Externally-Informed Annual Health Systems Trends Report – Third Edition

An Input for Health System Strategy Development, Policy Development and Planning

November 2010

Ontario

Ministry of Health and Long-Term Care

Copies of this report can be obtained from the Health System Planning and Research Branch

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TABLE OF CONTENTS

ADM'S FOREWORD 4

INTRODUCTION 5

PERSON-CENTRED CARE 7

SUSTAINABILITY, PRODUCTIVITY, AND INNOVATION IN THE HEALTH CARE SYSTEM 11

CHRONIC DISEASE PREVENTION AND MANAGEMENT 15

HEALTH HUMAN RESOURCES MANAGEMENT 18

MENTAL HEALTH AND ADDICTIONS 21

eHEALTH 23

PUBLIC AND POPULATION HEALTH 24

DISPARITIES IN HEALTH 25

CONSUMERISM IN HEALTH CARE 26

HEALTH CARE FACILITY INFRASTRUCTURE 28

REFERENCES 29

EXTERNALLY-INFORMED ANNUAL HEALTH SYSTEMS TRENDS REPORT

ADM's Foreword

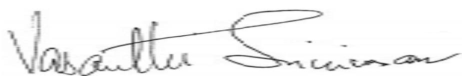
Welcome to the third edition of the Ministry of Health and Long-Term Care's Externally-Informed Annual Health Systems Trends Report, in which updated references and examples are provided for the trends identified in the January 2009 edition.

The trends discussed in this report are occurring internationally, largely independent of the activities of governments and health system managers. The Trends Report was designed to raise awareness of the trends among health system policy professionals and managers in order to support evidence-informed policy development across the health system. For example, the person-centred care trend is relevant to, and already reflected in, the activities of hospitals, providers, LHINs and the ministry.

Since its inception, the Trends Report has been guided by input from external experts. One of their key recommendations was to organize the trend information around growing challenges and emerging responses; this way the Trends Report can help us learn from the experience of others in Ontario and internationally. In the face of a myriad of important issues, the Trends Report may help us to decide what to focus on, research, and analyze in more detail. The emerging responses to the issues discussed in this report are not solutions in themselves, but they do complement existing tools and reports, such as those prepared by the Medical Advisory Secretariat, the Health Analytics Branch, and external organizations, such as the Institute for Clinical Evaluative Sciences.

We hope that you will find the information in the Trends Report both interesting and helpful. The Trends Report is one in a series of planning tools produced by The Health System Planning and Research Branch of the Health System Strategy Division, where we are committed to providing research evidence to provide a better foundation for cooperative policy development. Other planning tools prepared by our branch include the Health Horizon quarterly newsletter, an electronic repository of research reports, and rapid literature reviews on request. We would be pleased to provide additional research on the trends and other important topics for ministry and LHIN clients.

I would like again to thank the panel of external experts for their continued help in shaping and informing this report. Since the publication of the first edition of the Trends Report, there have been several major developments associated with each of the trends identified by the expert panel; their foresight in the selection of the trends has ensured the report's relevance for health system policy.



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INTRODUCTION

This report is designed to provide actionable information supporting planners and decision makers throughout the health system. The report development process incorporated input from external experts to bring in perspectives from outside the Ministry of Health and Long-Term Care.

Most of the content is drawn from research evidence. However, trend information was also obtained from other sources including government publications, websites and mainstream media. We have presented the information as emerging issues and challenges followed by the responses of various jurisdictions to address the trend.

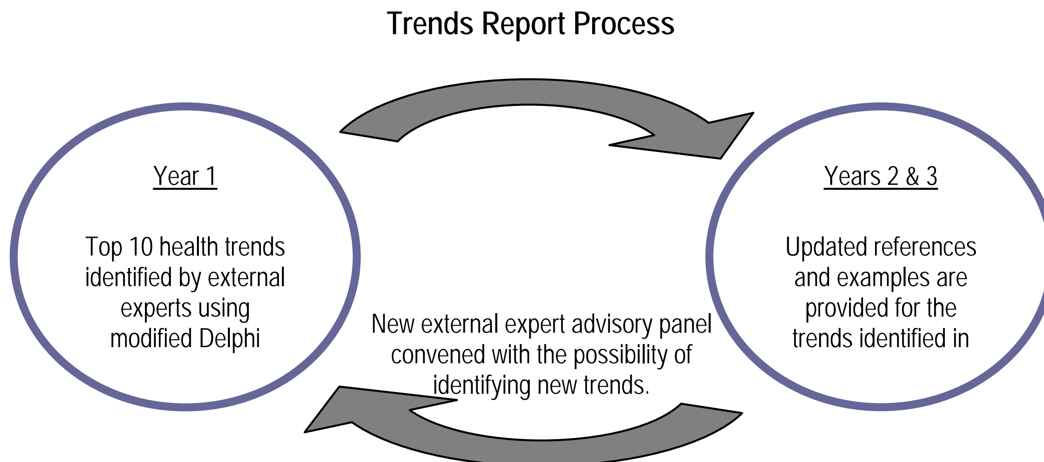
An External Expert Advisory Panel generously provided their time and identified ten important trends for strategy development, policy development, and planning. Once these were researched, six of the experts used a modified Delphi process to rank them. The four trends with the highest ranking are the focus of this report. However, we have included all trends and we can provide detailed background briefs for each one. It is important to note that these trends would naturally vary depending on the participating experts. Therefore, the ten trends identified represent an informed outlook, as opposed to a definitive list.

The ministry thanks the following members of the Trends Report External Expert Advisory Panel:

Harvey Schipper: Principal, Minden Schipper Associates
David Henry: CEO, Institute for Clinical Evaluative Sciences
Jonathan Guss: CEO, Ontario Medical Association
Brenda Zimmerman: Director, Health Industry Management Program, Schulich School of Business
Peter A. Singer: Director, Rotman-McLaughlin Center for Global Health, University Health Network and the University of Toronto
Jack Cashman: Venture Partner, Genesys Capital
John King: Executive Vice-President & Chief Administrative Officer, St. Michael's Hospital
Neil Wilkinson: Former Chair, Capital Health: Edmonton Area
Imogen Evans: Former Executive Editor of Lancet Journal
John Evans: Chair, MaRS Discovery District
Gabe Sékaly: Former CEO, Institute of Public Administration of Canada
Judy Middleton: Former CIO, Osler Health Center

In this third edition of the Trends Report, the trends identified by the External Expert Advisory Panel in 2008 have not been changed, but more recent research evidence related to growing challenges and emerging responses has been added. The ministry's Health System Strategy Division looks forward to expanding the process and expert input in future. Current plans are to continue to update these ten trends annually and to conduct the complete modified Delphi process, with the possibility of identifying new trends, every three years.

