Business of Aging:
Wellness solutions for our aging workforce
Author
Hadi Salah, Industry Analyst, Life Sciences & Healthcare, MaRS Market Intelligence

Reviewers
Karen Greve Young, Director, Strategic Initiatives, MaRS Discovery District
Veronika Litinski, Senior Advisor, Life Sciences & Healthcare, MaRS Discovery District

To download the original report, please visit www.marsdd.com/businessofagingwellness. For further information, please contact Hadi Salah at hsalah@marsdd.com.

Disclaimer: The information provided in this report is presented in summary form, is general in nature, current only as of the date of publication and is provided for informational purposes only.
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada's aging workforce</td>
<td>02</td>
</tr>
<tr>
<td>The cost of chronic disease</td>
<td>03</td>
</tr>
<tr>
<td>Keeping people productive longer</td>
<td>05</td>
</tr>
<tr>
<td>The case for employee wellness programs</td>
<td>05</td>
</tr>
<tr>
<td>Lead by example</td>
<td>06</td>
</tr>
<tr>
<td>Support for the caregiver</td>
<td>07</td>
</tr>
<tr>
<td>Call to action: Innovation and integration required</td>
<td>07</td>
</tr>
<tr>
<td>Innovation showcase</td>
<td>09</td>
</tr>
</tbody>
</table>
Canada’s aging workforce

The world’s population is aging, and Canada’s population is no exception. Our median age was 39.7 years in 2010—a sharp rise from the median age of 26.2 years in 1971—and is expected to increase to over 45 years by 2050 (Figure 1). The basic forces behind this demographic shift are simple: people are living longer and having fewer children.

An older population is a great thing. With age comes maturity, wisdom, experience and talent. Those who are older than we are contribute significantly to our success—they are our mentors and our leaders; they teach and guide us. Older workers enhance the competitiveness and productivity of organizations of all sorts and sizes, including small companies, government organizations, academic institutes, healthcare institutions and others. Furthermore, as the growth rate of the workforce-age population segment (those 15 to 64 years old) slows—or even shrinks—now and in the near future, tapping the full potential of older workers will become necessary to continue to grow companies’ bottom lines and countries’ gross domestic products.

Canada’s workforce is aging, and along with all the benefits derived from an aging workforce, there are also challenges. One of the major challenges of an aging workforce is the increase in the incidence of chronic diseases, which presents sizeable risks to companies, governments and society as a whole. The impact of chronic diseases on an aging workforce affects both employees and employers alike. For employees, having a chronic condition or caring for a chronically ill family member detracts from both their quality of life and their effectiveness on the job. The purpose of this paper is to present the case for employers to take action on employee wellness, and to provide them with a showcase of Canadian innovations to help their employees prevent or manage chronic disease, thereby keeping them healthy and effective throughout their careers.

Figure 1: The demographic makeup of Canada will be vastly different in 2050 compared to 2010: Canada’s population is aging (Source: Statistics Canada).
The cost of chronic disease

In Canada, some nine million Canadians—roughly one-third of the population—manage one or more chronic diseases on a daily basis. The incidence of chronic disease increases with age. Canada’s youth, those 12 to 19 years of age, have a chronic disease incidence rate of 6%. That incidence rate more than doubles (13%) for the 20- to 39-year-old age group and continues to increase rapidly as the population ages (Figure 2). The Ontario Ministry of Health and Long-Term Care estimates that 80% of those over the age of 45 (roughly 3.7 million Ontarians) were living with a chronic condition in 2003. The potential years of life lost (PYLL) measures the number of years of potential life not lived when a person dies “prematurely,” defined for this indicator as before age 75. Approximately half of the 4.5 million PYLL in Canada are attributed to chronic diseases, in particular cancer, and cardiovascular and respiratory diseases (2005 to 2007 data).

Defining chronic diseases

Also known as non-communicable diseases (NCDs), chronic diseases are defined as diseases of long duration and generally slow progression, and they are the major cause of adult mortality and morbidity worldwide (Source: World Health Organization). Four main diseases are generally considered to be dominant in NCD mortality and morbidity: cardiovascular diseases, including heart disease and stroke; diabetes; cancer; and chronic respiratory diseases, including chronic obstructive pulmonary disease and asthma.
The direct and indirect economic costs of chronic conditions are staggering. Although there are a number of approaches one can use to estimate, in dollars, the economic burden of chronic diseases, the results are always in the trillions of dollars.

In a comprehensive report on the economic burden of non-communicable diseases released in September 2011, the World Economic Forum estimates for the five top disease categories (cancer, cardiovascular diseases, chronic respiratory diseases, diabetes and mental health):

- direct and indirect costs of US$6.25 trillion in 2010 and rising to US$13.07 trillion in 2030, globally;
- lost output over the period 2011 to 2030 at nearly US$47 trillion, globally; and
- economic burden of life lost due to all chronic diseases ranging from US$22.8 trillion in 2010 to US$43.3 trillion in 2030, globally.

Chronic diseases impact workforce productivity via absenteeism, presenteeism (that is, a worker being present but unable to effectively do his or her work), the loss of critical skills, high turnover and the need to promote employees prematurely when more experienced employees die or can no longer work due to illness or caregiving responsibilities. One study suggests that men and women who have chronic diseases work 6.1% and 3.9% fewer hours, respectively, than their healthy colleagues. For example, stress-related absences cost Canadian companies over $3.5 billion annually.

