

**Vision 2020 Workshop on
Information and Communications
Technologies in Health Care
from the Perspective of Physicians**

Ottawa, Ontario

**Canadian Medical Association and
Office of Health and the Information Highway, Health Canada**

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EXECUTIVE SUMMARY

Through this Vision 2020 Workshop, Health Canada's Office of Health and the Information Highway (OHIH), in partnership with the Canadian Medical Association (CMA), consulted with a number of physicians from across Canada to find out what their vision of the health care system is for the year 2020, and the role that information and communications technologies (ICTs) would play in such a system.

Their primary objective involved developing a national agenda for action. To create the agenda, the participants were encouraged to focus on the steps needed to develop and implement the use of ICTs in a progressive, accessible health care system. Discussions centred on identifying challenges within the present health care system, recognizing new or existing areas of opportunity, and proposing specific actions—along with those responsible for those actions—to bring the vision to life.

Among the participants, it was agreed that the enhanced health care system in Canada in 2020 would focus, above all, on the *individual*. They foresee a system that is fully connected through the use of ICTs that uses universal standards for shared information purposes, such as medical terminology. It will also offer physicians and individuals increased knowledge and wider choices of care, thereby increasing independence for everyone. To accomplish this goal, however, three important elements must be set in place. First, there must be the political will to cooperate at all levels of government to bring about change. Second, it must be recognized that start-up and sustained funding are needed to develop, test and implement such an enhanced system. Third, physicians themselves must exercise a leadership role in the community by learning how to increase the use of technology in their own environments and to contribute to the integration of ICTs and Electronic Health Records (EHRs) in the health care system.

The participants' diverse perspectives and unique experiences offered many insights to Health Canada and the CMA on what considerations should be taken into account when integrating the use of ICTs and EHRs into the health care system. The actions they identified that would be needed now to move the agenda forward focussed on a willingness to change—both at the political and physician levels—and on growth in terms of physicians educating themselves and contributing to the development of a revitalized system.

Participants identified several major opportunities and actions:

- C Physicians have the power of influence now, and therefore the opportunity, to play a pivotal leadership role in shaping the development of an integrated health care system. *All* physicians, however, must learn how to use technology effectively in their environments, to maintain their credibility with patients. Informed, empowered and technologically literate individuals will expect their physicians to be aware of the latest on-line medical information and be able to comment on the validity of this information in relation to their medical situations
- C Canada has the financial and technological knowledge capacity to improve upon its existing publicly funded system now. The country is wealthy in financial and technological expertise and has the unique ability to independently implement technological change now.
- C Political will and cooperation among all levels of government to initiate change must be supported by specific and sustained funding for ICT and EHR development.
- C A business model must be created at the regional level based upon the knowledge gained from existing systems. This model would depend upon universal standards for medical terminology, data transaction, etc., and would eventually form the basis of a nation-wide, integrated, user-friendly health care system.

The CMA, the College of Family Physicians of Canada (CFPC) and the Royal College of Physicians and Surgeons of Canada (RCPSC), were identified as possible co-leaders with Health Canada to initiate action for launching the vision. Alternatively, one group suggested that a public-private sector partnership might be the most likely combination of expertise to develop and sustain the use of ICTs over the long term.

For the health care system to advance, the use of ICTs and the development of EHRs are critical. Canadians expect to see their health care system become privacy-protected, integrated, fully accessible and borderless as a result of technological advancements. They are, after all, enjoying the benefits of some of the world's most sophisticated technological and telecommunications applications in their homes and workplaces through banking, and other seamless, consumer services. But to achieve the vision of an enhanced health care system, ongoing funds, political commitment and a behavioural change toward technology among physicians must be initiated now to develop and sustain the use of ICTs and EHRs.

Above all, leadership, commitment and ongoing investment in the development of ICTs are required to move forward the agenda for action and sustain the vision of the health care system that the participants articulated.

OVERVIEW

For the workshop's three breakout sessions, participants were divided into three groups. One facilitator was assigned to each group to monitor discussion time, record key points and clarify points for future reference. Before each session, all participants were guided in the purpose of the breakout session and asked to consider key elements in their discussions.