Trends Report Process



The ten health systems trends identified by the expert panel were:

1. Person-Centred Care
2. Sustainability, Productivity, and Innovation in the Health Care System
3. Chronic Disease Prevention and Management
4. Health Human Resources Management
5. Mental Health and Addictions
6. eHealth
7. Public and Population Health
8. Disparities in Health
9. Consumerism in Health Care
10. Health Care Facility Infrastructure

PERSON-CENTRED CARE

Why is this trend important?

Person-centred care, sometimes referred to more narrowly as patient-centred care, encompasses: respect for people's values, preferences, and expressed needs; coordination and integration of care; information, communication, education; physical comfort; emotional support and alleviation of fear and anxiety; involvement of family and friends; and transition and continuity.[1] According to the declaration on patient-centred health care by the International Alliance of Patients' Organizations (IAPO), to achieve patient-centredness, health care must be based on the principles of respect, choice and empowerment, patient involvement in health policy, access and support, and information.[2]

One of the observable forces contributing to the shift in viewing patients as consumers of health care is searchable health information that is quickly and easily accessible through the Internet[3, 4, 5] and through new media tools such as weblogs, instant messaging platforms, video chat, and online social networks.[6]

Growing Challenges

Growing challenges related to person-centred care include:

- an aging population
- vocal patient groups
- increased demand for alternative medicines
- changing patient expectations

In Canada, the aging baby boomer generation may significantly alter health services usage pattern through:

- increased use of homecare
- increased visits to doctors
- additional diagnostic testing
- a demand for shorter waiting lists, advanced technology, advanced surgical procedures, and alternate services such as elder care, palliative care and respite care.[7]

Data from a 2008 survey by Ipsos Reid and the Canadian Medical Association indicated that only half (55%) of Canadians agreed that the health care services in their community were patient-centered, while three in ten (31%) disagreed.[8] Recent reviews of the literature note that the implementation of patient-centered care has been hampered by the lack of a clear definition and consistent method of measurement.[9, 10] Research has shown that patient-centered interactions promote adherence and lead to improved health outcomes.[11]

Internationally, the European Foundation for the Improvement of Living and Working Conditions refers to the increasing number and influences of vocal patient groups as an example of increasing involvement of patients in decision making.[12] A Swedish population-based study on the influence of perceived health on health utilization notes increasing demand for alternative medicine in the country and recommends the investigation of a relationship between alternative medicine and patients with multiple symptoms.[13] A survey of Australians in Perth identified two expectations of the public for major changes in the development of future health services:[14] shifting services from inner to outer metropolitan hospitals

wherever possible in order to provide care closer to where most people live and assuring high quality equivalents from inner metropolitan hospitals for locally delivered services.

Emerging Responses

Involvement of Patients in Decision Making

The public can be involved in health care decision making in many ways including: as representatives on priority-setting committees, as representatives on executive committees and boards (i.e., hospital boards and regional health authorities), as members of citizens' councils to provide ongoing advice on specific matters, and as participants of surveys, citizens' juries, community meetings, focus groups and the like, to provide feedback on all elements of priority setting.[15] In Canada, organizations that consult citizens include: hospital boards,[16] the Health Council of Canada,[17, 18] The Canadian Agency for Drugs and Technologies in Health,[19] and The Canadian Cochrane Musculoskeletal Group.[20]

Person-Centered Initiatives

On June 3rd, 2010, the Ontario Legislature passed the Excellent Care for All Act, which emphasizes the role of patients and their caregivers in their own health and in a sustainable health care system. The act further recognizes that a high quality health care system is one that is, among other things, accessible, appropriate, equitable, integrated, patient centred, and states that the government is committed to ensuring that health care organizations are focused on creating a positive patient experience.[21]

Other Ontario-based patient-centered initiatives that have been introduced by the government include:

- Ontario's Emergency Room Wait Times Strategy.[22]
- An Aging at Home Strategy that enables seniors to continue living in their homes.
- The Ontario Diabetes Strategy was launched in July 2008 which includes tools and education to empower patients.[23]
- The Health Care Options website was introduced in 2009 which provides information that will enable Ontarians to make informed decisions about where to go for their front-line health care needs.[24]
- The recently passed Excellent Care for All Act requires that health care organizations conduct surveys to assess patient and employee satisfaction, and to have a patient relations process (to address patient, client and caregiver relations[25]) and patient declaration of values.[26]

In 2007, the Institute for Healthcare Improvement in the US developed a new health care framework – "The Triple Aim" – that simultaneously addresses the (1) patient experience, (2) the cost per capita and (3) the health of specific populations.[27]

In the US, the "medical homes" concept has evolved to embrace different patient populations including patients under state Medicaid and Children's Health Insurance Programs (CHIP). A medical home is an enhanced model of primary care in which care teams attend to the multi-faceted needs of patients and provide whole person comprehensive and coordinated patient-centred care. Since 2006, more than 30 states have initiated projects to improve Medicaid and CHIP to advance medical homes.[28] In the past year, the US Department of Veterans Health Affairs (VA) has embraced the medical home model as the future standard of care for Veterans, and has implemented a care management model which uses a platform of standardized, software- aided mental health assessments and clinical care managers to deliver evidence-based treatments for depression, anxiety, and substance abuse in primary care settings.[29]

A 2008 parliamentary review of the UK NHS highlighted the importance of locally led, patient-centred and clinically driven health care.[30] Recently, the new coalition government has unveiled a plan to make structural changes to the NHS in an effort to develop "a more responsive, patient-centred NHS."[31] The plan is controversial,[32, 33, 34] but if enacted, patients would be granted greater access to information and greater flexibility in choosing health care providers. HealthWatch England, a new independent consumer organization would be created with the goal of strengthening the collective voice of patients by ensuring that the views and feedback from patients and caregivers are an integral part of local service acquisition of health and social services care. There would also be a shift in how success is measured; focus would shift from process targets (e.g., wait times) to outcome measures (e.g., improving cancer survival rates).[35]

Consumer Driven Changes to Health and Health Care Delivery

Increased interest in health care consumerism has created an environment conducive to growth in the use of decision aids to support patient decision making. Decision aids are evidence-based tools designed to prepare individuals to participate in making specific and informed values-based choices about disease management and treatment options, prevention, or screening.[36] Decision aids have been developed in several countries including Australia, Canada, China, Finland, Netherlands, United States, and the United Kingdom.[37]