The business community is also concerned about the rising costs of health and life insurance. According to Sun Life Financial, a leading supplier of insurance and group benefits programs, rising health-related expenses of unhealthy employees (those who have chronic diseases) are putting pressure on organizations’ bottom lines and making many current benefits plans unsustainable due to spiralling drug costs alone.

In 2010, Canadian companies spent nearly $200 million per week on prescription drugs—an estimated $10.2 billion for the year. And drug costs continue to rise: drug expenditures for all Canadians increased at an average annual rate of 9.1% from 1985 to 2008. At a medium-sized corporation such as Ontario Power Generation, which has about 11,700 employees, diabetes drugs alone cost over $1 million annually. Drugs provided through benefits plans, combined with absenteeism and lost productivity, cost Canadian companies billions of dollars annually.

More than 80% of companies recognize the dynamics of aging demographics, yet less than half are proactively planning for them. The good news is that proactive planning can turn the challenge of an aging workforce into a managed opportunity. Forward-looking companies are using new innovations and incorporating workplace wellness programs to help their employees delay, prevent and manage chronic diseases.

---

**Methods used to calculate the economic burden of health problems**
(Source: World Economic Forum and Harvard School of Public Health)

1. The cost-of-illness (COI) approach: This is a commonly used method that sets out to capture the economic impact of disease. It views the cost of NCDs as the sum of several categories of direct and indirect costs. The categories typically considered in this approach are: personal medical-care costs for diagnosis, procedures, drugs and in-patient and out-patient care; non-medical costs, such as the costs of transportation for treatment and care; non-personal costs like those associated with information, education, communication and research; and income losses. Pain and suffering are also sometimes included in this approach.

2. The value of lost output or the economic growth approach: This method estimates the projected impact of NCDs on aggregate economic output (gross domestic product [GDP]) by considering how these diseases deplete labour, capital and other factors that contribute to production levels in a country. The World Health Organization’s EPIC model simulates the macroeconomic consequences of NCDs by linking disease to economic growth. It does this by modelling the two main factors of production—labour and capital—as depending negatively on NCDs.

3. The value of statistical life approach: This method reflects a population’s willingness to pay to reduce the risk of disability or death associated with NCDs. By placing an economic value on the loss of health itself, this approach goes beyond the impact of NCDs on GDP alone.
Keeping people productive longer

Addressing the needs of our aging population is simultaneously simple and hard. Dr. Joseph Coughlin, the founder and director of the Massachusetts Institute of Technology AgeLab, has a simple solution: reinvent every social and economic institution that directly deals with an aging population, from transport and housing to education and commerce. It may sound easy, but in actuality it is very hard to accomplish, necessitating innovations from scientists, policy-makers, caregivers, businesses and others. It’s all about “how we keep people productive for as long as possible,” says Coughlin.12

On his blog, “Disruptive Demographics,” Coughlin shares evidence that suggests that many of the most powerful factors determining how you age come from what you do and what you do with others, for instance, whether you work, whether you play music or whether you have regular visitors.13 Supporting health and well-being is one area of the workplace that is evolving to meet the demands of our aging population: employers are increasingly seeking interventions to keep employees healthy in their youth to help reduce lifetime healthcare costs and increase productivity across the work span.14

Geoff Mulgan, the chief executive officer and chairman of Nesta in the United Kingdom, agrees. He believes innovations must have a big impact on productivity, achieving more for less. Mulgan is a thought leader on the topic of social innovation, and his expertise is highly regarded—especially in his home country, the UK, where middle-aged men and women suffer from worse physical and mental health issues than men and women in 12 other countries evaluated by the international Bupa Health Pulse study.15

“Paradoxically it’s the success of drug therapies in treating acute conditions that has led to greater numbers of people living longer with chronic disease,” says Mulgan. “We are no longer threatened by TB or cholera, but instead people live for years with cardiac conditions, diabetes and some cancers. The way that we deal with people in these situations has got to change.”

The case for employee wellness programs

The Public Health Agency of Canada reports that 70% of an organization’s health benefits costs come from six disease categories: cardiovascular, musculoskeletal, respiratory, digestive, cancer and stress.16 All of these conditions are preventable or modifiable through behavioural changes. In fact, it is estimated that 80% of heart disease, stroke and Type 2 diabetes, and 40% of cancers are preventable.17

Although it is well known that many chronic diseases are preventable, a recent coast-to-coast health survey of 4,000 adults conducted by Ipsos Reid and commissioned by Sun Life Financial reveals that although the vast majority of Canadians understand the importance of health and wellness, they struggle to take action, citing lack of willpower, time and money as barriers.18

The case for workplace wellness programs could not be clearer: unhealthy employees are expensive. For example:

- Obese employees on average are absent 13 times more often than non-obese employees and incur medical claims costs almost seven times higher.19
- Every smoker costs his or her employer an additional $3,396 per year due to increased absenteeism, decreased productivity and the costs of maintaining smoking facilities.20
- Stressed employees cost employers almost 50% more in health expenditures, with related absenteeism from stress alone costing Canadian companies $3.5 billion—that’s approximately $925 for each stressed employee per year.21
- Time lost due to unplanned absences has risen steadily in the past 10 years and is estimated to cost employers the equivalent of 9% of base payroll, on average.22

Workplace wellness programs, such as lifestyle coaching, fitness challenges, screening clinics, health-risk assessments and education sessions have been shown to enhance companies’ bottom lines:23

- 11% higher revenue per employee
- 1.8 fewer days absent per employee per year
- 28% higher shareholder returns
- For every $1.00 spent on wellness programs, medical costs fall by about $3.27 and absenteeism costs fall by about $2.73.
But it is not all about numbers and dollar return on investment (ROI). Dr. Alain Sotto, who is the chief physician at Ontario Power Generation (OPG) and an occupational medical consultant at the Toronto Transit Commission (TTC), has developed numerous workplace wellness programs.