This workshop, hosted by Health Canada's Office of Health and the Information Highway (OHIH) in partnership with the Canadian Medical Association (CMA), was the last in a series of workshops hosted by OHIH to consult with Canadian health organizations on the integration of information and communications technologies (ICTs) in Canada's health care system. Previous workshops included sessions with representatives from children's hospitals, the Canadian Nurses Association and the Canadian Healthcare Association. The results from these sessions will be reported to Health Canada's senior management and the Health Minister. In addition, OHIH will share the workshops recommendations with its provincial and territorial colleagues and with those in its own directorate to assist them in setting their priorities and work plans.

Participants were asked to focus on three main vision-building phases:

- C Articulating their vision of the future health care system
- C Identifying the challenges and opportunities for consideration in achieving the vision
- C Agreeing on the actions and key players required to build the vision into reality.

Breakout 1 — Role of information and communications technologies in a publicly funded health care system

In envisioning their view of the ideal health care system in Canada in the year 2020, participants were prompted to describe the role that information and communications technologies, including telehealth and electronic health records (EHRs), would play in bringing the vision to life.

Participants were invited to *describe what they would like to see* in an ideal system—not *forecast* the future. Each breakout group was asked to make its assumptions clear and to report back to the entire workshop group with five or six key points outlining their vision.

Breakout 2 — Overcoming challenges and realizing opportunities

Challenges and opportunities to realizing the vision were the guiding themes for the second breakout session. Participants explored the challenges that would need to be overcome and the opportunities (some of which lay within the challenges identified) that could be seized to achieve their vision.

Specifically, the breakout groups were prompted to discuss what opportunities would allow the vision to be realized, by means of ICTs, and in particular EHRs and telehealth. Each group was requested to come up with two main challenges and two main opportunities.

Breakout 3 — Launching action to achieve the vision

In the final breakout session, participants focussed on the actions needed now to achieve the vision described by the group and, more specifically, who should take the action. In anchoring the vision and setting a course for action, participants were asked to consider both traditional health partnerships to launch leadership initiatives and new alliances with non-traditional partners.

Session facilitation

Facilitators (identified in the Annex A) monitored discussions, encouraged the breakout groups to explore key steps toward achieving the vision, and recorded the agreed-upon points on flip charts. The final main points for the workshop reporting back session were then selected for presentation by the group's chosen reporter.

Participants involvement in the vision

"My colleagues across the country talk about the pressing need for systems that will allow us to integrate EHRs properly," commented one participant at the outset of the workshop, "because those that have already taken the plunge, continue to be frustrated by the lack of electronic links to the rest of the health community." This sentiment captured the group's experiences, motivation and eagerness to shape the vision of a fully integrated health care system in 2020 using ICTs and EHRs.

The results of the breakout sessions revealed many diverse opinions on how—and how soon—this vision would be achieved. Many of the physicians had participated in, or were about to embark on, some kind of electronic patient record system. Above all, they all agreed that to be widely adopted and used on a day-to-day basis, whatever kind of integrated patient record system is formulated, it must be privacy-protected, practical, hands-on and user-friendly.

Enthusiastic and eager to share and build upon their individual experiences, the workshop participants clearly understood their important and timely role in helping to lead the way toward the use of ICTs and the EHRs in Canada's health care system. Whether the changes to achieve the vision are driven by physicians or patients, all participants agreed that progress must be made and that there must be a willingness among physicians to reshape the present health care system if it is to become fully interdependent and integrated.

VISION FOR THE FUTURE

The health care system will be patient-centred and focussed on the individual.

The health care system will focus on the individual and will be driven by the individual. It will be very important to involve patients in the process of change because their participation and direction are key to the successful enhancement of the health care system. **A patient-centred approach will also improve access to care** by providing patients with a wider range of choices for health services and health providers as well as simpler access to the health care system. Individuals will be in a better position to choose the appropriate physician for their needs and have a full spectrum of physician choices available to them. Individuals will expect their physicians to be aware of the latest medical information available through the Internet. They will expect their physicians to qualify this information, comment on its relevance to the situation based on their knowledge and experience, and advise on the right course of action to take.