In the US, Consumer Driven Health Plans (CDHPs) are one tool in a consumerism strategy, wherein consumers take more responsibility not only for costs but also for lifestyle choices and treatment decisions.[38] Consumer driven health plans are typically a high-deductible health plan (HDHP)[39] and employers often offset the higher out-of-pocket costs of CDHPs by offering employees a health reimbursement arrangement (HRA) or a health savings account (HSA) and contributing funds.[40] A recent survey of 11,413 employers in the US found that CDHPs experienced continued growth in 2010, though at a slower rate than in 2009; the rate of growth in 2010 was found to be 18.1%, about half that of 2009.[41]

Retail-Based Medical Clinics

In response to US consumer demand, there are now a number of retail-based medical clinics including the health centres of CVS pharmacies, Target Corporation, Wal-Marts, and MinuteClinic.[42] The American Association of Family Physicians identified the following attributes as important to the patient care offered in retail clinics: scope of services, evidence-based medicine, team-based approach, referrals, and electronic health records.[43] According to one study, ten routine procedures[*] encompassed more than 90% of US retail clinic visits.[44] These same ten routine procedures made up 13% of adult primary care physician visits, 30% of paediatric primary care physician visits, and 12% of emergency department visits. It is unknown whether there will be a future shift of care from emergency departments or primary care physicians to retail clinics. However, a 2007 US poll indicated that 15% of children and 19% of adults were "very likely" or "likely" to use a retail clinic in the future.[45] As of July 2009, there were approximately 1,107 retail clinics in operation in the US. The annual growth rate of retail clinics from 2000-2007 was 65%; while the growth rate

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[*] The ten most routine medical problems included: upper respiratory infection, sinusitis, bronchitis, pharyngitis (sore throat), immunizations, otitis media (middle ear infection), otitis external (outer ear infection), conjunctivitis (pink eye), urinary tract infection, and screening lab/blood pressure test.

currently sits at 10-15%, it is expected to accelerate above 30% from 2013-2014, with the market topping out at 4,000 clinics in 2015.[46]

A background document is also available for this trend. See: "Trend 1 – Person-Centred Care"

SUSTAINABILITY, PRODUCTIVITY, AND INNOVATION IN THE HEALTH CARE SYSTEM

Why is this trend important?

Health system sustainability is critical in order to have a system that is able to meet current and future obligations and expected outcomes; adjust to meet new demands and unexpected system pressures; improve and be capable of sustaining improvement; and provide increasing values in both economic and health outcomes.[47]

Four indicators can be used to measure characteristics of health system sustainability: health spending, productivity, health human resource supply, and investment in information management.[48] Productivity is estimated by comparing the fluctuations of inputs and outputs. Inputs are any resources invested in the system, and outputs refer to the services provided to patients.[49] However, estimating productivity in health is complex[50], and health care quality (e.g., safety, efficiency and timeliness) and innovation are also important to sustainability.[51, 52, 53]

Growing Challenges

Sustainability

Ontario public health care spending is projected to increase over the long-term due to:

- increased utilization of services,[54]
- increases and aging in the population,[55]
- inflation, and new, more expensive treatments,[56, 57]
- increased consumer expectations,[58]
- new diseases,[59] and
- an increasing prevalence of chronic disease.[60, 61]

The Ontario Ministry of Finance projects a 6.0% annual growth rate for provincial government health care expenditure from 2009/10 to 2024/25, which will account for 55% of Ontario's budget.[62] Health costs currently make up 46%[63] of Ontario's total program spending and are expected to make up an even larger proportion of program spending in the future.[64] In Canada, total health expenditure was 10.7% of the gross domestic product (GDP) in 2008, and is forecast to reach 11.7% in 2010.[65] The trend of increased health spending has been seen internationally as well; health spending as a proportion of gross domestic product (GDP) is expected to increase in countries such as Australia,[66] the US,[67] and the UK[68] in the coming years.

There is also concern that the current budgeting system for Canada's hospitals (block grants or global budget) is not providing enough incentives for efficient and high quality hospital care, particularly in Canada's publicly funded health care system.[69] This trend has also been observed internationally.[70, 71]

Productivity and Quality in the Health Care System

Evidence in Canada and the US suggest that productivity and quality rates have not kept pace with health care investments.[72, 73, 74]

A report by the Ontario Health Quality Council found that in 2009, 43% of family physicians in Ontario had electronic medical records (EMRs), compared to 49% in Alberta and British Columbia and 95-99% in Australia, New Zealand, the UK, Norway and the Netherlands. Further, the report found that Ontario doctors with EMRs are not fully utilizing available tools to improve quality, such as electronic reminders for guideline based interventions of screening tests (16%) or checks for drug errors (28%). In Australia, nearly all doctors use these tools.[75]

Innovation as a Driver of Cost in the Health Care System

Despite Canada's investments in innovation,[76, 77] salaries, patent output, and R&D per capita is lower than in the US.[78] It has been suggested that making a large investment in biotechnology may create a paradox since Canada's federal and provincial governments – as the main buyers of biopharmaceuticals – are focused on cost containment and may not be able to purchase these new drugs.[79] From 2001 to 2005 biopharmaceutical sales increased (between 82% and 235%) in the US, Canada, France, Germany, Italy, Spain, the UK, Australia, and Japan.[80]

Emerging Responses

Sustainability

Priority-setting and rationing of services have led to savings in health care expenditures in Oregon[81] and has been recommended as an alternative approach to health care reform in the UK.[82]

Sustainability can be addressed through assuring appropriateness of medical treatments. The Ministry of Health and Long-Term Care and the University Health Network, in partnership with St. Joseph's Healthcare Hamilton, have developed an MRI and CT online decision support tool for use by physicians to determine appropriateness of testing.[83]

Similarly, private insurers in the US are increasingly contracting with radiology benefit management programs (RBMs) to reduce overall use and expenditures for radiology services. In most RBMs, referring physicians are required to submit requests for advanced imaging to the RBM and obtain approval before such procedures are performed. The RBM uses algorithms and clinical decision–support criteria, based on evidence from published clinical literature, to determine the medical necessity of the diagnostic exam or to suggest whether an alternative treatment is clinically indicated.[84] A recent study comparing the records of 459 CT and MRI examinations to the guidelines used by a RBM found that 26% of the examinations were considered inappropriate by the RBM's standards.[85]

In addition, as part of the 2009 US economic stimulus package, $1.1 billion of the package was designated for comparative-effectiveness research. Comparative-effectiveness research compares clinical outcomes, effectiveness, and appropriateness of items, services, and procedures that are used to prevent, diagnose, or treat diseases, disorders, and other health conditions.[86]

Moving towards a prospective fee-for-service (i.e., Diagnostic Related Group – DRG) is another approach being used to address sustainability. DRG requires a government to pay a fee to the service provider

(hospital) for each individual cared for based on the average expected costs of treating the patient's condition. This model has led to cost reductions and increased productivity in Sweden, Denmark, and Australia.[87]

Productivity and Quality

In 2010, Ontario passed the Excellent Care for All Act, which will make health care providers and executives accountable for improving patient care. The legislation requires that health care organizations publish annual quality improvement plans, create quality committees to report on quality related issues, and link executive compensation to quality plan performance improvements.[88]

The Ontario Health Quality Council reports that the province has made significant improvements in the use of information technology, particularly in the use of electronic medical records (EMRs). The proportion of family doctors who have an EMR system has risen from 26% in 2007 to 43% in 2009 in part due to the OntarioMD program,[89] which funds and assists physicians to acquire, implement and adopt IT.