“Our ROI is above and beyond,” says Sotto. “A dollar invested can save a life. If the ROI equals one saved life, then it was worth it. Many companies spend so much time measuring this and that, and at the end of the day they spend more money on trying to measure than taking action. Employers have to realize that when it comes to employee health, it’s not always about the number of dollars and cents spent. Employers enshrine health and safety but they often forget about the ‘health’ component of the Occupational Health and Safety Act.”

Lead by example

At OPG and the TTC, employee wellness began with the question of “Where can we have the biggest impact on employees and their families?” says Sotto. The answer was easy: focus on five preventable chronic disease states—mental health, cardiovascular diseases, musculoskeletal system diseases, cancers and diabetes. Their initial project was a colon cancer–screening program in partnership with Sunnybrook and Women’s College Health Sciences Centre (which is now de-amalgamated into two separate hospitals).

“The premise of the project is that at age 50, your risk of developing pre-cancerous polyps increases from low to average,” says Sotto, “so screening and early detection of polyps can prevent the onset of cancer 10 to 15 years later.”

The program was low cost and was based on four pillars: educate, engage, empower and enable. “We educated our employees about colon cancer. We engaged them with seminars, handouts, videos and face-to-face meetings. We empowered them with the knowledge of what to do, where to do it and how to do it. And we enabled them with the tools—facilitating referrals to clinics and giving them referral forms,” says Sotto. This program is part of a suite of innovations to tackle chronic diseases that are affecting his colleagues.

Shoppers Drug Mart (SDM) set out to review its benefits program in 2009, as costs had increased over the years. The company took this opportunity to revamp its benefits plans to reduce costs while enhancing the wellness of its employees and their family members. A new plan, launched in January 2011, integrated three components to better manage costs and improve health outcomes for employees: formulary solutions (i.e., the use of generics when possible), wellness solutions and chronic-care management solutions. As a leading pharmacy, SDM already had expertise in delivering parts of this plan. The company partnered with service providers, such as INTERxVENT Canada, for the employee wellness and disease management portions of the plan. In just four months the impact of focusing on generics, as well as adding the wellness and disease management components, was apparent: the drug plan costs decreased by close to 15% in Ontario. More than 80% of SDM’s employees completed the INTERxVENT health risk assessment, 20% of employees enrolled in wellness programs and 40% participated in the INTERxVENT chronic disease management program. According to Basil Rowe, vice-president of total rewards and shared services at SDM, the cornerstone of the new plan is that savings on the drug side will be reinvested into health and wellness.

Not only are pharmacists on board, but healthcare workers are as well. One would assume that people working in healthcare would be more health conscious than other workers, but hectic schedules coupled with long hours and stressful work environments can make it difficult for healthcare staff to focus on their personal health.

At Toronto’s University Health Network (UHN), a team led by Alison Cocking, manager of workplace wellness, wanted to change that. In 2007, Cocking and her team developed and launched a new wellness department at UHN and across three hospital sites. The message the UHN Oasis Wellness Centre was trying to convey to employees was clear and simple: pay attention to your health. During the initial rollout, classes and wellness programs were offered, and the team was focused on promotion. Three years later, about 5,500 employees (50% of UHN’s full-time and part-time staff) participated in what are now 190 programs delivering 600 classes—provided in partnership with solution providers offering innovative ways to engage UHN’s employees. The success of wellness programs is not always measurable, but at UHN, one 12-month program targeting front-line clinical staff showed savings of $583 per employee per year, based on absenteeism and benefits costs alone.

Employee wellness programs are being implemented across regional, national and international organizations. Major brands such as BMW, British Telecommunications and Hewlett-Packard are on board, as are small businesses in most industry verticals.
Support for the caregiver

Dr. Joseph Coughlin stresses that workplace wellness programs are only one way to tackle the challenges posed by an aging workforce. Older employees indicate that flexible work arrangements are also important to them. Flexible work benefits enable employees to fulfill the duties of informal caregiving for loved ones.27

It is estimated that one-quarter of Canadians aged 45 and older provide care to an older person who has a chronic health condition or physical limitations.28 The majority of informal caregivers are in the workforce (72% to 83%) and most are women (57%). The majority of those being cared for are family members. The economic value of the contribution of informal caregivers is significant, estimated at between $24 and $31 billion in 2007.29

Dr. Judith Shamian, president and CEO at VON (Victorian Order of Nurses) Canada, is a strong advocate for caregiver support. At VON, the average age of the workforce is 47 years old—higher than the national average. So not only does VON have strong experience in providing caregiving services, they know first-hand the impact of caregiving on their own employees.

“Lost productivity, missing work, leaving the workforce, stress—all are symptoms of caregiving responsibilities,” says Shamian. “There’s also a cost around recruitment and retention. The cost to business in Canada is being studied, but if it’s anything like what we have seen in the United States, the UK and Australia, then it’s going to be significant.”

