, while still allowing us to pursue other interests independently. We will work together to serve the needs of Alberta's health regions, who with the University of Calgary, are SEARCH Canada's member organizations. Potential "alliance projects" would include these themes:

- Evidence-based decision-making,
- Developing networks of expertise to support evidence-based decision-making,
- Building capacity for applied research, and
- Culture change to support policy and practice-responsive research.

CHE has been engaged to provide a broader scope of services to SEARCH to include infostructure and corporate knowledge management support for the new organization. Together, CHE and SEARCH will continue to develop and extend access to the knowledge supports and curriculum products developed by SEARCH faculty and provided through the SEARCH Desktop.

SEARCH Canada will have the capacity to respond to the increasing number of requests for expanded access to learning and knowledge resources, increased use of the SEARCH Network, and to support others developing similar programs. CHE and SEARCH Canada will contribute to each other's strategic thinking; together we will bring added value to each organization and build on the strong collaboration that has been forged over the last four years. CHE is very pleased to be part of SEARCH Canada and knows that the long-term sustainability of both organizations is served well by this alliance.



Project Profiles

Customized online environments – called “Desktops” – are the foundation for many projects undertaken at CHE. Approaches run the spectrum from virtual classrooms (usually short term and for a specific purpose) to virtual practice networks and virtual learning communities (usually multi-year and complex in their needs). This year has seen a proliferation of projects for CHE; the following are examples of groups using desktops to improve practice.

Dietitians of Canada Evidence-Based Decision Making Online Course

The Dietitians of Canada (DC) are committed to developing and maintaining a contemporary adult learning approach and environment that is facilitated by advanced communications technologies. DC approached the Centre for Health Evidence in January 2004 to collaborate on their Dietetics @ Work project, Practice-based Evidence in Nutrition (PEN). The goal of DC’s PEN project is to support best practices in nutrition services through the use of evidence-based, electronic, decision support tools, and professional development. In addition to working with DC on the original PEN concept, CHE created a desktop that supports the project by creating a virtual community where PEN contributors can access resources, generate new content for knowledge pathways, and have a place to share information.

DC also identified a need to enhance the skills of members of the PEN project, as well as other dietitians, on evidence-based practice. CHE introduced DC to the Users’ Guides Interactive (UGI) Desktop, a virtual classroom environment geared towards learning, teaching, and practicing evidence-based medicine.

To explore the realities and applicability of the UGI course, 3 members of DC audited Dr. Robert Hayward’s class, Critical Appraisal of the Health Sciences Literature. After completing the course, DC chose to customize the UGI model in order to increase capacity for evidence-based decision-making among dietitians. In collaboration with CHE, DC identified applicable learning modules, created new content, modified existing content, and tailored UGI curricula to the needs of dietitians. Each of the 10 learning modules include required and recommended readings, online video presentations, and one or more interactive exercises for participants to assess what they have learned. Where applicable, answers are provided for participants and discussion boards for each learning module topic are also available to allow participants to share information with each other.

DC advertised the course to its members, and in September 2004 the pilot course offering was launched to a whopping 155 participants! Given the success of the pilot, the course will be offered again in April 2005.

Executive Training for Research Application (EXTRA) Program

EXTRA is a two-year fellowship designed to develop capacity and leadership to optimize the use of research-based evidence in managing healthcare organizations.

The goals of the EXTRA program are to help health system leaders and executives find and apply research in their day-to-day work, facilitate evidence-based decision-making, and provide Canadian nurse, physician, and other health service executives with professional development and experiential learning opportunities. As a long-term training initiative, EXTRA is expected to produce a significant number of health service executives who are equipped with the skills and motivated to improve the quality and effectiveness of the health system through the use of research. These senior decision makers will also act as important agents of change within their organizations.

The program has five core components: 1) four away-from-home residency sessions; 2) one or several “intervention” projects at the home organization, proposed when the fellow applies to the program; 3) educational activities between residency sessions; 4) network-building opportunities between faculty and other fellows throughout the program and 5) support and activities after the program wraps up.

An *intervention project* of direct relevance to one’s ‘home’ organization is conducted throughout the entire program. The intervention projects employ a systematic approach to inquiry in accordance with accepted research methodologies, and can generate new information or data, analyse or apply existing data or research, and/or examine issues in searching for and applying evidence. *Mentoring* by individual faculty and mentoring teams is provided on site and in the periods between the residency sessions. *Self-directed learning* is facilitated through the *EXTRA Desktop*, using a customized Internet-based learning platform which provides fellows with an electronic classroom, virtual library of online course software, databases, search engines, journals and other resources, as well as a variety of Internet technologies and an environment for collaboration and dialogue with other participants, faculty and mentors. A post-program *community of practice* for fellows and organizations enables EXTRA alumni to continue professional development and build a network of decision makers and healthcare organizations across the country to share knowledge and experiences in health services management and delivery.