Lean initiatives to achieve productivity and quality (patient safety) gains have been demonstrated with success in various jurisdictions including the University Health Network,[90] North York General[91] and St. Joseph's[92] hospitals in Toronto, a Quebec[93] hospital surgical ward and the UK government.[94] North York General hospital won a national patient safety award in 2008 due to its implementation of Lean methodology to improve patient flow.[95] The implementation of Lean healthcare in one Quebec hospital resulted in a 30% reduction in usage of medical equipment, a potential reduction of costs ($500,000),[96] and waiting time reductions.[97, 98]

Surgical checklists are a tool being studied to determine if they can improve team communication and consistency of care to reduce complications and deaths associated with surgery. The World Health Organization funded an eight country study (including one site in Canada) which found implementation of a surgical checklist program was associated with concomitant reductions in the rates of death and complications among adult patients,[99] and a recent study found that facilities using a training program which included the use of checklists in the operating room had an 18% reduction in annual mortality rate.[100] A recent cost analysis, found that the checklist would generate cost savings once it prevented at least five major complications per year.[101]

Innovation Focused on Sustainability in the Health Care System

In Canada, the National Research Council's aims include concentrating R&D on developing solutions to national challenges in health and wellness, and strengthening Canada's innovation system.[102] The Canadian government is supporting innovation through R&D investments[103] and raising awareness of Canadian R&D.[104] Patient self-management innovation tools are also new ideas being proposed to reduce costs and improve the quality of care around the world.[105] For example, patient decision aids are being used in various clinical situations in several countries to prepare individuals to participate in making specific and informed values-based choices about disease management and treatment options, prevention, or screening.[106, 107] Furthermore, the communication properties and the growing market penetration of mobile phones are creating opportunities for innovation in promoting cardiovascular disease self-management in developing countries through support of lifestyle and behaviour modification.[108]

The US health care reform law mandates the creation of a Center for Medicare and Medicaid Innovation (CMI) by January 2011. The purpose of the of the CMI is to test innovative payment and service delivery

models to reduce program expenditures under Medicare and Medicaid, while preserving or enhancing the quality of care furnished to individuals under the programs.[109] The $10 billion worth of grants distributed by the CMI from 2011 to 2019 will be used to test promising models and expand successful pilot programs.[110]

A background document is also available for this trend. See: "Trend 2 – Sustainability, Productivity and Innovation in the Health Care System.

CHRONIC DISEASE PREVENTION AND MANAGEMENT

Why is this trend important?

In 2005, chronic diseases accounted for 35 million deaths worldwide, or 60% of all deaths.[111] This is projected to rise to 69% in 2030.[112, 113] In 2008, 39% of Canadians reported having at least one of seven common chronic health conditions.[114] In 2005, 50% of Ontarians age 45-64 years had at least one of nine common chronic conditions; the rates among 65-74 year olds and those 75 years and over were 77% and 84%, respectively.[115] As more people suffer from chronic disease, the costs associated with these diseases also increase.[116, 117]

Opportunities for chronic disease prevention and management in Ontario/Canada may emerge if and when stakeholders are connected to funding opportunities, research findings, data, surveys, and clinical, patient, and public health information. Examples of this approach include the Agency for Healthcare Research and Quality (AHRQ)[118] and the American Association of Retired Persons (AARP).[119]

Growing Challenges

The increasing incidence of chronic diseases in children and adolescents[120,121] and the burden of co-morbid chronic diseases[122, 123] along with the associated high costs to treat chronic diseases[124] are trends observed in Canada and internationally.

Children and Adolescents

Diabetes mellitus is one of the leading chronic diseases of childhood and youth.[125] In Canada, three out of every 1,000 one- to 19-year-olds (over 24,000 individuals) had diabetes in 2006-2007, and it is predicted that this figure will increase by more than 10% to almost 28,000 by 2012.[126] In Ontario, there has been an annual three percent increase in the rate of children diagnosed with diabetes. Most children with diabetes have Type 1, but a growing number of children are being diagnosed with Type 2 diabetes.[127] Asthma[128, 129] and Inflammatory Bowel Disease [130] are also chronic conditions that have been increasing among children in Ontario and in other international jurisdictions.

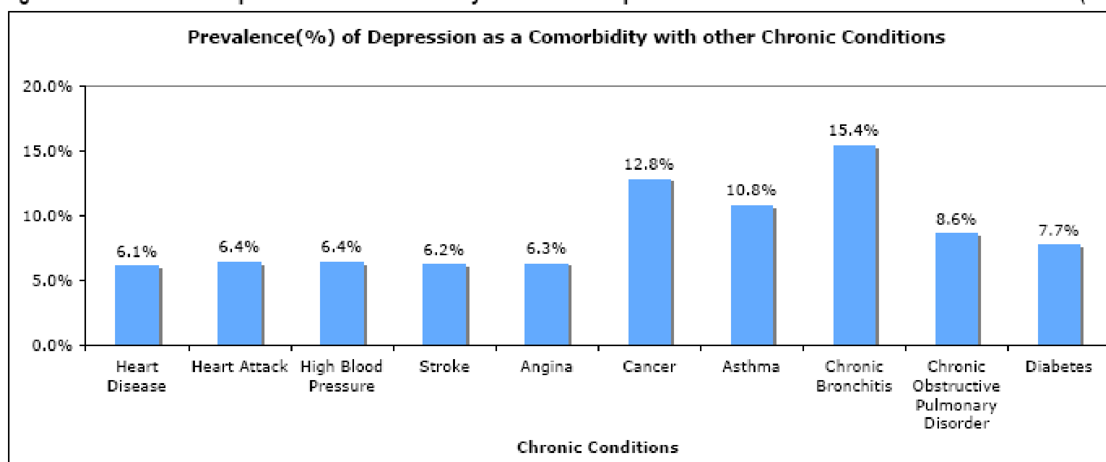
Co-morbidities

Of those Ontarians over 45 with one chronic disease, 70%, or 2.6 million Ontarians, have multiple chronic conditions.[131] The most commonly occurring co-morbidities in Ontario include[132]:

- arthritis/rheumatism and hypertension
- heart disease and hypertension
- heart disease and arthritis/rheumatism
- diabetes and hypertension
- diabetes and arthritis/rheumatism

Statistics Canada's Canadian Community Health Survey (CCHS) reports on chronic disease prevalence in Ontario. Recorded co-morbid afflictions show that people with diseases such as asthma, cancer and chronic bronchitis had a high prevalence of mood disorders/depression co-morbidity (> 10.0%), while some other chronic diseases had approximately 6% co-morbidity (see Figure 1).[133]

Figure 1: Prevalence of Depression as a Co-morbidity in Patients Hospitalized for Common Chronic Diseases in Ontario (2006)



Recent data highlight the link between diabetes and cardiovascular disease. Compared to non-diabetic Canadians, adult diabetics are hospitalized almost four times more often for heart failure and about three times more frequently for ischemic heart failure, heart attack and stroke.[134] In 2006-2007, 62.8% of adults (aged 20 years and older) with diabetes also had hypertension, such that 5.1% of Canadian adults were living with both conditions.[135]

Emerging Responses

According to the WHO, a healthy diet, regular physical activity and tobacco avoidance could potentially avoid 80% of premature heart disease, stroke, and type 2 diabetes, in addition to 40% of cancers.[136]

Some examples of programs and initiatives aimed at preventing/improving chronic disease outcomes include:

- Family health teams and multidisciplinary health teams (e.g., Ontario's Family Health Teams,[137] British Columbia's Abbotsford and Mission Seniors Clinic[138]). These teams are composed of doctors, nurses, nurse practitioners, and other health care professions who will work together to provide more coordinated health care and improved management of chronic diseases.[139] The Quality Improvement and Innovation Partnership (QIIP) helps Ontario's Family Health Teams learn and adopt quality improvement techniques.[140] QIIP recently launched *Learning Communities*, a quality improvement program supporting primary care providers; the first wave of the program focused on six areas: diabetes, asthma, hypertension, chronic obstructive pulmonary disease, integrated cancer care and office practice redesign.
- Legislation (e.g., The Smoke-Free Ontario Amendment Act 2008 came into effect in January 2009 and makes smoking in any motor vehicle illegal when passengers under the age of 16 are present[141]).
- Prevention programs (e.g., Ontario's Chronic Disease Prevention and Management Strategy[142] which starts with diabetes,[143] The Canadian Heart Health Initiative,[144] The US Diabetes Prevention Program which is based on strong evidence showing the effectiveness of diet and exercise in pre-diabetic populations,[145] and British Columbia's ActNow BC, a cross-government health promotion initiative, whose strategies were recently identified as "promising best practices" by the WHO[146]).
- Programs aimed at addressing co-morbidities (e.g., The CDC Arthritis Program[147]).

- Global initiatives (e.g., In June 2009, The Global Alliance for Chronic Disease was formed by six of the world's foremost health research agencies, including the Canadian Institutes of Health Research (CIHR), to collaborate in the fight against chronic, non-communicable diseases: cardiovascular disease, several cancer, chronic respiratory conditions, and type 2 diabetes.[148])

Health care case management approaches (e.g., Chronic Care Model[149]) help coordinate care to improve both its continuity and quality with lower costs.[150, 151, 152]

A background document is also available for this trend. See: "Trend 3 – Chronic Disease Prevention and Management.

HEALTH HUMAN RESOURCES MANAGEMENT

Why is this trend important?

Health human resources (HHR) is a critical factor in health policy planning across Canada and internationally. The Pan-Canadian Health Human Resource Strategy states that: "appropriate planning and management of HHR is key to developing a health-care workforce that has the right number and mix of health professionals to serve Canadians in all regions of the country."[153] The changing nature of medical practice represents both a challenge and an emerging solution, and investments in increasing the number of health practitioners are beginning to produce results.

Growing Challenges

Planning for HHR Supply

Trends in Ontario show that in the future the average physician will deliver fewer hours of care than today's average physician.[154] An increase in the number of female medical students (57.8% in 2007) and current trends in female physician work hours suggest that an overall decrease in doctor productivity is to be anticipated in Canada which may further compound Canada's HHR shortages.[155] An aging workforce may also affect supply. In 2008, the average age of the physician workforce was 49.8 years; the average family medicine physician was 49.0 and the average specialist was 50.6; prior to 1994, there was very little change in the average age of physicians, but since 1994, the average age of physicians has been increasing, particularly for family medicine physicians (the average age between 1994 and 2008 increased by 5.1 years).[156] However, an increase in the number of elderly and the number of persons with chronic diseases[157] will require more health care.[158]

Ethical Concerns with Recruiting Professionals from Abroad

There is a global shortage of approximately 4.3 million health workers, with the greatest shortages in the poorest countries.[159] Many developed countries rely on recruiting health professionals from developing countries to meet their HHR supply needs. For example, Canada recruits many International Medical Graduates from India and South Africa to the physician workforce.[160] The number of full time equivalent International Medical Graduates (IMGs) in Ontario increased from 67.43 in 2000 to 719.76 in 2009; proportionally, this corresponds to an increase from 2.0% to 13.3% of all postgraduate medical trainees.[161]

Distribution of HHR

Aside from the issues of training and recruiting physicians, there is the problem of efficient distribution. Geographical differences create numerous challenges for health care providers and planners. Rural areas in Canada[162], the United States[163], and New Zealand[164] are experiencing difficulties recruiting and retaining adequate medical professionals. In 2006, approximately 20% of the Canadian population was located in rural areas, while less than 10% of physicians were located in these areas[165] and only 12.2% of registered nurses resided in rural and remote areas (in 2007).[166]

Emerging Responses

Increasingly Efficient use of HHR

In Canada, there are a number of efforts underway to make the most of scarce health professionals. Multidisciplinary teams, such as Ontario's Family Health Teams, maximize the efficiency of HHR, providing improved access and better health outcomes.[167] Pharmacists[168] and physiotherapists[169] are examples of allied health professionals that are being studied to determine their roles in primary health care teams in Ontario. The use of physician assistants, acute care nurse specialists and primary health care nurse practitioners in emergency department teams are being piloted by Ontario to address the lack of physician resources.[170]