In the US, an estimated $2.8 billion is spent by businesses to replace people who have left their jobs to care for an elderly person. Productivity losses contribute another $33 billion. In the UK, some studies suggest that it may cost the equivalent of three months’ salary to replace a low-skilled worker and more than a year’s salary to replace a professional who quits their job in order to give care.30

A number of recommendations are suggested to help employers ease this burden (for both employees and the organization). Flexible work arrangements are one of the best ways to support caregiving employees. A number of companies in Canada excel in this area, including The Home Depot and Telus. Canada has options for employee leave support, as well as enhanced income and job protection. Our Employment Insurance (EI) Compassionate Care Benefits program is a good start, and some companies are going beyond by encouraging employees to take advantage of the program or even supplementing it. Paul Lukas, president and CEO of GlaxoSmithKline (GSK) Canada, was one of the first champions of this perk, implementing an enhanced compassionate care leave program at GSK Canada even before the federal government introduced the EI Compassionate Care Benefits program.

Call to action: Innovation and integration required

“This is not your father’s old age, nor his workplace. Innovation can be a bit intimidating, but it’s really as simple as putting practical new ideas into use that help enhance and personalize services and experiences. Companies that are able to implement creative solutions successfully will stay ahead of the pack, attracting, retaining and improving the productivity of key talent,” says Dr. Joseph Coughlin.

The case for employee wellness and caregiving support is strong, and employers are beginning to embrace the concept. A survey conducted by Aon Hewitt in September 2011 indicates that a healthy workforce has become a priority for many Canadian employers. What is perhaps discouraging is that the majority of wellness programs are focused on awareness and education—and not on activities designed to reduce health risks. In the survey, 94% of the 120 respondents offered basic wellness programs to employees in the form of employee and family assistance programs; 89% delivered newsletters; and 79% hosted lunch-and-learn sessions. What is lacking is the evolution of such wellness programs into more progressive and proactive efforts, such as delivering on-site fitness programs, yoga and nutrition classes, online health risk assessments, technological innovations and behavioural change support. To be truly effective, workplace health programs need to be integrated—but most aren’t. In the Aon Hewitt survey, 87% of respondents said that an integrated approach to managing health is critical, but only 15% of the companies surveyed said that their approach is in fact integrated.31 This is the gap that needs to be addressed.

“Living longer and better demands that we rethink personal, societal and technical ideas of what it means to age and to imagine the possibilities of life tomorrow,” says Coughlin.32 There must be more to living well as we age than taking our blood pressure and remembering to take medication, he says. At the MIT AgeLab, Coughlin and his colleagues are taking an integrative approach to innovation. They are looking at the whole aging ecosystem—from transportation, shopping, meal
preparation, retirement planning and caregiving to fun and leisure activities. To do this, the MIT AgeLab team draws upon the expertise of MIT students from the fields of engineering, social sciences, business, health sciences, architecture and planning. “The future requires systems thinking to integrate insights in behaviour, technology, business and public policy,” Coughlin concludes.

Employers seeking to implement new solutions must keep the integrated model in mind and offer solutions that are both innovative and work within an ecosystem, providing a compelling business case for the investment.

“It’s not rocket science. I’m embarrassed that more employers are not doing it,” says Dr. Alain Sotto of Ontario Power Generation and the TTC. “I think new initiatives require a champion—and that’s what is lacking.”

Tapping the full potential of older workers is becoming increasingly critical. More than 80% of companies recognize the dynamics of aging demographics, yet less than half are proactively planning for them.33 The good news is that proactive planning can turn the challenge of an aging workforce into a managed opportunity. Companies need to use innovative approaches to minimize the impact of this transition, making adjustments to limit the disruption of chronic diseases and investing in new innovations to delay and prevent new cases of disease. There are options available to prevent, detect and control chronic diseases, allowing the business community to manage future human resource issues as well as costs directly attributed to chronically ill workers.
Innovation showcase

Innovations designed to help employers navigate the aging workforce challenge are numerous and come in many forms. This section provides examples of Canada-grown innovations designed to help employers and employees take care of themselves and their loved ones. Many of the solutions available are highly customizable and, when used in an integrated approach, will yield positive wellness outcomes. A snapshot of the innovations is summarized in Table 1 below.

Table 1: Examples of Canadian innovations designed to help employers keep their aging workforce healthy and effective

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>SOLUTION</th>
<th>CATEGORY</th>
<th>PLATFORM</th>
<th>WEBSITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge Factory</td>
<td>Human resource strategy, support and management</td>
<td>Talent management</td>
<td>Workshops and training material</td>
<td>challengefactory.ca</td>
</tr>
<tr>
<td>Choratech</td>
<td>Working memory training</td>
<td>Mental health management</td>
<td>Software training course with personal trainer</td>
<td>choratech.com</td>
</tr>
<tr>
<td>Cogniciti</td>
<td>Brain health self-assessment and coping tools</td>
<td>Mental health assessment and management</td>
<td>Web and mobile applications</td>
<td>cogniciti.com</td>
</tr>
<tr>
<td>Evolution Health</td>
<td>Buriji behaviour change programs</td>
<td>Chronic disease prevention and management</td>
<td>Web and mobile applications</td>
<td>evolutionhs.com</td>
</tr>
<tr>
<td>The Exercise Doctor</td>
<td>FUNctional work-based fitness program</td>
<td>Musculoskeletal health, prevention of osteoporosis</td>
<td>Digital and on-site formats</td>
<td>theexercisedoctor.com</td>
</tr>
<tr>
<td>INTERxVENT</td>
<td>Cardiovascular health risk assessment, programs and mentoring</td>
<td>Chronic disease prevention and management</td>
<td>Online assessment and programs with personal trainer</td>
<td>intervent.ca</td>
</tr>
<tr>
<td>McKesson Canada</td>
<td>Numerous programs focused on disease prevention and management</td>
<td>Disease prevention and management</td>
<td>Telehealth and other</td>
<td>mckesson.ca</td>
</tr>
<tr>
<td>MEMOTEXT</td>
<td>Technology-based drug adherence program</td>
<td>Disease management</td>
<td>Mobile delivery, text/voice/SMS</td>
<td>memotext.com</td>
</tr>
<tr>
<td>Mon Ami™</td>
<td>Integrated system for the chronically ill and caregivers</td>
<td>Caregiving</td>
<td>Monitor and web portal for home-based care</td>
<td>mymonami.com</td>
</tr>
<tr>
<td>TAGlab</td>
<td>Electronic communicating picture frame, e-book and multimedia biographies</td>
<td>Social isolation and depression prevention and management</td>
<td>Prototypes for electronic tools</td>
<td>taglab.ca</td>
</tr>
<tr>
<td>Tyze Personal Networks</td>
<td>Social networks link caregivers, community and health system</td>
<td>Caregiving</td>
<td>Online tool with mobile application</td>
<td>tyze.com</td>
</tr>
<tr>
<td>The Workplace Institute</td>
<td>Talent management toolkit</td>
<td>Career transitions</td>
<td>Online assessment and related supports</td>
<td>workplaceinstitute.org</td>
</tr>
</tbody>
</table>
Challenge Factory
www.challengefactory.ca