Within the modernized health care system, key stakeholders, from various sectors, should each have a defined role to play. These stakeholders could include non-governmental organizations, provincial and federal medical societies, as well as representatives from private industry. Although the participants did not define the roles these organizations would play, they agreed that clear definitions of roles would be needed once the organizations were engaged.

The technology will be inter-operable and the health care system will be integrated and technologically universal.

This system will be based on connectivity standards and will be fully accessible so that everyone is able to communicate with each other regardless of their geographical location. This model could even be extended to be applied globally. Universal standards will be set in place and all health professionals will be conversant in their use. Physicians' universal accessibility to the technology will be vital. In addition, no individual will face technological barriers to accessing the health care system. Connectivity for individuals and physicians is key to the premise of an integrated health care system. All parts and parties of the system will be connected and able to "speak" to each other. Ideally, this enhanced model will result in a paperless environment and speed up the communication of information between all parties.

The cohesive integration of all ICTs is essential and will improve the logistics of care delivery at all levels. From the physician's office, to the patient's personal information, to hospital systems and public systems, Canadian health providers now have many isolated bits of ICT development in various projects across the country, but no integrated approach in place to harmonize or standardize them.

Independence and freedom will benefit physicians and patients alike.

In addition to offering geographic independence to physicians, the inter-connected system will offer independence to physicians as "agents" of health information. Physicians will have more freedom and ease to consult with one another, and patients will benefit from the freedom of the consolidated approach.

Assuming that individuals are comfortable with being cared for by a physician who may not necessarily be in the same place as they are, ICTs will offer physicians the ability to practise medicine from anywhere. It will also offer patients the benefit of being cared for by the physician who best suits their situation, regardless of geographical location. Clinical guidelines will inform and enable physicians, offering them a wider range of choices and more "freedom of choice" in deciding what course of action is best for their patients. At the same time, patients will have a wider range of choices of health care providers available to them and be able to freely and easily choose the health professional suited to their situation.

This freedom of integration also assumes that patient medical information will be more fully protected and judiciously accessed only by those who need the information to care for the patient. Personal information will therefore remain "personal" because it will be dealt with in a less fragmented manner than the present paper-based system. The issues of privacy, confidentiality and security of information will be fully resolved—to physicians' and individuals' satisfaction—and offer a higher degree of privacy, confidentiality and independence in the patient–physician relationship.

Information will be evaluated and rated according to its credibility.

Quality information, which has been properly filtered through a credible process to assess its value, will be available to physicians to help them quickly and easily assess the available choices and choose the right course of action for their patient's needs.

Commercial interests, which are now driving the aggregation and dissemination of knowledge, will be managed to everyone's satisfaction. The threat these interests pose now will be addressed and managed to ensure they contribute to positive outcomes for physicians and patients alike. In

essence, each individual will be enrolled in a clinical trial, and the research derived from this approach will serve to close the loop and integrate the overall health knowledge base in terms of hypothesis and follow-up. Patients' courses of treatment will be fully tracked and their continuing state of health will be closely monitored to ensure treatments are successful. When alterations to treatments occur, they will be fully documented and recorded for the benefit of other physicians.

Funding will be appropriate and adequate (investment sufficiency).

Ongoing funding for an integrated system will be balanced among interested parties, with an understanding that funding for key components must be sustained. For example, the EHR and connectivity are essential components for the delivery of telehealth, and must therefore be fully funded to maintain a fully operational health infrastructure.

Essential start-up funding should be specifically earmarked to fund the set-up work for an integrated health care system; long-term maintenance funding is equally important to ensure the infrastructure remains workable.

It is assumed that government will fund the enhanced health care system and that sufficient funding will be set aside to properly cover the expense of fully integrating ICTs. Above all, the system should be based on system connectivity and fully distributed among health professionals; it should not be built as a "data warehouse in the sky."