Several Canadian jurisdictions have passed legislation to expand health care professionals' scope of practice to give patients more options for care and allow health professionals to deliver more services.[171, 172, 173] In 2009, Ontario passed legislation to allow nurse practitioners, pharmacists, physiotherapists, dieticians, midwives and medical radiation technologists to deliver more services. The legislation also changed the rules for administering, prescribing, dispensing, compounding, selling and using drugs in practice for chiropodists and podiatrists, dental hygienists, dentists, midwives, nurse practitioners, pharmacists, physiotherapists and respiratory therapists.[174]

Increasing Current and Future Capacity

Significant increases in the training of health professionals are underway in Canada. The entering class of medical students in Canada in 2008/09 was 68.3% larger than the class of 1998/99; for nursing, the increase from 1997 to 2007 was 51.4%.[175] The workforce itself is also changing to meet increased demand through such initiatives as extending the careers of health care providers (e.g., Ontario's Late Career Nurse Initiative) and increasing the opportunity for full-time employment of new nursing graduates (New Graduate Guarantee).[176]

There are also efforts to move HHR planning beyond models based on simple population-provider ratios. For example, the Ottawa Hospital has developed a program logic model to more accurately predict the number of nurses the hospital would have to hire annually for three and five years. This workforce planning initiative moved the organization from a reactive to a proactive mode, supported innovative recruitment strategies and helped to justify budget requests, thus aligning hiring with the business plan of the hospital.[177]

Responses to HHR Management by Other Jurisdictions

The United Nations launched the eight Millennium Development Goals to increase health levels globally. These include explicit recognition of the need to train more health professionals annually.[178] Title V of the US health reform law addresses that nation's health care workforce; it outlines plans to increase the supply of a qualified health care workforce and enhance health care workforce education and training through specific initiatives such as state healthcare workforce development grants, public health workforce recruitment and retention programs, and increasing teaching capacity.[179] In India, the government's responses to rural doctor shortages have included a mobile health program that travels to rural areas with a few basic medical tools and over-the-counter medications, private sector medical colleges and nursing schools, a move towards community health insurance schemes, and compulsory rural placements for medical students.[180] Norway has had success in retaining doctors in rural areas by developing a training

model which allows for postgraduate medical training to occur in remote areas, rather than in large centres.[181] In Australia, there is suggestion that physician assistants (PAs) could help to address medical workforce shortages in rural and remote settings by practicing with remote physician supervision.[182] There has been further suggestion that the introduction of PAs into the rural medical workforce could serve to delay the retirement of existing rural doctors, and help to recruit and retain new, younger doctors.[183]

A background document is also available for this trend. See: "Trend 4 – Health Human Resources Management"

MENTAL HEALTH AND ADDICTIONS

Why is this trend important?

One in five Canadians will experience mental illness in their lifetime.[184] Mental illness is accompanied by significant costs to the health care system, employers, as well as the individuals affected by mental illness themselves. In Ontario, approximately one third of claims for short and long-term disability benefits (70% of total costs) are due to mental illness, which amounts to an estimated $15 billion to $33 billion annually. [185] The World Health Organization estimates that depression will be the second leading cause of disability by the year 2020.[186]

Growing Challenges

A national survey found that between 1994 and 2004, the proportion of Canadians who reported having used an illicit drug in their lifetime rose from 28% to 45%. Cannabis was found to be the most widely used type of drug, followed by hallucinogens, cocaine (or crack), speed and heroin.[187] According to 2005 survey data, 2.6% of Ontarians had moderate gambling problems while 0.8% had severe gambling problem.[188] A 2009 survey of Ontario students in grades seven to twelve conducted by the Centre for Addiction and Mental Health found a 31% prevalence rate of psychological distress, a 12% prevalence rate of self-reported poor mental health, a 21% prevalence rate of hazardous drinking, and a 16% prevalence rate of drug use problems.[189]

It has been suggested that depressive disorders are highly prevalent in the workplace and have a negative impact on performance, productivity, absenteeism, and disability costs.[190, 191, 192] Some of the challenges of dealing with mental illnesses in the workplace include addressing misconceptions about mental illness and overcoming both the stigma and discrimination of living with mental health issues.[193, 194] Access to mental health services is a critical issue facing consumers nationwide.[195, 196] In a 2010 report, Ontario's Select Committee on Mental Health and Addictions found that one of the main problems in Ontario's mental health and addictions system is that there is no coherent system; services are provided by hundreds of agencies, costs of services are frequently not covered by public health plans and no one person or organization is responsible for connecting these various parts. As a result, many people do not access care because of the complexity of the system.[197]

It has also been suggested that anxiety disorders and affective disorders are more prevalent among caregivers than non-caregivers.[198]

Emerging Responses

In Canada and many other countries, the harm reduction philosophy of treatment which emphasizes the provision of specific interventions (e.g., needle exchange, drug substitution, safe injection sites) has emerged and evolved over the past two decades as a response to growing concerns about the adverse consequences of substance abuse for both the individual and society – namely the spread of HIV and other blood borne infections.[199] On an international scale, the UN has recently committed to combat HIV/AIDS and other diseases in part through use of harm-reduction techniques such as expanding access to sterile injecting equipment.[200]

Various jurisdictions have developed support programs to reduce the burden of mental illness in the workplace as a way to combat productivity loss.[201, 202] "Supported employment" – a model that places clients in competitive jobs without extended preparation and provides on the job support from trained "job coaches" or employment specialists – has been found to be a best practice for employing people with a mental illness,[203] and significantly more effective than pre-vocational training in helping severely mentally ill people obtain competitive employment.[204]

Approaches to improve access to mental health services include:

- Connex*Ontario* provides service information on alcohol, drug, gambling and mental health services under one umbrella[205]
- The Ottawa Court Outreach Program is a community support program for individuals with a mental illness who are involved in the legal system.[206]
- The "Fusion of Care" model[207] of shelter based collaborative mental health care and the Annex Harm Reduction program[208] for homeless men at Seaton House in Toronto.
- Nova Scotia's Family Help telehealth program for children's mental health services.[209]
- In Ontario, the Select Committee on Mental Health and Addictions recommended the creation of a new umbrella organization (Mental Health and Addictions Ontario (MHAO)) to ensure that a single body is responsible for designing, managing, and coordinating the mental health and addictions system, and that programs and services are delivered consistently and comprehensively.[210]

Scotland's National Programme for Improving Mental Health has been noted as a successful public mental health policy that addresses the social determinants of mental health.[211]

Support for the psychological well-being of caregivers can be found in the form of respite care,[212] financial support,[213, 214] and community support.[215]

A background document is also available for this trend. See: "Trend 5 – Mental Health and Addictions"

eHEALTH

Why is this trend important?