Companies, associations and governments have many workforce-planning challenges, from recruitment and ensuring that new recruits come up to speed quickly to retaining talent. An aging workforce is adding another element to the puzzle, leaving employers struggling to balance business goals with human resource management.

Challenge Factory works with organizations that are interested in new ideas within the field of talent and career management. The company provides experiential talent programs for all demographics from young to old. The Legacy Careers Program provides the practical structure, tools and guidance that a company’s executive team needs to translate general demographic and career research to baby boomer employees’ realities. These employees aren’t looking to stop working, but they are looking to do something different from their current roles in their next phase of life. The Talent Shift game highlights more than five roles that employers do not currently have staffed that, if created and filled, would result in exceeding business plans and goals. By starting with the return on investment for the company, one can then create new and creative employment opportunities for both employees and alumni. Challenge Factory’s pilot program provides guidance on how to do this as well as all of the training, employee communication, dashboard metrics monitoring and operational processes needed.

Challenge Factory has been implementing practical, experiential career services for individuals, companies and governments since 2009. The methodology used is research based, and the coaches and facilitators lend their own corporate management expertise to the work that they do.

Choratech
www.choratech.com

Cognitive performance is known to decline in a roughly linear fashion throughout the adult lifespan. Moreover, in older individuals, cognitive functioning becomes a powerful determinant of various health-related, functional and quality-of-life outcomes. Cognitive training is therefore useful for the enhancement of cognitive functioning in both healthy and impaired individuals. Cognitive training improves the cognitive functioning of aging adults, which translates in the corporate setting into increased employee efficiency and effectiveness, quality of life and productive longevity. Scientifically documented effects of cognitive training include improvements in attention, memory, complex reasoning, self-control of emotions and behaviours, and even (in some suggestive research studies) general intelligence. The use of cognitive training will allow employers to keep their most experienced team members in play for a longer period of time, and will help keep these employees fully engaged right through to the end of their lengthened careers. Cognitive training will also take top performers and give them an added competitive edge. Plus, training benefits are not restricted to the workplace—they benefit users across the various spheres of their lives.

In collaboration with Pearson Canada, Choratech makes scientifically validated, personally coached online cognitive training available to corporate clients. Choratech’s primary target customers are corporate human resources (HR) and organizational development executives who wish to extend and enhance the productive capacities of their workforces.

There are two major overlapping employee groups for whom Choratech’s cognitive training is likely to be most useful. The larger of these groups consists of any and all employees whose cognitive functioning places limits on their job performance. Given the research on age-related cognitive decline, this group would include many older employees. The second group consists of those whose contribution to organizational success is disproportionately linked to their cognitive performance, including senior executives, professionals, subject-matter experts, engineers, marketing specialists, negotiators and sales people. Choratech’s innovation is targeted at both groups, and validation of positive outcomes has been published in peer-reviewed journals.

Cogniciti
www.cogniciti.com

The fear of dementia—particularly in its most common form, Alzheimer’s disease—is a rational one. The disease is common: one in eight adults over the age of 65 have dementia. And it impacts a much wider audience as each patient is generally cared for by his or her children, spouse or friends. Dementia is abusive: patients lose their memories, their loved ones and their bodily functions, usually across the span of years. And there is no cure. Most often memory problems are not dementia; rather they are treatable issues such as insomnia, mild depression, anxiety or the effects of prescription drugs. And often they are
simply the effects of normal aging that require no treatment. Today there are no well-established assessment tools for use outside of hospitals that will answer the key question: “Is my memory concern just normal aging or should I see my doctor?” And so adults and their families suffer in silence for years until the symptoms become so progressed that a trip to the family doctor is undertaken.

Cogniciti, a for-profit corporation jointly owned by Baycrest, the world’s leading centre for the study, assessment and treatment of memory and aging, and MaRS Discovery District, Canada’s leading innovation centre, has developed a Home Memory Assessment, validated in clinical studies conducted by Baycrest scientists and accessible over the Internet. The Home Memory Assessment lets adults get a clinical handle on whether their forgetfulness is normal for their age or whether it warrants a visit to their doctor. The self-assessment tool will be of real value to the millions of people who are experiencing memory loss but who have not yet taken the time to see their family doctor. It will be a game-changer for every adult who worries about his or her own brain health or that of their spouse or parent. Follow-up products include smartphone apps that address the most common aging complaints and that incorporate proven coping techniques to maintain optimal brain health.