There will need to be a common understanding of who is leading health ICT development.

The control of ICT development in an enhanced system will be defined to include such definitions of responsibility for funding pathways, methods for the development of an enhanced system, and which government organizational structure will address the integration of ICTs. Health providers will need to know and fully understand who is leading the development of ICTs in the health care system so that they can feel they will contribute to new developments and feel confident working within the modernized health care system.

Information ownership of the patient record will be defined.

Traditionally, individuals have the right to access the information in their medical file, but in practical terms the physician owns the paper chart. Defining who owns the information will therefore be a key component of an integrated system.

The value of up-front medical data, collected from patient records, will be valuable to private industry and pharmaceutical companies for research and marketing purposes. The question then becomes what, if any, financial gain will physicians receive for their role in collecting these outcomes data.

Security, privacy and confidentiality will underscore accessibility.

There will be a clear understanding and awareness of the importance of privacy and confidentiality requirements at all levels of health information technology development. The system will remain aware of the interests of all Canadians who use the system (individuals and health care providers alike) in protecting private information. Privacy and confidentiality will be the foundation for safe and secure accessibility.

The system will be built from the bottom up.

Grassroots involvement from all Canadians from the very beginning will be vital to the success of the enhanced system. There must be solutions and improvements in store for individuals and health professionals alike if buy-in from everyone is to take place. Although the input and solutions from all parties may differ vastly, the overall outcome must be workable for everyone in order to convince them to use and participate in the development of an improved system.

An essential ingredient to an enhanced system's success is determining how, through connectivity, everyone will be able to "speak" to each other.

Information will be presented to physicians in a user-friendly, ready-to-use way.

For physicians to want to use technology in the system, information must be presented to them in a timely, user-friendly way. Physicians want the bottom-line medical information relevant to their patients' situations delivered to them in a format that meets their practical needs. Too much detailed information can be overwhelming and take too long to decipher in situations where a prompt, decisive course of action is required. Ultimately, physicians need practical information that is relevant to the immediacy of their situation and readily available when they are caring for their patients at the bedside.

CHALLENGES

A general lack of a shared vision pervades among health providers and contributors to the health care system.

Many health care providers want the health care system to be improved or to operate more efficiently through the use of ICTs; however, physicians, particularly, feel that they are the last ones to be consulted in discussions on making improvements. There is an overall feeling among physicians that other stakeholders, such as hospitals, regional health authorities and various levels of government representatives, are consulted before they are.

Society's trust may be put at risk if an enhanced system is not well orchestrated and smoothly implemented.

An enhanced health care system should be carefully planned and smoothly set in place to ensure that society's trust in the health care system and health professionals remains intact. Issues of privacy, confidentiality, security and loss of personal autonomy could be put at risk by those who might want to use this knowledge as a form of surveillance or in a punitive fashion. For example, physicians could look at this as a punitive function, while patients may feel they are under surveillance.

Smooth implementation will require adequate funding on the government's part to begin renovations but will likely cost physicians little to implement in terms of money.

A lack of confidence in the technology could put change at risk. In general, if providers and patients are to accept the use of ICTs in the health care system, the present technology will need to improve to overcome some Canadians' scepticism and lack of confidence in technology. Some health care providers and patients have lost confidence in technology and may question whether the benefits of a "wired system" will outweigh the risks. This scepticism is further fuelled by technological glitches, computer viruses and the effects of failed technology that Canadians either experience first hand or hear about through others.

Physicians' readiness for change is imperative to modernizing the health care system.

Overall, most physicians are afraid of technology and aren't really prepared for technological change or for patients to be the driving force behind the changing the health care system. They see the future trends of consumerism in medicine as a significant threat to their position as pillars of knowledge in society. Overcoming this fear and convincing physicians that this change will benefit them will be an enormous challenge.

Physicians fear that if they are no longer a source of knowledge, they will lose their power and status of authority in the community. Physicians who are imaginative enough to see past this threat, however, will see that they are in an even better position to provide improved health care to their patients.