The EXTRA Desktop is developed and managed by CHE. This bilingual environment, coupled with simultaneous, multiple cohorts, present some interesting challenges around information management!

SEARCH Classic Program

The SEARCH (Swift Efficient Application of Research in Community Health) program was launched in 1996 by the Alberta Heritage Foundation for Medical Research (AHFMR) to help strengthen capacity in Alberta's health system for developing, disseminating, and applying knowledge to meet the challenge of improving health outcomes. It has been so effective that it is currently in its fifth cycle. SEARCH draws participants from a full range of disciplines: medicine, nursing, physiotherapy, and nutrition, as well as management from hospital, public health, and government organizations.

The SEARCH curriculum addresses the full cycle of knowledge generation and use, through the curriculum themes of Creating, Choosing and Using Evidence, as participants critically appraise the literature, enhance research methodology and evaluation skills, manage research projects, develop outcome assessments, and broker knowledge within the health system. To date, more than 130 applied research projects designed to inform local decisions in health care have been completed by SEARCH participants. Each project is linked to both organizational need and regional priorities.

SEARCH extends beyond the formal two-year program. Upon completion of the program, participants continue to pursue new information, contacts, and projects as part of the SEARCH Network. This Alberta-wide virtual community includes individuals possessing the key skills and expertise required to support decisions about health care planning with sound, locally relevant evidence.

Each two-year SEARCH Classic cycle includes seven, week-long residential modules where all participants and faculty converge in one location for training and collaboration. The Centre for Health Evidence (CHE) is strategically involved in these modules in several ways, including supporting curriculum planning and delivery through the SEARCH Desktop, teaching some sessions, providing technical support, and managing the logistics of the modules.

In between modules, participants and faculty interact via the SEARCH Desktop, which is a unique online learning platform that is developed and sustained by CHE. The SEARCH Desktop incorporates sophisticated knowledge resources with tools for learning, research, and collaboration. It also includes interactive community-building tools that help all members of the SEARCH Network to forge lasting relationships that will hopefully lead to shared knowledge and future research projects. The desktop is continually evaluated and enhanced through the monitoring of usage data and feedback surveys. This year, it has seen improvements such as an enhanced interface, richer content, finer security options, and new interactive features.

"I love the way I can conveniently access evidence based research, keep in touch with the SEARCH community, refresh my research skills, and track my own personal evidence projects. The desktop is making my life as a scholar-practitioner so much easier – it saves me time by providing one-stop-shopping for research needs . . ."

Mary Nugent - SEARCH participant

Financial Summary

In 2004/05, our major funding sources were the renewed contracts and grants negotiated with our partners. Again this year, the majority of funding came from more diverse areas reflecting the different ways in which CHE expertise is requested.

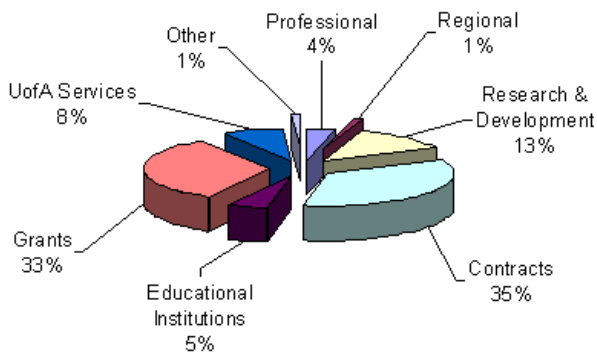
Salary and benefits continue to be our major expense.

Infrastructure funds allow us to update our servers and security to meet industry standards and to purchase computers and software as needed to meet the demands of project deliverables. With most of our work occurring over the Internet, technological updates, the latest software, and an evergreening policy are necessary to our survival. Our knowledgeable IT department works hard to keep these costs under control. New acquisitions undergo a rigorous review prior to purchase to ensure a match with our needs. Innovations in hardware as well as new software programs are tested on multiple platforms and levels before put into production.

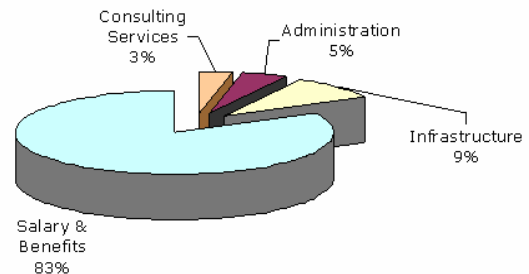
Administration costs include general supplies and services as well as larger items such as office rental, telephone charges, and indirect costs. With 15 full time staff (and projects that cross the globe) our communication costs alone add up!