The overarching approach behind Cogniciti’s innovations is three pronged:

- **Early detection:** There is a profound inefficiency in the way that memory problems are diagnosed today. Baycrest doctors report an average three-year delay between the time when a patient first notices brain-health issues, such as memory loss, to the time when a doctor is consulted. Cogniciti’s goal is to collapse the three-year wait, helping adults and their families get back on track faster.

- **Prevention:** Nutrition and exercise are proven preventive measures for maintaining brain health. For the past two years Baycrest scientists have been working with leading chefs from across Canada on a brain health cookbook that turns brain-healthy ingredients into tasty recipes. Called “Mindfullness,” this cookbook will be released in digital form late this summer.

- **Treatment for the worried well:** By far the most common cognitive task that busy younger and older workers struggle with is remembering faces and names. There are specific, scientifically grounded techniques that can dramatically improve performance in this area. At the end of 2012, Cogniciti will integrate the most powerful of these techniques into a smartphone and tablet app called “Memory Coach.”

**Evolution Health**

[www.evolutionhs.com](http://www.evolutionhs.com)

Traditional healthcare—delivered by primary healthcare practitioners and through the use of medications—has proven to be effective, but is expensive to administer and inconvenient to access. On the other hand, Healthcare 3.0 delivered via the web, Google searches, word of mouth and mobile technology is accessible and engaging, but the quality is unreliable.

Evolution Health is addressing these problems with Burijji, a software platform that bridges traditional and innovative healthcare. Burijji uses Web 2.0, social networking and mobile health to promote compliance and improve health outcomes for those who are suffering from chronic conditions, and mood and anxiety disorders. It has also been used to facilitate communication between healthcare providers and patients.

Burijji is not intended to replace one-on-one or in-person counselling services. Rather, the service can serve as an adjunct or extension of traditional modalities to expand the reach of evidence-based care. The solution offers tailored treatment through personalized algorithms, peer support through online-moderated support communities, and proactive and reactive support via mobile phones. Burijji has engaged tens of thousands of individuals to help them quit smoking (tripling successful smoking cessation rates); decrease depressive symptoms (by 40% after only four sessions); reduce the frequency and intensity of anxiety attacks; and reduce problem drinking (by 30%).

Evolution Health licenses Burijji to employee assistance programs, government agencies, and the insurance and pharmaceutical industries. Burijji is free to the end user (the patient) and is licensed to organizations using a software-as-a-service (SaaS) model. For employers and employee assistance programs, the platform offers preventive interventions to keep employees healthy and productive. Insurance companies leverage the software to reduce costs associated with short- and long-term disability, and pharmaceutical companies double adherence by offering support services in combination with medication. Government agencies expand their reach and measurably improve outcomes at the population level.
The Exercise Doctor
theexercisedoctor.com

Osteoporosis is a major public health concern that affects two million Canadians and results in considerable fracture-related disability, reduced mobility and quality of life, and death. This brittle bone disease affects one in four women and one in eight men over the age of 50, eroding this valuable employee demographic’s ability to be productive in the workforce. Bone health is essential for maintaining functional mobility and autonomy as people age. Following an appropriate exercise regimen improves bone health; however, most people do not know what exercises are needed (or need to be avoided or adapted) to promote healthy bones.

Exercise combined with pharmacologic therapy is key to successfully managing osteoporosis. The benefits of exercise are that it strengthens muscles and bones and improves balance and coordination, reducing the risk of falls and fractures. The Exercise Doctor™ is a new exercise business that specializes in online exercise programs for workplace use. The company’s 10-minute workplace workouts are designed to get employees started on their journey to improved health. The first chronic disease prevention video will focus on exercises to promote bone health, prevent falls, fractures, and the mobility impairments associated with aging. The easy-to-follow exercise program is consistent with scientific recommendations and Osteoporosis Canada’s clinical practice guidelines for exercise. A balanced four-part exercise regimen includes strength/resistance training, weight bearing/aerobic exercises, posture/flexibility exercises and core/balance training. This evidence-based program includes demonstrations of each exercise, an explanation of the correct and incorrect techniques, a discussion of the purpose and benefit of each exercise and a description of the muscle groups being strengthened. The mechanism of delivery (e.g., company portal or mobile device) can be customized to each company’s needs.

INTERxVENT
www.intervent.ca

INTERxVENT is a comprehensive, scientifically validated disease prevention and management platform, comprising health risk assessments, health content and tools, one-on-one health coaching, and analytics and outcome reporting capabilities.

“The major challenge with an aging workforce is the increased risk of chronic disease,” says Dr. Neil Gordon, the founder and CEO of INTERxVENT, “and that causes two major problems for organizations: first, productivity declines through absenteeism and presenteeism, and second, increased health-related costs.”

INTERxVENT approaches these problems by providing and managing employer wellness programs that proactively identify disease risks with comprehensive health-risk assessments, stratifying populations according to their risk level and, finally, delivering personalized programs outside of usual-care settings. These programs typically incorporate physicians, pharmacists, employee-assistance providers and other health-care stakeholders into a closed-loop system of care. Usual-care providers receive updates on the participants’ progress and can actively assist in delivering program components themselves. For example, pharmacists can be alerted to the participants’ medication risks, as well as actively mentor participants on medication compliance. Ultimately, the goal is to prevent chronic diseases and to reduce their impact on employees. Shoppers Drug Mart and Gamma-Dynacare Medical Laboratories are two major employers currently partnering with INTERxVENT to deliver employee wellness programs.