Lack of political will and cooperation, as well as funding struggles, stand in the way of progress.

The main issue narrows down to the question of "who is going to pay?" for the integration of ICTs in the health care system. Funding struggles, coupled with the lack of political will and willingness to cooperate among various levels of government, persist. This results in political arguments over "who will get the credit?" and "who will score the most political points for providing health care for their citizens?" or "who will be the villain for not providing enough money to pay for the needed changes?" By assuming there is enough money to pay for the needed changes, the real issue then becomes a matter of harnessing the wills to initiate change and creating a climate of harmonious intergovernmental cooperation.

Who will be the custodian of the EHR and be held accountable for maintaining its privacy?

Many people in the health sector want to use the medical information that may be gathered from an integrated health care system but don't want the responsibility of protecting that information. Health care providers are keenly aware of the responsibility that comes with the health record. "We as physicians are really the only ones who see the responsibilities of custodianship that come with the medical record." If others are going to gain access to this information, they must realize the importance of this responsibility for the sake of the public trust. Physicians are also very uneasy about the possibility of EHRs being stored outside their offices, in off-site Web-browser databases, for example.

In addition, it is possible that individuals may not be so anxious to take over ownership of their medical files. They may prefer a variation on the traditional paper-based model whereby they co-own their medical records with their physicians.

The privacy of the EHR is also a concern for many individuals. A common belief is that it is easier to break into EHRs than it is to access a patient's paper health records (which are normally stored in physicians' offices). In reality, many physicians have probably had break-ins at their offices and have no way of knowing whether or not these private records were accessed, tampered with, or copied.

OPPORTUNITIES

A prime opportunity exists for physicians to show leadership in launching an enhanced system.

Presently, no shared vision exists among all providers and contributors to the health care system. This gap presents an obvious leadership role for physicians to define a shared vision of an enhanced system. If physicians spearhead change and are confident in the privacy of the new EHR, they will be more likely to convince their patients of its benefits too. Because the trust already exists in the patient–physician relationship, patients may be more likely to accept changes to the health care system if their physicians accept and believe in the benefits too.

Physicians, however, must be aware of what medical information is available on the Internet and welcome this information when their patients bring it to them. “They can readily go down this path or be brought down this path through legal means.” If medical information that could save a patient’s life is widely available and easily accessible on the Internet, physicians must make themselves aware of it, for their patients’ sake and for their own legal protection.

A governance model could be developed, with physicians as the driving force. This style of governance would ensure the health care system would remain financially secure and independent in its decision-making abilities. In addition, this governing body would be free from government influence and remain independently stable from political changes in government.

There is a huge opportunity for physicians to learn more about technology. New doctors need to be better trained in the use of ICTs, and practising physicians need to learn more about using technology for their practical needs in their day-to-day environments. Better quality care for the patient will result from a more knowledgeable physician and lead to an increased benefit and efficiencies within the health care system overall.

Above all, the driver behind the changes to the health care system will be the patient, not the physician. The scenario will be that the patient will arrive in the physician’s office with medical information from the Internet—based on their symptoms—and expect the physician to be aware of the relevance of this information to their situation.

In addition, physicians will need to become very adept in a number of other areas, particularly in the use of technology by being able to interpret and deal with the data it will produce. If physicians don’t learn how to use technology, it will reflect badly upon them, and individuals will begin to challenge their authority.

The technology is available, and the time is right, to improve the health care system now.

The technology is mature enough to be applied now and is ready to do what needs to be done. In addition, other sectors are already creating infrastructures using ICTs.

There is sense of popular consumerism emerging and a move toward patients acting as their own advocates. The explosion of knowledge and knowledge-exchange is driving this consumerism and encouraging physicians to use the new tools and methods available to them to harness the information in a useable way.