eHealth is a consumer-centred model of health care where stakeholders collaborate, utilizing information and communication technologies, including Internet technologies to manage health, arrange, deliver and account for care, and manage the health care system.[216] eHealth solutions are viewed as one of the key methods of modernizing the health care system, as they may be able to make care safer and more cost effective.[217] In 2009, 21.7 million Canadians aged 16 and older (80%), went online for personal reasons during the 12 months prior to the survey. Of those individuals, 70% used the Internet to search for medical or health-related information, up from 59% in 2007.[218] In Canada, 61% of consumers report wanting their physicians, hospitals and/or the government to provide them with a personal health record (PHR) or online medical record, while 6% of consumers already maintain one.[219]

Growing Challenges

The two key challenges for e-health include its high implementation costs,[220, 221, 222] and resistance from health care professionals.[223, 224] According to Canada Health Infoway—which is working in partnership with the country's federal, provincial, and territorial governments to implement electronic health record (EHR) systems[225]—achieving the full health "infostructure" vision over the next 10 years will require a total incremental investment of $10 billion to $12 billion in capital and $1.5 billion to $1.7 billion in annual operating costs.[226] In England's NHS, nearly £13 billion is being spent to digitize their health system (Connecting for Health).[227] In January 2009 a parliamentary report concluded that the project was at least four years behind schedule and that the costs might soar.[228] In addition, it has been noted that some health professionals may be resistant to using information technologies.[229] Reasons for resistance from health care professionals include the absence of secure and stable electronic systems that are compatible with current electronic systems,[230] financial support,[231] and organizational factors.[232]

Emerging Responses

The Internet and mobile phone technologies are becoming an important medium in the delivery of care services, especially to patients with chronic conditions.[233, 234]

Examples include:

- web-based public health interventions[235,236, 237]
- telemental health programs[238]
- automated physical activity programs[239]
- home monitoring programs after hospital discharge[240]
- online pharmacist care[241]
- remote diagnosis of health conditions[242]
- integrated health management devices and online services[243]

An increasing number of private sector companies such as Intel,[244, 245] Google,[246] Microsoft,[247] and Telus[248] are developing e-health health applications and tools for both health care staff and patients.

A background document is also available for this trend. See: "Trend 6 – eHealth"

PUBLIC AND POPULATION HEALTH

Why is this trend important?

The Public Health Agency of Canada (PHAC) defines a population health approach as a strategy that aims to improve the health of the entire population and to reduce health inequities among population groups.[249] Population health builds on a tradition of public health and health promotion. It has been known for decades that changes in lifestyles or social and physical environments would likely lead to more improvements in health than would be achieved by spending more money on existing health care delivery systems.[250]

Growing Challenges

Between June 11, 2009 and August 10, 2010, there was a global H1N1 pandemic. In June 2009, when the WHO declared the start of the H1N1 influenza pandemic, there were 30,000 confirmed cases reported in 74 countries.[251] As of August 1, 2010, worldwide, more than 214 countries and overseas territories had reported laboratory confirmed cases of H1N1, including over 18,449 deaths.[252] In Canada, the impact of the H1N1 influenza on Aboriginal communities was of particular concern.[253] Although aboriginal people account for fewer than one in 25 people in Canada, they accounted for more than one in 10 recorded cases of H1N1 during the first wave of the outbreak, more than one in five H1N1 hospitalizations, almost one in six intensive care cases and more than one in 10 H1N1-related deaths.[254]

Infectious diseases such as *Clostridium difficile* and Methicillin-resistant *Staphylococcus aureus* are also of concern because of their increasing resistance to antibiotics and the difficulty of preventing these infections from spreading amongst patients in hospitals and other health care facilities.[255, 256, 257] It has also been suggested that climate change will start to have a greater impact on health, affecting weather patterns and environmental conditions, thus supporting new disease vectors and environmental stresses on health.[258]

Obesity and smoking are among two of the major contributors to lifestyle associated diseases such as diabetes,[259, 260] cancer,[261, 262] asthma,[263, 264] and cardiovascular disease.[265] Despite the fact that the negative consequences of obesity and smoking are agreed on, obesity rates are increasing[266, 267, 268] and the significant investment in cessation programs and prevention efforts[269] have not decreased smoking rates in Canada.[270] In addition, health concerns related to alcohol consumption are surfacing in the international public health field,[271, 272] with one study on the harmfulness of 20 types of drugs identifying alcohol as the single most harmful drug.[273]

Emerging Responses

Various initiatives in North American and Europe are aimed a promoting healthy lifestyle choices[274, 275, 276] such as physical activity[277, 278] and diet[279, 280, 281, 282] to address lifestyle associated diseases. Internationally, organizations and programs have been established to research and monitor infectious diseases such as H1N1 influenza[283, 284, 285] and nosocomial (hospital acquired) infections like *Clostridium difficile*.[286] The role of climate change on human health is currently being investigated to determine potential impacts and management strategies.[287, 288, 289, 290]

A background document is also available for this trend. See: "Trend 7 – Public and Population Health"

DISPARITIES IN HEALTH

Why is this trend important?

Health disparities are the differences in health status among population groups, often as a result of inequalities in the distribution of the social determinants of health across populations,[291] such as income, gender, and ethnicity. It has been suggested that it is not the absolute level of income of a society that determines health, but rather how evenly that income is distributed that affects mortality and health in an industrialized society.[292, 293, 294]

Growing Challenges

Recent reports from the Wellesley Institute and the Project for an Ontario Women's Health Evidence-Based Report (POWER) point to health disparities between low and high income Ontarians and between men and women living in Ontario.[295, 296] Health disparities also exist for different immigrant groups,[297, 298] people living in rural or remote communities,[299, 300] Lesbian, Gay, Bisexual, and Trans people[301], and Aboriginal Peoples.[302, 303,304] Similar findings were reported in two US reports on health disparities.[305, 306]

Emerging Responses

In Canada, various governmental and non-governmental initiatives have been introduced to reduce health disparities and disseminate knowledge of these barriers. Initiatives include the The Sick Kids Translation Project,[307] Integrated Pan-Canadian Healthy Living Strategy,[308] The Eskasoni Primary Care Project,[309] the POWER study,[310] Rainbow Health Ontario,[311] Toronto's Women's Health in Women's Hands community health centre,[312] and the Aboriginal Association of Nurses Framework for First Nations, Inuit, and Métis nursing.[313] Several US, Australian, and European-based initiatives have the same goals, including: the UN's Global Strategy for Women's and Children's Health,[314] the US's Office for Research on Disparities and Global Mental Health,[315] New York City's Cancer Awareness Network for Immigrant Minority Populations,[316] Australia's initiative to train Aboriginal and Torres Strait Islander Health Workers, counsellors and other clinic staff in Indigenous-specific health services,[317] US-based US CLEAN Look checklist (Culture, Literacy, Education, Assessment, and Networking),[318] and the emergence of Immigrant Friendly Hospitals in the EU.[319]