McKesson Canada
www.mckesson.ca

According to Lois Scott, vice-president of health solutions at McKesson Canada: “Workers are staying in the workforce longer and the majority of the population will be diagnosed with at least one chronic disease once they reach middle age. Moreover, many of these same people are trying to cope with elderly parents whose chronic diseases have become very complex.” For organizations and governments, this presents a unique and complex set of challenges that must be addressed. McKesson Canada has been providing solutions that address these challenges for decades.

McKesson Canada offers a number of tools to help employers and governments better manage an aging workforce:

- McKesson CareEnhance Solutions offer the general public or specified sub-populations easy 24/7 telephone and Internet access to healthcare professionals who can provide a comprehensive range of telehealth services, including symptom triage and advice, wellness and addictions counseling, chronic disease support, health education and referral to community-based resources.
- McKesson Health Management Services combine clinical expertise, innovative technology, and a highly principled
business approach to help companies and organizations enhance the health of their employees through a national network of healthcare providers.

- RelayHealth is a web-based service that provides patients and healthcare providers with a complete electronic health record and information sharing tool. It offers a fully integrated solution and a complete, up-to-date health record, connecting all providers across a patient’s continuum of care (hospitals, physician offices, labs, community care, etc.) and allows healthcare providers to communicate and collaborate with their peers, as well as with patients and their caregivers.

“The Canadian public invests a lot of money in acute and episodic care,” says Scott, “but if some of that money were to be diverted to chronic disease management and prevention programs, we would likely have a better ROI over the long term. McKesson’s programs have made a difference in improving the access, quality and outcome of care for patients with chronic diseases, as well as more appropriate utilization of health care resources.”

MEMOTEXT
www.memotext.com

Not complying with medications has been associated with somewhere between $7 billion and $9 billion of annual costs to the Canadian health-care system. The costs of non-compliance are associated with avoidable hospitalization, critical-care costs and indirect costs to the health-care system. The higher numbers of different medications a chronically ill person must take exacerbates the problem. Barriers to medication adherence include forgetfulness, lack of understanding, psychological and behavioural problems, social stigma and health belief systems.

MEMOTEXT has focused a significant amount of research in the United States, the United Kingdom and Canada over the last five years to developing and refining a proprietary, interdisciplinary, scalable, technology-based approach that provides significant improvements to the very costly and dangerous drug utilization problem. MEMOTEXT combines an enterprise class communications platform, a multidisciplinary design methodology and a self-learning patient segmentation algorithm to integrate medication adherence programming into the everyday lives of patients. This system provides a relevant, interactive digital dialogue with patients using the technology of their choice (speech/voice, short message service or mobile). The MEMOTEXT iterative assessment integrates with individual patient needs for education, coaching, motivating, reminder cues and support. The ability to learn and remember previously reported knowledge, intentions and behaviour allows the enterprise scale platform to modify content and dialogues for the same individual in real-time–evolving with the patient as his or her needs change over time.

MEMOTEXT was validated by a randomized control trial with Johns Hopkins University and Microsoft HealthVault in 2011. This innovative system has shown increases to daily treatment adherence of over 34%. Profiled at the Stanford Persuasive Technology Lab’s 2011 conference, Mobile Health 2011: What Really Works, and at the Kaiser Permanente second annual Gallery of Innovation, MEMOTEXT’s social, mobile and speech interventions deliver benefits to payors, pharmaceutical manufacturers, pharmacies and, ultimately, patients.

Mon Ami™
www.mymonami.com

Loneliness, depression, poor time management, inadequate health monitoring, deficient education and the disorganized activities of daily living can all lead to a poor quality of life for those who have illnesses, as well as for their caregivers. Caregivers usually lack the tools to properly care for their loved ones and, as a result, may have increased absenteeism and stress in the workplace.

Mon Ami is a unique, integrated plug-and-play support system that enables a caregiver to remotely or locally look after loved ones through a host of services. This results in an increased quality of life not only for the person being cared for, but for all parties who are involved in the care. Created by Tertec Enterprises, the system consists of two parts: a touch screen that resides in the home and the Mon Ami Web Portal, a website that enables the caregiver to remotely manage one or more Mon Ami units using any Internet browser. This enables caregivers to assist their loved one at a convenient place and time, thus helping to reduce stress and magnify the caregiving potential. Furthermore, Mon Ami forms the social bridge interlinking family members and friends, thereby mitigating problems such as depression and loneliness.

Along with benefiting those who have complex caregiving needs—and their caregivers—the system provides employers with an innovative solution to help their caregiving employees be more productive and more efficient, and also provides peace of mind, fostering a caring and productive workplace.
A range of issues, circumstances and conditions place seniors at risk for social isolation. Some of these factors include physical isolation and distance, inaccessibility, social stigmas and inequity, impairment and illness, and other social circumstances such as changing friendships, the death of loved ones or other traumatic events. Isolation may lead to feelings of loneliness and depression, which, in turn, are connected to poor physical health and increased mortality. Isolation can arise from many situations for older adults, including living alone, living with chronic conditions or with the effects of a stroke, being a 24-7 primary caregiver, living in long-term care residences or in long-term hospitalization, and living with chronic pain. Considered together, these situations apply to millions of Canadians.