Although the infrastructure for a fully enhanced health care system is not in place now, the building blocks are available to begin renovating the system. Now particularly, Canada can afford this change, both in terms of financial and ICT knowledge resources. There is enough money and know-how in Canada to pay for and build the health information structure that Canadians want and need. We are a wealthy nation with the financial resources and technological knowledge to set the plan in motion. Many barriers, however, stand in the way of this wealth being used to Canada's fullest advantage. (These barriers were included in the discussions under "Challenges".)

Two important questions resulted from this point: Can Canada afford *not* to make the changes needed? and What are the outcomes if we do not?

The EHR can help improve health outcomes in many areas.

It is very likely that improved job satisfaction among health care providers could be a natural result of an integrated, user-friendly system. Health care providers and individuals want a smoothly running system that is workable for all Canadians.

The EHR may also help to provide better statistical health information and allow health professionals to spot health trends earlier, thereby giving more of their focus to preventative medicine.

Efficiencies developed now will save time later.

Algorithms could be developed within a database to manage the amount of data physicians receive that is relevant to their situations. For instance, a number of articles on one particular disease could be prioritized, then assessed by a peer group; physicians would be informed as to which article is most relevant to their clinical environment. Although algorithms take quite some time to develop, the more data that is added and used, the more efficient and useful the database would become.

The efficiencies of an enhanced health care system should be shown to those who will benefit.

Health care providers and patients must be shown the advantages of changing the health care system in their terms. If all Canadians are to be convinced of the benefits and efficiencies of an enhanced system, these should be clearly demonstrated and communicated to them through examples that are understandable and meaningful to them in their environments.

AGENDA FOR ACTION

1. Examine existing initiatives, gather knowledge and fund creative public–private partnership incentives to create a model.

Several initiatives have already been started through local and provincial health care systems to find better ways of delivering health care through the use of ICTs and patient records. The knowledge gained from these initiatives should be gathered and drawn upon to create a fully integrated health infrastructure for the benefit of all Canadians.

An innovative public–private partnership is probably the most likely way to develop, integrate and maintain the use of ICTs in the health care system over the long term. However, the risks of such a public–private arrangement should be fully explored and understood before such a partnership is undertaken.

2. Begin educating physicians about the use of ICTs at the grassroots level.

An awareness and knowledge of ICTs among physicians should take place at the ground level. New graduates, particularly in medical schools, should be educated in the use of ICTs. Meanwhile, practicing senior physicians and all health providers could be engaged in the development of the technology to ensure it meets their needs and to help them understand how it can be applied in their environments. Physicians and other sectors of health providers should be shown, in clear, practical terms, how ICTs will benefit them so that they will buy in to the use of ICTs and EHRs in the health care system.

3. Examine how other industries introduced and implemented standards in terminology and technology to meet their customers' needs.

There is a very urgent need for standards in terminology and technology. For the example to be “sold” to physicians, it must be workable and answer their needs; for example, “hypertension” must mean the same thing to one physician that it means to another.

The standards, once developed, must integrate—not compete—with each other. For instance, the successes of Canadian banks in standardizing the automated banking to meet their customers’ needs in terms of point of delivery and hours of operation should be examined and used as a model for standards integration. Another example of successful integration of automation includes the agricultural manufacturing industry. This industry cooperated and set standards to manufacture farm machinery that would meet the farmers’ needs for such activities as seeding, etc.

The CMA, assisted by Health Canada, provincial governments and other organizations, was identified as a key partner that could move along the process of developing partnerships, create an awareness of ICTs in the health care system, and initiate the integration of standards.

4. Build strong alliances early in the process to ensure buy-in from end-users.

All parties, including health care providers, payers, patients and industry at large, must be involved in building an enhanced, integrated system and in creating buy-in from all sectors.

5. Address the urgent need for a shared vision of health information technology.

Leadership is needed to bring together key participants to consolidate a shared vision. The CMA is probably in the best position to provide some of that leadership. In this role, the CMA could start the dialogue for a shared vision because it has the capacity to bring the key participants together. Other possible leaders with this same capacity include the College of Family Physicians of Canada (CFPC) and the Royal College of Physicians and Surgeons of Canada (RCPSC).