CHE is grateful for the continued support of the University of Alberta. They provide office space, legal advice, human relations support, and financial reporting.

Revenue for April 2004 to March 2005



Expenses for April 2004 to March 2005



Meet the Team



Coordination Team

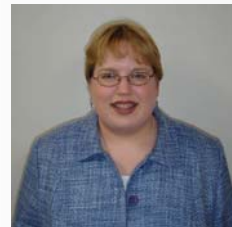
The CHE Coordination Team provides strategic direction for the Centre. The team involves management staff from IT, administration, and project areas. This was a particularly exciting year for our Associate Director, Kelly Deis, as we nominated her for the University of Alberta APO (Academic Professional Officer) Award – and she won! It was rewarding for all staff to see her hard work recognized.

Clockwise from top: Kelly Deis (Associate Director), Marilyn Weiss (Office Manager), Tanya Voth (Program Manager), Rob Hayward (Director), Igor Norsic (IT Architect), Louanne Keenan (SEARCH Course Coordinator as of May 2004). Missing: Steve Clelland (SEARCH Curriculum Coordinator – April 2004)

You're in good company!

Information Specialists

The Information Specialists manage projects and provide information management and instructional services for our clients and partners. This year, Louisa, Naomi and Diane took on a variety of projects working with partners in a variety of health fields and roles. They provide essential knowledge services and are a tremendous resource to our project participants.



Left to right: Naomi Castle, Louisa Fricker, Diane Conway

Help Desk Team

The Help Desk Team consists of a Network Administrator (Gary), two Technical Specialists (Denica & Jennifer Dion) and an Advanced Technical Specialist (Jennifer Patry). Although they work on various projects and have different roles within the organization, each member takes a turn staffing the Help Desk for a week at a time. They all have in-depth knowledge of CHE technologies and provide excellent support for our users.

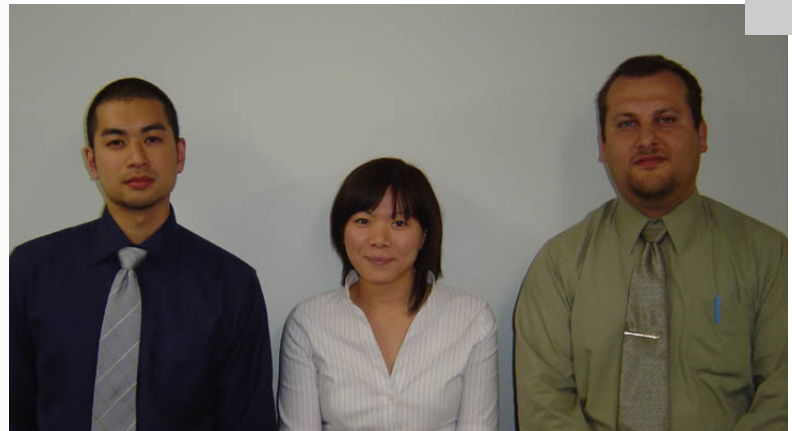


Left to right: Denica Foote, Jennifer Patry, Jennifer Dion, Gary Wong

We strive for perfection,
and settle for excellence!

Development Team

Our Development Team keeps CHE on the cutting edge of technology. This year Mohamad and Jenny focused on enhancing our desktop and associated technologies so that they meet industry standards for security and privacy. Duane is a web designer who has joined the team this year and will be working with Jenny to improve the appearance and usability of our products.



Left to right: Duane Cheung (Web Designer), Jenny Altarejos (Software Developer), Mohamad El-Hajj (Senior Software Developer)

Partner List

CHE partnered with a wide variety of foundations, organizations, professional associations, and universities in 2004/05 at multiple levels of engagement. Examples of strategic partnerships are noted throughout the report.

Foundations:

Alberta Heritage Foundation for Medical Research
Canadian Health Services Research Foundation
The Nemours Foundation

Organizations:

Capital Health
Elsevier Science
Evidence-Based Emergency Medicine Working Group
The CAPITAL CARE Group
VIVIDESK Global

Professional Associations:

Alberta Medical Association
American Medical Association
Canadian Cancer Society
College of Family Physicians of Canada
Dietitians of Canada
Royal College of Physicians and Surgeons
Society for Academic Emergency Medicine

Universities:

Alberta Cardiovascular and Stroke Research Centre, University of Alberta
Department of Medicine, University of Alberta
Division of Cardiology, University of Alberta & University of Calgary
Faculty of Computing Science, University of Alberta
Faculty of Nursing, University of Alberta
School of Health Information Science, University of Victoria



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