TAGlab is a research group based in the Department of Computer Science at the University of Toronto. The TAGteam is a talented group of interdisciplinary graduate and undergraduate students, post-doctoral fellows, and faculty and staff members with backgrounds in computer science, engineering, human-computer interaction and human factors, graphic and interface design, social work and psychology. TAGlab conducts research and develops technologies relevant to human needs; envisions ways in which we could address problems; and then designs, builds, tests, improves and, where possible, commercializes solutions. The team currently has three main research prototypes: Families in Touch (FIT), an electronic communicating picture frame; the Accessible Large-print Listening and Talking (ALLT) e-book; and Multimedia Biographies/Digital Life Histories, which helps support reminiscing and memory recall for individuals who have dementia. The prototype most relevant to employers and employees caring for loved ones is the FIT innovation.

The Families in Touch (FIT) innovation is an electronic, communicating picture frame that has been developed to encourage easy communication for those who are isolated. The picture frame displays photographs of loved ones, and when an isolated individual touches the frame a message is sent to the individual(s) pictured which says, “I’m thinking of you.” Recipients are then encouraged to record and send a video message back to their loved one using their laptop or mobile phone. The picture frame indicates both visibly and audibly: “You have mail.” The owner of the picture frame can then view the video message at his or her convenience. FIT’s appearance of a tablet encased in a picture frame is non-threatening, so that it easily and unobtrusively fits into someone’s living room or bedroom.

However, the concept could be replicated in television monitors such as those frequently found in patient hospital rooms. The frame supports asynchronous communication and is easily accessible, featuring a simple, intuitive and robust design. It also supports different types of messages. For example, a daughter could send either a quick email or a long video message to her parent, the frame owner.

FIT may prove to be a particularly useful tool for supporting employees who are also managing caregiving responsibilities. And due to the frame’s familiar and intuitive design, it is also ideal for individuals who have limited computer experience. It is especially helpful for those at risk of social isolation due to mobility constraints, communication impairments or illness, as it provides an easy way to reach out to loved ones. This includes both seniors living at home as well as those living in retirement homes or long-term-care facilities.

As we age, we require more help and support. Our network of support may comprise friends, co-workers, neighbours and family members. Tyze Personal Networks is an online tool—a private community centred around one person—that ties this network together. Using practical online tools such as a shared calendar, a vault and a message system, Tyze enables the individual and his or her family, friends, neighbours and health-care professionals to work together.

“Many workers are supporting aging parents,” says Vickie Cammack, Tyze president and CEO. “Tyze enables people to provide this care without having to miss work. One can also coordinate with others and delegate care through the network.”

Having a health-care professional in your Tyze care network, for example, can help with scheduling appointments, setting reminders and improving adherence. Friends and family members can also use the tool to share stories and photos, as well as plan events.

“Most people like working and enjoy their jobs,” says Cammack. “But everybody has deep and profound commitments to their families and loved ones. Knowing that your employer can support you in fulfilling that commitment—even if you’re not at home, but through tools like Tyze—that’s a real benefit.”

Christabel Shaler uses Tyze to support her mother, who is fighting cancer. “Tyze has helped me reach out to a small...
supportive network that helps out in extraordinary ways,” Shaler says. “For example, my mother needed a wheelchair, and we couldn’t afford one that was comfortable and fit her properly. I put out a group message on the Tyze connect page saying: ‘Hi there! We really need a wheelchair for my mom.’ Within 24 hours our friend in Bellingham had tracked down a fantastic second-hand wheelchair ... and we borrowed it, for free! By meeting people where they are at in their willingness and ability to assist us, we are not overwhelming any one person. This is also helping me to avoid burnout. Everyone is in it together.”

Workplace Institute
www.workplaceinstitute.org

The risks associated with an aging workforce have been established in this Business of Aging study as well as many others. An organization’s human resources (HR) blueprint must include a plan to address the aging challenge, incorporating talent retention and knowledge transfer. The Workplace Institute helps employers develop an older worker strategy that is mutually beneficial to both the employer and the employee. The Workplace Institute’s Older Workforce Strategy Toolkit is designed to guide an organization in its HR planning. The toolkit comprises short video-learning modules (delivered online or through physical media), as well as workbooks, guides, workshops and personality assessments. The modules include sections on Laying the Foundation, Guide to Developing an Older Workforce Strategy, Strategies and Tactics, and a Boomer Focus.

A major component of the toolkit is the “Professional Passport,” a 12-minute online assessment that measures personality on five dimensions and allows employees to learn more about their own personality traits, leading to a deeper understanding of themselves. The tool can predict what types of employment would be best suited for an employee’s long-term happiness and fulfillment. By knowing their strengths, competencies, challenges and energy points, employees can apply this information to improve all aspects of their lives, including preparing résumés and determining whether they would be good entrepreneurs. For employers, the tool helps managers understand the personalities of their current team members so they can then plan for various developmental opportunities, succession planning, mentoring relationships and promotions, and even predict how a new hire may boost productivity or cause conflict within their established environment. By building a strong, collaborative team, it is easy to eliminate high turnover rates by building on and utilizing everyone’s strengths to their fullest potential. This is a dynamic tool that can be used in a variety of ways to track progress and help plan for the future, and that allows experienced workers and employers to better understand and manage their personal and career goals.

The benefits of the program for employees are numerous: it encourages career planning, entrepreneurship and involvement in the community as ways of staying active and well.
References

1. Statistics Canada. Table 052-0005 – Projected population, by projection scenario, sex and age group as of July 1, Canada, provinces and territories, annual (persons x 1,000), CANSIM (database).


5. Statistics Canada. Table 102-4309 – Mortality and potential years of life lost, by selected causes of death and sex, three-year average, Canada, provinces, territories, health regions and peer groups, 2005/2007, CANSIM (database).