6. Create a new infrastructure of stakeholders to introduce standards for data transactions.

This infrastructure of stakeholders will be tasked with developing standards for data transactions that will help modernize the health care system. A co-partnership with the Canadian Institute for Health Information (CIHI)—which is presently doing a lot of work in the area of data standards—could be encouraged to address the physicians’ needs in the primary care environment. The participants noted that CIHI has been criticized for not being particularly sensitive to physicians’ needs in this area so far. Most importantly, standards are considered to be the “glue” that will make the whole, enhanced integrated health care system stick together.

The implementation of standards for data transactions may be more successful if they are introduced at the local or individual levels. Recent business models, such as the Internet and automated banking, created standards through industry leaders but the actual application of these standards occurred at the grassroots level. For instance, the standardized Internet language, HTML, allows anyone—from a huge corporation to a single individual—to create their own Web page.

Once the standards are set, the tools will be used, the benefits will be demonstrated, and users will become more curious and interested in sharing and increasing their knowledge to apply the technology in their own environments.

7. Develop a national business model but create it at the regional level.

Existing ICT projects should be evaluated and their successful characteristics drawn together to create a national business model. The interim step would involve the creation of a model at the regional level to address any shortcomings early and prove that such an integrated system will work before it is launched on a national level.

All Canadians, including those who fund the creation of a national model, should understand that this national business model may not have the usual return on investment characteristics in the short term (i.e. within a five-year government term of office), but that over the long term such a system will yield valuable social and financial results.

8. Test the model to identify how ICTs will work in practice.

Testing and proving the usefulness and workability of the model is key to achieving the necessary buy-in to move the whole process of integration forward. Physicians, particularly, need to know how this enhanced system will function in the field. Buy-in should be generated from the grassroots level, and the data and information must come together in a workable way in the field so that physicians and health care providers can really see how it is going to work and benefit their patients and practices.

9. Communicate the benefits of the model.

Once the model is created—and assuming all parties have contributed to creating it—those who will use the new approach must be convinced of its benefits. A strategy to accomplish this would be to engage all parties in the initial development of the model so that the alliances are in place to communicate the advantages once it is fully developed. This model would include the electronic patient record and the complete interconnectivity of the health care system.

CONCLUSION

The fundamental theme of the participants' vision of an integrated health care system is that it will be built from the bottom up and focus on the *individual*. They envision a modernized system that will take into account the needs of physicians and individuals alike, and that will be entirely interconnected through the use of ICTs, EHRs and universal standards. Ideally, no barriers will stand in the way to accessing the technology; all users will have the means and connectivity "to speak to one another." The participants foresee patients being informed and knowledgeable about their health issues, and physicians being up to date on the latest health information. The group's underlying values on the subject of privacy were unanimous; personal patient information will remain personal, private and confidential and will be fully protected in an EHR.

While the participants' overall outlook toward the integration of ICTs in the health care system was progressive, they acknowledged that their willingness to adopt technological change might not be a commonly held view among other Canadian physicians. Within the group, the participants reflected many diverse and differing points of view, and a variety of discussions took place on how ICTs should be successfully integrated. Their progressive points of view and, in many cases, practical experience with electronic patient records, set the stage for several informative discussions on such topics as:

- C privacy and the custodianship of the medical record;
- C whether patients or physicians will be catalysts for technological change in the health care system;
- C how Internet-based medical information will influence the physician–patient relationship; and
- C the leadership role physicians could play in effecting technological change within Canada's health care system.

To achieve the vision of a patient-centred, connected, enhanced health care system, however, the participants felt that adequate funding, accompanied by a political willingness to cooperate and the will of *all* physicians to encourage the use of technology in their environments, would be needed to initiate change.

APPENDIX A - Workshop Participants

Chair

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Acronyms

CFPC	College of Family Physicians of Canada
CIHI	Canadian Institute for Health Information
CMA	Canadian Medical Association
EHRs	Electronic Health Records
ICTs	Information and Communications Technologies
OHIH	Office of Health and the Information Highway
RCPSC	Royal College of Physicians and Surgeons of Canada