In addition, tools such as the Health Equity Impact Assessment (HEIA) have been implemented in Australia,[320] New Zealand,[321] and the UK[322] to identify the potential impacts a policy or project may have on the health of marginalized or disadvantaged populations. The Ontario Ministry of Health and Long-Term Care has developed a HEIA tool for the province which can be applied at the ministry, LHIN, or health-service provider level. [323]

On 6 November 2008, the Secretary of State for Health in the UK announced that Professor Sir Michael Marmot was to lead a Post 2010 Strategic Review of Health Inequalities.[324] Fair Society, Healthy Lives, was published in February 2010, and was the culmination of a year long independent review into health inequalities in England. The review proposes evidence-based strategies for reducing health inequalities in England from 2010 onwards; it presents evidence and advises on the development of a health inequalities strategy in England.[325]

A background document is also available for this trend. See: "Trend 8 – Disparities in Health"

CONSUMERISM IN HEALTH CARE

Why is this trend important?

Consumerism in health care is the process of enabling and engaging consumers more directly in the selection and purchase of health care services.[326] While increased consumer choice allows individuals to make better-informed choices about when, where, and from whom to seek health care,[327] consumerism in health care may be lead to inequity, needless consumption of resources, and compromised quality of care.[328] As well, perhaps the most serious consequence of implementing consumer choice in a publicly funded health care system, is that it could lead to a change in motivation among health care professionals (i.e., health care professionals will be more motivated to satisfy the consumer's requirements at the lowest possible cost to the provider, rather than be motivated to improve the overall welfare of the consumer).[329]

Growing Challenges

Direct-to-consumer advertising (DTCA) is an area that may reflect an unchecked expansion of consumerism in health care that should be addressed. In 2006, US spending on DTCA reached almost $5 billion.[330] A reduction in spending to $4.4 billion in 2008 was the first reduction in DTCA spending since the late 1990s.[331] There are arguments both for and against DTCA. Proponents argue that it increases appropriate consultation for undiagnosed or untreated health conditions and a 2002 Ipsos Reid survey found that 68% of Canadians support direct-to-consumer prescription drug information.[332] Opponents of DTCA claim that it can cause damage by instigating rapid, widespread use of new drugs before harmful effects are fully known,[333] confuse and mislead consumers, and interfere with the physician-patient relationship.[334] It may also contribute to higher costs through substitution of new expensive drugs without treatment advantages.[335] With the ever increasing expansion of the internet and other media outlets, there is concern with the reporting accuracy of medical findings in DTCA.[336, 337]

As well, there has been an observed increase in complementary and alternative medicine (CAM) usage[338, 339] that creates potential safety risks for patients, especially those who do not share this behaviour with other health care providers.[340] Canadians are high users of CAM compared to several European nations and the US, with one survey reporting that 25% had used CAM to treat a health problem with an alternative or natural therapy, whereas 19% had used CAM in the US, and only 13% in France.[341]

Emerging Responses

Initiatives have been launched to influence and prevent the negative consequences of health care consumerism. Regulations and guidance on drug advertising have been put forth by the American Medical Association,[342] the US Federal Food and Drug Administration,[343] and the European Union.[344] In Canada, a recent court challenge on DTCA[†] may provide guidance for future challenges against the Canadian Food and Drug Act that prohibits advertising to the public a drug as a treatment or cure for certain diseases or

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[†] In June 2009, CanWest Mediaworks Inc. withdrew their Canadian Charter of Rights and Freedoms challenge case about direct-to-consumer prescription drug advertising. CanWest argued that the section of the Food and Drug Act that prohibits advertising to the public a drug as a treatment or cure for certain diseases or disorders contravenes "freedom of thought, belief, opinion and expression including freedom of the press and other media of communication." However, the Attorney General of Canada argued that the ban on prescription drug advertising is justified by section one of the Charter which guarantees rights and freedoms "subject only to such reasonable limits prescribed by law as can be demonstrably justified in a free and democratic society."

disorders.[345] Websites such as Mediadoctor have been launched in Australia, Canada, the US, and most recently in Hong Kong to promote the accurate dissemination of medical information.[346, 347, 348] The UK's NHS has created a single-point of entry website for all health related information. The NHS Choices website provides a single 'front door' for the public to all NHS online services and information through the country's biggest health website.[349]

A background document is also available for this trend. See: "Trend 9 – Consumerism in Health Care"

HEALTH CARE FACILITY INFRASTRUCTURE

Why is this trend important?

Health care systems may need to renew their infrastructure in order to meet infection control standards and the demands and needs of a changing population. In 2005, Ontario announced that it would invest approximately five billion dollars over a five-year period to complete more than 100 hospital facility upgrade projects;[350] the plan was completed in 2008/09,[351] and a new long term plan will be developed in 2011.[352] "Green" building designs and construction are a new trend in health care facility infrastructure.

Growing Challenges

Growing challenges in maintaining and upgrading health care infrastructure include:

- a major design challenge is to ensure that any new buildings stay as relevant for as long as possible, given an average use of 40+ years.[353]
- accommodating various types of patients (e.g., individuals with mental illness and/or dementia) with a safe and secure environment.
- developing a culture of safety in nursing homes (e.g., providing enough hand washing stations, improving air flow, making surfaces less slippery to avoid falls).[354, 355, 356]

Emerging Responses

Some responses related to health care facility infrastructure include:

- evidence-based design is a current trend where all relevant and proven design innovations to optimize patient safety, quality, and satisfaction as well as workforce safety, satisfaction, productivity, and energy efficiency are taken into consideration when a health care facility project is planned.[357, 358]
    - For example, Kaiser Permanente—a large healthcare provider in the US—operates a facility that serves as a rehearsal ground to perfect proposed facility designs before they are rolled out to Kaiser's hundreds of hospitals and clinics. These simulations have enabled Kaiser to reduce expenses in a variety of areas, including facility construction, while maintaining levels of doctor, nurse, and patient satisfaction.[359]
- single patient rooms to improve patient safety and quality care and reduce nosocomial infections.[360, 361, 362, 363]
- ergonomic interventions in nursing homes and other health care facilities.[364, 365]
- green building designs and sustainable practices (e.g., using alternative methods of energy, green cleaning products, providing more natural light) are also emerging in the construction of health care facilities.[366, 367, 368]

A background document is also available for this trend. See: "Trend 10 – Health Care Facility Infrastructure"

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